NW 1982

Ecology Review Draft
Cleanup Action Plan
Verbeek Wrecking Property
18416 Bothell-Everett Highway
Bothell, Washington

December 24, 2009

Prepared for

Verbeek Wrecking
Bothell, Washington

LANDAU ASSOCIATES
130 2nd Avenue South
Edmonds, WA 98020
(425) 778-0907

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

1.0 INTRODUCTION

This document presents the results of conducting a remedial investigation (RI) and implementing the Cleanup Action Plan (CAP) for the Verbeek Wrecking Site (Site), located at 18416 Bothell-Everett Highway in unincorporated Snohomish County, north of Bothell, Washington (Figure 1). The purpose of the RI is to collect adequate data to characterize the Site for the purpose of developing, evaluating, and selecting a cleanup action. The purpose of the CAP is to describe the cleanup action selected for the Site to address the nature and extent of contamination delineated in the RI.

The Site is enrolled in the Washington State Department of Ecology (Ecology) Voluntary Cleanup Program (VCP). Site characterization and interim cleanup actions previously conducted at the Site are summarized in the Interim Action Cleanup Report (Landau Associates 2009a). Cleanup action at the Site will be conducted in accordance with the Washington State Model Toxics Control Act (MTCAWAC 173-340) under the Ecology Voluntary Cleanup Program (VCP). The VCP reference number for the Site is NW 1982 (FSID 51544175).

Section 2.0 of this report presents information on the Site background, including Site use and regional geology. Section 3.0 provides information on previous investigations and the interim action at the Site. Section 4.0 describes the RI activities. Section 5.0 presents the methods used for developing the proposed cleanup standards for the Site. Section 6.0 describes Site conditions, including Site geology and hydrogeology, and environmental conditions. Section 7.0 presents the approach and assumptions used to develop, evaluate and select the proposed cleanup action. Section 8.0 summarizes the use of this document, and Section 9.0 presents the references for this document.

2.0 BACKGROUND

This section presents information on Site background, including a description of the Site (Section 2.1), a summary of historic and current uses of the Site (Section 2.2), and the Site's regional physical and hydrogeologic setting (Section 2.3). Note that a detailed historical review was previously completed for the Site and is presented in the Interim Cleanup Action Report (Landau Associates 2009a); this historical review should be reviewed for a more thorough description of Site historical uses and conditions.

2.1 SITE DESCRIPTION

Figure 1 shows a vicinity map for the Site. Figure 2 presents a site plan showing the property boundary and relevant historical Site features. The Site is bounded to the east by Bothell-Everett Highway (SR 527) and a commercial property (18332 Bothell-Everett Highway) currently used for storage of landscaping material, to the north by 183rd Street, to the west by a residential neighborhood, and to the south by Gold's Gym and Lease Crutcher Lewis (a construction company). As shown on Figure 3, the Site slopes to a north-south trending drainage depression, and stormwater runoff is drained by a series of catch basins that connect to a centrally located north-south trending stormwater conveyance line. The approximate center of the Site is located at North 47.83092° and West 122.21085°. Verbeek Properties, LLC currently owns the properties within the Site.

2.2 HISTORICAL AND CURRENT SITE USE

Verbeek Wrecking purchased the southern portion of the Site in 1956 and began its automobile salvage operations in the early 1960s. Verbeek Wrecking purchased the northern portion of the Site in the mid 1980s. Prior to 1957, the Site was heavily wooded and was occupied, in part, by several residences. Over the Verbeek Wrecking operational history, auto wrecking and salvage activities were conducted in various portions of the Site.

Auto wrecking and salvage operations ceased in early 2008 in advance of the interim cleanup action activities. The Site was cleared of the salvaged materials and structures used for the wrecking and salvage processes. Currently, the Site is not in use, pending further environmental assessment and redevelopment.

For organizational purposes, the Site is sub-divided into four areas: A, B, C, and D (Figure 2). Area A encompasses the western third of the property, was historically leased to other auto wrecking companies, and was separated from other portions of the Site by a fence. Area B, located in the southern portion of the Site, was used for storage, truck parking, and automobile salvage operations, and was the location where contaminated soil originating from the Gas Works Park (GWP) site in Seattle, Washington

was used as fill. Area C is located in the northeastern portion of the Site and was used for heavy auto wrecking operations. Area D is located in the eastern portion of the Site and had several structures, including a residence/office building, a shop building, and truck scale; the shop building and the residence/office building are the only structures remaining on the Site. The following section presents descriptions of the historical activities conducted in each of the four areas.

Based on aerial photograph interpretation, contaminated soil originating from the GWP site was brought to the Site at some point in the mid 1960s to early 1970s. Characterization and cleanup of the GWP soil is being conducted by Puget Sound Energy (PSE), a former owner of the GWP site. As a result, Area B is not addressed in this report, except for the results of RI activities conducted to evaluate the impacts of former wrecking yard activities in Area B. Characterization and cleanup of impacts from the GWP material at the Site will be presented in a separate document prepared by PSE's environmental consultant, Dalton, Olmsted & Fuglevand (DOF). However, information related to environmental conditions and interim action activities related to the GWP soil are discussed below to provide the reader a more complete understanding of Site environmental conditions.

2.2.1 AREA A

Area A encompasses about the western third of the Site, and was accessed at the north end from 183rd Street SE (mailing address: 18414 Bothell Everett Highway). Verbeek Wrecking leased the property since the early 1970s to various tenants that operated auto parts salvage businesses. Figure 2 shows the location of Area A and associated structures and features. Its longest and most recent tenant, Cascade Wrecking, leased the property from 1981 to mid-2008. The configuration of Area A has been consistent since the mid-1980s. In the mid-1980s, Verbeek Wrecking purchased the northern portion of the Site and expanded its operations and the Cascade Wrecking operations into this area.

The ground surface in Area A consisted of gravel prior to implementation of the interim action. The ground surface surrounding the parts sheds (engine disassembly building) was reportedly stained and numerous petroleum-stained areas were observed beneath the vehicle shells during a 2008 Phase II environmental site assessment (Geotech Consultants 2008a). According to Renee West of Verbeek Properties LLC the ground surface surrounding the engine and transmission storage area also exhibited petroleum-staining (West, R. 2009 Personal Communication). An oil-water separator was located on the eastern edge of the property. Runoff from the nearby steam cleaning/parts shed area passed through the oil-water separator prior to discharge to the stormwater system.

2.2.2 AREA B

Area B is located in the southeastern quarter of the Site and is shown on Figure 2. Area B encompasses a portion of the Site that contains contaminated fill material originating from the GWP Site. According to Verbeek Wrecking personnel, the general grade in this area was raised, in some areas up to 16 ft, to fill in the drainage depression noted in the pre-1976 aerial photographs.

Historical Site activities in this area consisted of auto salvaging, truck parking, and storage. Prior to Verbeek Wrecking purchasing the northern portion of the Site and expanding their operations in the mid 1980s, the western portion of Area B was used as the primary wrecking yard for Verbeek Wrecking. The eastern portion of Area B, near the Bothell-Everett Highway, was used for truck parking and as an entrance to the Site. The oval-shaped track feature that can be seen on Figure 2 is a dirt track that was used by Verbeek Wrecking for recreational purposes. The ground surface in Area B consisted of gravel surfacing prior to implementation of the interim action.

2.2.3 AREA C

Area C is located in the north portion of the Site (Figure 2), and was used for automobile wrecking activities. An east-west trending fence separated the original property in the south from the more recent expansion of the property to the north prior to implementation of the interim action. The property in the south portion of Area C was used for auto salvaging operations from the late 1950s to the mid 1980s, and more recently was used for storage purposes. Verbeek Wrecking expanded their operations to the north in the mid-1980s and increased their automobile processing capabilities by adding automobile crushing and sheering equipment. The most recent automobile wrecking activities that took place in the northern portion of Area C include:

- **Automobile processing:** Batteries and tires were removed, and fluids were drained from automobiles in the processing building. The fluids were drained to containers for subsequent recycling.

- **Automobile crushing:** Processed automobiles were crushed in a crushing press. Crushed automobiles were then sold to offsite recycling companies.

- **Metal shearing:** Crushed vehicles that were too large to be transported offsite were sheared into smaller pieces in the shearing area. This was conducted using a shearing attachment on a track hoe. Sheared metal was then sold to offsite recycling companies.

As shown on Figure 2, concrete pads covered the processing/crushing and the shearing areas. Runoff from the concrete pads was captured in centrally-located catch basins, which then drained to an oil-water separator. Water discharged from the oil-water separator to the sanitary sewer. According to Verbeek Wrecking personnel, the fluids captured in the oil-water separator were periodically pumped out.

The pumped fluid was then stored in the 8,000-gallon waste oil underground storage tank (UST) located at the west end of, and partially beneath, the shop building in Area D. The fill port for the UST is located inside the shop building. The ground surface beyond the boundaries of the concrete pads was covered with gravel surfacing prior to implementation of the interim action.

2.2.4 AREA D

Area D is located in the eastern portion of the Site (Figure 2) and is occupied by the residence/office building, truck scale, the shop building, an active waste oil UST, and two former UST areas. The ground surface in Area D is primarily covered with gravel in the western portion and asphalt in the eastern portion.

The western UST area corresponded to the former fuel dispenser island shown on Figure 2. Verbeek Wrecking removed five USTs from two areas of Area D in November 1995. The tanks were removed by Coastal Tank Cleaning, Incorporated. The approximate locations of the removed tanks are shown on Figure 2. According to the UST Closure and Site Assessment report, the following USTs were removed:

- 6,000-gallon diesel tank associated with the fuel dispenser
- 5,000-gallon diesel tank associated with the fuel dispenser
- 800-gallon lube oil tank located immediately north of the shop
- 550-gallon fuel oil tank located immediately north of the shop
- 500-gallon fuel oil tank located immediately north of the shop.

A total of nine soil confirmation samples were collected from the bottom and sidewalls of the two excavations at the time of the tank removals. Of the nine samples, two (USS-2 and USS-8) exhibited concentrations of diesel-range petroleum hydrocarbons (TPH-D) above the MTCA Method A cleanup level (2,000 mg/kg). Soil sample USS-2 was located beneath the 6,000-gallon diesel UST, and exhibited a concentration of TPH-D at 14,000 mg/kg; soil sample USS-8 was located beneath the 800-gallon lube oil tank, and exhibited a concentration of TPH-D at 2,400 mg/kg. All other sample analytical results were below the MTCA Method A cleanup levels. Figure 4 presents the locations of the samples and the associated laboratory analytical results.

An 8,000-gallon waste oil UST is located partially beneath the shop building as shown on Figure 2. The tank was historically used for storing waste oil that was recovered from the processed automobiles and oil-water separators located at the Site. According to Verbeek Wrecking personnel, the waste oil was either recycled periodically by a waste oil recycling company (e.g., Emerald Services) or was used to fuel

the waste oil furnace in the shop building. The liquid contents of the tank were recently recycled, and sludge remains in the bottom of the tank.

2.3 REGIONAL GEOLOGY

The Site is located in the Puget Sound Lowland, which consists mainly of glacially deposited sediments. The Puget Sound Lowland is a basin lying between the Cascade Mountains to the east and the Olympic Mountains to the west. More specifically, the Site is situated in the North Creek Channel within the Intercity Plateau geomorphic province. The topography surrounding the Site slopes down to the south-southwest. Geologic maps of the area indicate that the Site lies within an area mapped as Vashon advanced glacial outwash (Qva); however, it is possible for Vashon glacial till (Qvt) to be present at the Site as well because it is commonly located stratigraphically higher than the advanced outwash and is mapped in areas within 5 miles of the Site. The presence or absence of glacial till at the Site has not been clearly identified during previous Site investigations.

Glacial till is described as a dense, and in some places concrete-like, glacially compressed mixture of silt, sand, gravel, and clay. Typically, till exhibits relatively low vertical hydraulic conductivity that frequently results in the formation of perched groundwater along its upper contact. The "perched" water (if present) is frequently seasonal and derives recharge primarily from the infiltration of precipitation through more permeable overlying soil.

The advance outwash deposit is described as clean, gray, well stratified, fine sand that grades to sand and gravel and contains some lenses of silt. The unit is 120 to 350 ft thick. The unit has a higher hydraulic conductivity than glacial till, is largely unconfined, and is known to be the principal aquifer (in terms of use) in western Snohomish County (USGS 1997). If present at the Site, the advance outwash unit would likely contain the uppermost hydrostratigraphic unit that would meet the definition of a potable water source under MTCA [WAC 173-340-720(2)]. Site geology and hydrogeology are discussed further in Section 6.1.

3.0 PREVIOUS INVESTIGATIONS AND INTERIM ACTION

This section summarizes the environmental investigations and the interim action conducted at the Site prior to the RI. These investigations and the interim action are documented in the Interim Cleanup Action Report (Landau Associates 2009), which provides a comprehensive overview of the previous activities. The Interim Action Cleanup Report was compiled based on the works of others, including two limited Phase II Environmental Site Assessments (ESAs) completed by Geotech Consultants (Geotech Consultants 2008a,b), and the interim cleanup action completed by GreenCo and Construction Management Services of Washington (CMSI; GreenCo and CMSI 2008).

3.1 ENVIRONMENTAL INVESTIGATIONS

Two limited Phase II ESAs were conducted at the Site in April and May of 2008 by Geotech Consultants of Bellevue, Washington (Geotech Consultants 2008a,b). These investigations were conducted on behalf of RG Properties, which at that time was a prospective purchaser of the property. The investigations were conducted in April and May of 2008 (Geotech Consultants 2008a,b). The purpose of the investigations was to obtain initial characterization data for evaluating Site environmental conditions. The interim action report should be reviewed for a more thorough description of the activities and results of the Phase II ESAs.

The number of soil and groundwater samples collected for characterization purposes and the types of chemical analyses performed for each are described below.

3.1.1 SOIL

Investigation of soil at the Site during the Phase II ESAs included collecting and testing of a total of 38 soil samples located throughout the Site. Laboratory analysis of the soil samples included diesel-, oil- and gasoline-range petroleum hydrocarbons (TPH-D; TPH-O and TPH-G); metals [arsenic (As), lead (Pb), barium (Ba), mercury (Hg), cadmium (Cd), selenium (Se), chromium (Cr), silver (Ag)]; benzene, toluene, ethylbenzene, xylenes (BTEX); volatile organic compounds (VOCs); polycyclic aromatic hydrocarbons (PAHs); and ethylene glycol. Table 1 presents the Phase II ESA analytical results for constituents detected in soil for locations where the soil has not been removed. Phase II ESA environmental soil sampling locations and results are shown on Figures 5 and 6.

As shown on these figures, limited exceedances of MTCA soil cleanup levels were detected in the borings and test pits. Of the 10 soil samples collected in Area A, none exhibited detections of the tested constituents above the laboratory reporting limits. Of the 17 soil samples collected in Area B, 4 samples exhibited exceedances of the MTCA soil cleanup levels; constituents that exceeded the cleanup levels in

Area B were limited to benzene, cPAHs, naphthalene, and oil-range petroleum hydrocarbons. Of the eight samples collected in Area C, one sample exhibiting a single exceedance of the MTCA Method B benzene soil cleanup level was the only soil criteria exceedance identified.

3.1.2 GROUNDWATER

Investigation of groundwater at the Site included collecting and testing of a total of eight groundwater samples located throughout the Site during the Phase II ESAs. Laboratory analysis of the groundwater samples included TPH-D, TPH-O, and TPH-G; BTEX; methyl tertiary butyl ether (MTBE); naphthalene; carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and VOCs. Table 2 presents the Phase II ESA analytical results for constituents detected in groundwater from locations representative of current site conditions. Previous environmental groundwater sampling locations are shown on Figure 7.

As shown on Figure 7, only two exceedances of the MTCA Method B groundwater cleanup levels were observed. Sample B1 H2O located in the northern portion of the Site (Area C) exhibited a concentration of benzene that was slightly greater than the cleanup level. Sample B8 H2O located in the southern portion of the Site (Area B) exhibited concentrations of gasoline-range petroleum hydrocarbons, benzene, and naphthalene that were greater than the cleanup levels. All other groundwater samples collected from the Site during the Phase II ESAs did not exhibit any exceedances of the preliminary cleanup levels.

During the interim cleanup action (described below), GreenCo installed two groundwater monitoring wells, MW-1 and MW-2, in the western portion of Area B. The well locations are shown on Figure 8 (along with soil borings and test pits advanced in 2008 and 2009 investigations). The wells were installed by Environmental Services Northwest, Inc. (ESN) of Olympia, Washington (ESN). According to the resource protection well reports, the wells were installed using a hollow-stem auger and were constructed of 2-inch diameter, schedule 40 PVC. The well screens were constructed from 34 to 39 ft and 38 to 48 ft. Resource protection well reports for the wells are presented in Appendix A. Although geologic logs were not prepared by GreenCo or ESN, ESN provided field notes made by the driller at MW-1, which are summarized in Appendix B.

3.2 INTERIM CLEANUP ACTION

An interim soil cleanup action was conducted at the Site by GreenCo between July and October 2008 in Areas A, B and C. According to GreenCo (GreenCo and CMSI 2008), the interim cleanup action was focused in these areas to address potential areas of soil contamination identified in the Geotech

Consultant's Phase II ESAs. Figure 9 presents the areas of soil and groundwater contamination identified by Geotech Consultants based on their interpretation of the Phase II ESA results.

In Areas A and C, the interim action included excavation and onsite treatment of petroleum hydrocarbon impacted soil. Soil was excavated based on the presence of soil cleanup level exceedances identified during the Phase II ESA and field screening techniques (visual and olfactory senses). The excavated soil was then treated by amending it with "bio-enhancement chemicals" (assumed to be nitrate-based fertilizer) and mechanically mixing the amended soil to facilitate bio-remediation of the contaminants. The location footprint of the remediation piles is shown on Figure 10. Confirmation samples were collected from the bottom and sidewalls of the excavations and from the remediation piles following treatment to verify that the preliminary cleanup levels were achieved. A total of 61 remediation pile soil samples were collected and submitted to a laboratory for analytical testing. A total of 50 confirmation soil samples were collected from the base and sidewalls of the cleanup action area in Area A. A total of 83 confirmation soil samples were collected from the base and sidewalls of excavation area in Area C. All confirmation and remediation pile samples were tested for TPH-G, TPH-D, TPH-O, and many samples were also tested for BTEX and lead.

The excavations in Areas A and C were then backfilled with the treated soil. Interim Action Areas A and C and associated soil compliance monitoring locations are shown on Figure 11. A detailed description of the interim action conducted in these areas is presented in the Interim Cleanup Action Report (Landau Associates 2009a).

As previously discussed, characterization and final cleanup of Area B is being addressed separately from the other portions of the Site due to the source of the contamination in this area. However, GreenCo conducted interim cleanup activities in Area B that impact current conditions elsewhere on the Site. The contaminated soil excavated from Area B was stockpiled in Area A. GreenCo intended to treat the soil in the same manner as that used for Areas A and C. However, after a pilot project demonstrated that treatment for contaminants present in the GWP soil was ineffective, GreenCo was directed by Verbeek Wrecking to cease treatment of Area B soil and consolidate and secure the contaminated soil. The approximate location of the Area B excavation from which contaminated soil was removed and the location of the associated contaminated soil stockpile are shown on Figure 12.

4.0 REMEDIAL INVESTIGATION FIELD ACTIVITIES

The scope and procedures for the RI are presented in the RI Work Plan (Landau Associates 2009b). The goals of the RI were to evaluate the effectiveness of the interim cleanup action and fill remaining data gaps regarding Site environmental conditions to provide the information necessary to evaluate the nature and extent of contamination at the Site, and to enable the selection of a final cleanup action. Remedial investigation (RI) activities took place between August and October of 2009. The RI consisted of investigation of Site soil, groundwater, and surface water (stormwater). This section provides a description of RI activities. RI results are presented in Section 6.0, following development of the proposed cleanup levels in Section 5.0. A summary of the data gap addressed and the analyses chosen for each sample is presented in Table 3.

4.1 SOIL INVESTIGATION

Field activities for the soil investigation were conducted in August and September 2009, and consisted of evaluating soil conditions by collecting soil samples for analysis from 29 boring locations (6 of which were converted to monitoring wells) and 16 surface soil sampling locations. The borings were completed using hollow-stem auger or direct-push drilling methods. The surface samples were collected using hand tools. Soil was classified in the field using the Unified Soil Classification System, and field screened for observable signs of contamination. Field screening was accomplished using visual and olfactory senses and a photoionization detector (PID). Soil types and field screening results were recorded on individual log of exploration forms, which are presented in Appendices C and D for borings and monitoring wells, respectively. Sample collection, analyses, and quality assurance were performed in general accordance with the procedures described in the Sampling and Analysis Plan provided in Appendix D of the RI work plan (Landau Associates 2009b).

The following sections describe the RI soil investigation activities and rationale. Soil sampling locations are presented on Figure 8. The soil analytical results are presented in Section 6.2.

4.1.1 AREA A (FORMER CASCADE WRECKING LEASEHOLD)

In Area A, the soil investigation focused on characterization of soil in portions of the previous excavation area that were not adequately characterized during interim action compliance monitoring, the area of the former remediation piles, the gravel stockpiles located in the southwest corner of the Site, and undisturbed portions of the area where historical Site uses could have caused the release of hazardous substances. In addition, samples were collected from the treated backfill material to confirm that cleanup

levels were achieved in the remediation piles prior to use as backfill. Soil samples were collected in Area A from the boring locations, surface sample locations, and the gravel stock piles shown on Figure 8.

4.1.1.1 Soil Borings

Four soil borings (A-B1, A-B2, MW-3, and MW-4) were completed in the area of the interim action excavation. Two of the borings (A-B1 and A-B2) were completed to verify backfill quality and supplement existing interim action compliance monitoring data, and were extended to 10 ft BGS. The other two borings were completed as monitoring wells MW-3 and MW-4, and were completed to at least 5 ft into the uppermost hydrostratigraphic unit observed at each location. At each of the four soil borings, soil samples were collected from the surface and from within the excavation backfill. Additionally, one sample was collected at MW-4 from the depth of the apparent bottom of the previous excavation. It was anticipated that one sample would be collected from the bottom of the previous excavation at A-B1, A-B2, and MW-3. However, the bottom of the previous excavation at those locations was not discernable, likely because the backfill and the native soil beneath the base of the excavation were of similar composition and could not be differentiated.

Soil samples collected from these borings were collected according to the Sampling and Analysis Plan (Landau Associates 2009b) and tested for TPH using the hydrocarbon identification (HCID) method, metals (arsenic, cadmium, chromium, lead, and mercury), and cPAHs. Follow-up analysis for TPH-D and TPH-O were conducted on one sample from A-B2 and two samples each from MW-3 and MW-4 based on the HCID results.

4.1.1.2 Surface Soil Samples

Three surface soil samples were collected in Area A (A-S1, A-S2, and A-S3). The samples were collected from the upper 6 inches of soil using hand tools (hand auger, stainless steel spoon, etc.) and were tested for TPH-HCID, metals, and cPAHs. Additionally, samples A-S1 and A-S2 were analyzed for PCBs.

Soil sample A-S1 was collected from an area where former remediation soil piles were located to determine if any impacts have resulted from the remediation pile being placed at that location. Soil samples A-S2 and A-S3 were collected from undisturbed portions of Area A where historical activities could have resulted in the release of hazardous substances.

4.1.1.3 Gravel Stockpile Grab Samples

Six grab samples (A-GP-1 through A-GP-6) were collected from the two gravel stockpiles located in the south end of Area A using hand tools. Stockpile samples were tested for TPH-HCID, metals, and cPAHs. Follow-up analysis for TPH-G, TPH-D, and TPH-O were conducted on all six grab samples based on the HCID results.

4.1.2 AREA C

The soil investigation in Area C, similar to that of Area A, focused on characterization of soil in portions of the previous excavation area that were not adequately characterized during compliance monitoring, the area of the former remediation piles, and undisturbed portions of the Site where historical information suggests that the release of hazardous substances may have occurred. In addition, a limited number of samples were collected from the backfill material within the former excavation area to confirm that the proposed cleanup levels were achieved in the remediation piles prior to using the soil as backfill. Soil samples were collected from boring locations and surface sample locations. Soil samples collected in Area C from the soil boring locations and surface sample locations are shown on Figure 8.

4.1.2.1 Soil Borings

A total of three borings were originally planned for Area C as part of the RI, including the two borings for monitoring wells MW-5 and MW-6 and soil boring C-B1 in the northern portion of the interim action excavation area. However, six additional borings (CB-2, CB-3, C-SS1 through C-SS3, and D-SS4) were advanced in the southern portion of Area C to delineate petroleum hydrocarbon contamination encountered in Area D at MW-8. Petroleum hydrocarbon contamination that could be related to former wrecking yard activities was also encountered underlying the GWP soil in the vicinity of C-SS1 through C-SS3 underlying the GWP soil during a previous investigation (DOF 2009), so this previously identified contamination was also evaluated during the RI. Note that some of these additional borings are physically located in Area B, but the Area B designation is being applied specifically to contamination associated with GWP material.

Two soil borings (MW-5 and MW-6) were advanced in the area of the previous excavation and subsequently converted into monitoring wells. Borings for MW-5 and MW-6 were advanced using hollow-stem auger drilling to depths of 34.5 and 21 ft BGS, respectively, and were completed to at least 5 ft into the uppermost hydrostratigraphic unit. Soil boring C-B1 was advanced in the central portion of the former vehicle processing area using direct-push drilling techniques to a depth of 10 ft BGS and was completed to verify backfill quality and supplement existing interim action compliance monitoring data.

Soil boring C-B2 was originally planned to be a surface soil sample (proposed location C-S4 in the RI work plan; Landau Associates 2009b). Apparent GWP material was encountered at the proposed location for C-S4 from approximately 0.33 to 0.5 ft BGS; therefore, this location was converted to a soil boring location (C-B2) to evaluate soil quality below the GWP material. Soil boring C-B3, which was advanced nearby to a depth of 1.5 ft BGS, also encountered apparent GWP material from 0.75 to 0.9 ft BGS. The material encountered was black, had a hard, viscous consistency, and a strong hydrocarbon odor. Soil borings C-B2 and C-B3 were both advanced using hand tools (hand auger, shovel, etc.). Soil samples were not collected from C-B2 or C-B3 due to the presence of the apparent GWP material at these locations, because the GWP material is being addressed separately, as previously discussed.

Soil samples were collected from MW-6 and C-B1 from the surface, from within the excavation backfill, and at the depth of the bottom of the previous excavation. At MW-5, a saturated, confined sand and gravel unit was encountered at MW-5 from a depth of 27.5 ft BGS to the bottom of the boring (34.5 ft BGS). As shown in Appendix D, sufficient saturated thickness (i.e., greater than 3 ft) of a soil unit was not encountered in MW-5 until it reached the confined aquifer. The confining layer overlying the aquifer was interbedded sandy silt and silty sand. The RI work plan anticipated collecting one soil sample at MW-5 from the capillary fringe zone above the groundwater table, or from the most contaminated soil interval as indicated by field screening and general field observations. No indications of impacts to soil or groundwater were observed at MW-5 and no capillary fringe was encountered. Therefore, soil samples were collected from the soil immediately above the confining layer and from soil within the aquifer. Soil samples collected from these borings were tested for TPH-HCID, metals, and cPAHs. Follow-up analysis for TPH-D and TPH-O were conducted on samples from MW-6 and C-B1 based on the HCID results.

Soil borings not originally planned for the RI were completed in Area C to evaluate potential wrecking yard TPH impacts identified during a previous investigation at the north edge of the GWP soil. Three borings (C-SS1 through C-SS3) were advanced using direct-push drilling methods to depths ranging from approximately 10 to 20 ft BGS to obtain soil samples from the potentially affected zone. These three additional borings, and D-SS4 (originally thought to be in Area D) were also used to delineate petroleum hydrocarbon contamination detected during the installation of MW-8 in Area D (discussed in Section 4.1.3). The samples were analyzed for TPH-HCID, metals, and cPAHs. Follow-up analysis for TPH-D and TPH-O were conducted on samples from C-SS1, C-SS2 and D-SS4 based on the HCID results.

4.1.2.2 Surface Soil Samples

Three surface soil samples (C-S1, -S5, and -S6) were collected from the locations of the former remediation soil piles to determine if any impacts resulted from the remediation pile being placed at those

locations. Surface soil samples C-S2, C-S3, and C-S7 through C-S12 were collected from undisturbed portions of Area C where historical information suggests the potential for the release of hazardous substances to the ground surface associated with former wrecking yard activities. As stated above, material that potentially originated from the GWP site was encountered at the proposed location of surface sample C-S4 (Figure 13 of the RI work plan), so no soil surface soil sample was collected at this location. As in Area A, surface soil samples were collected using hand tools and were tested for TPH-HCID, metals, and cPAHs. Additionally, samples C-S3 and C-S6 were analyzed for PCBs. Follow-up analysis for TPH-D and TPH-O were conducted for C-S1, -S2, -S3, and -S6 based on the HCID results. Based on the analytical results for these five surface soil samples, six additional surface soil samples (C-S7 through C-S12) were collected and analyzed for cPAHs.

4.1.3 AREA D

The soil investigation in Area D was focused on characterization of soil near the former USTs and the existing out-of-service waste oil UST. The former UST locations are shown on Figure 2. The planned RI scope included the advancement of one boring at each of these locations, with monitoring wells MW-7 and MW-8 installed at the two former UST locations. However, due to a combination of drilling difficulties and encountering petroleum hydrocarbon contamination at the southernmost former UST location, a total of 17 soil borings (MW-7, MW-8, D-B1 through D-B10, and D-SS1 through D-SS5) were advanced in Area D. Two of the borings were completed as monitoring wells (MW-7 and MW-8). Additionally, two surface soil samples (D-S1 and D-S2) were collected from undisturbed soils in Area D to evaluate the extent of cPAH surface soil contamination previously discussed in Section 4.1.2. Boring and surface soil sample locations are shown on Figure 8.

4.1.3.1 Soil Borings

Previous investigations found petroleum hydrocarbon concentrations in soil above cleanup levels at the locations of two former UST locations (Landau Associates 2009b). Monitoring wells MW-7 and MW-8 were each placed at one of these two locations and soil samples were collected during advancement of the borings for these wells. MW-7 and MW-8 were advanced using hollow-stem auger drilling methods to depths of 26 ft and 22.5 ft BGS, respectively. No evidence of impacts were observed at MW-7, therefore, one soil sample was collected from the capillary fringe above the water table.

Petroleum hydrocarbon impacts were encountered at MW-8 at depths ranging from approximately 5 to 19 ft BGS. Soil samples were collected from the uppermost depth where impacts were first observed (5 to 6 ft BGS), from the most impacted zone above the uppermost hydrostratigraphic

unit according to field screening (12.5 to 13.5 ft BGS), and from the deepest portion of the boring where field screening indicated the absence of impacts (22 to 22.25 ft BGS). Soil samples collected from these borings were tested for TPH-D and TPH-O, TPH-G, and BTEX.

Twelve additional soil borings (D-B3 through D-B8, D-B10 and D-SS1 through D-SS5) were advanced to delineate the petroleum hydrocarbon contamination encountered at MW-8. Borings D-B3 through D-B6 were advanced in this area using direct-push drilling methods, but encountered refusal at depths ranging from approximately 14 to 19 ft BGS, prior to reaching the groundwater table. Soil samples were collected from the deepest soils recovered from D-B3 through D-B6 for laboratory analysis. Petroleum hydrocarbon impacts were observed in soil at D-B4. Petroleum hydrocarbon impacts were not observed in Boring D-B3, which was located approximately 18 ft northwest of D-B4. Petroleum hydrocarbon impacts were also not observed in borings D-B5 and D-B6, which were advanced northeast and southeast of D-B4 to determine if the impacts present at D-B4 extended in those directions. Soil samples from these four borings were analyzed for TPH-D and TPH-O.

Because refusal was encountered at borings D-B3 through D-B6, hollow-stem auger drilling methods were subsequently used to advance borings D-B7, D-B8, and D-B10 to greater depths at locations near borings D-B3, D-B4, and D-B6, respectively (Figure 8). No impacts were observed in borings D-B7 and D-B10, where one soil sample was collected from each boring at the depth of the capillary fringe zone located about 18 ft BGS. Petroleum hydrocarbon impacts were encountered in Boring D-B8, consistent with nearby Boring D-B4. In order to determine the vertical extent of petroleum impacts observed in soil in the D-B4/D-B8 area, one soil sample was collected from D-B8 at the depth that field screening indicated was below the depth of petroleum hydrocarbon impacts (17.5 to 18.25 ft BGS). Soil samples collected from D-B7, D-B8, and D-B10 were analyzed for TPH-D and TPH-O due to their proximity to the former southern UST location. Additionally, the sample from D-B8 was analyzed for TPH-G and VOCs.

Borings D-SS1 through D-SS5 were advanced using direct-push drilling methods to depths ranging from approximately 10 to 20 ft BGS to delineate the extent of petroleum hydrocarbon contamination to the to the north, west and south of MW-8 (as noted above, D-SS4 is actually located in Area C). A total of six soil samples were collected for analysis from these borings. The samples were analyzed for TPH-HCID, metals, and cPAHs. Follow-up analysis for TPH-D and TPH-O were conducted on samples from D-SS2 and D-SS4 based on the HCID results. Additionally, the soil sample collected from D-SS4 was also analyzed for VOCs based on elevated PID readings and odor.

Borings D-B1 and D-B2 were advanced near the out-of-service used oil UST using direct push drilling equipment, but these two borings encountering refusal prior to reaching the groundwater table, similar to the borings D-B3 through B-6. As a result, Boring D-B9 was advanced using hollow stem

auger drilling equipment near D-B2 to characterize soil quality near the existing used oil UST. Boring D-B9 was advanced to a depth of 30 ft BGS, but did not reach the groundwater table. Soil samples were collected from the deepest soil samples recovered from borings D-B1, D-B2, and D-B9 for analysis. Due to their proximity to the existing UST, soil samples from these three borings were analyzed for cPAHs, VOCs, and metals. Additionally, samples from borings D-B2 and D-B9 were analyzed for TPH-D and TPH-O.

4.1.3.2 Surface Soil Samples

Although surface soil sampling was not planned for Area D during the RI, concentrations of cPAHs greater than the cleanup level were found in adjacent surface soils in Area C. As a result, two surface soil samples (D-S1 and D-S2) were collected from undisturbed soils in Area D to determine if the impacts found in Area C were also present in Area D. Surface soil samples were collected using the same procedures as those used in Areas A and C. The surface samples were analyzed for cPAHs.

4.2 GROUNDWATER INVESTIGATION

Field activities for the RI groundwater investigation were conducted in August and September 2009 and consisted of sampling of one of the two existing groundwater monitoring wells (MW-1) and the installation and sampling of six additional groundwater monitoring wells (MW-3 through MW-8). One groundwater sample was also collected from soil boring D-SS4. Well reference elevations were surveyed after installation by a land surveying subcontractor. Depth to groundwater at each of these wells was recorded prior to groundwater sampling. Resultant groundwater elevations are presented in Table 4. All six new wells were installed using hollow-stem auger drilling methods and completed as flush-mounted, two-inch diameter schedule 40 PVC monitoring wells with 0.020-inch slotted screen.

One groundwater monitoring event was conducted for all wells as part of the RI. MW-8 was monitored a second time due to a detection of diesel-range petroleum hydrocarbons during the first monitoring event. Standard and natural attenuation field parameters [i.e., pH, specific conductance, temperature, dissolved oxygen (DO), oxidation/reduction potential (ORP), and ferrous iron] were obtained during groundwater sampling at each well. Detailed procedures for groundwater sample collection and analyses and quality assurance are provided in the Sampling and Analysis Plan provided in Appendix D of the RI work plan (Landau Associates 2009b)

The following sections describe the RI groundwater installation and sampling activities and rationale for each area. Groundwater analytical results are presented in Section 6.2.1.2. Well

construction details and boring logs are presented in Appendix C. Remedial Investigation well installation logs are provided in Appendix D.

4.2.1 AREA A (FORMER CASCADE WRECKING LEASEHOLD)

In Area A, the groundwater investigation focused on characterization of groundwater quality in the area of the interim cleanup action. Monitoring wells MW-3 and MW-4 were installed within Area A. MW-3 was installed within a deep excavation in an area that appears to have been affected by previous auto wrecking activities. MW-4 was installed to the south of the former steam cleaner and parts sheds. Groundwater samples were collected from MW-3 and MW-4 on August 25, 2009 and were tested for TPH-HCID, dissolved metals, and PAHs.

4.2.2 AREA C

In Area C, the groundwater investigation focused primarily on characterization of groundwater in the area of the interim cleanup action and in the central portion of the former vehicle processing area. Monitoring wells MW-5 and MW-6 were installed in Area C. MW-5 was installed within the former vehicle processing area. MW-6 was installed within the former automobile shearing area. Groundwater samples were collected from MW-5 and MW-6 on August 25, 2009 and were tested for TPH-HCID, dissolved metals, and PAHs. A blind field duplicate sample was also collected from MW-5.

Although existing well MW-1 is located within Area B, it was thought likely that the water at this location was downgradient of Area C and/or Area D. As a result, a groundwater sample was also collected from MW-1 and tested for the same parameters as the Area C wells.

4.2.3 AREA D

The primary objective of the RI groundwater investigation in Area D was to characterize groundwater quality in the vicinity of the existing out-of-service used oil tank and the former USTs locations. Two monitoring wells, MW-7 and MW-8, were installed in this area, as shown on Figure 8. One monitoring well was installed in each of the two former UST areas and borings D-B1. D-B2 and D-B9 were installed in the vicinity of the out-of-service used oil UST.

Groundwater samples were collected from MW-7 and MW-8 on August 25, 2009 and the samples were tested for TPH-D, TPH-O, dissolved metals, VOCs and PAHs. A blind field duplicate sample was collected from MW-8 and tested for VOCs. Because evidence of petroleum hydrocarbon impact to soil was encountered at MW-8 during the soil investigation, a groundwater grab sample was collected from D-SS4 on August 21, 2009 to determine if impacts observed in soil at MW-8 were present

downgradient in groundwater at D-SS4. The groundwater sample from D-SS4 was analyzed for TPH-HCID, dissolved metals, PAHs, and VOCs. Follow-up analysis for TPH-G, TPH-D, and TPH-O was conducted based on the HCID results.

Based on the detection of diesel-range petroleum hydrocarbons at a concentration below the MTCA Method A cleanup level for the groundwater sample collected in August, MW-8 was sampled again on September 30, 2009 and the sample was analyzed for TPH-D, TPH-O, VOCs, and dissolved metals. The sample was also analyzed for PAHs due to the detection of cPAHs in surface soil and the presence of the GWP soil in this area. A blind field duplicate (MW-98) was also collected during the second round of sampling and submitted for the same analyses as the MW-8 sample.

A groundwater grab sample was planned to be collected from one of the three soil borings (D-B1, D-B2, and D-B9) advanced near the out-of-service used oil UST that partially underlies the shop building. However, none of the three borings encountered groundwater, even though borings were advanced to about 30 ft BGS. As a result, no groundwater sample was collected from the vicinity of the out-of-service UST.

4.3 SURFACE WATER INVESTIGATION

Surface water quality was evaluated by collecting and testing one stormwater grab sample on October 16, 2009 from the most downgradient stormwater catch basin located on Site (SW-1). The sample was analyzed for total petroleum hydrocarbons by HCID, total metals (arsenic, cadmium, chromium, lead, mercury, and zinc), VOCs, and cPAHs.

5.0 PROPOSED CLEANUP STANDARDS

Proposed soil and groundwater cleanup standards were developed to evaluate Site environmental conditions, and to develop the final cleanup action for the Site. Cleanup standards consist of the cleanup levels for affected media and the points of compliance at which the cleanup levels must be achieved. This section presents the proposed cleanup levels and points of compliance, and the process used to develop them. Proposed soil, groundwater and surface water cleanup levels and the criteria used to develop them are presented in Tables 5 and 6.

5.1 PROPOSED SOIL CLEANUP LEVELS

Proposed soil cleanup levels were developed in accordance with MTCA. Under MTCA, soil cleanup levels are developed based on the highest beneficial use (HBU) and reasonable maximum exposure (RME) expected to occur at the Site. Current and potential future land uses were used to determine the reasonable maximum exposure. The Site is currently zoned for light industrial use. Future use of the land has not been decided, but could include commercial or multi-family residential uses. The proposed soil cleanup levels were developed using the MTCA Method B cleanup levels for unrestricted site use, which represents a conservative basis for screening available analytical data. Under MTCA Method B, soil cleanup levels must be as stringent as:

- Concentrations established under applicable state and federal laws
- Concentrations protective of direct human contact with soil
- Concentrations protective of groundwater
- Concentrations protective of terrestrial ecological receptors.

No soil cleanup levels have been established under state or federal laws for hazardous substances detected in Site soil. Standard MTCA Method B soil cleanup levels protective of direct human contact were determined in accordance with WAC 173-340-740(3) using Ecology's on-line Cleanup Levels and Risk Calculations (CLARC) database (https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx). The Method B cleanup level for benzo(a)pyrene was used for the sum of cPAHs, using toxicity equivalency factors (TEFs) to calculate a toxicity equivalency quotient (TEQ) for total cPAHs in accordance with WAC 173-340-708(8)(e).

Soil proposed cleanup levels protective of groundwater were determined using the fixed parameter three-phase partitioning model in accordance with WAC 173-340-747(4). Proposed groundwater cleanup levels were developed for those constituents detected in soil and used in the three-phase partitioning model.

Proposed groundwater cleanup levels are presented in Section 5.2. For constituents that do not have a Method B soil cleanup level, such as TPH, MTCA Method A soil cleanup levels for unrestricted land use were applied, if available.

For constituents present in soil at concentrations greater than the calculated proposed soil cleanup levels protective of groundwater, an empirical demonstration that concentrations present in soil are not causing groundwater preliminary cleanup levels to be exceeded may be made [WAC 173-340-747(9)(b)]. The empirical demonstration requires that:

- Measured groundwater concentrations in proposed point of compliance wells are less than the groundwater cleanup levels
- Any hazardous substances in soil have been present for many years, allowing sufficient time for migration to the shallow groundwater
- Future site use following redevelopment will reduce the potential for leaching from soil to groundwater due to an increase of low-permeability cover resulting from additional buildings and paved areas.

Based on these criteria, cPAHs and all heavy metals except for arsenic are considered to meet the empirical demonstration that Site soil concentrations for these constituents were adequately protective of groundwater, so proposed soil cleanup levels for these constituents are based on direct contact rather than protection of groundwater.

Cleanup levels for protection of terrestrial ecological receptors were developed in accordance with WAC 173-340-7490. Based on Ecology's current interpretation that residential property constitutes undeveloped land for the purposes of terrestrial ecological evaluation, 11.4 acres of "undeveloped" land are contiguous with the western boundary of the Site. This amount of contiguous, undeveloped land exceeds the 1.5-acre threshold for an exclusion to conducting a terrestrial ecological assessment [WAC 173-340-7941(1)(c)(i)]. Because the Site does not meet any of the criteria identified in WAC 173-340-7491(2)(a) that require a site-specific terrestrial ecological evaluation, soil cleanup levels for protection of potential terrestrial ecological receptors were developed using the simplified terrestrial ecological evaluation procedures (WAC 173-340-7492). The cleanup levels for the protection of ecological receptors were developed using MTCA Table 749-2, as provided for in WAC 173-340-7492(1)(d).

The lowest criterion developed under Method B was selected as the Site proposed soil cleanup level for each constituent. However, in accordance with WAC 173-340-720(7)(c), further adjustments to the proposed soil cleanup levels were made as needed so that the cleanup levels are not less than the practical quantitation limit (PQL) or natural background. Analytical reporting limits for Site environmental investigations were used as the PQLs, and are presented in Table 5. The MTCA Method B soil criteria are all greater than the PQL, so no adjustments to the proposed soil cleanup for PQLs were necessary. Adjustments to the MTCA Method B soil criteria based on background concentrations for the

State of Washington (Ecology 1994) were made for chromium. The Site proposed soil cleanup levels are presented in Table 5.

5.2 PROPOSED GROUNDWATER CLEANUP LEVELS

Proposed groundwater cleanup levels were developed based on the HBU and RME expected to occur under both current and potential future land. Ecology considers the use of groundwater as a source of drinking water as the beneficial use requiring the highest quality of groundwater and exposure of hazardous substances through ingestion of drinking water and other domestic uses represents the RME. Although the groundwater at the Site is not expected to be used as drinking water, Site groundwater has the potential to be used for this purpose and proposed cleanup levels were developed based on MTCA Method B groundwater cleanup levels for potable water.

MTCA Method B groundwater cleanup levels must be as stringent as:

- Concentrations established under applicable state and federal laws
- Concentrations protective of human consumption of groundwater
- Concentrations protective of surface water.

It is not anticipated that groundwater discharges to surface water in proximity to the Site; therefore, groundwater cleanup levels protective of surface water were not developed. MTCA and other Washington State and federal regulations have identified criteria that are considered protective of groundwater as drinking water for most of the constituents detected in Site groundwater. These criteria are presented in Table 6.

The most stringent criteria developed under Method B for each constituent was selected as the Site proposed cleanup level. However, in accordance with WAC 173-340-720(7)(c), further adjustments to the proposed cleanup levels can be made so that a proposed groundwater cleanup level is not less than the PQL. PQLs are based on analytical reporting limits for Site environmental investigations and are presented in Table 6. No adjustments to the proposed cleanups based on PQLs were necessary because the PQLs are less than the proposed cleanup levels. MTCA also allows adjustments to cleanup levels so that they are not less than the natural background. The proposed cleanup level for arsenic was adjusted upward to the MTCA Method A cleanup level for unrestricted Site use because this concentration is based on natural arsenic background concentrations for the State of Washington. The proposed groundwater cleanup levels as adjusted are presented in Table 6.

5.3 PROPOSED SURFACE WATER CLEANUP LEVELS

Surface water is not present at the Site. However, stormwater runoff that discharges to the Site stormwater collection system is conveyed via a buried conveyance line prior to its point of discharge to an intermittent, unnamed stream about 900 ft south of the Site, which eventually discharges to North Creek over ½ mile to the south of the Site. Because of the intermittent nature of the unnamed stream that receives Site stormwater runoff, the distance from the Site to the closest body of surface water that could support aquatic life is about ½ mile (i.e., North Creek). As a result, it is highly unlikely that Site stormwater would impact either aquatic organisms or humans that consume aquatic organisms. As a result, the HBU for Site stormwater is considered groundwater recharge and the RME is considered groundwater use for potable water. As a result, the groundwater cleanup levels will also be used for Site surface water.

5.4 POTENTIAL CONSTITUENTS OF CONCERN

Data from the previous Phase II ESAs and the RI were evaluated against the proposed cleanup levels developed in Sections 5.1 through 5.3 to develop Site potential constituents of concern (PCOCs) for soil, groundwater, and surface water. PCOCs for soil were developed for the Site, except for GWP soil present in Area B; as previously indicated, GWP soil is addressed in a separate document. Site groundwater and surface water PCOCs were developed without differentiating with respect to the GWP-affected media because available data do not indicate that groundwater or surface water are affected by the GWP soil.

The data used for the evaluation is summarized in Table 7 for soil PCOCs, Table 8 for groundwater PCOCs, and Table 9 for surface water PCOCs. The tables include the number of samples analyzed, the number of detections, and the number of samples that exceeded the proposed cleanup levels. These tables also summarize the constituent frequency of detection, maximum detected concentrations and reporting limits, and the analytes identified as PCOCs for soil, groundwater, and surface water.

Site soil PCOCs consist of:

- cPAHs
- Lead
- Gasoline-, diesel-, and oil-range petroleum hydrocarbons
- Benzene, toluene, ethylbenzene, and xylene
- Naphthalene.

Site groundwater PCOCs consist of:

- Arsenic
- TPH-G, TPH-D
- Benzene
- Naphthalene.

Site surface water PCOCs consist of arsenic.

5.5 POINT OF COMPLIANCE

The point of compliance is the location where the cleanup level must be achieved to demonstrate compliance with the cleanup standards. This section presents the proposed points of compliance for affected media.

The standard point of compliance for soil will be applied to the Site, which is throughout the Site for cleanup levels based on protection of groundwater and to a depth of 15 ft for cleanup levels based on protection of human health for direct contact and protection of terrestrial ecological receptors. The standard point of compliance for groundwater is throughout the Site, and will be used for Site groundwater. The point of compliance for surface water is where hazardous substances are released to surface waters of the state, which is about 900 ft downstream from the Site where the stormwater system discharges to the unnamed, intermittent stream.

6.0 SITE CONDITIONS

This section presents Site environmental, geologic, and hydrologic conditions, the nature and extent of contamination for affected media (soil, groundwater and surface water), and other data relevant to Site conditions. The results of the RI are integrated with data from previous investigations that represent current Site conditions to provide the reader a comprehensive understanding of Site conditions. Data from areas that were subject to the interim action, and collected prior to the interim action, are not presented in this section because they do not represent current conditions.

This section is organized into the following subsections: Geology and Hydrogeology (Section 6.1), Environmental Conditions (Section 6.2), and Nature and Extent of Contamination (Section 6.3).

6.1 GEOLOGY AND HYDROGEOLOGY

The regional geology is described in Section 2.3. Site geology and hydrogeology are based on the information obtained during Site environmental investigations.

6.1.1 SITE GEOLOGIC CONDITIONS

Site geologic conditions were primarily evaluated based on the 23 borings and 6 monitoring wells installed during the RI. In general, varying amounts of granular fill soil overlies geologic soils consisting of glacial advance outwash deposits. The fill material is present within the central and southern portions of the Site, and where soil was excavated and backfilled during the interim action. A significant amount of contaminated soil from the GWP site was imported to the Site in the late 1960s to early 1970s to raise grades in the southern portion of the Site, and this represents the only fill known to have been imported to the Site other that crushed rock used as a surface trafficking layer. As previously discussed, the GWP soil is being addressed in a separate cleanup document, so geologic conditions in the area affected by the GWP soil is not discussed further in this document.

With the exception of the GWP soil, fill soil generally consists of silty sand to sandy silt with some gravel, and is not easily differentiated from the underlying native soil. As a result, the fill/native soil contacts were not typically recorded on the geologic logs. In general, about the upper 15 to 25 ft of Site soil (fill and native) consists of a fine to medium sand to a silty fine to medium sand, with some areas containing zones of gravelly sand to sandy gravel. Explorations in the portion of Area D that is elevated above the adjacent grades to the west consistently encountered a sandy gravel to gravelly sand in the upper 20 to 30 ft, that is interpreted to be primarily native soil.

Dense/hard silty sand to sandy silt interbeds commonly encountered at depths of between about 15 and 25 ft BGS appear to represent finer grained interbeds within the glacial advance outwash deposits.

The silt and silty sand interbeds were discontinuous between borings and appear to represent lenses of fine grain soil within the more broadly distributed fine to medium sand typically encountered in glacial advance outwash deposits. No stratigraphic sequences were encountered that extended across a sufficient portion of the Site to allow the development of a meaningful geologic cross section.

6.1.2 SITE HYDROGEOLOGY

Groundwater was encountered at the time of drilling at depths ranging from about 6 to 27 ft BGS. The depth to water measured in existing monitoring wells MW-1 and MW-2 and the newly completed monitoring wells (MW-3 through MW-8) ranged from about 6 to 20 ft BGS, as presented in Table 4. Groundwater was encountered under unconfined conditions during drilling at most locations, although confined groundwater conditions were encountered at MW-5. Groundwater water was often first encountered in silty deposits or at depths closely underlain by a fine-grained deposit, suggesting that perched groundwater may be present at these locations.

Groundwater elevations for each well were calculated based on the measured depth to water and the surveyed well rim reference elevation. Figure 13 presents groundwater elevation isopleths based on October 8, 2009 groundwater level gauging data. As shown on the figure, groundwater generally flows westward, with a southerly component of flow in the southern portion of the Site. The southerly component of flow may result from MW-1 and MW-2 being completed at greater depths than other Site wells, which suggests that a downward vertical gradient may be present at the Site and that shallow Site groundwater overlies the regional aquifer.

6.2 ENVIRONMENTAL CONDITIONS

Site environmental conditions are evaluated in this section using results from previous investigations, interim action compliance monitoring results, and the results of the RI. Tables 10 and 11 present the RI results for detected constituents in soil and groundwater, respectively. Tables 12 and 13 present the post-interim action results for soil remaining in Areas A and C, respectively. The RI analytical results for all tested constituents are provided in Appendix E, and the analytical laboratory reports are maintained in Landau Associates' files and are available upon request. The analytical results for previous investigations and the interim action are presented in the interim action report (Landau Associates 2009a).

Environmental conditions are based on current conditions, and as such, do not address conditions that existed prior to implementation of the interim action for those areas addressed by the interim action. Results from samples representative of current conditions collected during the Phase II ESA for detected

constituents are presented in Tables 1 and 2. As previously indicated, environmental conditions associated with the GWP soil is discussed in a separate document.

6.2.1 AREA A

Soil samples were collected in Area A during compliance monitoring for the interim action, supplemented by soil and groundwater samples collected during the RI to fill data gaps following completion of the interim action. The data gaps filled by the RI included characterizing:

- Soil quality for the gravel piles located in the southwest corner of the Site
- Soil quality in portions of the interim action excavation area not adequately characterized during interim action compliance monitoring
- Soil quality in the area of the former remediation piles
- Soil quality in undisturbed portions of the area
- Groundwater quality in the area of the interim action.

RI activities in Area A were implemented consistent with the scope of work presented in the RI work plan.

6.2.1.1 Soil Quality

Analytical results for final soil compliance monitoring results from the interim action in Area A are presented in Table 12. RI soil quality data are presented in Table 10. With the exception of the gravel piles (discussed below), concentrations of PCOCs in Area A soil are below the proposed cleanup levels, with the exception of a single exceedance of the cPAH proposed cleanup level in a surface soil sample collected from location A-B2. As presented in Table 10, and shown on Figure 14, cPAHs exceed the cleanup level in the surface soil sample collected a location A-B2. CPAHs were not detected in the underlying sample collected from 1 to 2 ft BGS at A-B2, indicating that the excedance is limited to surface soil. Due to the proximity of the sample location to the stockpile of GWP soil, and because the soil at this location had previously been remediated, it is probable that the cPAH contamination at this location is due to runoff or sloughing from the GWP soil pile.

As described in Section 4.1.1.3, the stockpiled gravel located at the south end of Area A was tested as part of the RI to determine whether PCOCs are present at levels exceeding the proposed cleanup levels. Based on the results of the six samples tested, the gravel is not impacted by any PCOCs other that lead. As presented on Figure 15, out of the six samples taken, one sample from each gravel stockpile (A-GP-1 and A-GP-4) contained concentrations of lead above the proposed cleanup level.

6.2.1.2 Groundwater Quality

As described in Section 4.2.1, groundwater quality monitoring was conducted in Area A as part of the RI to evaluate groundwater quality in this area following implementation of the interim action. MW-3 was installed within a deep excavation area that appeared to be affected by previous auto wrecking activities. MW-4 was installed to the south of the former steam cleaner and parts shed. The only groundwater PCOC detected at a concentration higher than the proposed cleanup level was dissolved arsenic in well MW-3. Dissolved arsenic was detected in the sample at a concentration of 5.2 µg/L, which slightly exceeds the arsenic proposed cleanup level of 5.0 µg/L. Arsenic was not detected above its proposed groundwater cleanup level in any of the other groundwater monitoring wells, nor was the proposed arsenic soil cleanup level exceeded in any of the soil samples collected in Area A. As a result, the single, low level exceedance of the arsenic groundwater cleanup level does not appear to warrant further action.

6.2.2 AREA C

Soil were collected in Area C during compliance monitoring for the interim action, supplemented by soil and groundwater data collected during the RI to fill data gaps following completion of the interim action. Similar to Area A, the data gaps filled by the RI for Area C included characterizing:

- Soil quality in portions of the interim action excavation area not adequately characterized during interim action compliance monitoring
- Soil quality in the area of the former remediation piles
- Soil quality in undisturbed portions of the area
- Groundwater quality in the area of the interim action.

The scope of the RI investigation for Area C was consistent with the RI work plan, except that additional surface soil samples were collected in the southern portion of Area C to better delineate the extent of cPAH contamination encountered in this area, and additional soil and groundwater characterization was conducted in the southeast portion of Area C to delineate petroleum hydrocarbon contamination encountered in this area during delineation of the GWP material (DOF 2009) and during installation of MW-8 for the RI.

6.2.2.1 Soil Quality

As described in Section 4.1.2.2, eight surface soil samples (C-S2, C-S3, and C-S7 through C-S12) were collected from portions of Area C that were not subjected to cleanup during the interim action. In

three of the samples, C-S2, C-S3, and C-S12 (along with the blind field duplicate from C-S12), the cPAH TEQ exceeded the proposed cPAH cleanup level, as presented in Table 10 and shown on Figure 14. The cPAH surface soil exceedances, including those in Area D to the east (D-S1 and D-SS3, discussed in Section 6.2.3 below), either immediately overlie GWP soil, or are in close proximity downhill from the GWP material. Analytical results for final soil compliance monitoring results from the interim action in Area C are presented in Table 13 and shown on Figure 11. Due to the lack of cPAH contamination elsewhere on the Site, and the proximity to the GWP material, the most probable source of cPAH surface soil contamination is the GWP soil, likely associated with surface contamination that occurred during the excavation of test pits conducted to delineate the extent of the GWP material (DOF 2009).

Of the six soil borings advanced to delineate the extent of petroleum hydrocarbon contamination in the southeast portion of Area C, D-SS4 was the only location that exhibited soil concentrations about the proposed cleanup level, where gas, diesel and oil range petroleum hydrocarbons all exceeded their proposed cleanup levels. The full extent of petroleum hydrocarbon contamination encountered in this area is discussed in Section 6.2.3 since the contamination appears to have originated in Area D.

6.2.2.2 Groundwater Conditions

Two groundwater samples (B2 H2O and B6 H2O, renamed C-B2 and B-B6 for the interim action report) were collected during the Phase II ESA in Area C from locations not subjected to cleanup during the interim action. As shown on Figure 7, and presented in Table 2, analyzed constituents were either not detected or were detected at concentrations well below the proposed cleanup levels from these locations.

Additional groundwater testing was conducted in this area as part of the RI. As discussed in Section 4.2.2, monitoring wells MW-5, and MW-6 were installed and sampled in Area C. The groundwater samples were tested for petroleum hydrocarbons, PAHs, and dissolved arsenic. The results show that all PCOCs were either not detected or were below the cleanup levels in the groundwater samples collected from these locations.

6.2.3 AREA D

Site characterization and cleanup activities were not conducted in this area as part of the Phase II ESAs and 2008 interim cleanup action. However, analytical results for confirmation soil samples were collected during removal of the five USTs (located in Area D in 1995) and were presented in the Phase II ESA report (Geotech Consultants 2008a). The RI investigation in Area D focused on characterization of soil and groundwater near the former USTs to evaluate whether petroleum hydrocarbon contamination

remains at these locations, and to evaluate environmental conditions in the vicinity of the existing waste oil UST.

The scope of the RI investigation for Area D was consistent with the RI work plan, except that additional soil and groundwater characterization was conducted in the southwest portion of Area D to delineate petroleum hydrocarbon contamination encountered during installation of MW-8 for the RI.

6.2.3.1 Soil Conditions

As described in Section 2.2.4, Verbeek Wrecking removed five USTs from two locations (north and southwest of the former shop building) in Area D in November 1995. A total of nine confirmation soil samples were collected from the two UST excavation areas, and one confirmation sample from each area exhibited an exceedance of the proposed soil cleanup level for diesel-range petroleum hydrocarbons.

As discussed in Section 4.1.3.1, monitoring wells MW-7 and MW-8 were each installed at one of the two former UST locations to evaluate soil and groundwater quality. No petroleum hydrocarbon impacts were observed during advancement of the soil boring for monitoring well MW-7, and petroleum hydrocarbons were not detected in the analysis of the sample collected at 15 ft BGS from this location to the north of the former shop building.

Petroleum hydrocarbon soil contamination was encountered during the advancement of the boring for monitoring well MW-8, located to the southwest of the shop building. Diesel-range petroleum hydrocarbon concentrations in the samples taken from 5 to 6 ft BGS and 12.5 to 13.5 ft BGS were above the proposed soil cleanup level and oil range petroleum hydrocarbon concentrations were above the proposed cleanup level for the sample collected from 5 to 6 ft BGS. The concentrations for all petroleum hydrocarbon ranges were below reporting limits in the sample collected from 22 ft BGS.

Of the 11 additional borings completed in Area D to delineate the extent of petroleum hydrocarbon contamination encountered at MW-8, concentrations of petroleum hydrocarbons exceeding the proposed soil cleanup levels were only encountered at D-SS2, and possibly D-B4. The diesel-range range petroleum hydrocarbon concentration detected at D-SS2 was 1,300 mg/kg, compared to the proposed cleanup level of 460 mg/kg (based on protection of terrestrial ecological receptors). Boring D-B4 exhibited a diesel-range petroleum hydrocarbon concentration of 2,000 mg/kg at a depth of 15 to 15.5 ft BGS. Because the 460 mg/kg proposed cleanup level is based on protection of terrestrial ecological receptors, and the point of compliance for this receptor is 15 ft BGS, the cleanup level at this location may not have been exceeded. However, the concentration also equals the cleanup level for protection of groundwater, therefore, this location will be considered the edge of petroleum hydrocarbon contamination for this release. The estimated extent of petroleum hydrocarbon soil contamination in the MW-8 vicinity is shown on Figures 16 and 17, including the portion that extends into Area C.

Three borings (D-B1, D-B2, and D-B9), were installed west of the estimated edge of the out-of-service 8,000-gallon waste oil UST, which is located partially beneath the shop building, as shown on Figure 2. Because the exact location of the UST was unknown, the borings were located a sufficient distance to the west to ensure that the UST would not be penetrated during drilling. The soil samples collected from each of these borings did not exhibit detectable concentrations of petroleum hydrocarbons, VOCs or cPAHs, and all metals concentrations were well below the proposed soil cleanup levels.

Because of the cPAH-impacted surface soil found in Area C (described in Section 6.2.2.1), two surface soil samples were collected in Area D from undisturbed soil adjacent to the location of the Area C impacted samples. Both samples exhibited exceedances of the proposed soil cleanup level for cPAHs. As shown on Figure 14, and previously discussed in Section 6.2.2.1, cPAH contamination in this area appears to be co-located with the underlying GWP soil.

6.2.3.2 Groundwater Conditions

During the 1995 UST removals, groundwater was not present in the UST excavations and groundwater quality samples were not collected. Groundwater monitoring wells MW-7 and MW-8 were installed and sampled to address this data gap. Groundwater sampling of the boring located to the west of the service waste oil tank was also planned. However, groundwater was not encountered at this location, therefore, a groundwater sample was not collected.

Monitoring well MW-7 was sampled in August, and the sample was tested for petroleum hydrocarbons, BTEX, PAHs and dissolved arsenic. As presented in Table 11, no constituents were detected above the laboratory reporting limit.

MW-8 was sampled in August 2009 and diesel-range petroleum hydrocarbons were detected at a concentration of 380 µg/L, which is below the proposed groundwater cleanup level of 500 µg/L. At Ecology's request, a second groundwater sample was collected and tested from MW-8 in September 2009 and exhibited a diesel-range petroleum hydrocarbon concentration of 660 µg/L, although the field duplicate exhibited a concentration of 480 µg/L, which is slightly below the cleanup level. Based on these results, groundwater in the MW-8 area slightly exceeds the proposed diesel-range petroleum hydrocarbon groundwater cleanup level on at least an intermittent basis, as presented on Figure 18.

A groundwater sample was collected from boring D-SS4, located about 20 ft downgradient of MW-8. The sample was tested for petroleum hydrocarbons, BTEX, and PAHs. A number of petroleum hydrocarbon constituents were detected in the sample, but none of the concentrations exceeded the proposed groundwater cleanup levels.

As previously indicated, groundwater was not sampled from the borings completed downgradient of the out-of-service used oil tank because groundwater was not encountered during drilling. Boring

D-B9 was extended to 30 ft BGS at this location, which represents an elevation of about 252 ft. Groundwater was first encountered at MW-7 and MW-8, the closest monitoring wells to this location, at elevations more than 10 ft higher than the termination depth for Boring D-B9, which indicates that shallow groundwater in this area is only intermittently present. As indicated in Table 4, groundwater elevations for all Site monitoring wells are greater than elevation 260 ft, which indicates that whatever depth groundwater is first encountered in this area, it will be under artesian pressure, and thus, unlikely to be affected by a nonaqueous phase liquid such as used oil or other petroleum hydrocarbons. As a result of these considerations, the lack of groundwater quality data in the vicinity of the out-of-service used oil tank is not considered a substantive data gap.

6.2.4 SURFACE WATER CONDITIONS

As discussed in Section 5.3, one water sample (SW-1) was collected from the most downstream storm water catch basin in order to evaluate Site surface water quality, as shown on Figure 8. The surface water sample was tested for petroleum hydrocarbons, VOCs, PAHs, and total arsenic and lead. The only constituents detected were naphthalene, total arsenic, and lead, and the only constituent with a concentration that exceeded proposed surface water cleanup levels was total arsenic. Total arsenic was detected at a concentration of 7.3 µg/L, in slight exceedance of the proposed surface water cleanup level of 5.0 µg/L.

Although total arsenic slightly exceeded its proposed surface water cleanup level, this exceedance appears to be related to slight turbidity and natural background concentrations of arsenic in Site soil and not a Site release. Although turbidity data were not collected during surface water sampling, the sample collection form noted a yellow tint to the water sample, which is likely indicative of at least slight turbidity. As shown in Table 7, of the 99 soil samples tested for total arsenic, only one exceeded the proposed soil cleanup level. The single total arsenic soil exceedance occurred at boring location D-SS2 at a depth of 19 ft BGS. Given the lack of data indicating that arsenic was released by Site activities, the ubiquitous presence of arsenic as a natural earth material, and the low level of the exceedance, the detected concentration of arsenic in Site stormwater is not considered indicative of a Site release.

6.3 NATURE AND EXTENT OF CONTAMINATION

Based on the results of Site environmental investigations, the interim action, and the proposed cleanup levels presented in the preceding section, the nature and extent of Site contamination is limited to the following:

- Lead contamination in the gravel stockpiles located in the southwest corner of Area A

- Diesel-range petroleum hydrocarbon soil and groundwater contamination, and more limited oil and gasoline-range petroleum hydrocarbons, naphthalene, benzene and total xylene soil contamination, in the vicinity of Monitoring Well MW-8

- cPAHs surface soil contamination in southern portion of Areas C and D, likely related to the underlying GWP material.

7.0 PROPOSED CLEANUP ACTION

Development of a cleanup action for a site is a multi-step process. First, cleanup action objectives (CAOs) must be established for the site. Next, cleanup action technologies need to be evaluated to determine those technologies that are capable of achieving the various CAOs. The cleanup technologies must then be assembled into alternatives that achieve all CAOs, and the alternatives need to be compared against criteria established under MTCA to select the most practicable cleanup action for the site.

This alternative development, evaluation, and selection process is typically accomplished by conducting a feasibility study [FS; WAC 173-340-350(8)]. The FS develops alternatives that achieve the CAOs, compares the alternatives against criteria established under MTCA (WAC 173-340-360), and selects the alternative that is permanent to the maximum extent practicable. However, the need to integrate Site cleanup with as yet undetermined future redevelopment focuses the cleanup on those actions that are compatible with a wide range of future redevelopment options. Therefore, rather than conducting an FS, the alternatives considered for Site cleanup will be described and the selected cleanup action will be compared against MTCA requirements to demonstrate compliance.

The following sections establish the CAOs (Section 7.1); identify applicable or relevant and appropriate requirements (ARARs, Section 7.2); identify the factors associated with integrating the cleanup action with Site redevelopment (Section 7.3); present the response actions, cleanup technologies, and alternatives considered for site cleanup (Section 7.4); identify the selected alternative and compare it to MTCA requirements (Section 7.5); describe compliance monitoring that will be conducted in conjunction with the selected cleanup action (Section 7.6); and describe reporting for the cleanup action (Section 7.7).

7.1 CLEANUP ACTION OBJECTIVES

Based on the PCOCs established for Site soil and groundwater quality (Section 5.4), the proposed cleanup standards, and the additional regulatory requirements, the CAOs for the site are established as follows:

- Prevent human contact (dermal, incidental ingestion, or inhalation) with Site soil containing PCOCs at concentrations above the proposed soil cleanup levels.
- Prevent terrestrial ecological receptors from contacting PCOCs at concentrations above the proposed soil cleanup levels
- Prevent the transfer of PCOCs in soil to groundwater at concentrations that exceed the groundwater cleanup levels

- Prevent human ingestion of groundwater containing PCOCs at concentrations above the proposed groundwater cleanup levels.

The CAOs are of primary importance to the evaluation of cleanup action technologies, as discussed in the following section.

7.2 APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS

In accordance with MTCA, all cleanup actions conducted under MTCA shall comply with applicable state and federal laws [WAC 173-340-710(1)]. MTCA defines applicable state and federal laws to include legally applicable requirements and those requirements that are relevant and appropriate. Collectively, these requirements are referred to as ARARs. This section provides a brief overview of potential ARARs for the site cleanup. The primary ARAR is the MTCA cleanup regulation (WAC 173-340) especially with respect to the development of cleanup levels and procedures for development and implementation of a cleanup under MTCA. The primary ARARs that may be applicable to the cleanup action include the following:

Washington Water Pollution Control Act and the following implementing regulation: Water Quality Standards for Surface Waters (WAC 173-201A). These regulations establish water quality standards for surface waters of the State of Washington consistent with pubic health and the propagation and protection of fish, shellfish, and wildlife. These standards were used to develop groundwater cleanup levels for the site, as discussed in Section 2.3.

Washington Hazardous Waste Management Act (Chapter 70.105 RCW) and the following implementing regulation: Dangerous Waste Regulations (WAC 173-303). These regulations establish a comprehensive statewide framework for the planning, regulation, control, and management of dangerous waste. The regulation designates those solid wastes that are dangerous or extremely hazardous to the public health and environment. The management of excavated contaminated soil from the site would be conducted in accordance with these regulations to the extent that any dangerous wastes are discovered or generated during the cleanup action.

Washington Solid Waste Management Act (Chapter 70.95 RCW) and the following implementing regulations: Solid Waste Handling Standards (WAC 173-350) and Criteria for Municipal Solid Waste Landfills (WAC173-351). These regulations establish a comprehensive statewide program for solid waste management, including proper handling and disposal. The management of excavated contaminated soil from the site will be conducted in accordance with these regulations to the extent that the soil can be managed as inert or solid waste instead of dangerous waste.

Hazardous Waste Operations (WAC 296-843). These regulations establish safety requirements for workers providing investigation and cleanup operations at sites containing hazardous materials. These requirements would be applicable to onsite cleanup activities and would be addressed in a site health and safety plan prepared specifically for these activities.

7.3 INTEGRATION OF CLEANUP AND REDEVELOPMENT

As indicated above, the Site will be redeveloped in the future, although the specific nature of the redevelopment has not yet been determined. The uncertainty regarding the nature of the redevelopment focused the cleanup actions on those actions that would be acceptable for a wide range of future land uses and Site grades. Because future Site use, building locations and grades are not currently known, containment of contaminated soil or groundwater may not be compatible with future Site use, and as such, containment is not considered a viable alternative for Site cleanup and will not be discussed in subsequent sections of this document.

7.4 DEVELOPMENT OF THE PROPOSED CLEANUP ACTION

The proposed cleanup action was developed for the Site by first evaluating applicable response actions and cleanup technologies to identify those potentially applicable to site conditions. Next, cleanup technologies were screened against Site-specific conditions to determine their feasibility. Finally, a proposed cleanup action was developed based on an evaluation of the practicability of the remaining cleanup technologies.

7.4.1 EVALUATION OF RESPONSE ACTIONS AND CLEANUP TECHNOLOGIES

Soil and groundwater response actions and cleanup technologies were screened for possible use in developing alternatives for site cleanup. Each alternative must address the CAOs presented in Section 7.1. Applicable response actions and cleanup technologies evaluated for potential use as part of the cleanup action are described below.

7.4.1.1 Soil

Two response actions were considered for cleanup of contaminated soil within the cleanup action area: 1) removal and 2) *in situ* treatment. The cleanup technology considered for removal of contaminated soil is excavation with offsite disposal at a solid waste landfill. The cleanup technology considered for *in situ* treatment is aqueous-phase bioremediation for the petroleum hydrocarbon contamination. Bioremediation is not considered adequately effective for the cPAH contaminated shallow soil or the lead contaminated gravel piles in the southwest corner of the Site, therefore, removal and offsite disposal was the only response action considered for these areas.

7.4.1.2 Groundwater

Three response actions were considered for cleanup of petroleum hydrocarbon contaminated groundwater within the cleanup action area: 1) removal, 2) *in situ* treatment, and 3) monitored natural recovery (MNR). Removal of diesel-contaminated groundwater would be conducted in conjunction with removal of diesel-contaminated soil, largely through the dewatering process that would be required to excavate the diesel contaminated soil from below the groundwater table. *In situ* groundwater treatment would be conducted in conjunction with soil treatment by aqueous-phase bioremediation. Monitored natural recovery would be conducted following source removal if residual diesel-range petroleum hydrocarbon groundwater contamination remains.

7.4.2 SCREENING OF CLEANUP TECHNOLOGIES

Cleanup technologies were screened against Site-specific conditions and other considerations to determine which technologies could be practicably implemented at the Site and properly function as part of the cleanup action.

7.4.2.1 Soil

Two cleanup technologies, 1) excavation and offsite disposal, and 2) *in situ* bioremediation, were identified as potential cleanup actions for soil. Excavation and offsite disposal can be easily implemented and will integrate well with future Site development, regardless of redevelopment plan ultimately selected for the Site. Conversely, *in situ* bioremediation poses significant challenges and do not appear to be practicable, largely due to issues discussed below.

In situ bioremediation would consist of a series of injection and monitoring wells installed in the area affected by petroleum hydrocarbon soil contamination in the MW-8 vicinity, possibly in conjunction with extraction wells at the downgradient edge of the treatment area to allow recirculation and containment of treatment fluids. The treatment system would need to remain in place until soil and groundwater cleanup levels are achieved and for a sufficient period of time following achieving cleanup levels to demonstrate that contaminated soil was sufficiently treated to prevent groundwater recontamination. Treatment could potentially require 3 to 5 years to obtain soil cleanup levels and up to an additional 2 years of groundwater quality monitoring to demonstrate that groundwater recontamination is not occurring. Thus, the bioremediation treatment system would need to remain in place for up to 7 years, which could significantly impede Site redevelopment. As a result, bioremediation is not considered a viable cleanup technology for cleanup of petroleum hydrocarbon contaminated Site soil.

Based on the above evaluation, excavation and offsite disposal of contaminated Site soil at a solid waste landfill is selected as the cleanup technology for both cPAH- and petroleum hydrocarbon-contaminated Site soil.

7.4.2.2 Groundwater

Based on the evaluation of soil cleanup technologies presented in the previous section, *in situ* aqueous-phase bioremediation is eliminated as a potential remedial technology for treatment of diesel-range petroleum hydrocarbon groundwater contamination in the MW-8 vicinity, leaving removal with offsite disposal and MNR as the remaining viable technologies. Because of the limited areal extent of the groundwater contamination and the low level of the exceedance (630 mg/L, compared to the 500 mg/l cleanup level), MNR could achieve the cleanup standards if a conditional point of compliance downgradient of the source area was applied. However, the use of MNR as the sole remedy (i.e., without removal of the petroleum hydrocarbon contaminated soil source material) would encumber the Site with deed restrictions until cleanup standards were achieved throughout the Site, which would impede redevelopment. As a result, MNR is only considered a viable technology as a contingent action that would be applied following removal of the source material, leaving removal and offsite disposal as the selected remedy for addressing Site groundwater contamination.

7.4.3 Evaluation of Proposed Cleanup Action

Based on the preceding development and evaluation of response actions and cleanup technologies, the proposed final cleanup action for the Site soil and groundwater consists of the following elements:

- Excavation and offsite disposal of contaminated soil
- Removal and treatment/disposal of contaminated groundwater
- Soil and groundwater compliance monitoring
- Contingent MNR, if groundwater cleanup levels are not achieved by the removal action.

MTCA requires that cleanup actions be compared to a number of criteria to evaluate their adequacy in achieving the intent of the regulations. Consistent with MTCA, the proposed cleanup action was evaluated with respect to compliance with threshold requirements, permanence, and restoration time frame. Public participation is also a requirement, as discussed in Section 7.4.3.4.

7.4.3.1 Threshold Requirements

As specified in WAC 173-340-360(2), all cleanup actions are required to meet the following threshold requirements:

- Protect human health and the environment
- Comply with cleanup standards specified under MTCA
- Comply with applicable state and federal laws
- Provide for compliance monitoring.

It is assumed that compliance with MTCA cleanup standards will ensure protection of human health and the environment and that any cleanup action performed in accordance with the requirements of MTCA will be in compliance with applicable state and federal laws. Compliance monitoring is a component of the proposed cleanup action.

7.4.3.2 Requirement for a Permanent Solution to the Maximum Extent Practicable

WAC 173-340-200 defines a permanent solution as one in which cleanup standards can be met without further action being required at the site, other than the approved disposal of any residue from the treatment of hazardous substances. Because all contaminated soil will be excavated and disposed of offsite, soil cleanup for the proposed cleanup action is considered permanent to the maximum extent practicable. Similarly, groundwater contamination will be removed from the affected area in conjunction with removal of the contaminated soil, although there is some potential that groundwater concentrations of diesel-range petroleum hydrocarbons could remain above the cleanup level for a limited period of time, perhaps up to 2 years, following removal of the source material. As a result, MNR may be needed to achieve final cleanup following the removal action to achieve groundwater cleanup standards. Removal of contaminated groundwater in conjunction with the source material, potentially supplemented with MNR, will achieve groundwater cleanup standards throughout the Site, which is considered permanent to the maximum extent practicable.

7.4.3.3 Requirement for a Reasonable Restoration Time Frame

WAC 173-340-360(6)(a) specifies that eight factors be considered when determining whether a cleanup action provides for a reasonable restoration time frame. These factors are evaluated for the Site below:

> ***Potential risks to human health and the environment***: The proposed cleanup action will eliminate the exposure pathway for contact with affected soil and groundwater. Therefore,

neither human health nor the environment will be impacted by Site soil or groundwater. As a result, the potential risks to human health and the environment are adequately addressed.

Practicability of achieving shorter restoration time frame: The proposed cleanup action will achieve cleanup either immediately following implementation of the cleanup action, or within 2 years. Because the proposed cleanup action primarily relies on removal to achieve cleanup standards, a shorter restoration time frame is not practicable.

Current use of the site, surrounding areas, and associated resources that are, or may be affected by releases from the site: The current Site use is light industrial and commercial, and contamination is confined to areas within the property. Offsite migration of contaminants is not expected.

Availability of alternate water supplies: The Site is currently supplied by municipal water.

Likely effectiveness and reliability of institutional controls: It is not anticipated that institutional controls will be required.

Ability to control and monitor migration of hazardous substances from the site: Monitoring data indicate that migration of hazardous substances from the Site is not occurring. The proposed cleanup action includes compliance monitoring to verify that migration does not occur in the future.

Toxicity of hazardous substances at the site: The main constituents of concern within the Site are cPAHs, petroleum hydrocarbons and metals in soil, and petroleum hydrocarbons in groundwater. The toxicity of these constituents at the Site is low under current Site usage.

Natural processes that reduce concentrations of hazardous substances and have been documented to occur at the site or under similar site conditions: Natural processes (natural attenuation) are anticipated to reduce the concentrations of petroleum hydrocarbons in soil and groundwater.

In summary, the proposed cleanup action will achieve Site cleanup shortly after implementation and therefore provides for a reasonable restoration time frame.

7.4.3.4 Requirement for Consideration of Public Concerns

Consideration of public concerns is an inherent part of the Site cleanup process under MTCA (see WAC 173-340-600). The cleanup action will be subjected to public review and comment during State Environmental Policy Act (SEPA) review for the Snohomish County grading permit application and the public notice requirements for the National Pollutant Discharge Elimination System (NPDES) construction stormwater permit.

7.5 DETAILED DESCRIPTION OF PROPOSED CLEANUP ACTION

This section presents a detailed description of the proposed cleanup action. The description is subdivided into soil and groundwater cleanup action elements.

7.5.1 SOIL

Soil removal and offsite disposal is the selected technology for cleanup of soil containing concentrations of metals, petroleum hydrocarbons, and/or cPAHs above the cleanup levels. Three soil cleanup action areas exist at the Site that are being addressed under this cleanup action plan:

- Lead contaminated gravel stockpiles in the southwest corner of the Site
- cPAH contaminated surface soil near the center of the Site, and
- Petroleum hydrocarbon contaminated soil near the center of the Site.

These cleanup action areas are shown on Figure 19. The two gravel stockpiles in the southwest corner of the Site that exceed the proposed cleanup level for lead will be excavated and disposed of at a licensed solid waste landfill. The estimated volume of soil to be removed from the two stockpiles is about 1,040 yd^3. The piles will be excavated to adjacent grades, and an additional 3 inches of underlying soil will be excavated to remove all affected soil, to be confirmed by additional soil testing.

The estimated extent of cPAH contaminated surface soil is shown on Figure 19. The contaminated soil will be excavated to a depth of 6 inches over the affected area. The estimated volume of contaminated soil to be removed from this area is 380 yd^3. The grading plan showing the cPAH excavation area and associated cross sections through the cleanup area is provided in Appendix F. Responsibility for implementation of the cleanup action for this material will be determined by Verbeek Properties LLC and PSE prior to implementation of the cleanup action.

The estimated excavation limits of the petroleum hydrocarbon contaminated soil area in the MW-8 vicinity is shown on Figure 19. Soil will be excavated from depths up to about 15 ft BGS in this area; the estimated volume of contaminated soil to be removed from this area is 600 yd^3. Due to the overburden present above the diesel-contaminated soil and the steep slopes on the eastern side of the excavation, up to about 2,900 yd^3 of clean soil will need to be excavated to remove the contaminated soil. The excavation area for the diesel contaminated soil is shown on Figure 16. The grading plan showing the diesel excavation area and associated cross sections through the cleanup area is provided in Appendix F.

7.5.2 GROUNDWATER

The removal of petroleum hydrocarbon-affected soil will remove the source of elevated petroleum hydrocarbon concentrations in the vicinity of MW-8. Groundwater cleanup will also be aided by the dewatering that will be needed to support excavation of diesel contaminated soil in this area. The volume of groundwater extracted during dewatering for soil cleanup will depend on a number of factors, including the hydraulic conductivity of the soil and aquifer boundary conditions, the depth the excavation extends below the groundwater table and the length of time the excavation is kept open. Based on the apparent intermittent nature of the water bearing units at the Site, it is anticipated that the excavation can be dewatered using internal sumps and that groundwater inflows will be minimal once the excavation is initially dewatered.

Although detailed analyses have not been conducted, it is anticipated that the equivalent of up to two pore volumes of groundwater (70,000 gallons) relative to volume of contaminated soil will be removed during the dewatering process. The groundwater extracted during dewatering will be pumped to temporary storage (Baker tanks) with internal baffles to segregate any free product, and tested to determine applicable requirements of treatment and disposal. Dewatering water would be discharged to surface water if water quality achieves Site proposed groundwater cleanup levels.

Because all petroleum hydrocarbon-contaminated soil will be removed from the affected area as part of the cleanup action, groundwater cleanup levels should be attained rapidly following implementation of the cleanup action. However, there is some potential that the diesel-range petroleum hydrocarbon groundwater cleanup level will not be immediately attained. If the groundwater cleanup level is not attained within two rounds of groundwater quality monitoring, or if there is not a clear trend of decreasing concentration indicating that the groundwater cleanup level will be rapidly achieved, a plan for implementing MNR at the Site will be developed and submitted to Ecology for review and approval.

7.6 COMPLIANCE MONITORING

As required under MTCA, soil and groundwater compliance monitoring will be conducted for the proposed cleanup action. The compliance monitoring will include the following:

Protection monitoring to confirm that human health and the environment are adequately protected during construction, operation, and maintenance associated with the cleanup action.

Performance monitoring to confirm that the cleanup action has attained cleanup standards and any other performance standards.

Confirmational monitoring to confirm the long-term effectiveness of the cleanup action once the cleanup standards and other performance standards have been attained.

A Compliance Monitoring Plan documenting the compliance monitoring program for the Site cleanup action is provided in Appendix G.

In general, compliance monitoring will consist of performance monitoring for soil and groundwater. Performance monitoring will consist of soil and groundwater confirmation sampling to determine that cleanup levels have been achieved.

In general, soil compliance monitoring will consist of testing soil samples collected from the base of the excavation and from the excavation sidewalls for deeper excavations (i.e., the petroleum hydrocarbon cleanup area). However, soil compliance monitoring samples for the cPAH surface contamination area will only be collected from areas that are not immediately underlain by GWP material because the GWP material will also be removed as part of the Site cleanup action. Additionally, soil underlying the GWP material will be subjected to compliance monitoring as part of that cleanup action (GWP cleanup action plan preparation in progress).

Groundwater compliance monitoring will consist of groundwater compliance monitoring samples collected from monitoring wells installed following the completion of excavation and backfilling of the diesel-range petroleum hydrocarbon contaminated soil and groundwater area. Because of the limited area of contamination, a single compliance monitoring well will be installed at the location of D-SS4, the location where the highest concentration of diesel-range petroleum hydrocarbons was detected in soil during the RI.

7.7 REPORTING

In accordance with WAC 173-340-515(4), a report documenting the cleanup action and compliance monitoring will be prepared and submitted to Ecology within 90 days of completion of the cleanup action. The report will include as-built drawings and compliance monitoring results, including any statistical analyses used to demonstrate compliance with cleanup levels.

8.0 USE OF THIS REPORT

This cleanup action plan has been prepared for the exclusive use of Verbeek Properties LLC for specific application to the Verbeek Wrecking Site. No other party is entitled to rely on the information, conclusions, and recommendations included in this document without the express written consent of the Verbeek Properties LLC and Landau Associates. Further, the reuse of information, conclusions, and recommendations provided herein for extensions of the project or for any other project, without review and authorization by the Verbeek Properties LLC and Landau Associates, shall be at the user's sole risk. Landau Associates warrants that within the limitations of scope, schedule, and budget, our services have been provided in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions as this project. We make no other warranty, either express or implied.

This document has been prepared under the supervision and direction of the following key staff.

LANDAU ASSOCIATES, INC.

Lawrence D. Beard, P.E., L.G.
Principal

Alyssa B. Johnson
Staff Environmental Scientist

LDB/ABJ/rgm

9.0 REFERENCES

Dalton, Olmsted & Fuglevand. 2009. Memorandum: *Results of Preliminary Sampling Former Verbeek Wrecking Yard, Bothell, Washington.* May 27.

Ecology. 1994. *Natural Background Soil Metals Concentrations in Washington State.* Toxics Cleanup Program, Department of Ecology. Publication #94-115. October.

Geotech Consultants. 2008a. *Phase II Site Assessment, Verbeek Wrecking Yard, 18416 Bothell-Everett Highway, Snohomish County, Washington.* October 13.

Geotech Consultants. 2008b. *Soil and Groundwater Sampling Analysis, Verbeek Wrecking Yard, 18416 Bothell-Everett Highway, Snohomish County, Washington.* November 20.

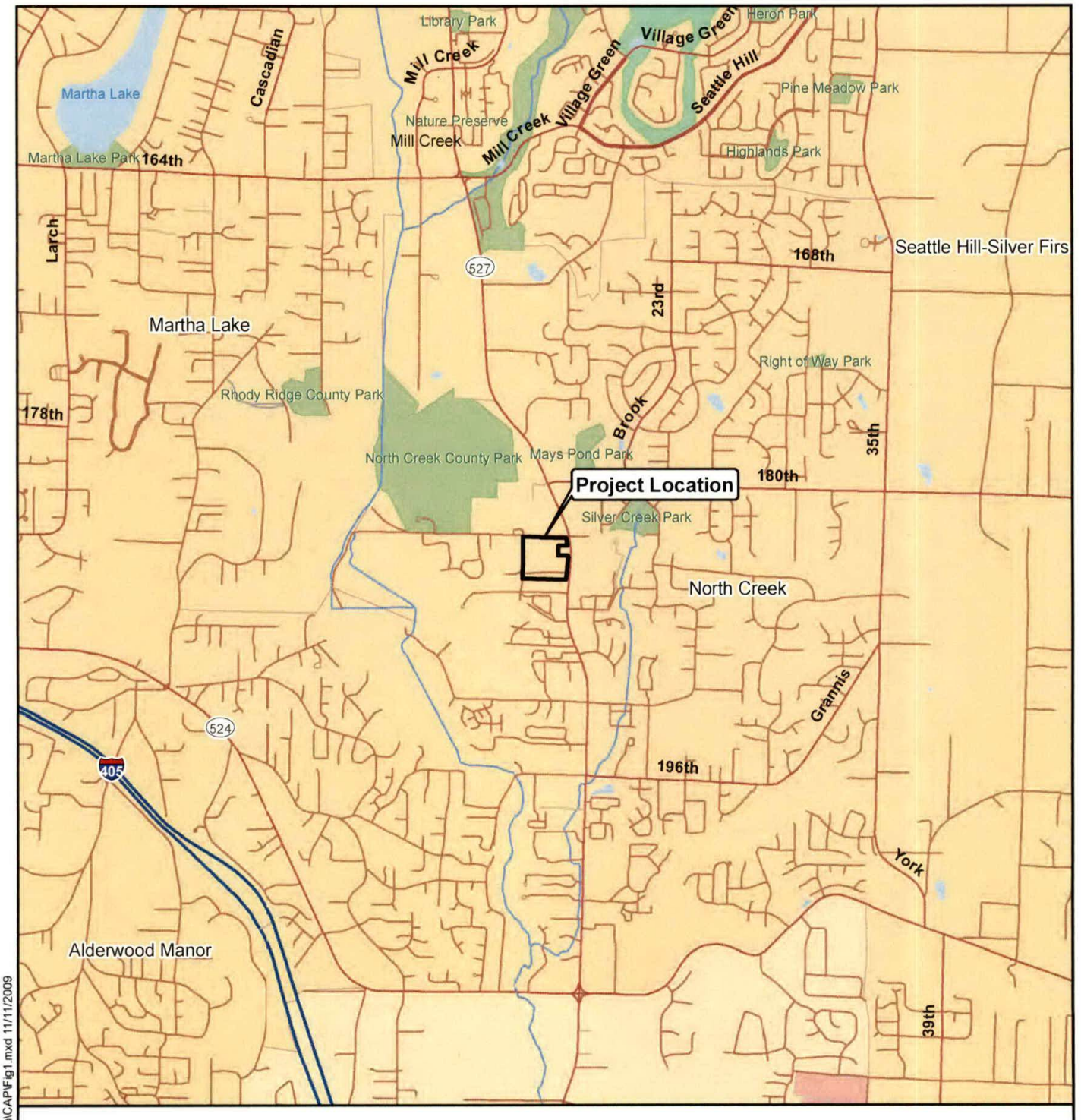
GreenCo and CMSI. 2008. *Remediation Report, Verbeek Wrecking, Cascade Wrecking Site, 18414 Bothell-Everett Highway, Bothell, Washington.* October 7.

Landau Associates. 2009a. *Interim Action Cleanup Report, Verbeek Wrecking Property, 18416 Bothell-Everett Highway, Bothell, Washington.* May 20.

Landau Associates. 2009b. *Remedial Investigation Work Plan, Verbeek Wrecking Site, Bothell, Washington.* June 15.

USGS. 1997. *The Ground-Water System and Ground-Water Quality in Western Snohomish County, Washington, by B.E. Thomas, J.M. Wilkinson, and S.S. Embrey.* U.S. Geological Survey Water-Resources Investigations Report 96-4312.

West, Renee. 24 March 2009. Personal Communication (Conversation with Renee West, Verbeek Wrecking re: Historical Site Activities).



N

0 0.5 1

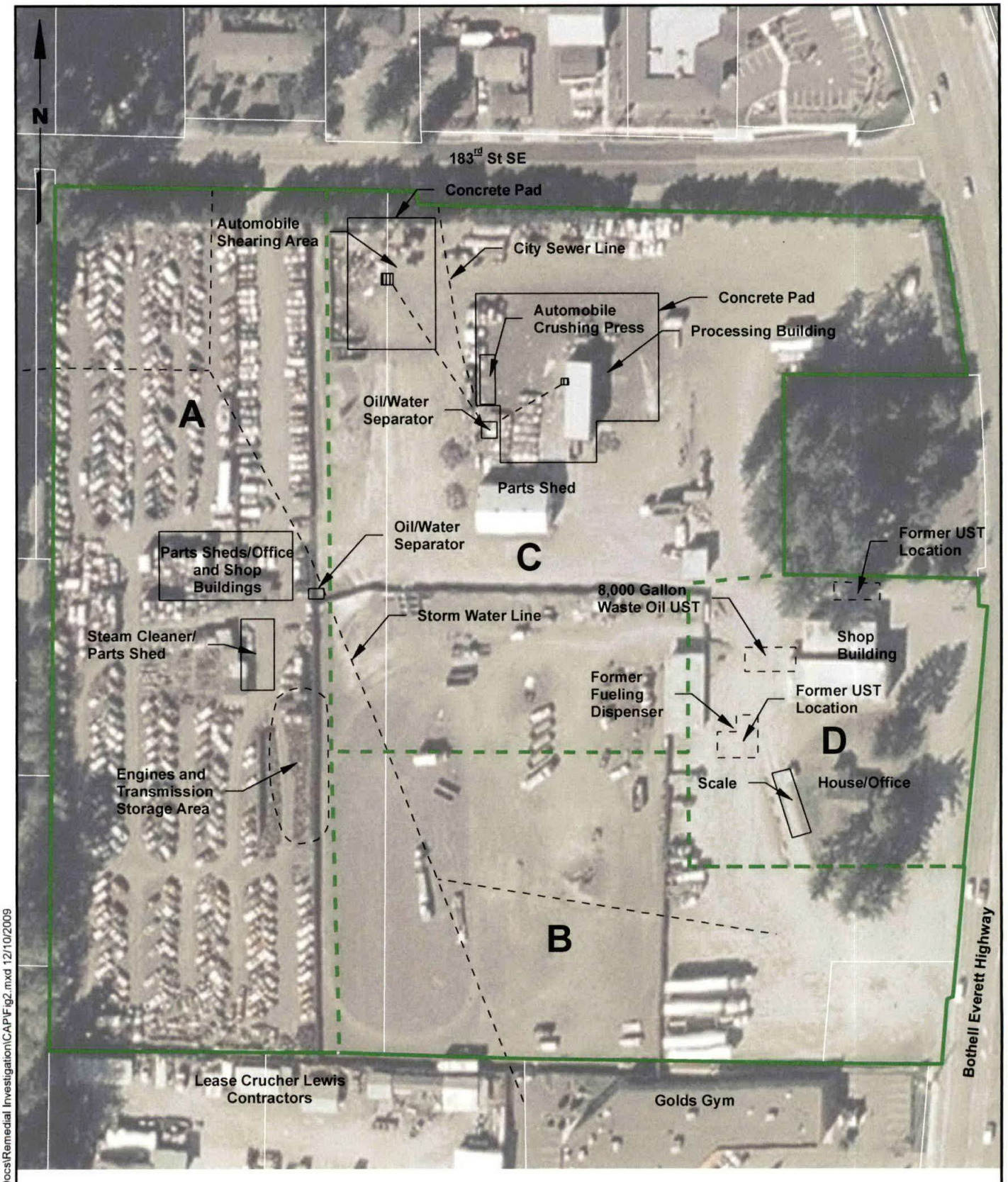
Miles

Data Source: ESRI 2008

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig1.mxd 11/11/2009

LANDAU ASSOCIATES

Verbeek Wrecking CAP Bothell/Snohomish County Washington	**Vicinity Map**	Figure **1**



0 120 240

Scale in Feet

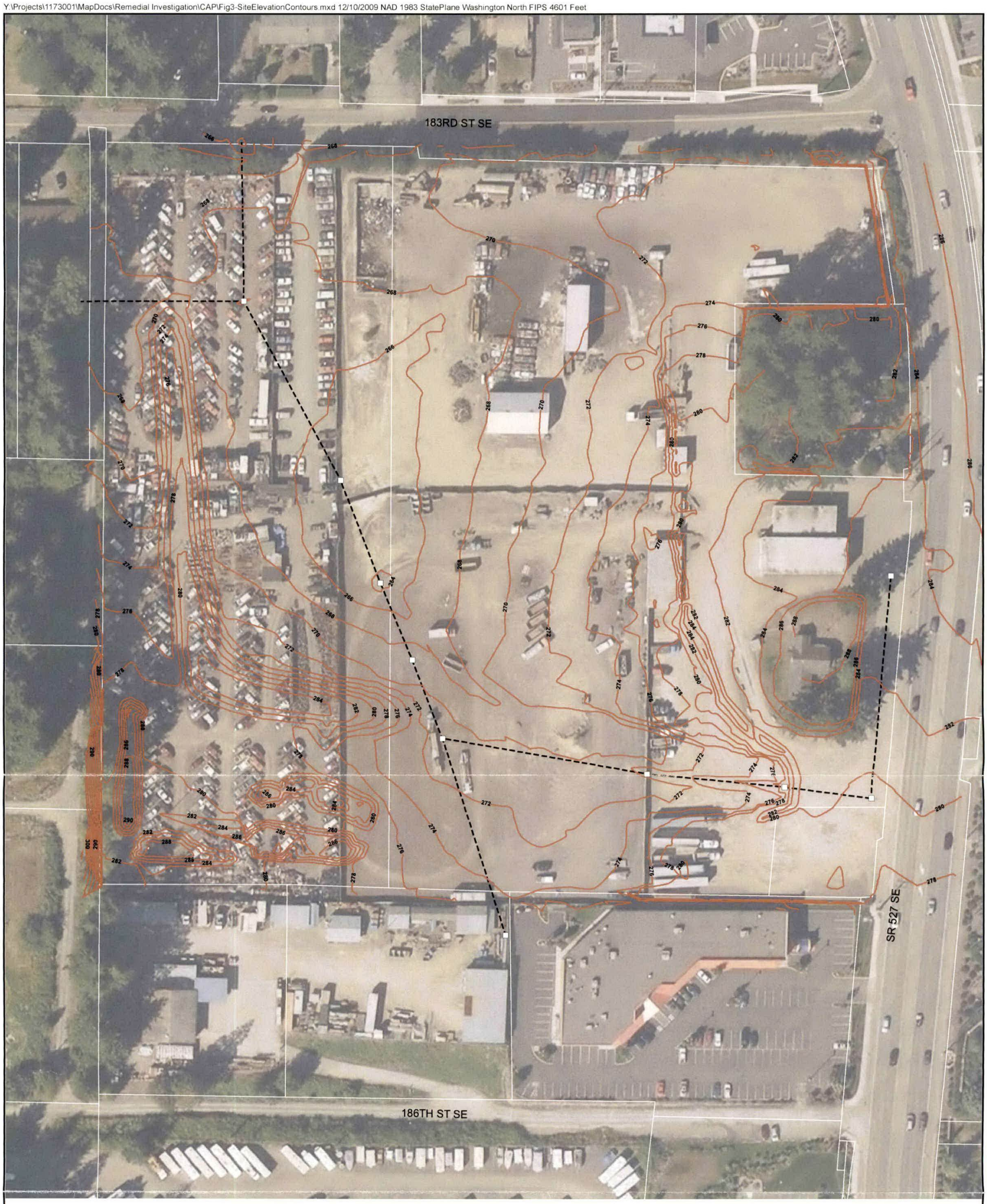
Data Source: Snohomish County; ESRI

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig2.mxd 12/10/2009

LANDAU ASSOCIATES

Verbeek Wrecking CAP Bothell/Snohomish County Washington	**Historic Site Plan**	Figure 2

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig3-SiteElevationContours.mxd 12/10/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Legend

- Catch Basin
- Storm Drains and Sanitary Sewer Lines
- Elevation Contour

0 100 200

Scale in Feet

N

Data Source: Snohomish County; ESRI; Western Engineers Inc.

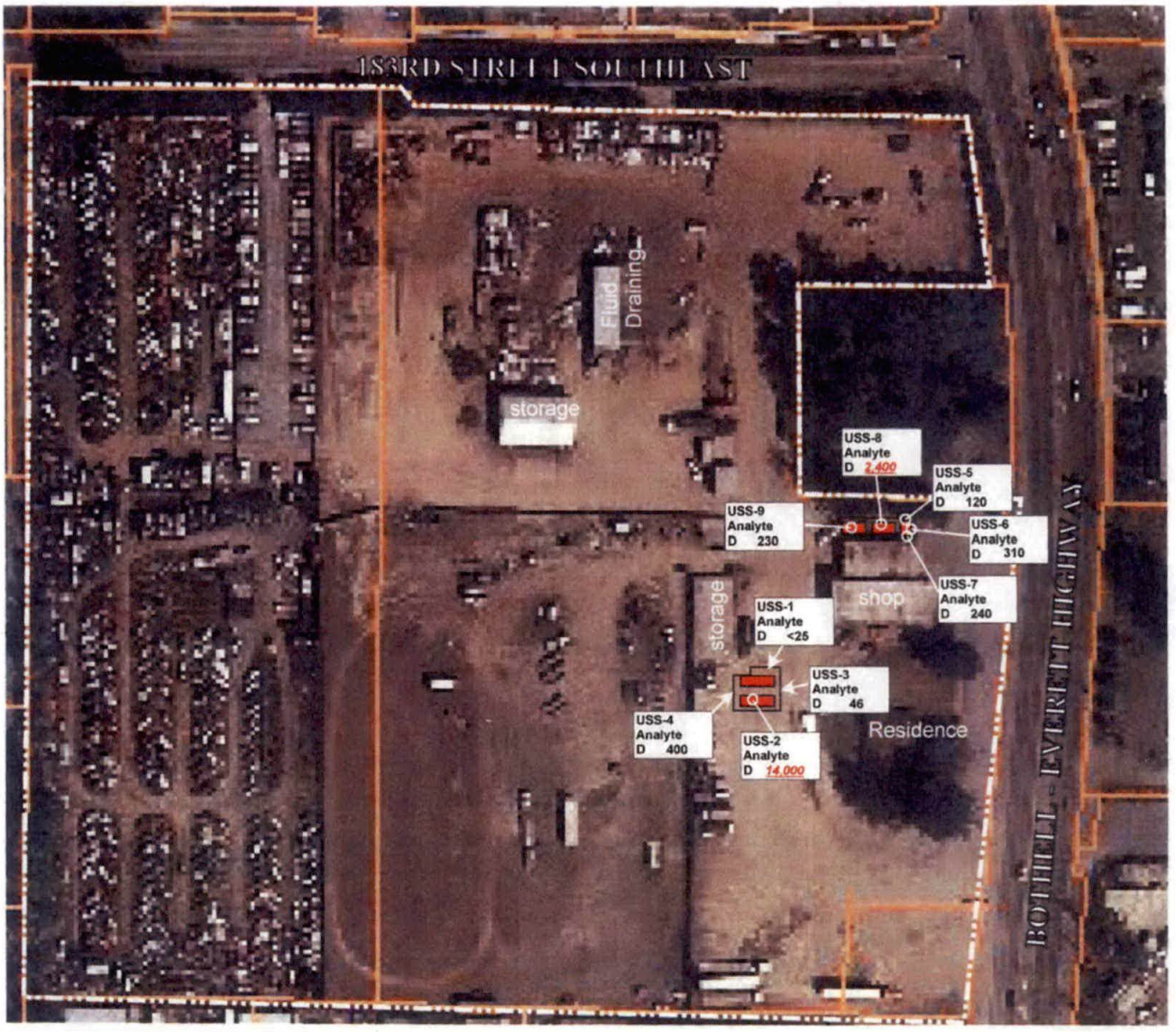
Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

Site Topography

Figure 3



LEGEND:

Approximate bottom sample

Approximate wall sample

USS-3
Analyte
D 46

Approximate limits of excavation and sample location
Based Upon Sample Location Map Coastal Tank Services November 1995
(depth of sample not reported)

Approximate project boundary

Inferred Direction of Shallow Groundwater Flow

Analyte
D Diesel

Results reported in parts per million (ppm)
ND Not Detected above practical quantitation limit
NS Not Sampled
Italicized and underlined values exceed Method A
Table 740-1 Cleanup Levels

N

SOURCE: Snohomish County, 2005 Aerial

Scale 1"=: 130'

GEOTECH
CONSULTANTS, INC.

PREVIOUS TPH RESULTS MAP

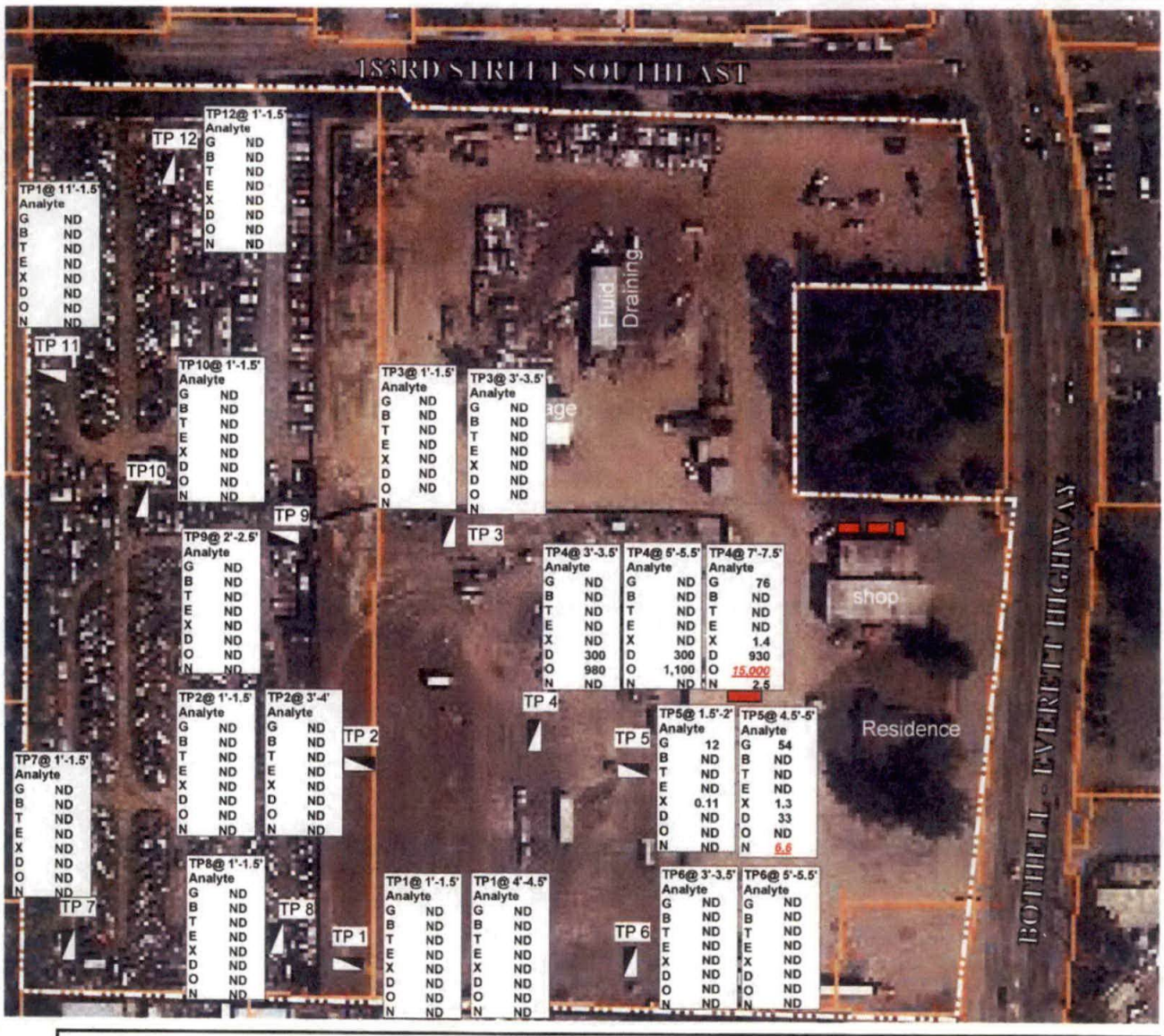
Verbeek Wrecking
18416 Bothell - Everett Highway
Bothell, Washington

Job No:	Date:		Plate:
08094E	October 2008		5

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig3.mxd 11/11/2009

LANDAU ASSOCIATES

Figure
4



LEGEND: TP 1 **Approximate Location of Geotech Consultants Test Pit, April 2008**

Approximate project boundary

Inferred Direction of Shallow Groundwater Flow

TP1@ Depth

Analyte	
G	Gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Xylenes
D	Diesel
O	Oil
N	Naphthalene

Results reported in parts per million (ppm)
ND Not Detected above practical quantitation limit
NS Not Sampled
Italicized and underlined values exceed Method A Table 740-1 Cleanup Levels

N

SOURCE: Snohomish County, 2005 Aerial

Scale 1"=: 130'

GEOTECH CONSULTANTS, INC.

TPH RESULTS MAP

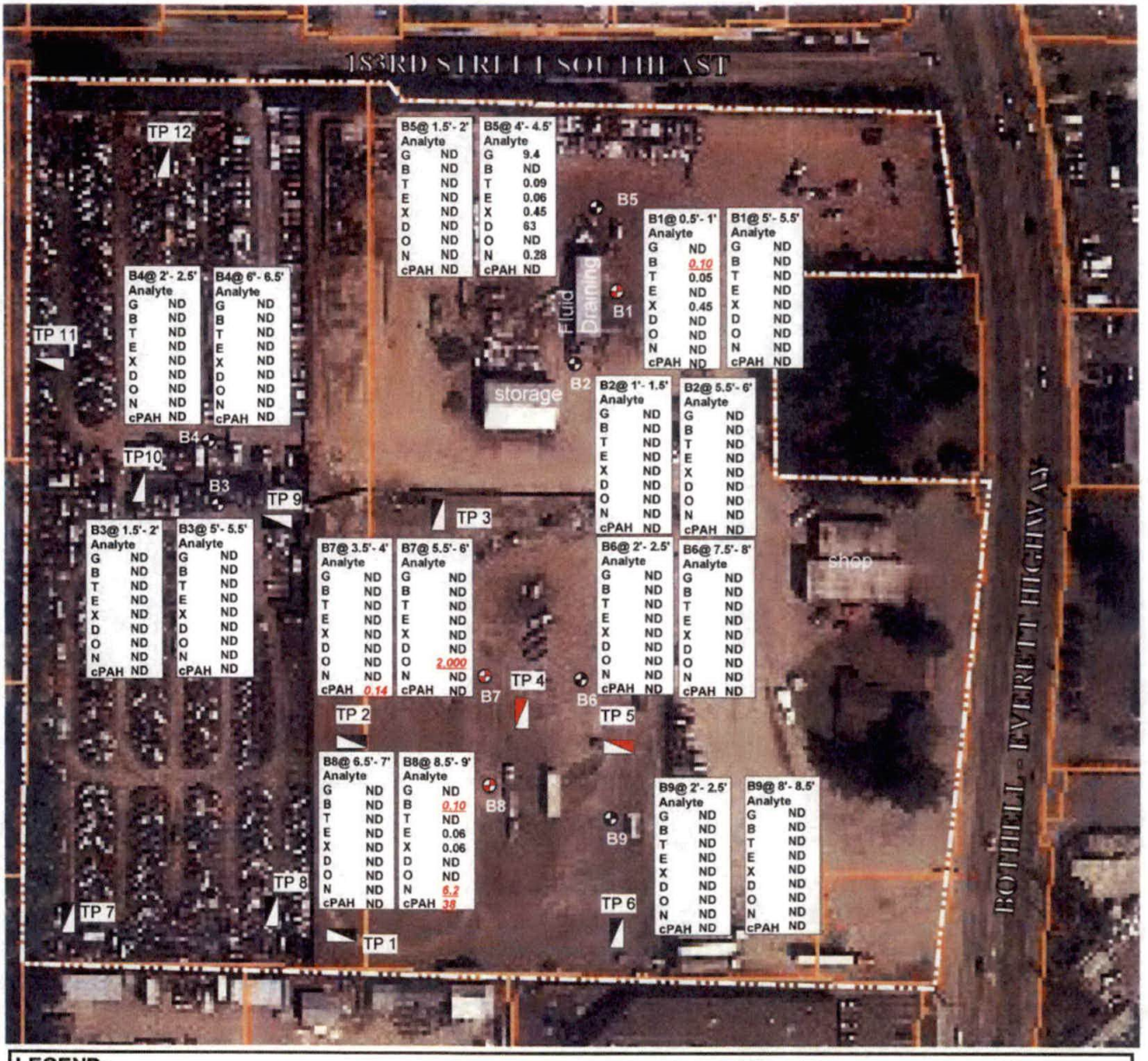
Verbeek Wrecking
18416 Bothell - Everett Highway
Bothell, Washington

Job No:	Date:		Plate:
08094E	October 2008		6

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAPFig4.mxd 11/11/2009

LANDAU ASSOCIATES

Figure 5



LEGEND:

TP 1 — Approximate location of test pit excavated April 2008.
(red coloration indicates analyte levels above applicable cleanup levels)

B1 — Approximate location of direct push boring drilled May 2008.
(red coloration indicates analyte levels above applicable cleanup levels)

Approximate project boundary

Inferred Direction of Shallow Groundwater Flow

SOURCE: Snohomish County, 2005 Aerial

B1@ Depth

Analyte	
G	Gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Xylenes
D	Diesel
O	Oil
N	Naphthalene
cPAH	carcinogenic Polycyclic Aromatic Hydrocarbons

Results reported in parts per million (ppm)
ND Not Detected above practical quantitation limit
NS Not Sampled
Italicized and underlined values exceed Method A Table 740-1 Cleanup Levels

N

Scale 1"=: 130'

GEOTECH CONSULTANTS, INC.

TPH BTEX & cPAH RESULTS - SOIL

Verbeek Wrecking
18416 Bothell - Everett Highway
Bothell, Washington

Job No:	Date:		Plate:
08094E	November 2008		6

Figure 6

LANDAU ASSOCIATES

Y:\Projects\11730001\MapDocs\Remedial Investigation\CAPFig5.mxd 11/11/2009

LEGEND:

TP 1 — Approximate location of test pit excavated April 2008.
(red coloration at TP4 indicates visual indication of groundwater contamination)

B1 — Approximate location of direct push boring drilled May 2008.
(red coloration indicates analyte levels above applicable cleanup levels)

Approximate project boundary

Inferred Direction of Shallow Groundwater Flow

SOURCE: Snohomish County, 2005 Aerial

B1H2O Analyte	
G	Gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Xylenes
D	Diesel
O	Oil
N	Naphthalene
MTBE	Methyl-t-butyl ether

Results reported in parts per billion (ppb)
ND Not Detected above practical quantitation limit
NS Not Sampled
Italicized and underlined values exceed Method A Table 720-1 Cleanup Levels

N

Scale 1"=: 130'

GEOTECH CONSULTANTS, INC.

TPH & BTEX RESULTS - H_2O

Verbeek Wrecking
18416 Bothell - Everett Highway
Bothell, Washington

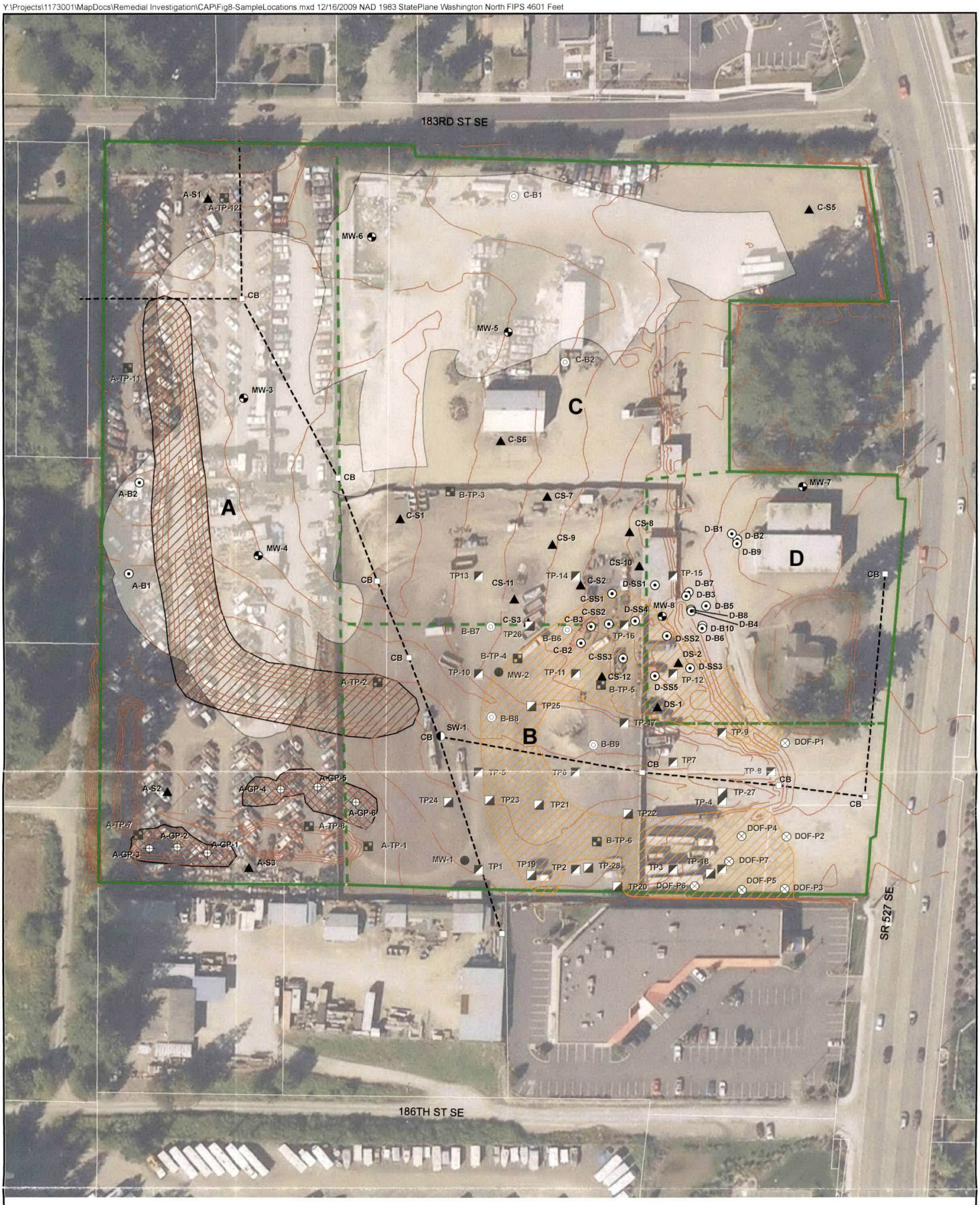
Job No:	Date:		Plate:
08094E	November 2008		7

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig6.mxd 11/11/2009

LANDAU ASSOCIATES

Figure 7

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig8-SampleLocations.mxd 12/16/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Legend

- RI Boring Location
- RI Monitoring Well Location
- RI Surface Soil Sample Location
- RI Surface Water Sample Location
- RI Gravel Stockpile Sample
- DOF August 2009 Boring Location
- DOF September 2009 Test Pit Location
- DOF April 2009 Test Pit Location (Approximate)
- Existing Monitoring Well - Green Co. 2008
- 2008 Boring Location - Geotech Consultants
- 2008 Test Pit Location - Geotech Consultants
- Storm Drains and Sanitary Sewer Lines
- Elevation Contour
- Gravel Stockpile
- Soil Stockpile
- Soil cleanup action area (approximate limits)
- Approximate Extent of Remaining GWP Fill

N

0 100 200

Scale in Feet

Data Source: Snohomish County; ESRI; Western Engineers Inc.

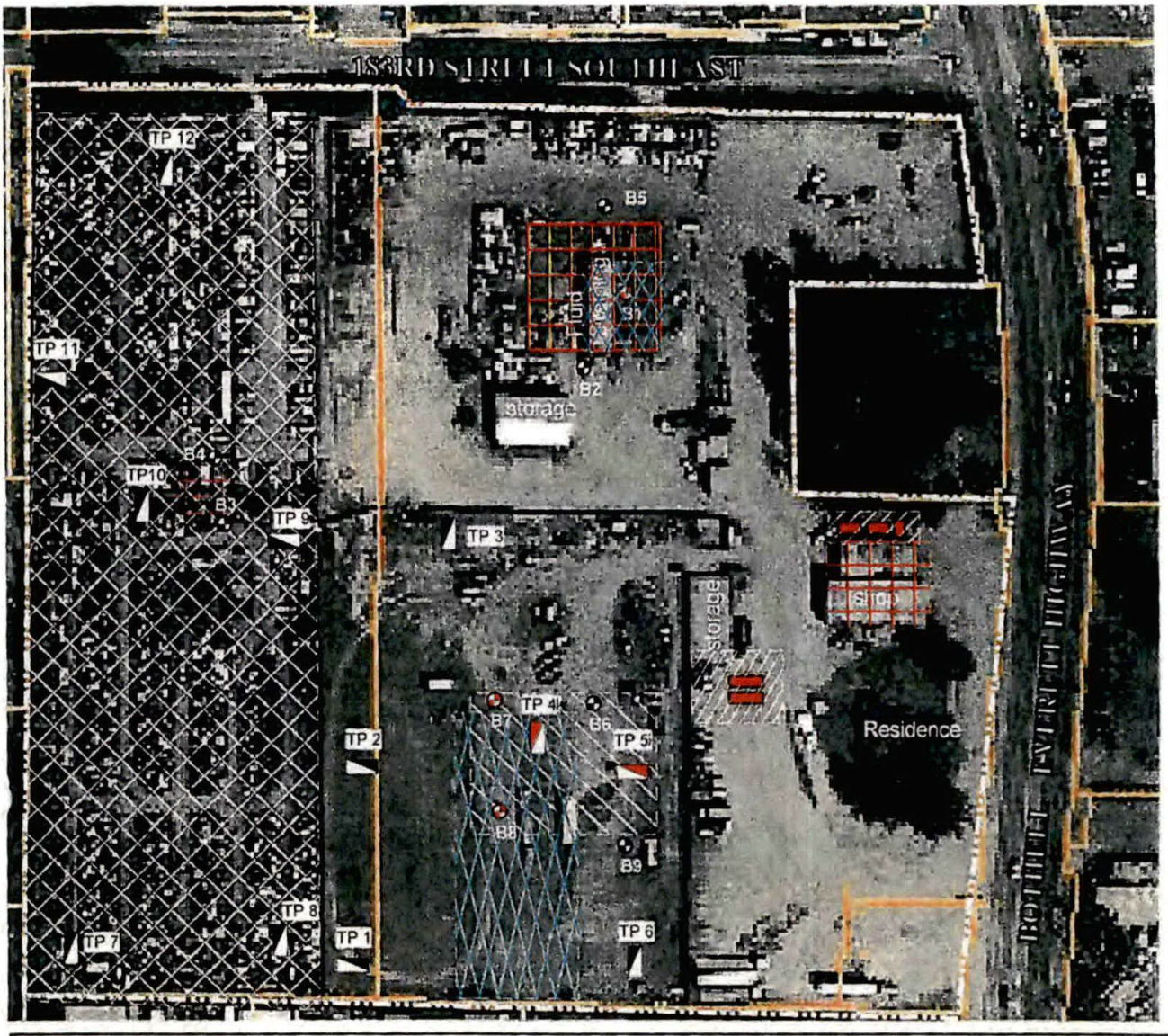
Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

Remedial Investigation Sampling Locations

Figure 8



LEGEND:

TP 1 — Approximate location of test pit excavated April 2008. (red coloration indicates analyte levels above applicable cleanup levels)

B1 — Approximate location of direct push boring drilled May 2008. (red coloration indicates analyte levels above applicable cleanup levels)

Approximate location former USTs

1 — Approximate shallow contamination (0 to 1 foot, boundaries not confirmed)

2 — Approximate near surface contamination (0 to 5 feet, boundaries not confirmed)

3 — Approximate mid depth contamination (4 to 10 feet, boundaries not confirmed)

4 — Approximate deep contamination (5 to 10 feet, boundaries not confirmed)

Approximate project boundary

Area of suspected groundwater contamination (boundaries not confirmed)

Inferred Direction of Shallow Groundwater Flow

N

SOURCE: Snohomish County, 2005 Aerial

Scale 1"=: 130'

GEOTECH CONSULTANTS, INC.

CONTAMINATED AREAS MAP

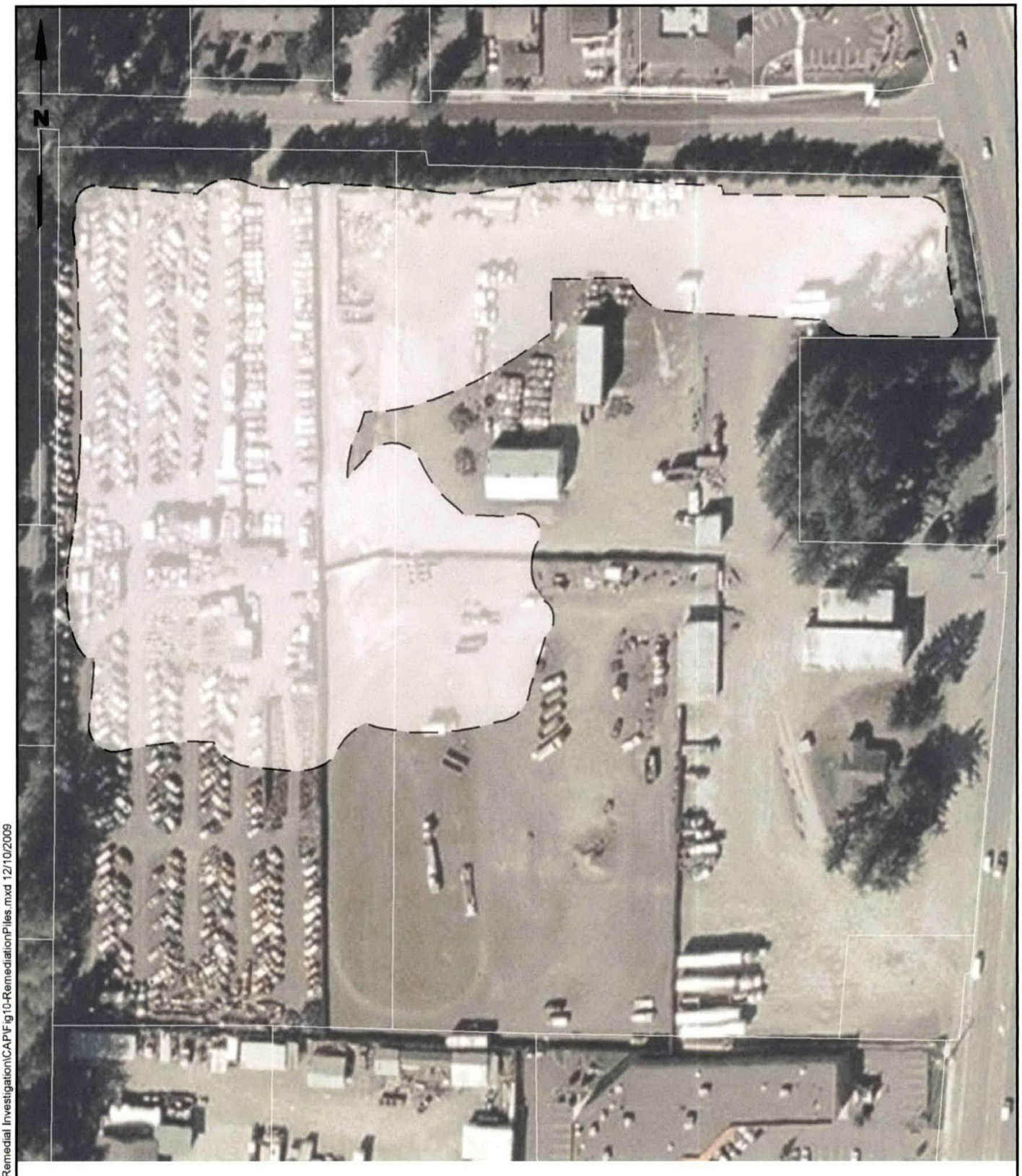
Verbeek Wrecking
18416 Bothell - Everett Highway
Bothell, Washington

Job No:	Date:		Plate:
08094E	May 2008		8

Y:\Projects\11730001\MapDocs\Remedial Investigation\CAP\Fig9-Contaminated Areas.mxd 12/11/2009

LANDAU ASSOCIATES

Figure 9



Legend

Soil treatment areas (approximate limits)

0 120 240

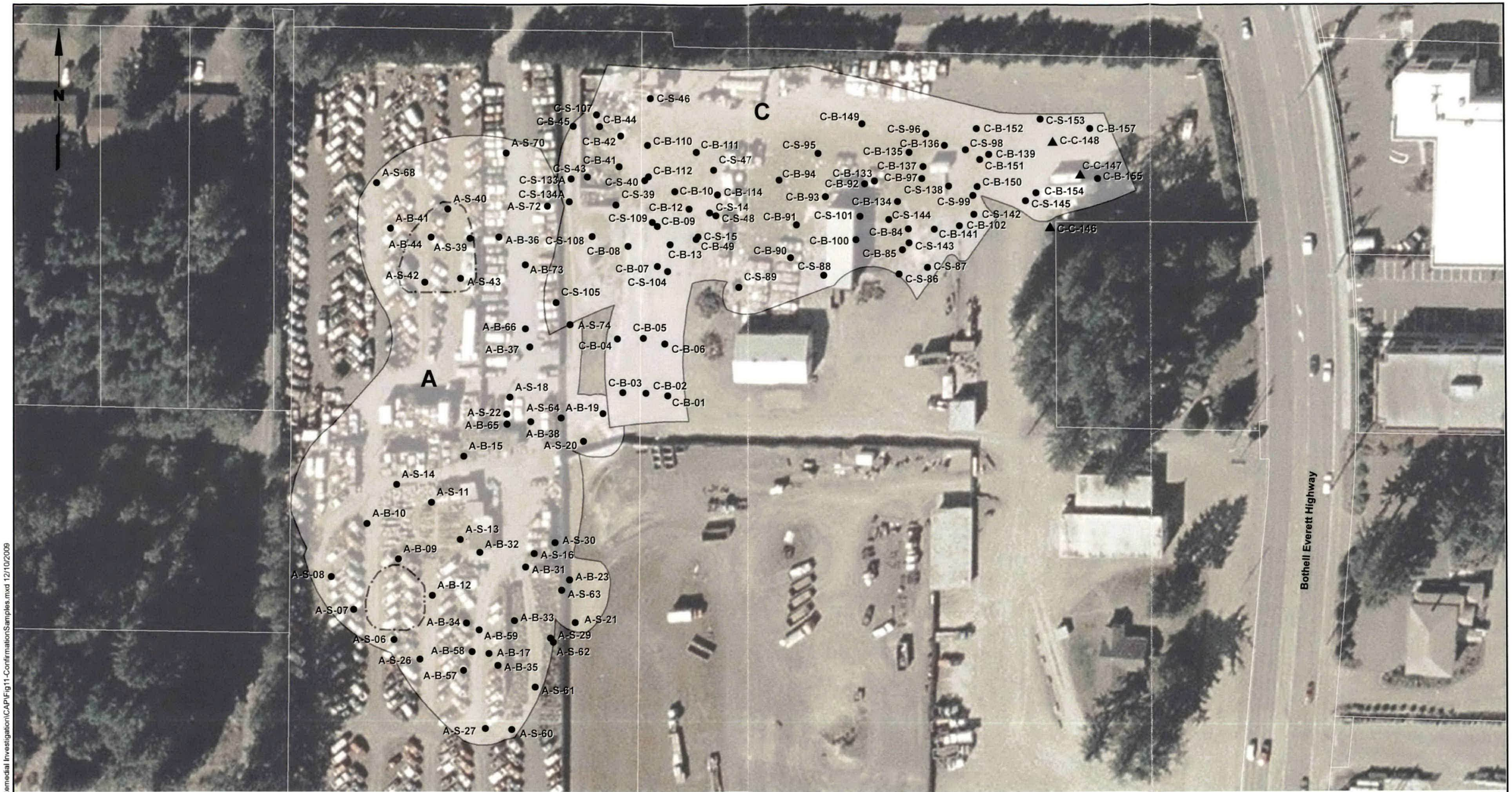
Scale in Feet

Data Source: Snohomish County; ESRI

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig10-RemediationPiles.mxd 12/10/2009

LANDAU ASSOCIATES

Verbeek Wrecking CAP Bothell/Snohomish County Washington	**Footprint of Soil Remediation Piles**	Figure 10



Legend

- ● Confirmation soil sample location with analytical results below cleanup levels or below the laboratory reporting limits
- ▲ Characterization soil sample location with analytical results below cleanup levels or below the laboratory reporting limits
- Approximate locations of deeper soil excavation (12 ft BGS)
- Soil Interim action areas A and C (approximate limits)

0 80 160
Scale in Feet

Data Source: Snohomish County; ESRI

LANDAU ASSOCIATES

Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

Final Confirmation Soil Samples in Area A and C

Figure 11

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig11-ConfirmationSamples.mxd 12/10/2009

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig12-AreaBStockpile.mxd 12/10/2009

LANDAU ASSOCIATES

Verbeek Wrecking CAP Bothell/Snohomish County Washington	**Approximate Extent of Area B Excavation and Stock Pile Location**	Figure 12

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig13-GWContour.mxd 12/16/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet

Legend

- Monitoring Well Location
- Existing Monitoring Well - Green Co. 2008
- Groundwater Contour (ft)
- Storm Drains and Sanitary Sewer Lines
- Approximate Extent of Remaining GWP Fill
- Soil cleanup action area (approximate limits)

N

0 100 200

Scale in Feet

Data Source: Snohomish County; ESRI; Western Engineers Inc.

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

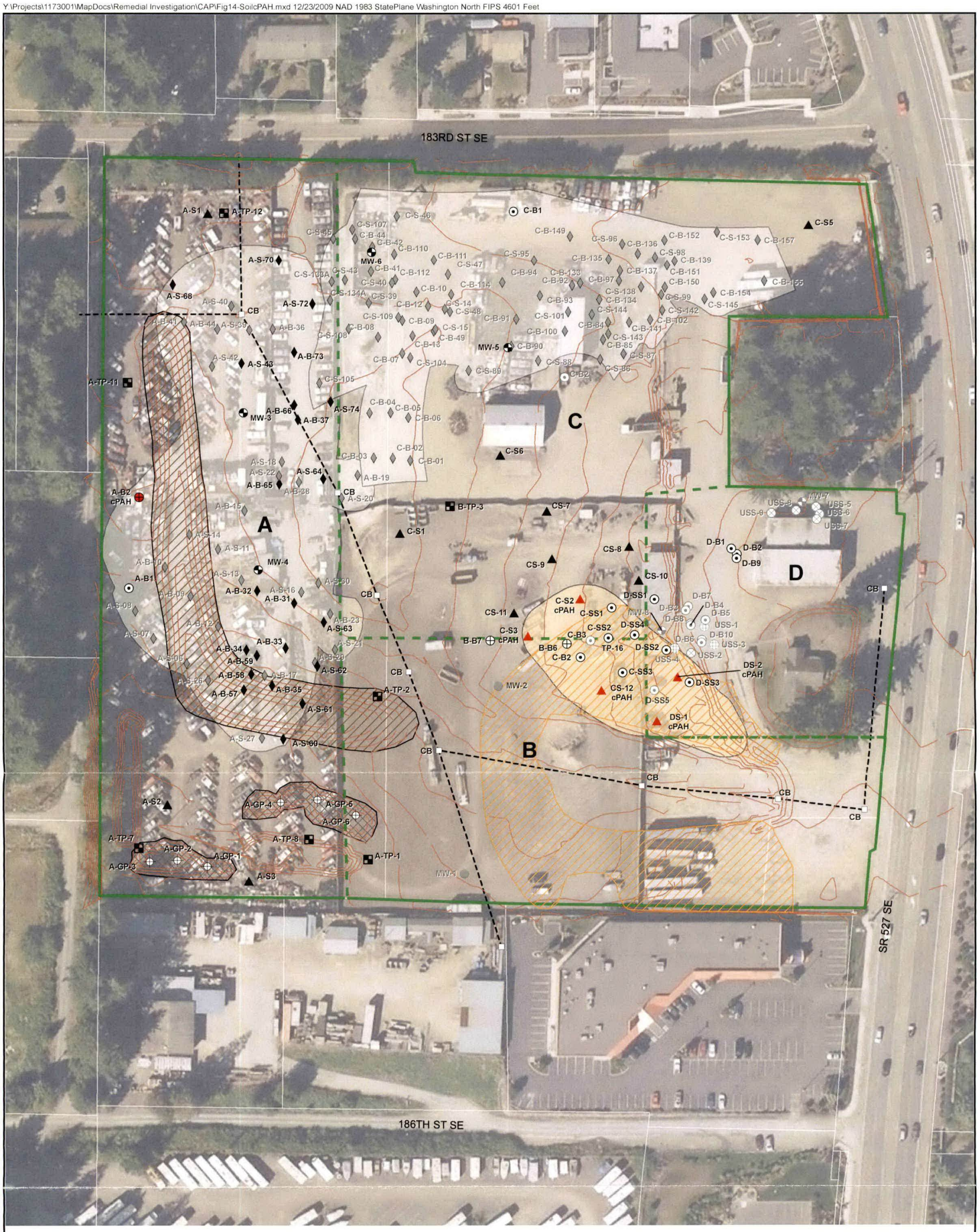
LANDAU ASSOCIATES

Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

Groundwater Elevation Contours October 8, 2009

Figure 13

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig14-SoilcPAH.mxd 12/23/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Legend

- RI Boring Location
- RI Monitoring Well Location
- RI Surface Soil Sample Location
- RI Gravel Stockpile Sample
- Existing Monitoring Well - Green Co. 2008
- 2008 Test Pit Location - Geotech Consultants
- 1995 Excavation Sidewall Confirmation Soil Sample - Geotech Consultants
- 1995 Excavation Bottom Confirmation Soil Sample - Geotech Consultants
- 2008 Boring Location - Geotech Consultants
- Green Co. 2008 Excavation Sample
- Soil Sample Exceeds Cleanup Screening Level - Constituent that exceeds is noted below sample name.
- Sample Location Not Analyzed for cPAHs
- Storm Drains and Sanitary Sewer Lines
- Elevation Contour
- Gravel Stockpile
- Soil Stockpile
- Soil cleanup action area (approximate limits)
- cPAH Affected Area
- Approximate Extent of Remaining GWP Fill

N

0 100 200

Scale in Feet

Data Source: Snohomish County; ESRI; Western Engineers Inc.

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

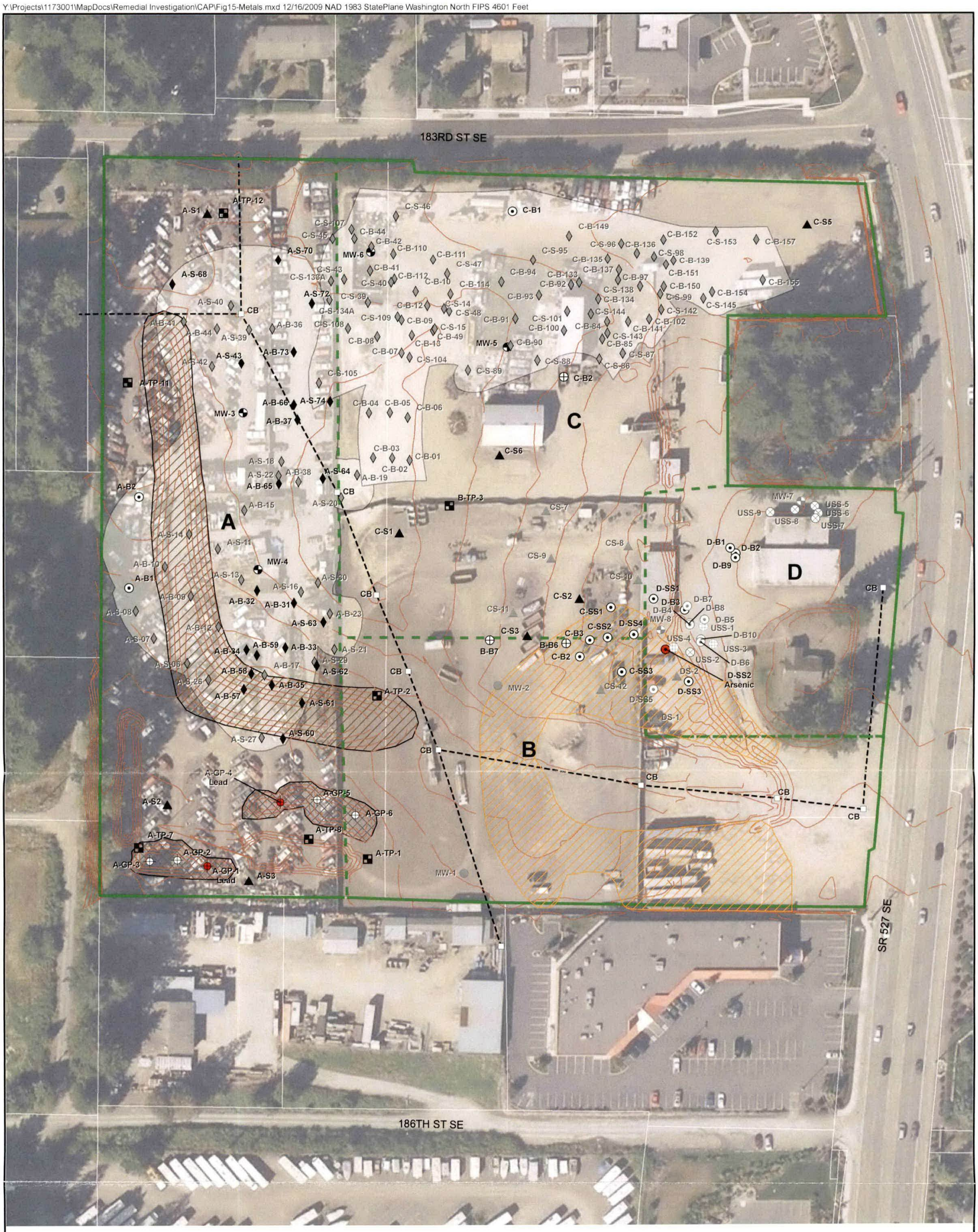
LANDAU ASSOCIATES

Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

Current Soil Conditions - cPAHs

Figure 14

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig15-Metals.mxd 12/16/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Legend

- RI Boring Location
- RI Monitoring Well Location
- RI Surface Soil Sample Location
- RI Gravel Stockpile Sample
- Existing Monitoring Well - Green Co. 2008
- 2008 Test Pit Location - Geotech Consultants
- 1995 Excavation Sidewall Confirmation Soil Sample - Geotech Consultants
- 1995 Excavation Bottom Confirmation Soil Sample - Geotech Consultants
- 2008 Boring Location - Geotech Consultants
- Green Co. 2008 Excavation Sample
- Soil Sample Exceeds Cleanup Screening Level - Constituent that exceeds is noted below sample name.
- Sample Location Not Analyzed for Metals during the RI
- Storm Drains and Sanitary Sewer Lines
- Elevation Contour
- Gravel Stockpile
- Soil Stockpile
- Soil cleanup action area (approximate limits)
- Approximate Extent of Remaining GWP Fill

N

0 100 200

Scale in Feet

Data Source: Snohomish County; ESRI; Western Engineers Inc.

LANDAU ASSOCIATES

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

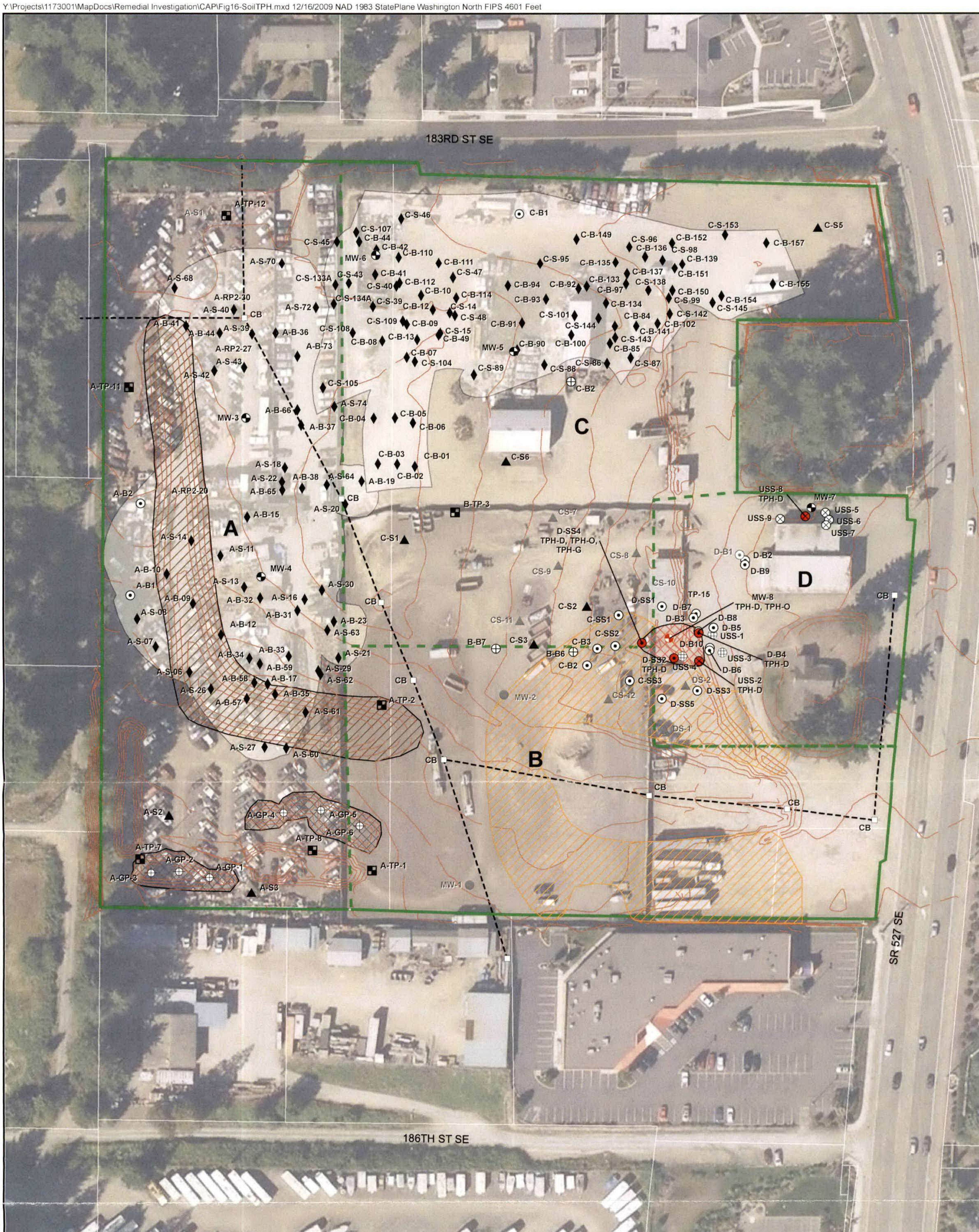
Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

Current Soil Conditions - Metals

Figure 15

[redacted]

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig16-SoilTPH.mxd 12/16/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Legend

- RI Boring Location
- RI Monitoring Well Location
- RI Surface Soil Sample Location
- RI Gravel Stockpile Sample
- Existing Monitoring Well - Green Co. 2008
- 2008 Test Pit Location - Geotech Consultants
- 1995 Excavation Sidewall Confirmation Soil Sample - Geotech Consultants
- 1995 Excavation Bottom Confirmation Soil Sample - Geotech Consultants
- 2008 Boring Location - Geotech Consultants
- Green Co. 2008 Excavation Sample
- Soil Sample Exceeds Cleanup Screening Level - Constituent that exceeds is noted below sample name.
- Sample Location Not Analyzed for TPH during the RI
- Storm Drains and Sanitary Sewer Lines
- Elevation Contour
- Gravel Stockpile
- Soil Stockpile
- Soil cleanup action area (approximate limits)
- TPH Affected Area
- Approximate Extent of Remaining GWP Fill

N

0 100 200

Scale in Feet

Data Source: Snohomish County; ESRI; Western Engineers Inc.

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

Verbeek Wrecking CAP Bothell/Snohomish County Washington	Current Soil Conditions - Total Petroleum Hydrocarbons	Figure 16

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig17-TPHImpact.mxd 12/16/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet

C

D

B

C-S6	
Depth	0-0.5
TPH-O	68

C-S2	
Depth	0-0.5
TPH-O	230

C-S3	
Depth	0-0.5
TPH-O	93

B-B7	
Depth	5.5-6
TPH-O	2,000

C-SS1		
Depth	7-8	
TPH-O	92	

C-SS3		
Depth	6-7.5	
TPH-D	300	
TPH-O	710	

D-SS4		
Depth	6-8	
TPH-D	4,000	
TPH-O	15,000	
TPH-G	820	

D-SS2		
Depth	11-12	19-20
TPH-D	1,300	920

USS-5	
Depth	NR
TPH-D	120

USS-6	
Depth	NR
TPH-D	310

USS-8	
Depth	NR
TPH-D	2,400

USS-9	
Depth	NR
TPH-D	230

USS-7	
Depth	NR
TPH-D	240

MW-8		
Depth	5-6	12.5-13.5
TPH-D	790	1,800
TPH-O	2,300	

D-B4	
Depth	15-15.5
TPH-D	2,000

USS-3	
Depth	NR
TPH-D	46

USS-4	
Depth	NR
TPH-D	400

USS-2	
Depth	NR
TPH-D	14,000

B-TP-3, CS-7, CS-8, CS-9, CS-11, CS-12, MW-2, MW-7, B-B6, C-B3, C-SS2, C-B2, D-SS1, D-B7, D-B3, D-B8, D-B5, USS-1, D-B10, D-B6, DS-2, D-SS3, D-SS5, DS-1, D-B1, D-B2, D-B9, CB, CB

Legend

- RI Boring Location
- RI Monitoring Well Location
- RI Surface Soil Sample Location
- Existing Monitoring Well - Green Co. 2008
- 2008 Test Pit Location - Geotech Consultants
- 1995 Excavation Sidewall Confirmation Soil Sample - Geotech Consultants
- 1995 Excavation Bottom Confirmation Soil Sample - Geotech Consultants
- 2008 Boring Location - Geotech Consultants
- Soil Sample Exceeds Cleanup Screening Level - Constituent that exceeds is noted below sample name.
- Sample Location Not Analyzed for TPH
- Storm Drains and Sanitary Sewer Lines
- Elevation Contour
- Petroleum Hydrocarbon Affected Area
- Approximate Extent of Remaining GWP Fill

Sample ID	
Depth	Interval (ft)
Analyte	Result (mg/kg)

NR = Not Reported

N

0 40 80

Scale in Feet

Data Source: Snohomish County; ESRI; Western Engineers Inc.

Notes

1. The Cleanup Level for TPH-D is 460 mg/kg above 15 ft BGS and 2,000 mg/kg below 15 ft BGS. The Cleanup Level for TPH-Ois 2,000 mg/kg. The Cleanup Level for TPH-G is 30 mg/kg.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
3. Data boxes only provided for locations where TPH detected.

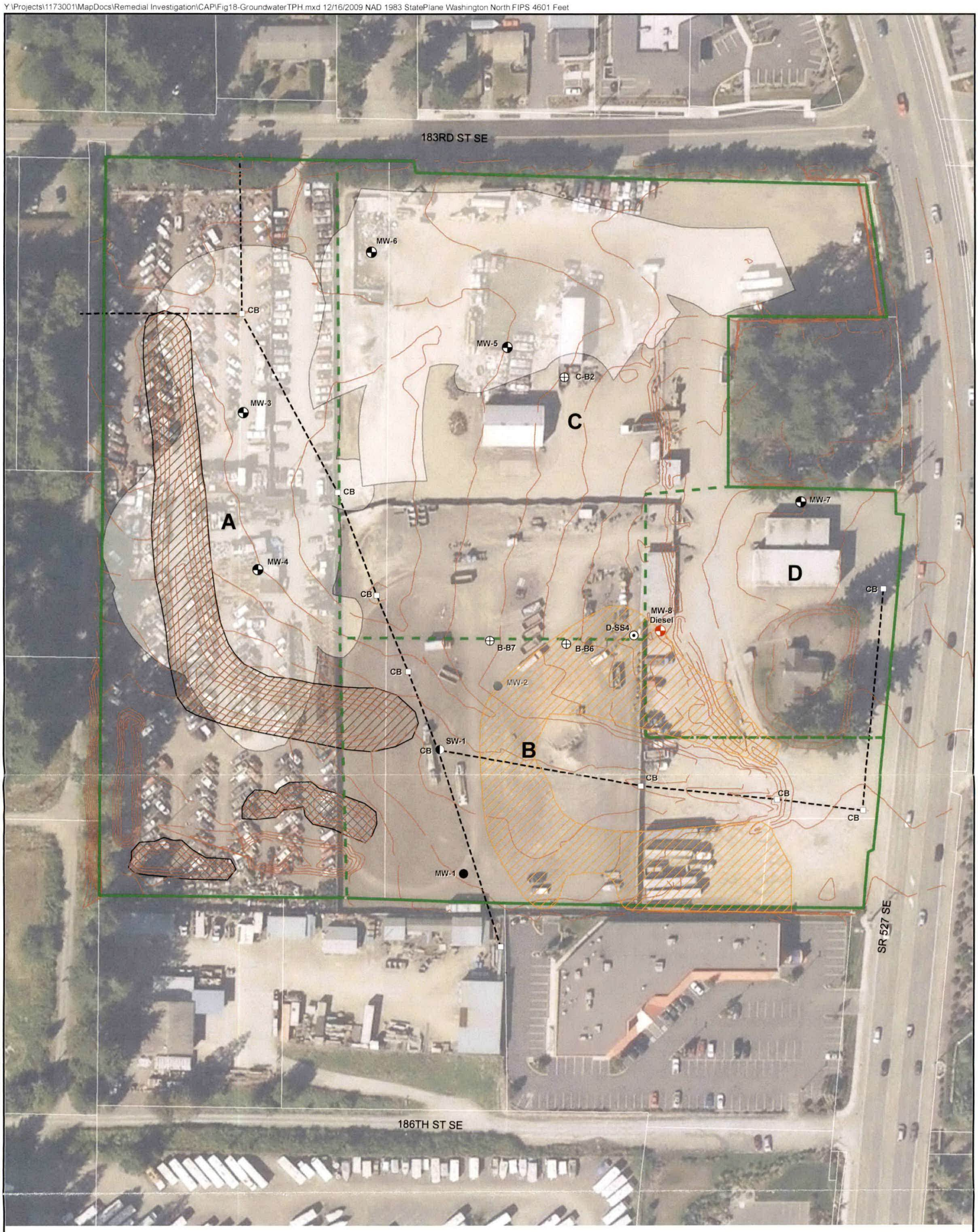
LANDAU ASSOCIATES

Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

TPH Impacted Area
TPH Detection Summary

Figure
17

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig18-GroundwaterTPH.mxd 12/16/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Legend

- RI Boring Location
- RI Monitoring Well Location
- RI Surface Water Sample Location
- Existing Monitoring Well - Green Co. 2008
- 2008 Boring Location - Geotech Consultants
- Water Sample Exceeds Cleanup Screening Level - Constituent that exceeds is noted below sample name.
- Sample Location not Analyzed for TPH in groundwater
- Storm Drains and Sanitary Sewer Lines
- Elevation Contour
- Gravel Stockpile
- Soil Stockpile
- Soil cleanup action area (approximate limits)
- Approximate Extent of Remaining GWP Fill

N

0 100 200

Scale in Feet

Data Source: Snohomish County; ESRI; Western Engineers Inc.

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

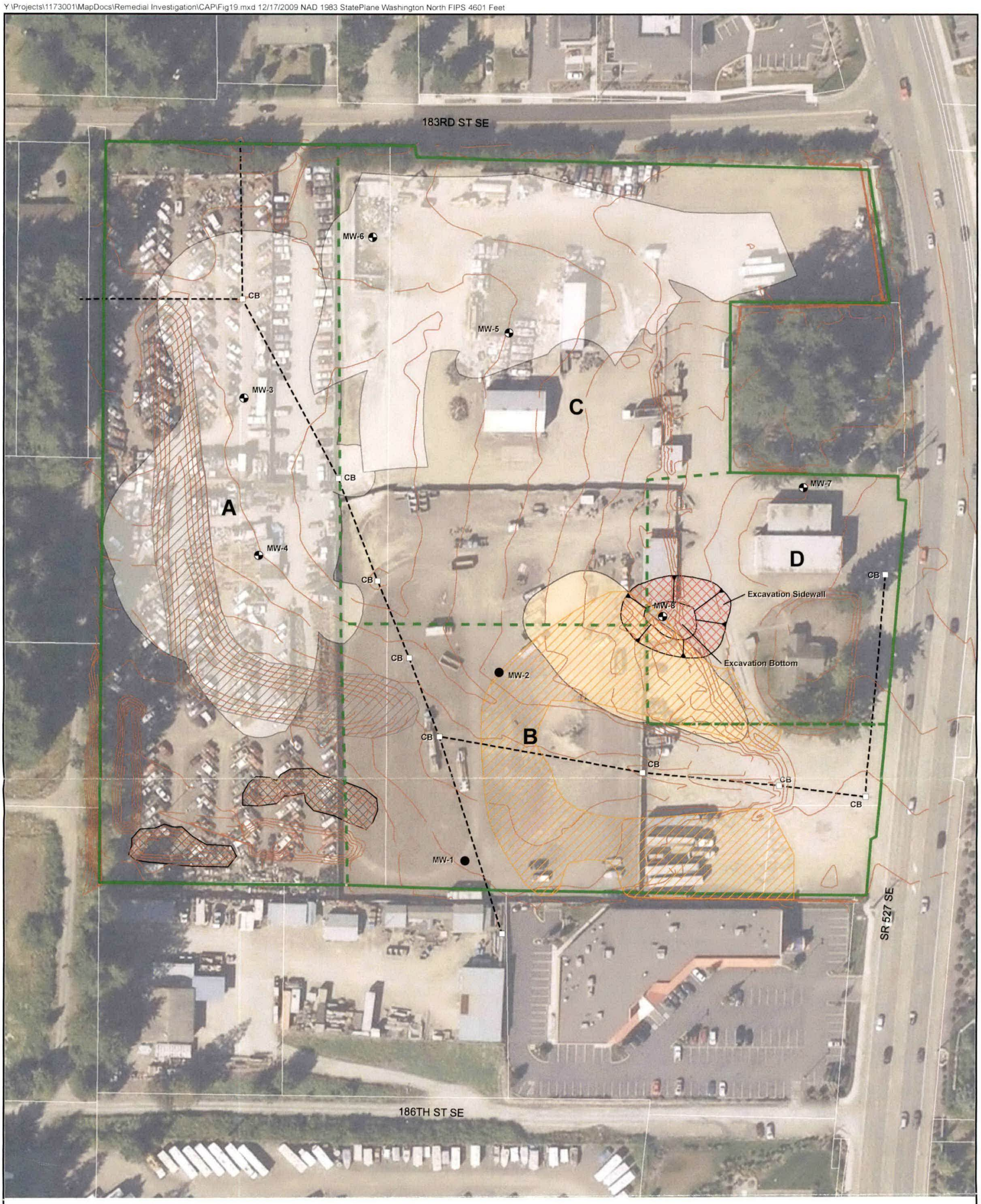
LANDAU ASSOCIATES

Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

Groundwater Analytical Results - Total Petroleum Hydrocarbons

Figure 18

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\Fig19.mxd 12/17/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Legend

- Existing Monitoring Well - Green Co. 2008
- RI Monitoring Well Location
- Elevation Contour
- Storm Drains and Sanitary Sewer Lines
- Gravel Stockpile
- Soil Stockpile
- cPAH Affected Area
- Soil cleanup action area (approximate limits)
- TPH Excavation Area
- Approximate Extent of Remaining GWP Fill

N

0 100 200

Scale in Feet

Data Source: Snohomish County; ESRI; Western Engineers Inc.

Note
1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

Cleanup Action Areas

Figure 19

TABLE 1
ANALYTICAL RESULTS OF DETECTED CONSTITUENTS
GEOTECH CONSULTANTS PHASE II ESA SOIL REMAINING
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		A-TP-1	A-TP-1	A-TP-2	A-TP-2	A-TP-7	A-TP-8	A-TP-11	A-TP-12	B-B6	B-B6	B-B7
Sample Location ID		TP1 S1	TP1 S2	TP2 S1	TP2 S2	TP7 S1	TP8 S1	TP11 S1	TP12 S1	B6S1	B6S2	B7S1
Top Depth		1	4	1	3	1	1.5	1	1	2	7.5	3.5
Bottom Depth		1.5	4.5	1.5	4	1.5	2	1.5	1.5	2.5	8	4
Lab Sample ID	Preliminary Cleanup Levels	04/17/08	04/17/08	04/17/08	04/17/08	04/17/08	04/17/08	04/17/08	04/17/08	05/22/08	05/22/08	05/22/08
METALS (mg/kg)												
Arsenic	20	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.4	<2.0	<5	<5	<5
Barium	1700 / 1250 (a)	<10	<10	<10	<10	<10	<10	<10	<10	<50	<50	60
Cadmium	25	<1.0	<1.0	<1.0	1	<1.0	<1.0	<1.0	<1.0	<1	<1	<1
Chromium	120000 / 48 (a)	5.4	3.4	5.6	7.6	2	3.5	9.8	3.1	8.9	8.5	10
Lead	250 / 220 (a)	4.5	3.8	9.3	14	2.5	3.9	81	8.8	<5	<5	34
TOTAL PETROLEUM HYDROCARBONS (mg/kg)												
Diesel	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline	100/30 (b)	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range Petroleum Hydrocarbons	2000	<50	<50	<50	<50	<50	<50	<50	<50	<40	<40	<40
BTEX (mg/kg)												
Benzene	0.03	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
Toluene	4.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
Xylenes	15	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
Glycol (mg/kg)												
Ethylene Glycol	160000	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<10	<10	<10
VOLATILES (mg/kg)												
1,2,4-Trimethylbenzene	4000	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene	4000	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
Isopropylbenzene		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
Isopropyltoluene		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
n-Butylbenzene		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
n-Propylbenzene		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
tert-Butylbenzene		<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05	<0.05	<0.05
PAHs (mg/kg)												
Naphthalene	4.5	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
1-Methylnaphthalene										<0.10	<0.10	<0.10
2-Methylnaphthalene	320									<0.10	<0.10	<0.10
1,2-Methylnaphthalene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10			
Acenaphthene	98 / 20 (a)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluorene	101 / 30 (a)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Phenanthrene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Fluoranthene	630	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Pyrene	650	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.11
Benzo(ghi)perylene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)pyrene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(a)anthracene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(b)fluoranthene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Benzo(k)fluoranthene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chrysene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.14
Dibenzo(a,h)anthracene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Indeno(1,2,3-cd)pyrene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total cPAH TEQ	0.14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0014

TABLE 1
ANALYTICAL RESULTS OF DETECTED CONSTITUENTS
GEOTECH CONSULTANTS PHASE II ESA SOIL REMAINING
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		B-B7	B-B8	B-B8	B-B9	B-B9	B-TP-3	B-TP-3	B-TP-4	B-TP-4	B-TP-4	B-TP-5	B-TP-5
Sample Location ID		B7S2	B8S1	B8S2	B9S1	B9S2	TP3 S1	TP3 S2	TP4 S1	TP4 S2	TP4 S3	TP5 S1	TP5 S2
Top Depth		5.5	6.5	8.5	2	8	1	3	3	5	7	1.5	4.5
Bottom Depth		6	7	9	2.5	8.5	1.5	3.5	3.5	5.5	7.5	2	5
Lab Sample ID	Preliminary Cleanup Levels	05/22/08	05/22/08	05/22/08	05/22/08	05/22/08	04/17/08	04/17/08	04/17/08	04/17/08	04/17/08	04/17/08	04/17/08
METALS (mg/kg)													
Arsenic	20	<5	5.7	<5	<5	<5	<2.0	<2.0	<2.0	2	<2.0	<2.0	<2.0
Barium	1700 / 1250 (a)	<50	140	87	130	65	<10	<10	<10	<10	<10	<10	<10
Cadmium	25	<1	<1	<1	<1	<1	<1.0	<1.0	1.6	<1.0	<1.0	<1.0	<1.0
Chromium	120000 / 48 (a)	7.1	14	11	17	11	8.5	7.1	19	7.5	4	3.8	5.4
Lead	250 / 220 (a)	21	33	19	12	24	7.3	5.8	2.4	170	87	7.4	38
TOTAL PETROLEUM HYDROCARBONS (mg/kg)													
Diesel	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	170	300	930	<20	33
Gasoline	100/30 (b)	<5	<5	<5	<5	<5	<5	<5	<5	<5	76	12	54
Oil-Range Petroleum Hydrocarbons	2000	2000	<40	<40	<40	<40	<50	<50	980	1100	15000	<50	<50
BTEX (mg/kg)													
Benzene	0.03	<0.02	<0.02	0.1	<0.02	<0.02	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Ethylbenzene	6	<0.05	<0.05	0.06	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	0.056	<0.050	0.66
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	0.1	<0.050	0.24
Xylenes	15	<0.05	<0.05	0.06	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	1.4	0.11	1.3
Glycol (mg/kg)													
Ethylene Glycol	160000	<10	<10	<10	<10	<10	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
VOLATILES (mg/kg)													
1,2,4-Trimethylbenzene	4000	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	0.77	0.082	1.4
1,3,5-Trimethylbenzene	4000	<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	0.26	<0.050	0.48
Isopropylbenzene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	0.14	<0.050	0.1
Isopropyltoluene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	0.1	<0.050	0.071
n-Butylbenzene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
n-Propylbenzene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
tert-Butylbenzene		<0.05	<0.05	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
PAHs (mg/kg)													
Naphthalene	4.5	<0.10	<0.10	6.2	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	2.5	<0.10	9.8
1-Methylnaphthalene		<0.10	<0.10	1.2	<0.10	<0.10							
2-Methylnaphthalene	320	<0.10	<0.10	1.9	<0.10	<0.10							
1,2-Methylnaphthalene							<0.10	<0.10	<0.10	0.12	8	<0.10	4.9
Acenaphthene	98 / 20 (a)	<0.10	<0.10	1.1	<0.10	<0.10	<0.10	<0.10	<0.10	0.26	4.1	<0.10	0.47
Fluorene	101 / 30 (a)	<0.10	<0.10	0.77	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	4.8	<0.10	0.46
Phenanthrene		0.26	<0.10	12	<0.10	<0.10	<0.10	<0.10	<0.10	0.26	17	<0.10	1.4
Fluoranthene	630	0.8	<0.10	17	<0.10	<0.10	<0.10	<0.10	<0.10	0.36	26	<0.10	0.96
Pyrene	650	<0.10	<0.10	22	<0.10	<0.10	<0.10	<0.10	<0.10	0.59	41	<0.10	1.4
Benzo(ghi)perylene		<0.10	<0.10	7.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	4.8	<0.10	<0.10
Benzo(a)pyrene		<0.10	<0.10	4.7	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	5.2	<0.10	0.35
Benzo(a)anthracene		<0.10	<0.10	3.8	<0.10	<0.10	<0.10	<0.10	<0.10	0.15	5.8	<0.10	0.28
Benzo(b)fluoranthene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	6.4	<0.10	0.58
Benzo(k)fluoranthene		<0.10	<0.10	6.1	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	7.5	<0.10	0.58
Chrysene		<0.10	<0.10	8.4	<0.10	<0.10	<0.10	<0.10	<0.10	0.45	6.8	<0.10	0.55
Dibenzo(a,h)anthracene		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.1	<0.10	0.47
Indeno(1,2,3-cd)pyrene		<0.10	<0.10	15	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	3.9	<0.10	0.24
Total cPAH TEQ	0.14	NA	NA	7.274	NA	NA	NA	NA	NA	0.0195	7.738	NA	0.5705

TABLE 1
ANALYTICAL RESULTS OF DETECTED CONSTITUENTS
GEOTECH CONSULTANTS PHASE II ESA SOIL REMAINING
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		B-TP-6	B-TP-6	C-B2	C-B2	C-B2
Sample Location ID		TP6 S1	TP6 S2	B1S1	B2S1	B2S2
Top Depth		3	5			
Bottom Depth		3.5	5.5			
Lab Sample ID	Preliminary Cleanup Levels	04/17/08	04/17/08	05/23/08	05/22/08	05/22/08
METALS (mg/kg)						
Arsenic	20	<2.0	<2.0		<5	<5
Barium	1700 / 1250 (a)	<10	<10		<50	<50
Cadmium	25	<1.0	<1.0		<1	<1
Chromium	120000 / 48 (a)	**2**	**4.9**		**9.3**	**9.9**
Lead	250 / 220 (a)	**3.4**	**5.2**		<5	<5
TOTAL PETROLEUM HYDROCARBONS (mg/kg)						
Diesel	2000 / 460 (a)	<20	<20		<20	<20
Gasoline	100/30 (b)	<5	<5		<5	<5
Oil-Range Petroleum Hydrocarbons	2000	<50	<50		<40	<40
BTEX (mg/kg)						
Benzene	0.03	<0.050	<0.050		<0.02	<0.02
Ethylbenzene	6	<0.050	<0.050		<0.05	<0.05
Toluene	4.7	<0.050	<0.050		<0.05	<0.05
Xylenes	15	<0.050	<0.050		<0.05	<0.05
Glycol (mg/kg)						
Ethylene Glycol	160000	<1.0	<1.0		<10	<10
VOLATILES (mg/kg)						
1,2,4-Trimethylbenzene	4000	<0.050	<0.050	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene	4000	<0.050	<0.050	<0.05	<0.05	<0.05
Isopropylbenzene		<0.050	<0.050		<0.05	<0.05
Isopropyltoluene		<0.050	<0.050	<0.05	<0.05	<0.05
n-Butylbenzene		<0.050	<0.050	<0.05	<0.05	<0.05
n-Propylbenzene		<0.050	<0.050	<0.05	<0.05	<0.05
tert-Butylbenzene		<0.050	<0.050	<0.05	<0.05	<0.05
PAHs (mg/kg)						
Naphthalene	4.5	**0.73**	<0.10		<0.10	<0.10
1-Methylnaphthalene					<0.10	<0.10
2-Methylnaphthalene	320				<0.10	<0.10
1,2-Methylnaphthalene		**0.31**	<0.10			
Acenaphthene	98 / 20 (a)	<0.10	<0.10		<0.10	<0.10
Fluorene	101 / 30 (a)	<0.10	<0.10		<0.10	<0.10
Phenanthrene		**0.1**	<0.10		<0.10	<0.10
Fluoranthene	630	<0.10	<0.10		<0.10	<0.10
Pyrene	650	<0.10	<0.10		<0.10	<0.10
Benzo(ghi)perylene		<0.10	<0.10		<0.10	<0.10
Benzo(a)pyrene		<0.10	<0.10		<0.10	<0.10
Benzo(a)anthracene		<0.10	<0.10		<0.10	<0.10
Benzo(b)fluoranthene		<0.10	<0.10		<0.10	<0.10
Benzo(k)fluoranthene		<0.10	<0.10		<0.10	<0.10
Chrysene		**0.29**	<0.10		<0.10	<0.10
Dibenzo(a,h)anthracene		<0.10	<0.10		<0.10	<0.10
Indeno(1,2,3-cd)pyrene		<0.10	<0.10		<0.10	<0.10
Total cPAH TEQ	0.14	**0.0029**	NA		NA	NA

(a) Soil concentrations protective of terrestrial ecological receptors apply to soil above a depth of 15 feet below ground surface.
(b) MTCA Method A cleanup level is 30 mg/kg when benzene is present and 100 mg/kg when benzene is not present.
BOLD = Analyte found above detection limit.
Box = Exceeds MTCA Method A Cleanup Level.

TABLE 2
PHASE II ESA GROUNDWATER ANALYTICAL RESULTS OF DETECTED CONSTITUENTS FROM LOCATIONS REPRESENTATIVE OF CURRENT SITE CONDITIONS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location / Sample Location ID / Lab Sample ID / Sample Date	Preliminary Cleanup levels	B-B6 B6 H2O 5/22/2008	B-B7 B7 H2O 5/22/2008	B-B8 B8 H2O 5/24/2008	C-B2 B2 H2O 5/22/2008
TOTAL PETROLEUM HYDROCARBONS (µg/L)					
Diesel-Range	500	<200	<200	<200	<200
Oil-Range	500	<400	<400	<400	<400
Gasoline-Range	800	<100	<100	**1,900**	<100
PAHs (µg/L)					
2-Methylnaphthalene	32	<0.2	<0.2	<0.2	<0.2
1-Methylnaphthalene	160	<0.2	<0.2	<0.2	<0.2
Acenaphthene	960	<0.2	<0.2	<0.2	<0.2
Fluorene	640	<0.2	<0.2	<0.2	<0.2
Phenanthrene	--	<0.2	<0.2	<0.2	<0.2
Fluoranthene	640	<0.2	<0.2	<0.2	<0.2
Pyrene	480	<0.2	<0.2	<0.2	<0.2
Benzo(g,h,i)perylene	--	<0.2	<0.2	<0.2	<0.2
Naphthalene	160	<0.2	<0.2	**3,700**	<0.2
Anthracene	4,800	<0.2	<0.2	<0.2	<0.2
cPAHs (µg/L)					
Benzo(a)pyrene	0.12	<0.2	<0.2	<0.2	<0.2
Benzo(a)anthracene	see total cPAHs	<0.2	<0.2	<0.2	<0.2
Benzo(b)fluoranthene	see total cPAHs	<0.2	<0.2	<0.2	<0.2
Benzo(k)fluoranthene	see total cPAHs	<0.2	<0.2	<0.2	<0.2
Chrysene	see total cPAHs	<0.2	<0.2	<0.2	<0.2
Dibenzo(a,h)anthracene	see total cPAHs	<0.2	<0.2	<0.2	<0.2
Indeno(1,2,3-cd)pyrene	see total cPAHs	<0.2	<0.2	<0.2	<0.2
Total cPAHs - TEQ	0.12	NA	NA	NA	NA
BTEX (µg/L)					
Benzene	5.0	**1.4**	<1.0	**84**	<1.0
Ethylbenzene	700	<1.0	<1.0	**77**	<1.0
Toluene	640	<1.0	<1.0	**5.4**	<1.0
Xylenes	1,600	<1.0	<1.0	**70**	<1.0
VOCs (µg/L)					
Acetone	800	<10.0	<10.0	**37**	<10.0
2- Butanone (MEK)	4,800	<10.0	<10.0	**6.9**	<10.0
1,2,4-Trimethylbenzene	400	<1.0	<1.0	**16**	<1.0
1,3,5-Trimethylbenzene	400	<1.0	<1.0	**4**	<1.0
Isopropylbenzene	--	<1.0	<1.0	**1.7**	<1.0
Methyl-t-butyl ether	24	<1.0	<1.0	<1.0	<1.0
tert-Butylbenzene		<1.0	<1.0	**2**	<1.0

BOLD = analyte found above detection limit.
Box = exceeds MTCA Method A Cleanup Level.

-- Indicates no cleanup level criteria available.

TABLE 3
SUMMARY OF REMEDIAL INVESTIGATION SOIL AND GROUNDWATER SAMPLE LOCATIONS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Location ID	Location	Data Gap Addressed	Sample Types	Surface Soil Analyses	Subsurface Soil Analyses	Groundwater/ Stormwater Analyses
A-B1	Area A	Verify effectiveness of interim cleanup action, characterize surface soil conditions in area of former remediation soil piles.	Surface Soil; Subsurface Soil [backfill testing (2.5-3.25 ft BGS); no excavation bottom sample- unable to identify visually	TPH-HCID (a), Metals (b), PAHs	TPH-HCID (a), Metals (b), PAHs	--
A-B2	Area A	Verify effectiveness of interim cleanup action, characterize surface soil conditions in area of former remediation soil piles.	Surface Soil; Subsurface Soil [backfill testing (1-2 ft BGS); no excavation bottom sample- unable to identify visually	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	TPH-HCID (a), Metals (b), PAHs	--
MW-3	Area A	Verify effectiveness of interim cleanup action, evaluate groundwater quality, characterize surface soil conditions in area of former remediation soil piles.	Surface Soil; Subsurface Soil [backfill testing (2.5-3.5 ft BGS); no excavation bottom sample unable to identify visually; Groundwater sample from MW-3	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	TPH-HCID (a), Metals (b), PAHs
MW-4	Area A	Verify effectiveness of interim cleanup action, evaluate groundwater quality, characterize surface soil conditions in area of former remediation soil piles.	Surface Soil; Subsurface Soil [backfill testing (2.5-3.5 ft BGS); no excavation bottom sample unable to identify visually; Groundwater sample from MW-4	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	TPH-HCID (a), Metals (b), PAHs
A-S1	Area A	Evaluate surface soil conditions in area of former remediation soil piles.	Surface Soil	Metals (b), PAHs, PCBs	--	--
A-S2	Area A	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	TPH-HCID (a), Metals (b), PAHs, PCBs	--	--
A-S3	Area A	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	TPH-HCID (a), Metals (b), PAHs	--	--
A-GP-1	Area A	Quality of gravel stock piles	Surface (stockpile)	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--	--
A-GP-2	Area A	Quality of gravel stock piles	Surface (stockpile)	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--	--
A-GP-3	Area A	Quality of gravel stock piles	Surface (stockpile)	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--	--
A-GP-4	Area A	Quality of gravel stock piles	Surface (stockpile)	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--	--
A-GP-5	Area A	Quality of gravel stock piles	Surface (stockpile)	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--	--
A-GP-6	Area A	Quality of gravel stock piles	Surface (stockpile)	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--	--
SW-1	Area B	Evaluate stormwater quality at the most downgradient stormwater catch basin on Site	Stormwater	--	--	TPH-HCID (a), Metals (c), VOCs, PAHs
MW-1	Area B	Evaluate groundwater quality downgradient of Area C and/or Area D.	Groundwater	--	--	TPH-HCID (a), Metals (b), PAHs

TABLE 3
SUMMARY OF REMEDIAL INVESTIGATION SOIL AND GROUNDWATER SAMPLE LOCATIONS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Location ID	Location	Data Gap Addressed	Sample Types	Surface Soil Analyses	Subsurface Soil Analyses	Groundwater/ Stormwater Analyses
C-SS3	Area B	Evaluate near-surface soil in undisturbed area north of GWP soils.	Subsurface Soil (6-7.5 ft BGS)	--	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--
MW-5	Area C	Evaluate conditions within former vehicle processing area.	Subsurface Soil (capillary fringe, 25-25.5 ft BGS and 29-29.5 ft BGS); Groundwater sample from MW-5	--	TPH-HCID (a), Metals (b), PAHs	TPH-HCID (a), Metals (b), PAHs
MW-6	Area C	Verify effectiveness of interim cleanup action, evaluate groundwater quality, characterize surface soil conditions in area of former remediation soil piles.	Surface Soil; Subsurface Soil [backfill testing (3-3.5 ft BGS); excavation bottom (based on visual, 12.5-13.5 ft BGS)]; Groundwater sample from MW-6	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	TPH-HCID (a), Metals (b), PAHs	TPH-HCID (a), Metals (b), PAHs
C-B1	Area C	Verify effectiveness of interim cleanup action, characterize surface soil conditions in area of former remediation soil piles.	Surface Soil; Subsurface Soil [backfill testing (1.5-2.25 ft BGS); excavation bottom (based on visual, 5.5-6.5 ft BGS)]	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	TPH-HCID (a), Metals (b), PAHs	--
C-S1	Area C	Evaluate surface soil conditions in area of former remediation soil piles.	Surface Soil	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--	--
C-S2	Area C	Evaluate surface soil conditions in area of former remediation soil piles.	Surface Soil	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--	--
C-S3	Area C	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	TPH-HCID (a), TPH-Dx, Metals (b), PAHs, PCBs	--	--
C-S4	Area C	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	--	--	--
C-S5	Area C	Evaluate surface soil conditions in area of former remediation soil piles.	Surface Soil	TPH-HCID (a), Metals (b), PAHs	--	--
C-S6	Area C	Evaluate surface soil conditions in area of former remediation soil piles.	Surface Soil	TPH-HCID (a), TPH-Dx, Metals (b), PAHs, PCBs	--	--
C-S7	Area C	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	PAHs	--	--
C-S8	Area C	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	PAHs	--	--
C-S9	Area C	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	PAHs	--	--
C-S10	Area C	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	PAHs	--	--

TABLE 3
SUMMARY OF REMEDIAL INVESTIGATION SOIL AND GROUNDWATER SAMPLE LOCATIONS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Location ID	Location	Data Gap Addressed	Sample Types	Surface Soil Analyses	Subsurface Soil Analyses	Groundwater/ Stormwater Analyses
C-S11	Area C	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	PAHs	--	--
C-S12	Area C	Evaluate surface soil in undisturbed portions of the area due to previous use.	Surface Soil	PAHs	--	--
C-SS1	Area C	Evaluate near-surface soil in undisturbed area north of GWP soils.	Subsurface Soil (7-8 ft BGS)	--	TPH-HCID (a), TPH-Dx, Metals (b), PAHs	--
C-SS2	Area C	Evaluate near-surface soil in undisturbed area north of GWP soils.	Subsurface Soil (10-11 ft BGS)	--	TPH-HCID (a), Metals (b), PAHs	--
MW-7	Area D	Former underground storage tank area north of shop.	Subsurface Soil (capillary fringe); Groundwater sample from MW-7	--	TPH-Dx	TPH-Dx, VOCs, Metals, PAHs
MW-8	Area D	Former underground storage tank area west of house/ office.	Subsurface Soil (capillary fringe); Groundwater sample from MW-8	--	TPH-Dx, TPH-Gx, BETX	TPH-Dx, VOCs, Metals, PAHs
D-B1	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 12-13 ft BGS); Unable to collect groundwater grab sample	--	VOCs, Metals (b), PAHs	--
D-B2	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 13-14 ft BGS)	--	TPH-Dx, VOCs, Metals (b), PAHs	--
D-B3	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 13-14 ft BGS)	--	TPH-HCID (a), TPH-Dx, Metals (b)	--
D-B4	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 15-15.5 ft BGS)	--	TPH-Dx	--
D-B5	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 14-15 ft BGS)	--	TPH-Dx	--
D-B6	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 17.5-19 ft BGS)	--	TPH-Dx	--
D-B7	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 17.5-18.25 ft BGS)	--	TPH-Dx	--
D-B8	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 17.5-18.25 ft BGS)	--	TPH-Dx, TPH-Gx, VOCs	--
D-B9	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 29-30 ft BGS)	--	TPH-Dx, VOCs, PAHs, Metals (b)	--
D-B10	Area D	Adjacent to the underground waste oil tank	Subsurface Soil (capillary fringe, 19-20 ft BGS)	--	TPH-Dx	--
D-S1	Area D	Evaluate surface soil in undisturbed portions of the area based on data from nearby samples in Area C	Surface Soil	PAHs	--	--
D-S2	Area D	Evaluate surface soil in undisturbed portions of the area based on data from nearby samples in Area C	Surface Soil	PAHs	--	--

TABLE 3
SUMMARY OF REMEDIAL INVESTIGATION SOIL AND GROUNDWATER SAMPLE LOCATIONS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Location ID	Location	Data Gap Addressed	Sample Types	Surface Soil Analyses	Subsurface Soil Analyses	Groundwater/ Stormwater Analyses
D-SS1	Area D	Evaluate near-surface soil in undisturbed area north of GWP soils.	Subsurface Soil (10-11 ft BGS)	--	TPH-HCID (a), PAHs, Metals (b)	--
D-SS2	Area D	Evaluate near-surface soil in undisturbed area north of GWP soils.	Subsurface Soil (11-12 ft BGS)	--	TPH-HCID (a), TPH-Dx, PAHs, Metals (b)	--
D-SS3	Area D	Evaluate near-surface soil in undisturbed area north of GWP soils.	Subsurface Soil (5-6.25 ft BGS)	--	TPH-HCID (a), PAHs, Metals (b)	--
D-SS4	Area D	Evaluate surface soil in undisturbed portions of the area due to previous use.	Subsurface Soil (6-8 ft BGS)	--	TPH-HCID (a), TPH-Dx, TPH-Gx, BETX, VOCs, PAHs, Metals (b)	TPH-HCID (a), TPH-Dx, TPH-Gx, BTEX, VOCs, PAHs,
D-SS5	Area D	Evaluate surface soil in undisturbed portions of the area due to previous use.	Subsurface Soil (12.5-13.25 ft BGS)	--	TPH-HCID	--

(a) Follow-up analysis for TPH-Dx and TPH-G/BTEX was conducted on samples based on HCID detections.

(b) Metals = (MTCA 5 Metals) arsenic, cadmium, chromium, lead, and mercury.

TABLE 4
REMEDIAL INVESTIGATION GROUNDWATER ELEVATIONS
VERBEEK WRECKING SITE
BOTHELL, WASHINGTON

Well ID	Total Well Depth (ft)	Top of Casing Elevation (b)	8/25/2009 DTW (a)	8/25/2009 Groundwater Elevation	10/8/2009 DTW (a)	10/8/2009 Groundwater Elevation
MW-1	undetermined	273.02	12.06	260.96	12.67	260.35
MW-2	undetermined	270.28	NM	NM	8.10	262.18
MW-3	30.5	267.58	6.28	261.30	6.83	260.75
MW-4	20.0	267.81	5.40	262.41	6.11	261.70
MW-5	34.5	267.46	6.51	260.95	5.83	261.63
MW-6	21.0	268.16	6.79	261.37	6.63	261.53
MW-7	26.0	283.27	18.87	264.40	19.52	263.75
MW-8	22.5	276.16	12.98	263.18	13.61	262.55

DTW = Depth to water
NM = Not measured
-- = Not Applicable

(a) Measured from top of casing at the survey point.
(b) Top of casing elevation (ft MSL) surveyed by Western Engineers Inc. on 9/30/09

TABLE 5
PRELIMINARY SOIL CLEANUP LEVELS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Constituent	Protective of Direct Human Contact: MTCA Method B Unrestricted Land Use Carcinogen	Protective of Direct Human Contact: MTCA Method B Unrestricted Land Use Non-Carcinogen	Protective of Groundwater as Drinking Water: MTCA Method B (a)	Protective of Terrestrial Ecological Receptors: Primary Contaminant Soil Concentrations Protective of Terrestrial Ecological Receptors Unrestricted Land Use (b)	Adjustments: PQL (b)	Adjustments: Soil Background (c)	Preliminary Cleanup Level
METALS (mg/kg)							
Arsenic	0.67	24	20 (d)	95	5	7	20
Barium	--	16,000	1700 (k)	1,250	50	--	16,000/1,250 (e)
Cadmium	--	80	0.69 (k)	25	1	1.0	25
Chromium III	--	120,000	3,600,000	42	5	48	120,000/48 (e)
Lead	--	250 (f)	-- (g)	220	5	24	250/220 (e)
Mercury	--	24	2.1 (k)	0.7	0.05	0.07	24 / 0.7 (e)
TOTAL PETROLEUM HYDROCARBONS (mg/kg)							
Diesel-Range	--	2,000 (h)	2,000 (h)	460	20	--	2,000/460 (e,h)
Gasoline-Range	--	100/30 (h, i)	100/30 (h, i)	200	5.0	--	100/30 (h,i)
Oil-Range	--	2,000 (h)	2,000 (h)	--	50	--	2,000 (h)
BTEX (mg/kg)							
Benzene	18	320	0.03	--	0.02	--	0.03
Ethylbenzene	--	8,000	6.0	--	0.05	--	6.0
Toluene	--	6,400	4.7	--	0.05	--	4.7
Xylenes (total)	--	16,000	15	--	0.05	--	15
m,p-Xylene	--	160,000	84	--	0.05	--	84
o-Xylene	--	160,000	92	--	0.05	--	92
Ethylene Glycol	--	160,000	-- (g)	--	--	--	160,000
VOLATILES (mg/kg)							
1,2,4-Trimethylbenzene	--	4,000	-- (g)	--	0.05	--	4,000
1,3,5-Trimethylbenzene	--	4,000	-- (g)	--	0.05	--	4,000
Isopropylbenzene	--	--	--	--	0.05	--	--
Isopropyltoluene	--	--	--	--	0.05	--	--
n-Butylbenzene	--	--	--	--	0.05	--	--
n-Propylbenzene	--	--	--	--	0.05	--	--
tert-Butylbenzene	--	--	--	--	0.05	--	--
p-Isopropyltoluene	--	--	--	--	0.05	--	--
sec-Butylbenzene	--	--	--	--	0.05	--	--

TABLE 5
PRELIMINARY SOIL CLEANUP LEVELS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Constituent	Protective of Direct Human Contact: MTCA Method B Unrestricted Land Use Carcinogen	Protective of Direct Human Contact: MTCA Method B Unrestricted Land Use Non-Carcinogen	Protective of Groundwater as Drinking Water: MTCA Method B (a)	Protective of Terrestrial Ecological Receptors: Primary Contaminant Soil Concentrations Protective of Terrestrial Ecological Receptors Unrestricted Land Use (b)	Adjustments: PQL (b)	Adjustments: Soil Background (c)	Preliminary Cleanup Level
PAHS (mg/kg)							
Naphthalene	--	1,600	4.5	--		--	4.5
1-Methylnaphthalene	--	--	-- (g)	--	0.10	--	--
2-Methylnaphthalene	--	320	-- (g)	--	0.10	--	320
1,2-Methylnaphthalenes		--	--	--	--	--	--
Acenaphthene	--	4,800	98	--	0.10	--	98 / 20 (e)
Fluorene	--	3,200	101	--	0.10	--	101 / 30 (e)
Phenanthrene	--	--	--	--	0.10	--	
Fluoranthene	--	3,200	630	--	0.10	--	630
Pyrene	--	2,400	650	--	0.10	--	650
Benzo(g,h,i)perylene	--	--	--	--	0.10	--	--
Benzo(a)pyrene	see total cPAHs	--	see total cPAHs	--	0.10	--	see total cPAHs
Benzo(a)anthracene	see total cPAHs	--	see total cPAHs	--	0.10	--	see total cPAHs
Benzo(b)fluoranthene	see total cPAHs	--	see total cPAHs	--	0.10	--	see total cPAHs
Benzo(k)fluoranthene	see total cPAHs	--	see total cPAHs	--	0.10	--	see total cPAHs
Chrysene	see total cPAHs	--	see total cPAHs	--	0.10	--	see total cPAHs
Dibenzo(a,h)anthracene	see total cPAHs	--	see total cPAHs	--	0.10	--	see total cPAHs
Indeno(1,2,3-cd)pyrene	see total cPAHs	--	see total cPAHs	--		--	see total cPAHs
Total cPAH - benzo(a)pyrene TEQ (i)	0.14	--	2.3 (k)		--	--	0.14

Shaded cell indicates basis for screening levels.

-- Indicates no criterion available.

(a) Calculated using fixed parameter 3-phase partitioning model, WAC 173-340-747(4) and preliminary groundwater cleanup levels shown in Table 2 of this report.

(b) Practical quantitation limit calculated using ten times Analytical Resources, Inc.'s 2008 method detection limit.

(c) From Ecology's Natural Background Soil Metals Concentrations in Puget Sound (1994). Used 90th percentile for Puget Sound.

(d) The MTCA Method A soil cleanup level for unrestricted site use was used for arsenic because it was established based on adjustments for background. From Responsiveness Summary for the Amendments to the MTCA Cleanup Regulation Chapter 173-340 WAC 1991.

(e) Soil concentrations protective of terrestrial ecological receptors apply to soil above a depth of 15 feet below ground surface.

(f) No MTCA Method B criteria available. MTCA Method A criteria based on preventing unacceptable blood lead levels is presented.

(g) Value cannot be calculated because Koc value is not available for this constituent.

(h) MTCA Method A soil cleanup levels for unrestricted land use.

(i) MTCA Method A cleanup level is 30 mg/kg when benzene is present and 100 mg/kg when benzene is not present.

(j) A toxicity equivalency quotient (TEQ) will be completed for each sample containing carcinogenic PAHs above reporting limits and the sum of the TEQs will be compared to the benzo(a)pyrene cleanup level in accordance with 173-340-708(8)(e).

(k) Critera based on protection of groundwater not applicable based on empirical demonstartion that groundwater not affected

TABLE 6
PRELIMINARY GROUNDWATER CLEANUP LEVELS
VERBEEK WRECKING
BOTHELL, WASHINGTON

	Federal and State Criteria Protective of Drinking Water						MTCA Method B Unadjusted Site Screening Levels		MTCA Method B Adjusted Preliminary Cleanup Levels
Constituent	Federal MCL	State MCL	MTCA Method A	MTCA Method B (Formula Value) Carcinogen	MTCA Method B - Non Carcinogen	Concentration Associated with 10^{-5} Risk (if carcinogen)	**Protective of Drinking Water**	PQL (a)	**Protective of Drinking Water**
TOTAL METALS (µg/L)									
Arsenic	10	10	5.0	0.058	4.8	0.58	0.58	0.20	5.0 (b)
Barium	2,000	2,000	--	--	3,200	--	2,000	0.50	2,000
Cadmium	5.0	5.0	5.0		8.0	--	5.0	0.20	5.0
Chromium (total)	100	100	50	--	--	--	100	0.50	100
Chromium (III)	--	100	--	--	24,000	--	100	--	100
Chromium (VI)	--	100	--	--	48	--	48	--	48
Lead	15	15	15	--	--	--	15	1.0	15
TOTAL PETROLEUM HYDROCARBONS (µg/L)									
Diesel-Range	--	--	500	--	--	--			500
Gasoline-Range	--	--	1,000/800 (c)	--	--	--			1,000/800 (c)
Oil-Range	--	--	500	--	--	--			500
BTEX (µg/L)									
Benzene	5.0	5.0		0.8	32	8.0	5	1.0	5
Ethylbenzene	700	700		--	800	--	700	1.0	700
Toluene	1,000	1,000		--	640	--	640	1.0	640
Xylenes (total)	10,000	10,000		--	1,600	--	1,600	1.0	1,600
VOLATILES (µg/L)									
Acetone	--	--	--	--	800	--	800	10.0	800
2- Butanone (MEK)	--	--	--	--	4,800	--	4,800	10.0	4,800
1,2,4-Trimethylbenzene	--	--	--	--	400	--	400	1.0	400
1,3,5-Trimethylbenzene	--	--	--	--	400	--	400	1.0	400
Isopropylbenzene	--	--	--	--	--	--	--	1.0	--
n-Propylbenzene	--	--	--	--	--	--	--	1.0	--
Methyl-t-butyl ether	--	--	--	24	6,900	--	24	1.0	24
tert-Butylbenzene	--	--	--	--	--	--			

TABLE 6
PRELIMINARY GROUNDWATER CLEANUP LEVELS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Constituent	Federal and State Criteria Protective of Drinking Water						MTCA Method B Unadjusted Site Screening Levels		MTCA Method B Adjusted Preliminary Cleanup Levels
	Federal MCL	State MCL	MTCA Method A	MTCA Method B (Formula Value) Carcinogen	MTCA Method B - Non Carcinogen	Concentration Associated with 10^{-5} Risk (if carcinogen)	**Protective of Drinking Water**	PQL (a)	**Protective of Drinking Water**
PAHs (µg/L)									
Naphthalene	--	--	160 (d)	--	160	--	160 (d)	0.38	160 (d)
2-Methylnaphthalene	--	--	160 (d)	--	32 (e)	--	32 (e)	0.32	32 (e)
1-Methylnaphthalene	--	--	160 (d)	--	--	--	160 (d)	0.41	160 (d)
Acenaphthene	--	--	--	--	960	--	960	0.42	960
Fluorene	--	--	--	--	640	--	640	0.39	640
Phenanthrene	--	--	--	--	--	--	--	--	--
Anthracene	--	--	--	--	4,800	--	4,800	0.35	4,800
Fluoranthene	--	--	--	--	640	--	640	0.26	640
Pyrene	--	--	--	--	480	--	480	0.35	480
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--
cPAHs (µg/L)									
Benzo(a)pyrene	0.20	0.20	see total cPAHs	0.012	--	0.12	0.12	0.014	0.12
Benzo(a)anthracene	--	--	see total cPAHs	see total cPAHs	--	--	see total cPAHs	0.020	see total cPAHs
Benzo(b)fluoranthene	--	--	see total cPAHs	see total cPAHs	--	--	see total cPAHs	0.017	see total cPAHs
Benzo(k)fluoranthene	--	--	see total cPAHs	see total cPAHs	--	--	see total cPAHs	0.036	see total cPAHs
Chrysene	--	--	see total cPAHs	see total cPAHs	--	--	see total cPAHs	0.019	see total cPAHs
Dibenzo(a,h)anthracene	--	--	see total cPAHs	see total cPAHs	--	--	see total cPAHs	0.014	see total cPAHs
Indeno(1,2,3-cd)pyrene	--	--	see total cPAHs	see total cPAHs	--	--	see total cPAHs	0.017	see total cPAHs
Total cPAHs - TEQ	--	--	0.10	0.012	--	0.12 (f)	0.12	--	0.12 (f)

Shaded cell indicates basis for screening levels.

-- Indicates no cleanup level criteria available.

(a) Practical quantitation limit based on reporting limit from previous investigation except for metals. Metals PQL is based on Analytical Resources, Inc. laboratory reporting limit for analytical method 6020.

(b) Ecology's potable groundwater Method A Cleanup Screening Level for arsenic is based on background concentrations of this metal in groundwater (WAC 173-340-900; Table 720-1. As such, the proposed Cleanup Screening Level for arsenic of 5 ug/L is based on the MTCA Method A level for potable groundwater.

(c) Preliminary cleanup level of gasoline-range petroleum hydrocarbons is 800 ug/L if benzene is present, or is 1,000 ug/L if no detectable benzene is present in groundwater.

(d) Cleanup level is a total value for naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene.

(e) The concentration of 2-methylnapthalene cannot exceed 32 ug/L. The total concentration of naphthalene, 1-methylnaphthelene, and 2-methylnaphthalene cannot exceed 160 ug/L.

(f) A toxicity equivalency quotient (TEQ) will be completed for each sample containing carcinogenic PAHs above reporting limits and compared to the benzo(a)pyrene cleanup level protective of drinking water in accordance with 173-340-708(8)(d).

e

TABLE 7
SOIL CONSTITUENTS OF CONCERN EVALUATION
VERBEEK WRECKING
BOTHELL, WASHINGTON

Analyte	Number of Soil Samples Analyzed	Number of Samples with Detected Concentrations	Frequency of Detection (%)	Number of Soil Samples with Concentrations Exceeding Cleanup Levels	Units	Proposed Cleanup Level	Max Detection (Includes Removed Soil Data)	PCOC?	Rationale Inclusion or Exclusion as PCOC
METALS									
Arsenic	99	7	7.1	1	mg/kg	20	24	No	Analyte only exceeded the cleanup level in one location, at 19-20 ft BGS, representing only 1 % of the samples tested. Analyte not considered a PCOC due to the depth and thelow frequency of detection.
Barium	39	4	10.3	0	mg/kg	1700 /1250 (a)	78	No	Analyte did not exceed proposed cleanup level.
Cadmium	100	10	10.0	0	mg/kg	25	5.2	No	Analyte did not exceed proposed cleanup level.
Chromium	99	93	93.9	0	mg/kg	120,000 / 48 (a)	45	No	Analyte did not exceed proposed cleanup level.
Lead	103	64	62.1	2	mg/kg	250 / 220 (a)	1,200	Yes	Analyte is present in lead acid car batteries and was frequently detected (63%).
Mercury	99	29	29.3	0	mg/kg	2.1 / 0.7 (a)	0.059	No	Analyte did not exceed proposed cleanup level.
PETROLEUM HYDROCARBONS									
Gasoline range	323	28	8.7	14	mg/kg	100 / 30 (b)	28,000	Yes	Analyte exceeded the cleanup level.
Diesel range	345	32	9.3	7	mg/kg	2000 / 460 (a)	3,000	Yes	Analyte exceeded the cleanup level.
Motor oil range	332	50	15.1	5	mg/kg	2000	44,000	Yes	Analyte exceeded the cleanup level.
BTEX									
Benzene	268	16	6.0	15	mg/kg	0.03	26	Yes	Analyte exceeded the cleanup level.
Ethylbenzene	268	22	8.2	4	mg/kg	6.0	3,100	Yes	Analyte exceeded the cleanup level.
Toluene	268	28	10.4	4	mg/kg	4.7	240	Yes	Analyte exceeded the cleanup level.
Xylenes (total)	268	3	1.1	5	mg/kg	15	540	Yes	Analyte exceeded the cleanup level.
VOLATILES									
1,2,4-Trimethylbenzene	44	2	4.5	0	mg/kg	4,000	50	No	Analyte did not exceed proposed cleanup level.
1,3,5-Trimethylbenzene	44	2	4.5	0	mg/kg	4,000	17	No	Analyte did not exceed proposed cleanup level.
2-Butanone (MEK)	27	0	--	--	mg/kg	--	--	No	Analyte was not detected, was detected below cleanup levels in groundwater.
Acetone	27	0	--	--	mg/kg	--	--	No	Analyte was not detected, was detected below cleanup levels in groundwater.
Ethylene Glycol	22	1	4.5	0	mg/kg	160,000	87	No	Analyte did not exceed proposed cleanup level.
Isopropylbenzene	44	2	4.5	--	mg/kg	--	1.7	No	Analyte detected at low concentration and has no established cleanup criteria.
Isopropyltoluene	39	2	5.1	--	mg/kg	--	1.7	No	Analyte detected at low concentration and has no established cleanup criteria.
n-Butylbenzene	44	2	4.5	--	mg/kg	--	4.9	No	Analyte detected at low concentration and has no established cleanup criteria.
n-Propylbenzene	44	2	4.5	--	mg/kg	--	6.6	No	Analyte detected at low concentration and has no established cleanup criteria.
p-Isopropyltoluene	4	1	25.0	--	mg/kg	--	1.6	No	Analyte detected at low concentration and has no established cleanup criteria.
sec-Butylbenzene	59	1	1.7	--	mg/kg	--	1.5	No	Analyte detected at low concentration and has no established cleanup criteria.
tert-Butylbenzene	44	1	2.3	--	mg/kg	--	0.07	No	Analyte detected at low concentration and has no established cleanup criteria.

TABLE 7
SOIL CONSTITUENTS OF CONCERN EVALUATION
VERBEEK WRECKING
BOTHELL, WASHINGTON

Analyte	Number of Soil Samples Analyzed	Number of Samples with Detected Concentrations	Frequency of Detection (%)	Number of Soil Samples with Concentrations Exceeding Cleanup Levels	Units	Proposed Cleanup Level	Max Detection (Includes Removed Soil Data)	PCOC?	Rationale Inclusion or Exclusion as PCOC
PAHs									
Naphthalene	96	5	5.2	3	mg/kg	4.5	9.2	Yes	Analyte exceeded the cleanup level.
1-Methylnaphthalene	27	1	3.7	--	mg/kg	--	0.15	No	Analyte detected at low concentration and has no established cleanup criteria.
2-Methylnaphthalene	27	1	3.7	0	mg/kg	320	0.33	No	Analyte did not exceed proposed cleanup level.
Acenaphthene	56	1	1.8	0	mg/kg	98	0.15	No	Analyte did not exceed proposed cleanup level.
Fluorene	56	2	3.6	0	mg/kg	101	0.85	No	Analyte did not exceed proposed cleanup level.
Phenanthrene	56	2	3.6	--	mg/kg	--	0.96	No	Analyte detected at low concentration and has no established cleanup criteria.
Anthracene	43	0	0.0	--	mg/kg	--	--	No	Analyte was not detected, was detected below cleanup levels in groundwater.
Fluoranthene	56	1	1.8	0	mg/kg	630	0.16	No	Analyte did not exceed proposed cleanup level.
Pyrene	56	2	3.6	0	mg/kg	650	0.42	No	Analyte did not exceed proposed cleanup level.
Benzo(g,h,i)perylene	56	0	0.0	--	mg/kg	--	--	No	Analyte detected at low concentration in water and has no established cleanup criteria.
cPAHs									
Benzo(a)pyrene	107	13	12.1	--	mg/kg	TEQ	1.3	Yes	See TEQ.
Benzo(a)anthracene	107	14	13.1	--	mg/kg	TEQ	0.68	Yes	See TEQ.
Benzo(b)fluoranthene	107	12	11.2	--	mg/kg	TEQ	0.88	Yes	See TEQ.
Benzo(k)fluoranthene	107	9	8.4	--	mg/kg	TEQ	0.69	Yes	See TEQ.
Chrysene	107	18	16.8	--	mg/kg	TEQ	0.90	Yes	See TEQ.
Dibenz(a,h)anthracene	107	7	6.5	--	mg/kg	TEQ	0.23	Yes	See TEQ.
Indeno(1,2,3-cd)pyrene	107	9	8.4	--	mg/kg	TEQ	1.1	Yes	See TEQ.
cPAH TEQ	107	19	17.8	7	mg/kg	0.14	1.667	Yes	Analyte exceeded the cleanup level.

(a) Point of Compliance for cleanup level protective of terrestrial plants and animals is 15 ft BGS.
See Table 3 for cleanup level development.

(b) Gasoline-range petroleum hydrocarbon cleanup level is 100 mg/kg in areas where benzene is not present and 30 mg/kg where benzene is present.

TEQ = Toxicity Equivalency Quotient. TEQ is based on individual Toxicity Equivalency Factors (TEFs) of benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene.

TABLE 8
GROUNDWATER CONSTITUENTS OF CONCERN EVALUATION
VERBEEK WRECKING
BOTHELL, WASHINGTON

Analyte	Number of Groundwater Samples Analyzed	Number of Samples with Detected Concentrations	Frequency of Detection (%)	Units	Cleanup Level	Max Detection	Number of Groundwater Samples with Concentrations Exceeding Cleanup Levels	PCOC?	Rationale Inclusion or Exclusion as PCOC
DISSOLVED METALS									
Arsenic	10	7	70.0	ug/L	5	5.2	1.0	Yes	Analyte exceeded groundwater cleanup level at one location
Barium	0	--	--	ug/L	--	--	--	No	Analyte detected infrequently in soil at concentrations below the cleanup level
Cadmium	10	0	--	ug/L	--	--	--	No	Analyte did not exceed proposed groundwater cleanup level.
Chromium (total)	10	0	--	ug/L	--	--	--	No	Analyte not commonly associated with automobile wrecking yards
Lead	10	0	--	ug/L	--	--	--	No	Analyte did not exceed proposed groundwater cleanup level
Mercury	10	0	--	ug/L	--	--	--	No	Analyte did not exceed proposed groundwater cleanup level
PETROLEUM HYDROCARBONS									
Gasoline-Range	16	2	12.5	ug/L	1000/800 (a)	1,900	1	Yes	Analyte exceeded groundwater cleanup level at one location
Diesel-Range	20	4	20.0	ug/L	500	660	1	Yes	Analyte exceeded groundwater cleanup level at one location
Motor oil-Range	20	1	5.0	ug/L	500	460	0	No	Analyte did not exceed proposed groundwater cleanup level
BTEX									
Benzene	9	3	33.3	ug/L	5	84	2	Yes	Analyte exceeded groundwater cleanup level at one location
Ethylbenzene	9	2	22.2	mg/kg	700	77	0	No	Analyte did not exceed proposed groundwater cleanup level
Toluene	9	1	11.1	ug/L	640	5.4	0	No	Analyte did not exceed proposed groundwater cleanup level
Xylenes (total)	9	4	44.4	ug/L	1600	70	0	No	Analyte did not exceed proposed groundwater cleanup level
VOLATILES									
1,2,4-Trimethylbenzene	15	2	13.3	ug/L	400	54	0	No	Analyte did not exceed proposed groundwater cleanup level
1,3,5-Trimethylbenzene	15	2	13.3	ug/L	400	12	0	No	Analyte did not exceed proposed groundwater cleanup level
2- Butanone (MEK)	15	1	6.7	ug/L	4,800	6.9	0	No	Analyte did not exceed proposed groundwater cleanup level
Acetone	15	1	--	ug/L	800	37	0	No	Analyte did not exceed proposed groundwater cleanup level
Ethylene Glycol									
Isopropylbenzene	15	2	13.3	ug/L	--	2.4	0	No	Analyte detected at low concentration and has no cleanup level
Isopropyltoluene	7	0	--	ug/L	--	--	--	No	Analyte detected at low concentration and has no cleanup level
Methyl-t-butyl ether	15	1	6.7	ug/L	24	1.60	0	No	Analyte did not exceed proposed groundwater cleanup level
n-Butylbenzene	10	0	--	ug/L	--	--	--	--	Analyte was not detected, was detected below cleanup level in soil
n-Propylbenzene	10	1	10.0	ug/L	--	4.6	--	--	Analyte detected at low concentration and has no cleanup level
p-Isopropyltoluene	3	0	--	ug/L	--	--	--	--	Analyte was not detected, was detected below cleanup level in soil
sec-Butylbenzene	10	0	--	ug/L	--	--	--	--	Analyte was not detected, was detected below cleanup level in soil
tert-Butylbenzene	15	1	6.7	ug/L	--	2.0	0	No	Analyte detected at low concentration and has no cleanup level

TABLE 8
GROUNDWATER CONSTITUENTS OF CONCERN EVALUATION
VERBEEK WRECKING
BOTHELL, WASHINGTON

Analyte	Number of Groundwater Samples Analyzed	Number of Samples with Detected Concentrations	Frequency of Detection (%)	Units	Cleanup Level	Max Detection	Number of Groundwater Samples with Concentrations Exceeding Cleanup Levels	PCOC?	Rationale Inclusion or Exclusion as PCOC
PAHs									
Naphthalene	19	6	31.6	ug/L	160	3,700	1	Yes	Analyte exceeded groundwater cleanup level at one location
1-Methylnaphthalene	19	3	15.8	ug/L	160	5.8	0	No	Analyte did not exceed proposed groundwater cleanup level
2-Methylnaphthalene	19	3	15.8	ug/L	32	6.5	0	No	Analyte did not exceed proposed groundwater cleanup level
Acenaphthene	19	3	15.8	ug/L	960	0.38	0	No	Analyte did not exceed proposed groundwater cleanup level
Fluorene	19	3	15.8	ug/L	640	1.0	0	No	Analyte did not exceed proposed groundwater cleanup level
Phenanthrene	19	3	15.8	ug/L	--	0.22	0	No	Analyte detected at low concentration and has no cleanup level
Anthracene	19	2	10.5	ug/L	4,800	0.051	0	No	Analyte did not exceed proposed groundwater cleanup level
Fluoranthene	19	1	5.3	ug/L	640	0.020	0	No	Analyte did not exceed proposed groundwater cleanup level
Pyrene	19	3	15.8	ug/L	480	0.064	0	No	Analyte did not exceed proposed groundwater cleanup level
Benzo(g,h,i)perylene	19	1	5.3	ug/L	--	0.029	0	No	Analyte detected at low concentration and has no cleanup level
cPAHs									
Benzo(a)pyrene	19	0	0.0	ug/L	0.12	--	--	No	Analyte not detected in groundwater
Benzo(a)anthracene	19	0	0.0	ug/L	TEQ	--	--	No	Analyte not detected in groundwater
Benzo(b)fluoranthene	19	0	0.0	ug/L	TEQ	--	--	No	Analyte not detected in groundwater
Benzo(k)fluoranthene	19	0	0.0	ug/L	TEQ	--	--	No	Analyte not detected in groundwater
Chrysene	19	0	0.0	ug/L	TEQ	--	--	No	Analyte not detected in groundwater
Dibenzo(a,h)anthracene	19	0	0.0	ug/L	TEQ	--	--	No	Analyte not detected in groundwater
Indeno(1,2,3-cd)pyrene	19	0	0.0	ug/L	TEQ	--	--	No	Analyte not detected in groundwater
Total cPAHs - TEQ	19	0	0.0	ug/L	0.12	--	--	No	Analyte not detected in groundwater

(a) TPH-G cleanup level is 1,000 ug/L in areas where benzene is not present and 800 ug/L where benzene is present.

TEQ = Toxicity Equivalency Quotient. TEQ is based on individual Toxicity Equivalency Factors (TEFs) of benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene.

TABLE 9
SURFACE WATER CONSTITUENTS OF CONCERN EVALUATION
VERBEEK WRECKING
BOTHELL, WASHINGTON

Analyte	Number of Surface Water Samples Analyzed	Number of Samples with Detected Concentrations	Frequency of Detection (%)	Units	Cleanup Level	Max Detection	Water Samples with Concentrations Exceeding Cleanup Levels	PCOC?	Rationale Inclusion or Exclusion as PCOC
DISSOLVED METALS									
Arsenic	1	1	100.0	ug/L	5	7.3	1	Yes	Analyte exceeded groundwater cleanup level
Barium	0	--	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Cadmium	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Chromium	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Lead	1	1	100.0	ug/L	15	1.1	0	No	Analyte did not exceed the cleanup level
Mercury	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
PETROLEUM HYDROCARBONS									
Gasoline range	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Diesel range	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Motor oil range	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
BTEX									
Benzene	0	--	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Ethylbenzene	0	--	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Toluene	0	--	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Xylenes (total)	0	--	--	ug/L	--	--	--	No	Analyte was not detected in surface water
VOLATILES									
1,2,4-Trimethylbenzene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
1,3,5-Trimethylbenzene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
2-Butanone (MEK)	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Acetone	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Ethylene Glycol	0	--	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Isopropylbenzene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Isopropyltoluene	0	--	--	ug/L	--	--	--	No	Analyte was not detected in surface water
n-Butylbenzene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
n-Propylbenzene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
p-Isopropyltoluene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
sec-Butylbenzene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
tert-Butylbenzene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
PAHs									
Naphthalene	1	1	100.0	ug/L	160	0.028	0	No	Analyte did not exceed the cleanup level
1-Methylnaphthalene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
2-Methylnaphthalene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Acenaphthene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Fluorene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Phenanthrene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Anthracene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Fluoranthene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Pyrene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water

TABLE 9
SURFACE WATER CONSTITUENTS OF CONCERN EVALUATION
VERBEEK WRECKING
BOTHELL, WASHINGTON

Analyte	Number of Surface Water Samples Analyzed	Number of Samples with Detected Concentrations	Frequency of Detection (%)	Units	Cleanup Level	Max Detection	Water Samples with Concentrations Exceeding Cleanup Levels	PCOC?	Rationale Inclusion or Exclusion as PCOC
Benzo(g,h,i)perylene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
cPAHs									
Benzo(a)pyrene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Benzo(a)anthracene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Benzo(b)fluoranthene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Benzo(k)fluoranthene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Chrysene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Dibenz(a,h)anthracene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
Indeno(1,2,3-cd)pyrene	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water
cPAH TEQ	1	0	--	ug/L	--	--	--	No	Analyte was not detected in surface water

TEQ = Toxicity Equivalency Quotient. TEQ is based on individual Toxicity Equivalency Factors (TEFs) of benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, and dibenz(a,h)anthracene.

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		A-B1	A-B1	A-B2	A-B2	A-GP-1
Field Sample ID		A-B1-(0-0.5)	A-B1-(2.5-3.25)	A-B2-(0-0.5)	A-B2-(1-2)	A-GP-1
Begin Sample Depth		0	2.5	0	1	
End Sample Depth	Preliminary	0.5	3.25	0.5	2	
Sample Date	Cleanup	8/20/2009	8/20/2009	8/20/2009	8/20/2009	8/31/2009
Lab Sample ID	Level	0908099-03A	0908099-04A	0908099-01A	0908099-02A	0909004-07A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	100 U	100 U	>100	100 U	>100
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)			25 U		130
Motor Oil	2,000			110		410
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)					
BETX (mg/kg)						
SW8021						
Benzene	0.03					
Ethylbenzene	6					
Toluene	4.7					
Total Xylenes	15					
VOLATILES (mg/kg)						
SW8260B						
1,2,4-Trimethylbenzene	4,000					
1,3,5-Trimethylbenzene	4,000					
Ethylbenzene	6					
Isopropylbenzene (Cumene)	--					
m, p-Xylene	84					
Naphthalene	4.5					
n-Butylbenzene						
n-Propylbenzene						
o-Xylene	92					
p-Isopropyltoluene						
Sec-Butylbenzene						
Toluene	4.7					
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene	see TEQ	0.02 U	0.02 U	0.062	0.02 U	0.02 U
Benzo(a)pyrene	see TEQ	0.02 U	0.02 U	0.13	0.02 U	0.02 U
Benzo(b)fluoranthene	see TEQ	0.02 U	0.02 U	0.11	0.02 U	0.024
Benzo(k)fluoranthene	see TEQ	0.02 U	0.02 U	0.07	0.02 U	0.02 U
Chrysene	see TEQ	0.02 U	0.02 U	0.095	0.02 U	0.02 U
Dibenzo(a,h)anthracene	see TEQ	0.02 U	0.02 U	0.025	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene	see TEQ	0.02 U	0.02 U	0.13	0.02 U	0.02 U
cPAH TEQ	0.14	NA	NA	0.17065	NA	0.0024
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	5 U	5 U	5 U	5 U
Cadmium	25	1 U	1 U	1 U	1 U	3.7
Chromium	120000 / 48 (a)	22	19	27	23	23
Lead	250 / 220 (a)	5 U	9.3	17	5 U	300
Mercury	2.1 / 0.7(a)	0.02 U	0.038	0.042	0.022	0.021

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		A-GP-2	A-GP-3	A-GP-4	A-GP-5	A-GP-6
Field Sample ID		A-GP-2	A-GP-3	A-GP-4	A-GP-5	A-GP-6
Begin Sample Depth						
End Sample Depth	Preliminary					
Sample Date	Cleanup	8/31/2009	8/31/2009	8/31/2009	8/31/2009	8/31/2009
Lab Sample ID	Level	0909004-08A	0909004-09A	0909004-10A	0909004-11A	0909004-12A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	>100	>100	>100	>100	>100
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	120	97	210	25 U	25 U
Motor Oil	2,000	410	320	700	110	120
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)					
BETX (mg/kg)						
SW8021						
Benzene	0.03					
Ethylbenzene	6					
Toluene	4.7					
Total Xylenes	15					
VOLATILES (mg/kg)						
SW8260B						
1,2,4-Trimethylbenzene	4,000					
1,3,5-Trimethylbenzene	4,000					
Ethylbenzene	6					
Isopropylbenzene (Cumene)	--					
m, p-Xylene	84					
Naphthalene	4.5					
n-Butylbenzene						
n-Propylbenzene						
o-Xylene	92					
p-Isopropyltoluene						
Sec-Butylbenzene						
Toluene	4.7					
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene	see TEQ	0.02 U	0.02 U	0.03	0.02 U	0.02 U
Benzo(a)pyrene	see TEQ	0.02 U	0.02 U	0.034	0.02 U	0.02 U
Benzo(b)fluoranthene	see TEQ	0.023	0.02	0.085	0.02 U	0.02 U
Benzo(k)fluoranthene	see TEQ	0.02 U	0.02 U	0.05	0.02 U	0.02 U
Chrysene	see TEQ	0.025	0.026	0.05	0.02 U	0.02 U
Dibenzo(a,h)anthracene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene	see TEQ	0.02 U	0.02 U	0.066	0.02 U	0.02 U
cPAH TEQ	0.14	0.00255	0.00226	0.0576	NA	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5.1	5 U	8.7	5 U	5 U
Cadmium	25	5.2	3	1.7	1.9	1.9
Chromium	120000 / 48 (a)	18	20	27	11	20
Lead	250 / 220 (a)	190	110	1,200	43	40
Mercury	2.1 / 0.7(a)	0.059	0.034	0.03	0.02 U	0.02 U

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		A-S1	A-S2	A-S3	C-B1	C-B1
Field Sample ID		A-S1-(0-0.5)	A-S2-(0-0.5)	A-S3-(0-0.5)	C-B1-(0-0.5)	C-B1-(1.5-2.25)
Begin Sample Depth		0	0	0	0	1.5
End Sample Depth	Preliminary	0.5	0.5	0.5	0.5	2.25
Sample Date	Cleanup	8/20/2009	8/31/2009	8/31/2009	8/20/2009	8/20/2009
Lab Sample ID	Level	0908099-15A	0909004-05A	0909004-06A	0908099-05A	0908099-06A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)		50 U	50 U	50 U	50 U
Gasoline	30		20 U	20 U	20 U	20 U
Motor Oil	2,000		100 U	100 U	>100	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)				170	
Motor Oil	2,000				430	
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)					
BETX (mg/kg)						
SW8021						
Benzene	0.03					
Ethylbenzene	6					
Toluene	4.7					
Total Xylenes	15					
VOLATILES (mg/kg)						
SW8260B						
1,2,4-Trimethylbenzene	4,000					
1,3,5-Trimethylbenzene	4,000					
Ethylbenzene	6					
Isopropylbenzene (Cumene)	–					
m, p-Xylene	84					
Naphthalene	4.5					
n-Butylbenzene						
n-Propylbenzene						
o-Xylene	92					
p-Isopropyltoluene						
Sec-Butylbenzene						
Toluene	4.7					
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(a)pyrene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(b)fluoranthene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(k)fluoranthene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Chrysene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Dibenzo(a,h)anthracene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cPAH TEQ	0.14	NA	NA	NA	NA	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	5 U	5 U	5.3	5 U
Cadmium	25	1 U	1 U	1 U	1 U	1 U
Chromium	120000 / 48 (a)	28	25	25	35	45
Lead	250 / 220 (a)	15	9.9	5 U	41	5 U
Mercury	2.1 / 0.7(a)	0.038	0.02 U	0.037	0.048	0.043

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		C-B1	C-S1	C-S2	C-S3	C-S5
Field Sample ID		C-B1-(5.5-6.5)	C-S1-(0-0.5)	C-S2-(0-0.5)	C-S3-(0-0.5)	C-S5-(0-0.5)
Begin Sample Depth		5.5	0	0	0	0
End Sample Depth	Preliminary	6.5	0.5	0.5	0.5	0.5
Sample Date	Cleanup	8/20/2009	8/31/2009	8/31/2009	8/31/2009	8/20/2009
Lab Sample ID	Level	0908099-07A	0909004-04A	0909004-02A	0909004-03A	0908099-14A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	100 U	>100	>100	>100	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)		52	25 U	25 U	
Motor Oil	2,000		200	230	93	
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)					
BETX (mg/kg)						
SW8021						
Benzene	0.03					
Ethylbenzene	6					
Toluene	4.7					
Total Xylenes	15					
VOLATILES (mg/kg)						
SW8260B						
1,2,4-Trimethylbenzene	4,000					
1,3,5-Trimethylbenzene	4,000					
Ethylbenzene	6					
Isopropylbenzene (Cumene)	--					
m, p-Xylene	84					
Naphthalene	4.5					
n-Butylbenzene						
n-Propylbenzene						
o-Xylene	92					
p-Isopropyltoluene						
Sec-Butylbenzene						
Toluene	4.7					
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene	see TEQ	0.02 U	0.02 U	0.17	0.16	0.028
Benzo(a)pyrene	see TEQ	0.02 U	0.02 U	0.34	0.24	0.035
Benzo(b)fluoranthene	see TEQ	0.02 U	0.02 U	0.32	0.24	0.029
Benzo(k)fluoranthene	see TEQ	0.02 U	0.02 U	0.19	0.19	0.02 U
Chrysene	see TEQ	0.02 U	0.022	0.27	0.24	0.048
Dibenzo(a,h)anthracene	see TEQ	0.02 U	0.02 U	0.065	0.057	0.02 U
Indeno(1,2,3-cd)pyrene	see TEQ	0.02 U	0.02 U	0.33	0.29	0.022
cPAH TEQ	0.14	NA	0.00022	0.4502	0.3361	0.04338
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	5 U	5 U	5 U	5 U
Cadmium	25	1 U	1 U	1.3	1.5	1 U
Chromium	120000 / 48 (a)	32	20	39	21	35
Lead	250 / 220 (a)	6.7	17	23	19	13
Mercury	2.1 / 0.7(a)	0.037	0.032	0.037	0.021	0.039

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		C-S6	C-S7	C-S8	C-S9	C-S10	C-S11
Field Sample ID		C-S6-(0-0.5)	C-S7-(0-0.5)	C-S8-(0-0.5)	C-S9-(0-0.5)	C-S10-(0-0.5)	C-S11-(0-0.5)
Begin Sample Depth		0	0	0	0	0	0
End Sample Depth	Preliminary	0.5	0.5	0.5	0.5	0.5	0.5
Sample Date	Cleanup	8/31/2009	9/30/2009	9/30/2009	9/30/2009	9/30/2009	9/30/2009
Lab Sample ID	Level	0909004-01A	0910008-06A	0910008-05A	0910008-08A	0910008-04A	0910008-07A
PETROLEUM HYDROCARBONS (mg/kg)							
NWTPH-HCID							
Diesel	2000 / 460 (a)	50 U					
Gasoline	30	20 U					
Motor Oil	2,000	>100					
NWTPH-DX (mg/kg)							
Diesel	2000 / 460 (a)	25 U					
Motor Oil	2,000	68					
NWTPH-GX (mg/kg)							
Gasoline	100/30 (b)						
BETX (mg/kg)							
SW8021							
Benzene	0.03						
Ethylbenzene	6						
Toluene	4.7						
Total Xylenes	15						
VOLATILES (mg/kg)							
SW8260B							
1,2,4-Trimethylbenzene	4,000						
1,3,5-Trimethylbenzene	4,000						
Ethylbenzene	6						
Isopropylbenzene (Cumene)	--						
m, p-Xylene	84						
Naphthalene	4.5						
n-Butylbenzene							
n-Propylbenzene							
o-Xylene	92						
p-Isopropyltoluene							
Sec-Butylbenzene							
Toluene	4.7						
cPAHs (mg/kg)							
SW8270SIM							
Benz[a]anthracene	see TEQ	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Benzo(a)pyrene	see TEQ	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Benzo(b)fluoranthene	see TEQ	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Benzo(k)fluoranthene	see TEQ	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Chrysene	see TEQ	0.024	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Dibenzo(a,h)anthracene	see TEQ	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
Indeno(1,2,3-cd)pyrene	see TEQ	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U
cPAH TEQ	0.14	0.00024	NA	NA	NA	NA	NA
TOTAL METALS (mg/kg)							
SW6010/SW7471							
Arsenic	20	5 U					
Cadmium	25	1 U					
Chromium	120000 / 48 (a)	23					
Lead	250 / 220 (a)	13					
Mercury	2.1 / 0.7(a)	0.026					

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		C-S12	DUP of C-S12	C-SS1	C-SS2	C-SS3	D-B1	D-B2
Field Sample ID		C-S12-(0-0.5)	C-S66-(0-0.5)	C-SS1-(7-8)	C-SS2-(10-11)	C-SS3-(6-7.5)	D-B1-(12-13)	D-B2-(13-14)
Begin Sample Depth		0	0	7	10	6	12	13
End Sample Depth	Preliminary	0.5	0.5	8	11	7.5	13	14
Sample Date	Cleanup	9/30/2009	9/30/2009	8/20/2009	8/21/2009	8/21/2009	8/20/2009	8/21/2009
Lab Sample ID	Level	0910008-09A	0910008-13A	0908099-12A	0908099-23A	0908099-24A	0908099-13A	0908099-16A
PETROLEUM HYDROCARBONS (mg/kg)								
NWTPH-HCID								
Diesel	2000 / 460 (a)			50 U	50 U	50 U		
Gasoline	30			20 U	20 U	20 U		
Motor Oil	2,000			>100	100 U	>100		
NWTPH-DX (mg/kg)								
Diesel	2000 / 460 (a)			25 U		300		25 U
Motor Oil	2,000			92		710		50 U
NWTPH-GX (mg/kg)								
Gasoline	100/30 (b)							
BETX (mg/kg)								
SW8021								
Benzene	0.03							
Ethylbenzene	6							
Toluene	4.7							
Total Xylenes	15							
VOLATILES (mg/kg)								
SW8260B								
1,2,4-Trimethylbenzene	4,000						0.01 U	0.01 U
1,3,5-Trimethylbenzene	4,000						0.01 U	0.01 U
Ethylbenzene	6						0.01 U	0.01 U
Isopropylbenzene (Cumene)	--						0.01 U	0.01 U
m, p-Xylene	84						0.02 U	0.02 U
Naphthalene	4.5						0.01 U	0.01 U
n-Butylbenzene							0.01 U	0.01 U
n-Propylbenzene							0.01 U	0.01 U
o-Xylene	92						0.01 U	0.01 U
p-Isopropyltoluene							0.01 U	0.01 U
Sec-Butylbenzene							0.01 U	0.01 U
Toluene	4.7						0.01 U	0.01 U
cPAHs (mg/kg)								
SW8270SIM								
Benz[a]anthracene	see TEQ	0.46	0.51	0.02 U	0.02 U	0.021	0.02 U	0.02 U
Benzo(a)pyrene	see TEQ	0.85	0.86	0.02 U	0.02 U	0.02	0.02 U	0.02 U
Benzo(b)fluoranthene	see TEQ	0.50	0.59	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(k)fluoranthene	see TEQ	0.51	0.40	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Chrysene	see TEQ	0.61	0.64	0.02 U	0.02 U	0.029	0.02 U	0.02 U
Dibenzo(a,h)anthracene	see TEQ	0.15	0.16	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene	see TEQ	0.68	0.66	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cPAH TEQ	0.14	1.0861	1.0384	NA	NA	0.02239	NA	NA
TOTAL METALS (mg/kg)								
SW6010/SW7471								
Arsenic	20			5 U	5 U	5 U	5 U	5 U
Cadmium	25			1 U	1 U	1 U	1 U	1 U
Chromium	120000 / 48 (a)			22	29	33	24	31
Lead	250 / 220 (a)			12	7	19	5 U	5 U
Mercury	2.1 / 0.7(a)			0.039	0.04	0.022	0.02 U	0.02 U

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-B3	D-B4	D-B5
Field Sample ID		D-B3-(13-14)	D-B4-(15-15.5)	D-B5-(14-15)
Begin Sample Depth		13	15	14
End Sample Depth	Preliminary	14	15.5	15
Sample Date	Cleanup	8/21/2009	8/21/2009	8/21/2009
Lab Sample ID	Level	0908099-17A	0908099-18A	0908099-19A
PETROLEUM HYDROCARBONS (mg/kg)				
NWTPH-HCID				
Diesel	2000 / 460 (a)	50 U		
Gasoline	30	20 U		
Motor Oil	2,000	100 U		
NWTPH-DX (mg/kg)				
Diesel	2000 / 460 (a)	25 U	2,000	25 U
Motor Oil	2,000	50 U	100 U	50 U
NWTPH-GX (mg/kg)				
Gasoline	100/30 (b)			
BETX (mg/kg)				
SW8021				
Benzene	0.03			
Ethylbenzene	6			
Toluene	4.7			
Total Xylenes	15			
VOLATILES (mg/kg)				
SW8260B				
1,2,4-Trimethylbenzene	4,000			
1,3,5-Trimethylbenzene	4,000			
Ethylbenzene	6			
Isopropylbenzene (Cumene)	–			
m, p-Xylene	84			
Naphthalene	4.5			
n-Butylbenzene				
n-Propylbenzene				
o-Xylene	92			
p-Isopropyltoluene				
Sec-Butylbenzene				
Toluene	4.7			
cPAHs (mg/kg)				
SW8270SIM				
Benz[a]anthracene	see TEQ			
Benzo(a)pyrene	see TEQ			
Benzo(b)fluoranthene	see TEQ			
Benzo(k)fluoranthene	see TEQ			
Chrysene	see TEQ			
Dibenzo(a,h)anthracene	see TEQ			
Indeno(1,2,3-cd)pyrene	see TEQ			
cPAH TEQ	0.14			
TOTAL METALS (mg/kg)				
SW6010/SW7471				
Arsenic	20	5 U		
Cadmium	25	1 U		
Chromium	120000 / 48 (a)	23		
Lead	250 / 220 (a)	5 U		
Mercury	2.1 / 0.7(a)	0.035		

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-B6	D-B7	D-B8	D-B9
Field Sample ID		D-B-6-(17.5-19)	D-B7-(17.5-18.5)	D-B8-(17.5-18.25	D-B9-(29-30)
Begin Sample Depth		17.5	17.5	17.5	29
End Sample Depth	Preliminary	19	18.5	18.25	30
Sample Date	Cleanup	8/21/2009	8/27/2009	8/27/2009	8/27/2009
Lab Sample ID	Level	0908099-20A	0908125-01A	0908125-02A	0908125-03A
PETROLEUM HYDROCARBONS (mg/kg)					
NWTPH-HCID					
Diesel	2000 / 460 (a)				
Gasoline	30				
Motor Oil	2,000				
NWTPH-DX (mg/kg)					
Diesel	2000 / 460 (a)	25 U	25 U	25 U	25 U
Motor Oil	2,000	50 U	50 U	50 U	50 U
NWTPH-GX (mg/kg)					
Gasoline	100/30 (b)			3 U	
BETX (mg/kg)					
SW8021					
Benzene	0.03				
Ethylbenzene	6				
Toluene	4.7				
Total Xylenes	15				
VOLATILES (mg/kg)					
SW8260B					
1,2,4-Trimethylbenzene	4,000			0.01 U	0.01 U
1,3,5-Trimethylbenzene	4,000			0.01 U	0.01 U
Ethylbenzene	6			0.01 U	0.01 U
Isopropylbenzene (Cumene)	--			0.01 U	0.01 U
m, p-Xylene	84			0.02 U	0.02 U
Naphthalene	4.5			0.01 U	0.01 U
n-Butylbenzene				0.01 U	0.01 U
n-Propylbenzene				0.01 U	0.01 U
o-Xylene	92			0.01 U	0.01 U
p-Isopropyltoluene				0.01 U	0.01 U
Sec-Butylbenzene				0.01 U	0.01 U
Toluene	4.7			0.01 U	0.01 U
cPAHs (mg/kg)					
SW8270SIM					
Benz[a]anthracene	see TEQ				0.02 U
Benzo(a)pyrene	see TEQ				0.02 U
Benzo(b)fluoranthene	see TEQ				0.02 U
Benzo(k)fluoranthene	see TEQ				0.02 U
Chrysene	see TEQ				0.02 U
Dibenzo(a,h)anthracene	see TEQ				0.02 U
Indeno(1,2,3-cd)pyrene	see TEQ				0.02 U
cPAH TEQ	0.14				NA
TOTAL METALS (mg/kg)					
SW6010/SW7471					
Arsenic	20				5 U
Cadmium	25				1 U
Chromium	120000 / 48 (a)				20
Lead	250 / 220 (a)				5 U
Mercury	2.1 / 0.7(a)				0.02 U

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-B10	D-S1	D-S2	D-SS1
Field Sample ID		D-B10-(19-20)	D-S1-(0-0.5)	D-S2-(0-0.5)	D-SS1-(10-11)
Begin Sample Depth		19	0	0	10
End Sample Depth	Preliminary	20	0.5	0.5	11
Sample Date	Cleanup	8/27/2009	9/30/2009	9/30/2009	8/20/2009
Lab Sample ID	Level	0908125-04A	0910008-10A	0910008-11A	0908099-11A
PETROLEUM HYDROCARBONS (mg/kg)					
NWTPH-HCID					
Diesel	2000 / 460 (a)				50 U
Gasoline	30				20 U
Motor Oil	2,000				100 U
NWTPH-DX (mg/kg)					
Diesel	2000 / 460 (a)	25 U			
Motor Oil	2,000	50 U			
NWTPH-GX (mg/kg)					
Gasoline	100/30 (b)				
BETX (mg/kg)					
SW8021					
Benzene	0.03				
Ethylbenzene	6				
Toluene	4.7				
Total Xylenes	15				
VOLATILES (mg/kg)					
SW8260B					
1,2,4-Trimethylbenzene	4,000				
1,3,5-Trimethylbenzene	4,000				
Ethylbenzene	6				
Isopropylbenzene (Cumene)	--				
m, p-Xylene	84				
Naphthalene	4.5				
n-Butylbenzene					
n-Propylbenzene					
o-Xylene	92				
p-Isopropyltoluene					
Sec-Butylbenzene					
Toluene	4.7				
cPAHs (mg/kg)					
SW8270SIM					
Benz[a]anthracene	see TEQ		0.68	0.056	0.02 U
Benzo(a)pyrene	see TEQ		1.3	0.14	0.02 U
Benzo(b)fluoranthene	see TEQ		0.88	0.093	0.02 U
Benzo(k)fluoranthene	see TEQ		0.69	0.081	0.02 U
Chrysene	see TEQ		0.90	0.087	0.02 U
Dibenzo(a,h)anthracene	see TEQ		0.23	0.025	0.02 U
Indeno(1,2,3-cd)pyrene	see TEQ		1.1	0.13	0.02 U
cPAH TEQ	0.14		1.667	0.17937	NA
TOTAL METALS (mg/kg)					
SW6010/SW7471					
Arsenic	20				5 U
Cadmium	25				1 U
Chromium	120000 / 48 (a)				24
Lead	250 / 220 (a)				5 U
Mercury	2.1 / 0.7(a)				0.02 U

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-SS2	D-SS2	D-SS3	D-SS4	D-SS5
Field Sample ID		D-SS2-(11-12)	D-SS2-(19-20)	D-SS3-(5-6.25)	D-SS4-(6-8)	D-SS5-(12.5-13.25)
Begin Sample Depth		11	19	5	6	12.5
End Sample Depth	Preliminary	12	20	6.25	8	13.25
Sample Date	Cleanup	8/20/2009	8/20/2009	8/20/2009	8/21/2009	8/27/2009
Lab Sample ID	Level	0908099-09A	0908099-10A	0908099-08A	0908099-21A	0908125-05A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	>50	>50	50 U	>50	50 U
Gasoline	30	20 U	20 U	20 U	>20	20 U
Motor Oil	2,000	100 U	100 U	100 U	>100	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	1,300	920		4,000	
Motor Oil	2,000	50 U	50 U		15,000	
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)				820	
BETX (mg/kg)						
SW8021						
Benzene	0.03				0.088	
Ethylbenzene	6				2.3	
Toluene	4.7				0.3	
Total Xylenes	15				24	
VOLATILES (mg/kg)						
SW8260B						
1,2,4-Trimethylbenzene	4,000				50	
1,3,5-Trimethylbenzene	4,000				17	
Ethylbenzene	6				1.7	
Isopropylbenzene (Cumene)	--				1.7	
m, p-Xylene	84				20	
Naphthalene	4.5				9.2	
n-Butylbenzene					4.9	
n-Propylbenzene					6.6	
o-Xylene	92				5.1	
p-Isopropyltoluene					1.6	
Sec-Butylbenzene					1.5	
Toluene	4.7				0.15	
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene	see TEQ	0.02 U	0.02 U	0.02 U	0.1 U	
Benzo(a)pyrene	see TEQ	0.02 U	0.02 U	0.02 U	0.1 U	
Benzo(b)fluoranthene	see TEQ	0.02 U	0.02 U	0.02 U	0.1 U	
Benzo(k)fluoranthene	see TEQ	0.02 U	0.02 U	0.02 U	0.1 U	
Chrysene	see TEQ	0.02 U	0.02 U	0.02 U	0.1 U	
Dibenzo(a,h)anthracene	see TEQ	0.02 U	0.02 U	0.02 U	0.1 U	
Indeno(1,2,3-cd)pyrene	see TEQ	0.02 U	0.02 U	0.02 U	0.1 U	
cPAH TEQ	0.14	NA	NA	NA	NA	
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	24	5 U	5 U	
Cadmium	25	1 U	1 U	1 U	1 U	
Chromium	120000 / 48 (a)	22	22	43	24	
Lead	250 / 220 (a)	5 U	5 U	5.5	66	
Mercury	2.1 / 0.7(a)	0.02 U	0.02 U	0.028	0.039	

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-3	MW-3	MW-4	MW-4	MW-4
Field Sample ID		MW-3-(0-0.5)	MW-3-(2.5-3.5)	MW-4-(0-0.5)	MW-4-(2.5-3.5)	MW-4-(10-11)
Begin Sample Depth		0	2.5	0	2.5	10
End Sample Depth	Preliminary	0.5	3.5	0.5	3.5	11
Sample Date	Cleanup	8/18/2009	8/18/2009	8/18/2009	8/18/2009	8/18/2009
Lab Sample ID	Level	0908084-01A	0908084-02A	0908084-03A	0908084-04A	0908084-05A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	>100	>100	>100	>100	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	25 U	25 U	75	280	
Motor Oil	2,000	200	150	250	640	
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)					
BETX (mg/kg)						
SW8021						
Benzene	0.03					
Ethylbenzene	6					
Toluene	4.7					
Total Xylenes	15					
VOLATILES (mg/kg)						
SW8260B						
1,2,4-Trimethylbenzene	4,000					
1,3,5-Trimethylbenzene	4,000					
Ethylbenzene	6					
Isopropylbenzene (Cumene)	–					
m, p-Xylene	84					
Naphthalene	4.5					
n-Butylbenzene						
n-Propylbenzene						
o-Xylene	92					
p-Isopropyltoluene						
Sec-Butylbenzene						
Toluene	4.7					
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene	see TEQ	0.02 U	0.022	0.02 U	0.021	0.02 U
Benzo(a)pyrene	see TEQ	0.02 U	0.026	0.02 U	0.024	0.02 U
Benzo(b)fluoranthene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(k)fluoranthene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Chrysene	see TEQ	0.02 U	0.033	0.02 U	0.032	0.02 U
Dibenzo(a,h)anthracene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cPAH TEQ	0.14	NA	0.02853	NA	0.02642	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	6.3	5 U	5 U	5.3	5 U
Cadmium	25	1 U	1 U	1 U	1 U	1 U
Chromium	120000 / 48 (a)	31	34	26	27	23
Lead	250 / 220 (a)	19	15	34	48	5 U
Mercury	2.1 / 0.7(a)	0.04	0.037	0.054	0.029	0.023

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-5	MW-5	MW-6	MW-6	MW-6
Field Sample ID		MW-5-(25-25.5)	MW-5-(29-29.5)	MW-6-(0-0.5)	MW-6-(3-3.5)	MW-6-(12.5-13.5
Begin Sample Depth		25	29	0	3	12.5
End Sample Depth	Preliminary	25.5	29.5	0.5	3.5	13.5
Sample Date	Cleanup	8/17/2009	8/17/2009	8/17/2009	8/17/2009	8/17/2009
Lab Sample ID	Level	0908072-01A	0908072-02A	0908072-03A	0908072-04A	0908072-05A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	100 U	100 U	>100	100 U	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)			82		
Motor Oil	2,000			230		
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)					
BETX (mg/kg)						
SW8021						
Benzene	0.03					
Ethylbenzene	6					
Toluene	4.7					
Total Xylenes	15					
VOLATILES (mg/kg)						
SW8260B						
1,2,4-Trimethylbenzene	4,000					
1,3,5-Trimethylbenzene	4,000					
Ethylbenzene	6					
Isopropylbenzene (Cumene)	--					
m, p-Xylene	84					
Naphthalene	4.5					
n-Butylbenzene						
n-Propylbenzene						
o-Xylene	92					
p-Isopropyltoluene						
Sec-Butylbenzene						
Toluene	4.7					
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene	see TEQ	0.02 U	0.02 U	0.026	0.02 U	0.02 U
Benzo(a)pyrene	see TEQ	0.02 U	0.02 U	0.031	0.02 U	0.02 U
Benzo(b)fluoranthene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(k)fluoranthene	see TEQ	0.02 U	0.02 U	0.021	0.02 U	0.02 U
Chrysene	see TEQ	0.02 U	0.02 U	0.042	0.02 U	0.02 U
Dibenzo(a,h)anthracene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene	see TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cPAH TEQ	0.14	NA	NA	0.03612	NA	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	5 U	5 U	5 U	5 U
Cadmium	25	1 U	1 U	1 U	1 U	1 U
Chromium	120000 / 48 (a)	28	22	28	20	21
Lead	250 / 220 (a)	5 U	5 U	5 U	5 U	5 U
Mercury	2.1 / 0.7(a)	0.02 U	0.02 U	0.027	0.02 U	0.02 U

TABLE 10
REMEDIAL INVESTIGATION
SOIL DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-7	MW-8	MW-8	MW-8
Field Sample ID		MW-7-(15-15.5)	MW-8-(5-6)	MW-8-(12.5-13.5	MW-8-(22-22.25)
Begin Sample Depth		15	5	12.5	22
End Sample Depth	Preliminary	15.5	6	13.5	22.5
Sample Date	Cleanup	8/19/2009	8/19/2009	8/19/2009	8/19/2009
Lab Sample ID	Level	0908084-09A	0908084-06A	0908084-07A	0908084-08A
PETROLEUM HYDROCARBONS (mg/kg)					
NWTPH-HCID					
Diesel	2000 / 460 (a)				
Gasoline	30				
Motor Oil	2,000				
NWTPH-DX (mg/kg)					
Diesel	2000 / 460 (a)	25 U	**790**	**1,800**	25 U
Motor Oil	2,000	50 U	**2,300**	100 U	50 U
NWTPH-GX (mg/kg)					
Gasoline	100/30 (b)		33 U	32 U	3 U
BETX (mg/kg)					
SW8021					
Benzene	0.03		0.03 U	0.03 U	0.03 U
Ethylbenzene	6		**0.19**	**0.065**	0.05 U
Toluene	4.7		**0.07**	0.05 U	0.05 U
Total Xylenes	15		**0.38**	0.2 U	0.2 U
VOLATILES (mg/kg)					
SW8260B					
1,2,4-Trimethylbenzene	4,000				
1,3,5-Trimethylbenzene	4,000				
Ethylbenzene	6				
Isopropylbenzene (Cumene)	--				
m, p-Xylene	84				
Naphthalene	4.5				
n-Butylbenzene					
n-Propylbenzene					
o-Xylene	92				
p-Isopropyltoluene					
Sec-Butylbenzene					
Toluene	4.7				
cPAHs (mg/kg)					
SW8270SIM					
Benz[a]anthracene	see TEQ				
Benzo(a)pyrene	see TEQ				
Benzo(b)fluoranthene	see TEQ				
Benzo(k)fluoranthene	see TEQ				
Chrysene	see TEQ				
Dibenzo(a,h)anthracene	see TEQ				
Indeno(1,2,3-cd)pyrene	see TEQ				
cPAH TEQ	0.14				
TOTAL METALS (mg/kg)					
SW6010/SW7471					
Arsenic	20				
Cadmium	25				
Chromium	120000 / 48 (a)				
Lead	250 / 220 (a)				
Mercury	2.1 / 0.7(a)				

(a) Point of Compliance for cleanup level protective of terrestrial plants and animals is 15 ft BGS.
See Table 3 for cleanup level development.
(b) MTCA Method A cleanup level is 30 mg/kg when benzene is present and 100 mg/kg when benzene is not present.
U = Indicates the compound was undetected at the reported concentration.
Bold = Detected compound.
Box = Exceedance of cleanup level.

TABLE 11
REMEDIAL INVESTIGATION
GROUNDWATER DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-SS4	MW-1	MW-3	MW-4	MW-5	DUP of MW-5 MW-5	MW-6
Field Sample ID	Preliminary	D-SS4-GW	MW-1	MW-3	MW-4	MW-5	DUP	MW-6
Sample Date	Cleanup	8/21/2009	8/25/2009	8/25/2009	8/25/2009	8/25/2009	8/25/2009	8/25/2009
Lab Sample ID	Level	0908099-22A	0908112-09A	0908112-01A	0908112-02A	0908112-03A	0908112-07A	0908112-04A
PETROLEUM HYDROCARBONS (ug/L)								
NWTPH-HCID								
Gasoline	800	**>130**	130 U	130 U	130 U	130 U	130 U	130 U
Motor Oil	500	**>310**	310 U	310 U	310 U	310 U	310 U	310 U
NWTPH-DX (ug/L)								
Diesel	500	**270**	NA	NA	NA	NA	NA	NA
Motor Oil	500	**460**	NA	NA	NA	NA	NA	NA
NWTPH-GX (ug/L)								
Gasoline	800	**750**	NA	NA	NA	NA	NA	NA
BETX (ug/L)								
SW8021								
Ethylbenzene	700	**2.3**	NA	NA	NA	NA	NA	NA
Total Xylenes	1,600	**46**	NA	NA	NA	NA	NA	NA
VOLATILES (ug/L)								
SW8260B								
1,2,4-Trimethylbenzene	400	**54**	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	400	**12**	NA	NA	NA	NA	NA	NA
Benzene	5	2 U	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	**2.1**	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)		**2.4**	NA	NA	NA	NA	NA	NA
m, p-Xylene		**35**	NA	NA	NA	NA	NA	NA
Naphthalene	160	**12**	NA	NA	NA	NA	NA	NA
n-Propylbenzene		**4.6**	NA	NA	NA	NA	NA	NA
o-Xylene		**8**	NA	NA	NA	NA	NA	NA
PAHS (ug/L)								
SW8270SIM								
1-Methylnaphthalene	160	**5.1**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
2-Methylnaphthalene	32	**6.5**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Acenaphthene	960	**0.097**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Acenaphthylene		**0.032**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Anthracene	4,800	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(ghi)perylene		**0.029**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Fluoranthene	640	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Fluorene	640	**0.2**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Naphthalene	160	**6**	**0.027**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Phenanthrene		**0.22**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Pyrene	480	**0.02**	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cPAH TEQ	0.12	NA	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (ug/L)								
SW6010/SW7471								
Arsenic	5	NA	1.0 U	**5.2**	1.0 U	**1.4**	**1.4**	**1.8**
TOTAL METALS (ug/L)								
SW6010/SW7471								
Arsenic	5	NA	NA	NA	NA	NA	NA	NA
Lead	15	NA	NA	NA	NA	NA	NA	NA
CONVENTIONALS								
Total Organic Carbon (SM5310B; ug/L)		NA	NA	**12,000**	NA	NA	NA	**14,000**

TABLE 11
REMEDIAL INVESTIGATION
GROUNDWATER DETECTS ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-7	MW-8	DUP of MW-8 MW-8	MW-8	DUP of MW-8 MW-8	Surface Water SW-1
Field Sample ID	Preliminary	MW-7	MW-8	DUP	MW-8	MW-98	SW-1
Sample Date	Cleanup	8/25/2009	8/25/2009	8/25/2009	9/30/2009	9/30/2009	10/16/2009
Lab Sample ID	Level	0908112-05A	0908112-06A	0908112-07A	0910008-02A	0910008-03A	0910008-01
PETROLEUM HYDROCARBONS (ug/L)							
NWTPH-HCID							
Gasoline	800	NA	NA	NA	NA	NA	130 U
Motor Oil	500	NA	NA	NA	NA	NA	310 U
NWTPH-DX (ug/L)							
Diesel	500	130 U	**380**	NA	**660** J	**480** J	NA
Motor Oil	500	250 U	250 U	NA	250 U	250 U	NA
NWTPH-GX (ug/L)							
Gasoline	800	NA	NA	NA	NA	NA	NA
BETX (ug/L)							
SW8021							
Ethylbenzene	700	NA	NA	NA	NA	NA	NA
Total Xylenes	1,600	NA	NA	NA	NA	NA	NA
VOLATILES (ug/L)							
SW8260B							
1,2,4-Trimethylbenzene	400	2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	400	2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
Benzene	5	2 U	2 U	2 U	**2.3**	**2.6**	2.0 U
Ethylbenzene	700	2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
Isopropylbenzene (Cumene)		2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
m, p-Xylene		4 U	4 U	4 U	4.0 U	4.0 U	4.0 U
Naphthalene	160	2 U	2 U	2 U	**3.4**	**4.8**	2.0 U
n-Propylbenzene		2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
o-Xylene		2 U	2 U	2 U	2.0 U	2.0 U	2.0 U
PAHS (ug/L)							
SW8270SIM							
1-Methylnaphthalene	160	0.02 U	NA	NA	**4.3** J	**5.8** J	0.020 U
2-Methylnaphthalene	32	0.02 U	NA	NA	**0.51** J	**3.2** J	0.020 U
Acenaphthene	960	0.02 U	NA	NA	**0.38**	**0.36**	0.020 U
Acenaphthylene		0.02 U	NA	NA	**0.021**	**0.023**	0.020 U
Anthracene	4,800	0.02 U	NA	NA	**0.041**	**0.051**	0.020 U
Benzo(ghi)perylene		0.02 U	NA	NA	0.020 U	0.020 U	0.020 U
Fluoranthene	640	0.02 U	NA	NA	0.020 U	**0.020**	0.020 U
Fluorene	640	0.02 U	NA	NA	**0.88**	**1.0**	0.020 U
Naphthalene	160	0.02 U	NA	NA	**0.32** J	**1.5** J	**0.028**
Phenanthrene		0.02 U	NA	NA	**0.028** J	**0.15** J	0.020 U
Pyrene	480	0.02 U	NA	NA	**0.040** J	**0.064** J	0.020 U
cPAH TEQ	0.12	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (ug/L)							
SW6010/SW7471							
Arsenic	5	1.0 U	**1.1**	NA	**3.0**	**3.5**	NA
TOTAL METALS (ug/L)							
SW6010/SW7471							
Arsenic	5	NA	NA	NA	NA	NA	**7.3**
Lead	15	NA	NA	NA	NA	NA	**1.1**
CONVENTIONALS							
Total Organic Carbon (SM5310B; ug/L)		NA	NA	NA	NA	NA	NA

(a) Preliminary cleanup level of gasoline-range petroleum hydrocarbons is 800 ug/L if benzene is present, or is 1,000 ug/L if no detectable benzene is present in groundwater.
U = Indicates the compound was undetected at the reported concentration.
Bold = Detected compound.
Box = Exceedance of cleanup level.

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		A-B-09	A-B-10	A-B-12	A-B-15	A-B-17	A-B-19	A-B-23	A-B-31
Sample Location ID		9	10	12	15	17	19	23	31
Top Depth		16	10	7	7	6	6		4
Bottom Depth	Proposed	16	10	7	7	6	6		6
Lab Sample ID	Cleanup Levels	07/25/08	07/25/08	07/25/08	07/25/08	07/25/08	07/25/08	07/29/08	08/07/08
METALS (mg/kg)									
Arsenic	20								<2
Barium	1700 / 102 (a)								
Cadmium	25								2.1
Chromium	120000 / 48 (a)								3.3
Lead	250 / 220 (a)								12
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<50	<50	<50	<50	<50	<50	<20	<20
Gasoline-Range	100/30 (b)	<20	<20	<20	<20	<20	<20	<5	<5
Oil-Range	2,000	<100	<100	<100	<100	<100	<100	1600	<50
BTEX (mg/kg)									
Benzene	0.03							<0.02	<0.02
Ethylbenzene	6							<0.05	<0.05
Toluene	4.7							<0.05	<0.05
Xylenes	15							<0.05	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5								<0.05
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98								<0.1
Fluorene	101								<0.1
Phenanthrene									<0.1
Fluoranthene	630								<0.1
Pyrene	650								<0.1
Benzo(ghi)perylene									<0.1
Benzo(a)pyrene	see cPAH TEQ								<0.1
Benzo(a)anthracene									<0.1
Benzo(b)fluoranthene									<0.1
Benzo(k)fluoranthene									<0.1
Chrysene									<0.1
Dibenzo(a,h)anthracene									<0.1
Indeno(1,2,3-cd)pyrene									<0.1
Total cPAH teq	0.14								NA

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		A-B-32	A-B-33	A-B-34	A-B-35	A-B-36	A-B-37	A-B-38	A-B-41
Sample Location ID		32	33	34	35	36	37	38	41
Top Depth		4	4	4	4	10	5	5	5
Bottom Depth	Proposed	6	6	6	6	10	5	5	5
Lab Sample ID	Cleanup Levels	08/07/08	08/07/08	08/07/08	08/07/08	08/07/08	08/07/08	08/07/08	08/07/08
METALS (mg/kg)									
Arsenic	20	<2	<2	<2	<2		<2		
Barium	1700 / 102 (a)								
Cadmium	25	<1	<1	<1	<1		<1		
Chromium	120000 / 48 (a)	4.2	12	6.4	10		8.2		
Lead	250 / 220 (a)	22	6.7	5.3	18		46		
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5	<5	5.9	12	<5	<5	<5	<5
Oil-Range	2,000	<50	<50	<50	<50	120	240	240	200
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	0.1	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	0.18	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	0.55	<0.05	<0.05	<0.05	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5	<0.05	<0.05	<0.05	<0.05		<0.05		
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98	<0.1	<0.1	<0.1	<0.1		<0.1		
Fluorene	101	<0.1	<0.1	<0.1	<0.1		<0.1		
Phenanthrene		<0.1	<0.1	<0.1	<0.1		<0.1		
Fluoranthene	630	<0.1	<0.1	<0.1	<0.1		<0.1		
Pyrene	650	<0.1	<0.1	<0.1	<0.1		<0.1		
Benzo(ghi)perylene		<0.1	<0.1	<0.1	<0.1		<0.1		
Benzo(a)pyrene	see cPAH TEQ	<0.1	<0.1	<0.1	<0.1		<0.1		
Benzo(a)anthracene		<0.1	<0.1	<0.1	<0.1		<0.1		
Benzo(b)fluoranthene		<0.1	<0.1	<0.1	<0.1		<0.1		
Benzo(k)fluoranthene		<0.1	<0.1	<0.1	<0.1		<0.1		
Chrysene		<0.1	<0.1	<0.1	<0.1		<0.1		
Dibenzo(a,h)anthracene		<0.1	<0.1	<0.1	<0.1		<0.1		
Indeno(1,2,3-cd)pyrene		<0.1	<0.1	<0.1	<0.1		<0.1		
Total cPAH teq	0.14	NA	NA	NA	NA		NA		

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		A-B-44	A-B-57	A-B-58	A-B-59	A-B-65	A-B-66	A-B-73	A-S-06
Sample Location ID		44	57	58	59	65	66	73	6
Top Depth		12		3	3	3	6	3	8
Bottom Depth	Proposed	12		3	3	3	6	3	8
Lab Sample ID	Cleanup Levels	08/07/08	08/11/08	08/11/08	08/11/08	08/11/08	08/11/08	08/11/08	07/25/08
METALS (mg/kg)									
Arsenic	20		<5	<5	<5	<5	<5	<5	
Barium	1700 / 102 (a)		<50	<50	<50	**78**	**51**	<50	
Cadmium	25		<1	<1	<1	<1	<1	<1	
Chromium	120000 / 48 (a)		<5	<5	**6**	**12**	**9.8**	<5	
Lead	250 / 220 (a)		<5	<5	<5	<5	<5	<5	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<50
Gasoline-Range	100/30 (b)	<5	<5	<5	<5	<5	<5	<5	<20
Oil-Range	2,000	<50	<40	<40	<40	<40	<40	<40	<100
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.08**	
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.38**	
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.46**	
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
1,3,5-Trimethylbenzene	4000		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Isopropylbenzene			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
Isopropyltoluene			<0.05	<0.05	<0.05	<0.05	<0.05	**0.1**	
n-Butylbenzene			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
n-Propylbenzene			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
tert-Butylbenzene			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	
PAHs (mg/kg)									
Naphthalene	4.5		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
1-Methylnaphthalene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
2-Methylnaphthalene	320		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Acenaphthene	98		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Fluorene	101		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Phenanthrene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Fluoranthene	630		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Pyrene	650		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(ghi)perylene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(a)pyrene	see cPAH TEQ		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(a)anthracene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(b)fluoranthene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Benzo(k)fluoranthene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Chrysene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Dibenzo(a,h)anthracene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Indeno(1,2,3-cd)pyrene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
Total cPAH teq	0.14		NA	NA	NA	NA	NA	NA	

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		A-S-07	A-S-08	A-S-11	A-S-13	A-S-14	A-S-16	A-S-18	A-S-20
Sample Location ID		7	8	11	13	14	16	18	20
Top Depth		9	8	7	9	6	6	6	4
Bottom Depth	Proposed	9	8	7	9	6	6	6	4
Lab Sample ID	Cleanup Levels	07/25/08	07/25/08	07/25/08	07/25/08	07/25/08	07/25/08	07/25/08	07/25/08
METALS (mg/kg)									
Arsenic	20								
Barium	1700 / 102 (a)								
Cadmium	25								
Chromium	120000 / 48 (a)								
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<50	<50	<50	<50	<50	<50	<50	<50
Gasoline-Range	100/30 (b)	<20	<20	<20	<20	<20	<20	<20	<20
Oil-Range	2,000	<100	<100	<100	<100	<100	<100	<100	<100
BTEX (mg/kg)									
Benzene	0.03								
Ethylbenzene	6								
Toluene	4.7								
Xylenes	15								
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5								
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98								
Fluorene	101								
Phenanthrene									
Fluoranthene	630								
Pyrene	650								
Benzo(ghi)perylene									
Benzo(a)pyrene	see cPAH TEQ								
Benzo(a)anthracene									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Indeno(1,2,3-cd)pyrene									
Total cPAH teq	0.14								

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		A-S-21	A-S-22	A-S-26	A-S-27	A-S-29	A-S-30	A-S-39	A-S-40
Sample Location ID		21	22	26	27	29	30	39	40
Top Depth				0	0	0	0	5	5
Bottom Depth				4	4	4	4	12	12
Lab Sample ID	Proposed Cleanup Levels	07/29/08	07/29/08	08/07/08	08/07/08	08/07/08	08/07/08	08/07/08	08/07/08
METALS (mg/kg)									
Arsenic	20								
Barium	1700 / 102 (a)								
Cadmium	25								
Chromium	120000 / 48 (a)								
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2,000	190	<50	<50	<50	<50	<50	76	140
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5								
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98								
Fluorene	101								
Phenanthrene									
Fluoranthene	630								
Pyrene	650								
Benzo(ghi)perylene									
Benzo(a)pyrene	see cPAH TEQ								
Benzo(a)anthracene									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Indeno(1,2,3-cd)pyrene									
Total cPAH teq	0.14								

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		A-S-42	A-S-43	A-S-60	A-S-61	A-S-62	A-S-63	A-S-64	A-S-68
Sample Location ID		42	43	60	61	62	63	64	68
Top Depth		5	5	3	2	2	2	3	4
Bottom Depth	Proposed	12	12	3	2	2	2	3	4
Lab Sample ID	Cleanup Levels	08/07/08	08/07/08	08/11/08	08/11/08	08/11/08	08/11/08	08/11/08	08/11/08
METALS (mg/kg)									
Arsenic	20		<2	<5	<5	<5	<5	<5	<5
Barium	1700 / 102 (a)			<50	<50	<50	<50	<50	<50
Cadmium	25		<1	<1	<1	<1	<1	<1	<1
Chromium	120000 / 48 (a)		**3.7**	**9.3**	**10**	**6**	**7**	<5	**9.8**
Lead	250 / 220 (a)		**88**	<5	<5	<5	<5	<5	**39**
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2,000	<50	**100**	<40	<40	<40	<40	<40	<40
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.33**	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	**0.05**	<0.05	<0.05	**1.2**	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**1.3**	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
1,3,5-Trimethylbenzene	4000			<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Isopropylbenzene				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Isopropyltoluene				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Butylbenzene				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
n-Propylbenzene				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
tert-Butylbenzene				<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
PAHs (mg/kg)									
Naphthalene	4.5		<0.05	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-Methylnaphthalene				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-Methylnaphthalene	320			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	98		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	101		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	630		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	650		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	see cPAH TEQ		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b)fluoranthene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total cPAH teq	0.14		NA	NA	NA	NA	NA	NA	NA

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		A-S-70	A-S-72	A-S-74	A-RP1-45	A-RP1-46	A-RP1-47	A-RP1-48	A-RP1-49
Sample Location ID		70	72	74	45	46	47	48	49
Top Depth		4	4	3					
Bottom Depth	Proposed	4	4	3					
Lab Sample ID	Cleanup Levels	08/11/08	08/11/08	08/11/08	08/07/08	08/07/08	08/07/08	08/07/08	08/07/08
METALS (mg/kg)									
Arsenic	20	<5	<5	<5	<2.0			<2.0	
Barium	1700 / 102 (a)	<50	<50	<50					
Cadmium	25	<1	<1	<1	<1.0			<1.0	
Chromium	120000 / 48 (a)	10	12	9.3	4.5			4	
Lead	250 / 220 (a)	<5	<5	<5	36			37	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5	<5	<5	<5.0	<5.0	<5.0	<5.0	<5.0
Oil-Range	2,000	<40	<40	<40	400	550	170	230	170
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.020	<0.020	<0.020	<0.020	<0.020
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Toluene	4.7	0.09	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050
Xylenes	15	0.06	<0.05	<0.05	<0.050	<0.050	<0.050	<0.050	<0.050
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000	<0.05	<0.05	<0.05					
1,3,5-Trimethylbenzene	4000	<0.05	<0.05	<0.05					
Isopropylbenzene		<0.05	<0.05	<0.05					
Isopropyltoluene		1.7	<0.05	<0.05					
n-Butylbenzene		<0.05	<0.05	<0.05					
n-Propylbenzene		<0.05	<0.05	<0.05					
tert-Butylbenzene		<0.05	<0.05	<0.05					
PAHs (mg/kg)									
Naphthalene	4.5	<0.1	<0.1	<0.1	<0.050			<0.050	
1-Methylnaphthalene		<0.1	<0.1	<0.1					
2-Methylnaphthalene	320	<0.1	<0.1	<0.1					
Acenaphthene	98	<0.1	<0.1	<0.1	<0.10			<0.10	
Fluorene	101	<0.1	<0.1	<0.1	<0.10			<0.10	
Phenanthrene		<0.1	<0.1	<0.1	<0.10			<0.10	
Fluoranthene	630	<0.1	<0.1	<0.1	<0.10			<0.10	
Pyrene	650	<0.1	<0.1	<0.1	<0.10			<0.10	
Benzo(ghi)perylene		<0.1	<0.1	<0.1	<0.10			<0.10	
Benzo(a)pyrene	see cPAH TEQ	<0.1	<0.1	<0.1	<0.10			<0.10	
Benzo(a)anthracene		<0.1	<0.1	<0.1	<0.10			<0.10	
Benzo(b)fluoranthene		<0.1	<0.1	<0.1	<0.10			<0.10	
Benzo(k)fluoranthene		<0.1	<0.1	<0.1	<0.10			<0.10	
Chrysene		<0.1	<0.1	<0.1	<0.10			<0.10	
Dibenzo(a,h)anthracene		<0.1	<0.1	<0.1	<0.10			<0.10	
Indeno(1,2,3-cd)pyrene		<0.1	<0.1	<0.1	<0.10			<0.10	
Total cPAH teq	0.14	NA	NA	NA	NA			NA	

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Top Depth Bottom Depth Lab Sample ID	Proposed Cleanup Levels	A-RP1-50 50 08/07/08	A-RP1-51 51 08/07/08	A-RP1-52 52 08/07/08	A-RP1-53 53 08/07/08	A-RP1-54 54 08/07/08	A-RP1-55 55 08/07/08	A-RP1-56 56 08/07/08	A-RP2-20 20 08/27/08
METALS (mg/kg)									
Arsenic	20		<2.0			<2.0			
Barium	1700 / 102 (a)								
Cadmium	25		<1.0			<1.0			
Chromium	120000 / 48 (a)		5.2			4.9			
Lead	250 / 220 (a)		27			54			
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5
Oil-Range	2,000	<50	<50	200	250	160	210	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.02
Ethylbenzene	6	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05
Toluene	4.7	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05
Xylenes	15	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5		<0.050			<0.050			
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98		<0.10			<0.10			
Fluorene	101		<0.10			<0.10			
Phenanthrene			<0.10			<0.10			
Fluoranthene	630		<0.10			<0.10			
Pyrene	650		<0.10			<0.10			
Benzo(ghi)perylene			<0.10			<0.10			
Benzo(a)pyrene	see cPAH TEQ		<0.10			<0.10			
Benzo(a)anthracene			<0.10			<0.10			
Benzo(b)fluoranthene			<0.10			<0.10			
Benzo(k)fluoranthene			<0.10			<0.10			
Chrysene			<0.10			<0.10			
Dibenzo(a,h)anthracene			<0.10			<0.10			
Indeno(1,2,3-cd)pyrene			<0.10			<0.10			
Total cPAH teq	0.14		NA			NA			

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Top Depth Bottom Depth Lab Sample ID	Proposed Cleanup Levels	A-RP2-21 21 08/27/08	A-RP2-22 22 08/27/08	A-RP2-23 23 08/27/08	A-RP2-24 24 08/27/08	A-RP2-25 25 08/27/08	A-RP2-26 26 08/27/08	A-RP2-27 27 08/27/08	A-RP2-28 28 08/27/08
METALS (mg/kg)									
Arsenic	20								
Barium	1700 / 102 (a)								
Cadmium	25								
Chromium	120000 / 48 (a)								
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2,000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5								
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98								
Fluorene	101								
Phenanthrene									
Fluoranthene	630								
Pyrene	650								
Benzo(ghi)perylene									
Benzo(a)pyrene	see cPAH TEQ								
Benzo(a)anthracene									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Indeno(1,2,3-cd)pyrene									
Total cPAH teq	0.14								

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Top Depth Bottom Depth Lab Sample ID	Proposed Cleanup Levels	A-RP2-29 29 08/27/08	A-RP2-30 30 08/27/08	A-RP2-31 31 08/27/08	A-RP2-32 32 08/27/08	A-RP2-33 33 08/27/08	A-RP2-34 34 08/27/08	A-RP2-35 35 08/27/08	A-RP3-118 118 09/29/08
METALS (mg/kg)									
Arsenic	20								
Barium	1700 / 102 (a)								
Cadmium	25								
Chromium	120000 / 48 (a)								
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2,000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5								
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98								
Fluorene	101								
Phenanthrene									
Fluoranthene	630								
Pyrene	650								
Benzo(ghi)perylene									
Benzo(a)pyrene	see cPAH TEQ								
Benzo(a)anthracene									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Indeno(1,2,3-cd)pyrene									
Total cPAH teq	0.14								

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Top Depth Bottom Depth Lab Sample ID	Proposed Cleanup Levels	A-RP3-119 119 09/29/08	A-RP3-122 122 09/29/08	A-RP3-123 123 09/29/08	A-RP3-124 124 09/29/08	A-RP3-125 125 09/29/08	A-RP3-126 126 09/29/08	A-RP3-127 127 09/29/08	A-RP3-128 128 09/29/08
METALS (mg/kg)									
Arsenic	20								
Barium	1700 / 102 (a)								
Cadmium	25								
Chromium	120000 / 48 (a)								
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2,000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5								
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98								
Fluorene	101								
Phenanthrene									
Fluoranthene	630								
Pyrene	650								
Benzo(ghi)perylene									
Benzo(a)pyrene	see cPAH TEQ								
Benzo(a)anthracene									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Indeno(1,2,3-cd)pyrene									
Total cPAH teq	0.14								

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location		A-RP3-129	A-RP3-130	A-RP3-131	A-RP3-132	A-RP4-51	A-RP4-52	A-RP4-53	A-RP4-54
Sample Location ID		129	130	131	132	51	52	53	54
Top Depth									
Bottom Depth									
Lab Sample ID	Proposed Cleanup Levels	09/29/08	09/29/08	09/29/08	09/29/08	09/04/08	09/04/08	09/04/08	09/04/08
METALS (mg/kg)									
Arsenic	20								
Barium	1700 / 102 (a)								
Cadmium	25								
Chromium	120000 / 48 (a)								
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2,000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5								
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98								
Fluorene	101								
Phenanthrene									
Fluoranthene	630								
Pyrene	650								
Benzo(ghi)perylene									
Benzo(a)pyrene	see cPAH TEQ								
Benzo(a)anthracene									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Indeno(1,2,3-cd)pyrene									
Total cPAH teq	0.14								

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Top Depth Bottom Depth Lab Sample ID	Proposed Cleanup Levels	A-RP4-55 55 09/04/08	A-RP4-56 56 09/04/08	A-RP4-57 57 09/04/08	A-RP4-58 58 09/04/08	A-RP4-60 60 09/04/08	A-RP4-61 61 09/04/08	A-RP4-62 62 09/04/08	A-RP4-65 65 09/04/08
METALS (mg/kg)									
Arsenic	20								
Barium	1700 / 102 (a)								
Cadmium	25								
Chromium	120000 / 48 (a)								
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100/30 (b)	<5	<5	<5	12	<5	<5	<5	<5
Oil-Range	2,000	<50	<50	<50	180	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	0.21	<0.05	<0.05	<0.05	<0.05
VOLATILES (mg/kg)									
1,2,4-Trimethylbenzene	4000								
1,3,5-Trimethylbenzene	4000								
Isopropylbenzene									
Isopropyltoluene									
n-Butylbenzene									
n-Propylbenzene									
tert-Butylbenzene									
PAHs (mg/kg)									
Naphthalene	4.5								
1-Methylnaphthalene									
2-Methylnaphthalene	320								
Acenaphthene	98								
Fluorene	101								
Phenanthrene									
Fluoranthene	630								
Pyrene	650								
Benzo(ghi)perylene									
Benzo(a)pyrene	see cPAH TEQ								
Benzo(a)anthracene									
Benzo(b)fluoranthene									
Benzo(k)fluoranthene									
Chrysene									
Dibenzo(a,h)anthracene									
Indeno(1,2,3-cd)pyrene									
Total cPAH teq	0.14								

TABLE 12
AREA A - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Top Depth Bottom Depth Lab Sample ID	Proposed Cleanup Levels	A-RP4-66 66 09/04/08	A-RP4-67 67 09/04/08
METALS (mg/kg)			
Arsenic	20		
Barium	1700 / 102 (a)		
Cadmium	25		
Chromium	120000 / 48 (a)		
Lead	250 / 220 (a)		
TOTAL PETROLEUM HYDROCARBONS (mg/kg)			
Diesel-Range	2000 / 460 (a)	<20	<20
Gasoline-Range	100/30 (b)	<5	<5
Oil-Range	2,000	<50	<50
BTEX (mg/kg)			
Benzene	0.03	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05
Toluene	4.7	<0.05	<0.05
Xylenes	15	<0.05	<0.05
VOLATILES (mg/kg)			
1,2,4-Trimethylbenzene	4000		
1,3,5-Trimethylbenzene	4000		
Isopropylbenzene			
Isopropyltoluene			
n-Butylbenzene			
n-Propylbenzene			
tert-Butylbenzene			
PAHs (mg/kg)			
Naphthalene	4.5		
1-Methylnaphthalene			
2-Methylnaphthalene	320		
Acenaphthene	98		
Fluorene	101		
Phenanthrene			
Fluoranthene	630		
Pyrene	650		
Benzo(ghi)perylene			
Benzo(a)pyrene	see cPAH TEQ		
Benzo(a)anthracene			
Benzo(b)fluoranthene			
Benzo(k)fluoranthene			
Chrysene			
Dibenzo(a,h)anthracene			
Indeno(1,2,3-cd)pyrene			
Total cPAH teq	0.14		

(a) Point of Compliance for cleanup level protective of terrestrial plants and animals is 15 ft BGS.
See Table 3 for cleanup level development.
(b) MTCA Method A cleanup level is 30 mg/kg when benzene is present and 100 mg/kg when benzene is not present.
Bold = Analyte found above detection limit.
Box = Exceeds MTCA Method A Cleanup Level.

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-B-01 1 08/22/08	C-B-02 2 08/22/08	C-B-03 3 08/22/08	C-B-04 4 08/22/08	C-B-05 5 08/22/08	C-B-06 6 08/22/08	C-B-07 7 08/22/08	C-B-08 8 08/22/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-B-09 9 08/22/08	C-B-10 10 08/22/08	C-B-100 100 09/16/08	C-B-102 102 09/16/08	C-B-110 110 09/19/08	C-B-111 111 09/19/08	C-B-112 112 09/19/08	C-B-114 114 09/19/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	18
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.1
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.3

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-B-12 12 08/22/08	C-B-13 13 08/22/08	C-B-133 133 10/01/08	C-B-134 134 10/01/08	C-B-135 135 10/01/08	C-B-136 136 10/01/08	C-B-137 137 10/01/08	C-B-139 139 10/01/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-B-141 141 10/01/08	C-B-149 149 10/03/08	C-B-150 150 10/03/08	C-B-151 151 10/03/08	C-B-152 152 10/03/08	C-B-154 154 10/03/08	C-B-155 155 10/03/08	C-B-157 157 10/03/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	**5.9**	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	**0.1**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	**0.29**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-B-41 41 09/04/08	C-B-42 42 09/04/08	C-B-44 44 09/04/08	C-B-49 49 09/04/08	C-B-84 84 09/16/08	C-B-85 85 09/16/08	C-B-90 90 09/16/08	C-B-91 91 09/16/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-B-92 92 09/16/08	C-B-93 93 09/16/08	C-B-94 94 09/16/08	C-B-97 97 09/16/08	C-S-101 101 09/16/08	C-S-104 104 09/19/08	C-S-105 105 09/19/08	C-S-107 107 09/19/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	**12**
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.05**
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.3**
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	**0.32**

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-S-108 108 09/19/08	C-S-109 109 09/19/08	C-S-133A 133 09/29/08	C-S-134A 134 09/29/08	C-S-138 138 10/01/08	C-S-14 14 08/22/08	C-S-142 142 10/01/08	C-S-143 143 10/01/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	**8.8**	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	**0.094**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	**0.096**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-S-144 144 10/01/08	C-S-145 145 10/01/08	C-S-15 15 08/22/08	C-S-153 153 10/03/08	C-S-39 39 09/04/08	C-S-40 40 09/04/08	C-S-43 43 09/04/08	C-S-45 45 09/04/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-S-46 46 09/04/08	C-S-47 47 09/04/08	C-S-48 48 09/04/08	C-S-86 86 09/16/08	C-S-87 87 09/16/08	C-S-88 88 09/16/08	C-S-89 89 09/16/08	C-S-95 95 09/16/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-S-96 96 09/16/08	C-S-98 98 09/16/08	C-S-99 99 09/16/08	C-RP1-70 70 09/09/08	C-RP1-71 71 09/09/08	C-RP1-72 72 09/09/08	C-RP1-73 73 09/09/08	C-RP1-74 74 09/09/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-RP1-75 75 09/09/08	C-RP1-76 76 09/09/08	C-RP1-77 77 09/09/08	C-RP1-78 78 09/09/08	C-RP2-79 79 09/09/08	C-RP2-80 80 09/09/08	C-RP2-81 81 09/09/08	C-RP2-82 82 09/09/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-RP2-83 83 09/09/08	C-RP4-115 115 09/24/08	C-RP4-116 116 09/24/08	C-RP4-117 117 09/24/08	C-RP5-158 158 10/03/08	C-RP5-159 159 10/03/08	C-RP5-160 160 10/03/08	C-RP5-161 161 10/03/08
METALS (mg/kg)									
Lead	250 / 220 (a)								
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	**49**	**120**	**140**	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	**140**	**390**	**270**	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	**0.035**	**0.15**	**0.12**	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	**0.51**	**0.94**	**0.22**	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	**0.52**	**0.37**	**0.15**	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	**5.2**	**10**	**5.5**	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-RP5-162 162 10/03/08	C-RP5-163 163 10/03/08	C-RP5-164 164 10/03/08	C-RP5-165 165 10/03/08	C-RP5-166 166 10/03/08	C-RP5-167 167 10/03/08	C-RP6-168 149 (168) 10/13/08	C-RP6-169 150 (169) 10/13/08
METALS (mg/kg)									
Lead	250 / 220 (a)							**5.6**	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-RP6-170 151 (170) 10/13/08	C-RP6-171 152 (171) 10/13/08	C-RP6-172 153 (172) 10/13/08	C-RP6-173 154 (173) 10/13/08	C-RP6-174 155 (174) 10/13/08	C-RP6-175 156 (175) 10/13/08	C-RP6-176 157 (176) 10/13/08	C-RP6-177 158 (177) 10/13/08
METALS (mg/kg)									
Lead	250 / 220 (a)						82		
TOTAL PETROLEUM HYDROCARBONS (mg/kg)									
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)									
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

TABLE 13
AREA C - FINAL CONFIRMATION AND REMEDIATION PILE SAMPLE ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

General Location Sample Location ID Lab Sample ID	Preliminary Cleanup Levels	C-RP6-178 159 (178) 10/13/08	C-RP6-179 160 (179) 10/13/08	C-RP6-180 161 (180) 10/13/08	C-RP6-181 162 (181) 10/13/08	C-RP6-182 163 (182) 10/13/08	C-RP6-183 164 (183) 10/13/08	C-RP6-184 165 (184) 10/13/08
METALS (mg/kg)								
Lead	250 / 220 (a)		**18**				**8.7**	
TOTAL PETROLEUM HYDROCARBONS (mg/kg)								
Diesel-Range	2000 / 460 (a)	<20	<20	<20	<20	<20	<20	<20
Gasoline-Range	100 / 30 (b)	<5	<5	<5	<5	<5	<5	<5
Oil-Range	2000	<50	<50	<50	<50	<50	<50	<50
BTEX (mg/kg)								
Benzene	0.03	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Ethylbenzene	6	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Toluene	4.7	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Xylenes	15	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

(a) Point of Compliance for cleanup level protective of terrestrial plants and animals is 15 ft BGS. See Table 3 for cleanup level development.
(b) MTCA Method A cleanup level is 30 mg/kg when benzene is present and 100 mg/kg when benzene is not present.
Bold = Analyte found above detection limit.
Box = Exceeds MTCA Method A Cleanup Level.

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. RE02665

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☒ Construction

☐ Decommission

ORIGINAL INSTALLATION Notice of Intent Number:

Type of Well *("x in box)*

☒ Resource Protection

☐ Geotech Soil Boring

Property Owner Verbeek Properties

Site Address 18416 Bothell Everett Hwy

City Bothell County King

Location NE1/4-1/4 NE1/4 Sec 18 Twn 27 R 05

EWM ☒ or WWM ☐

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____

Long Deg ____ Min ____ Sec ____

Tax Parcel No. 27051800103700

Consulting Firm GreenCo

Unique Ecology Well IDTag No. BAF 235

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

☐ Driller ☐ Engineer ☒ Trainee

Name (Print Last, First Name) Knopf, Noel

Driller/Engineer/Trainee Signature

Driller or Trainee License No. T2872

Cased or Uncased Diameter 9" Static Level 35'

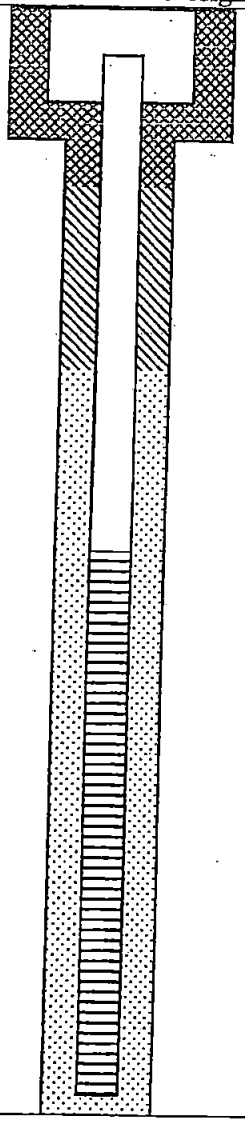
Work/Decommission Start Date 9/22/08

Work/Decommission Completed Date 9/22/08

If trainee, licensed driller's Signature and License Number:

Anna Harnden 2508

Construction Design



Well Data

MONUMENT TYPE: 8" flush mount

CONCRETE SURFACE SEAL: 0'-1'

ANNULAR SPACE: ____

BACKFILL: 1'-36'

TYPE: 3/8" bent chips

PVC BLANK: 0'-38'

SCREEN: 38'-48'

SLOT SIZE: 0.010"

TYPE: 2" sch 40 PVC

SAND PACK: 36'-48'

MATERIAL: 10/20 silica

DRILLING METHOD: H.S.A

WELL DEPTH: 48'

BORING DIAMETER: 9"

Formation Description

N/A

SCALE: 1"= ____ PAGE 1 OF 2

Please print, sign and return to the Department of Ecology

RESOURCE PROTECTION WELL REPORT

CURRENT Notice of Intent No. RE02665

(SUBMIT ONE WELL REPORT PER WELL INSTALLED)

Construction/Decommission *("x" in box)*

☒ Construction
☐ Decommission

ORIGINAL INSTALLATION Notice of Intent Number:

Type of Well *("x in box)*

☒ Resource Protection
☐ Geotech Soil Boring

Property Owner Verbeek Properties

Site Address 18416 Bothell Everett Hwy

Consulting Firm GreenCo

City Bothell County King

Unique Ecology Well IDTag No. BAF 236

Location NE1/4-1/4 NE1/4 Sec 18 Twn 27 R 05

EWM ☒ or WWM ☐

WELL CONSTRUCTION CERTIFICATION: I constructed and/or accept responsibility for construction of this well, and its compliance with all Washington well construction standards. Materials used and the information reported above are true to my best knowledge and belief.

Lat/Long (s, t, r still REQUIRED) Lat Deg ____ Min ____ Sec ____

Long Deg ____ Min ____ Sec ____

☐ Driller ☐ Engineer ☒ Trainee

Name (Print Last, First Name) Knopf, Noel

Driller/Engineer /Trainee Signature

Driller or Trainee License No. T2872

Tax Parcel No. 27051800103700

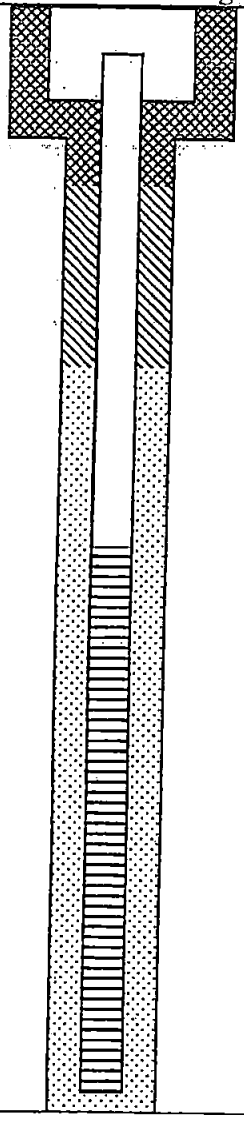
Cased or Uncased Diameter 9" Static Level 35'

Work/Decommission Start Date 9/22/08

Work/Decommission Completed Date 9/22/08

If trainee, licensed driller's Signature and License Number:
Chris Harnden 2508

Construction Design



Well Data

MONUMENT TYPE: 8" flush mount

CONCRETE SURFACE SEAL: 0'-1'

ANNULAR SPACE: ____

BACKFILL: 1'-32'
TYPE: 3/8" bent chips

PVC BLANK: 0'-34'

SCREEN: 34'-39'
SLOT SIZE: 0.010"
TYPE: 2" sch 40 PVC

SAND PACK: 32'-39'
MATERIAL: 10/20 silica

DRILLING METHOD: H.S.A.

WELL DEPTH: 39'

BORING DIAMETER: 9"

Formation Description

N/A

SCALE: 1"= ____ PAGE 2 OF 2

CY 050-12 (Rev. 7/06)

MW-1 and MW-2
Driller's Observations (a)
Verbeek Wrecking
Bothell, Washington

Soil Interval (ft)	Soil Description
0-4	Gravels
4-12	Grey silty sand
12-22	Brown silty sand
22-28	Wet brown silty sand
28-38	Dense silty sand
38-39	Gravels/cobbles
39-52	Wet silt

(a) Soil information provided by Environmental Services Northwest, Inc. in an e-mail dated February 6, 2009.

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL[1]	TYPICAL DESCRIPTIONS[2][3]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

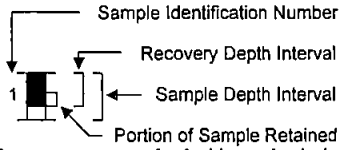
Notes:
1. USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
2. Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
3. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent:	> 50%	- "GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents:	> 30% and ≤ 50%	- "very gravelly," "very sandy," "very silty," etc.
	> 15% and ≤ 30%	- "gravelly," "sandy," "silty," etc.
Additional Constituents:	> 5% and ≤ 15%	- "with gravel," "with sand," "with silt," etc.
	≤ 5%	- "with trace gravel," "with trace sand," "with trace silt," etc., or not noted.

4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key

SAMPLER TYPE		SAMPLE NUMBER & INTERVAL
Code	Description	
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon	
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon	
c	Shelby Tube	
d	Grab Sample	
e	Single-Tube Core Barrel	
f	Double-Tube Core Barrel	
g	2.50-inch O.D., 2.00-inch I.D. WSDOT	
h	3.00-inch O.D., 2.375-inch I.D. Mod. California	
i	Other - See text if applicable	
1	300-lb Hammer, 30-inch Drop	
2	140-lb Hammer, 30-inch Drop	
3	Pushed	
4	Vibrocore (Rotosonic/Geoprobe)	
5	Other - See text if applicable	



Field and Lab Test Data

Code	Description
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
GT	Other Geotechnical Testing
CA	Chemical Analysis

Groundwater

▽ Approximate water level at time of drilling (ATD)

▼ Approximate water level at time other than ATD

12/24/09 N:\PROJECTS\1173001.GPJ SOIL CLASS SHEET

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation Bothell Washington	Soil Classification System and Key	Figure

A-B1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0	A-B1-(0-0.5)			0		SP	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc. Brownish gray, gravelly, fine to coarse SAND (medium dense, damp) (no odor, no stain)
				0			
				0		SM	Black, silty, fine to medium SAND with gravel (medium dense, damp to moist) (no odor)
	A-B1-(2.5-3.25)	b3		0			
				0		SM	
				0			Mottled gray, brown, and orange, gravelly, silty, fine to medium SAND (dense, damp to moist) (no odor, no stain) (possibly weathered)
5				0			ATD
				0			-Color change to all gray
		b3		0			-(medium dense)
				0			
				0			-(dense)
10							

Boring Completed 08/21/09
Total Depth of Boring = 10.0 ft.

Point located at State Plane Coordinates:
North: 306072.34
East: 1301738.84

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation Bothell Washington	Log of Boring A-B1	Figure C-1

A-B2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0	A-B2-(0-0.5)			0		SP	Brown, gravelly, fine to medium SAND (medium dense, damp) (no odor, no stain)
	A-B2-(1-2)			0			
		b3		0		SM	Mottled gray, brown, and orange, gravelly, silty, fine to medium SAND (very dense, damp) (no odor, no stain)
				0			
				0			-Color change to all gray
5				0			-(moist)
				0			-(wet) ▽ ATD
		b3		0			
				0			
				0			
10							

Drilling Method: Geoprobe™

Ground Elevation (ft): _____

Drilled By: Cascade Drilling Inc.

Boring Completed 08/20/09
Total Depth of Boring = 10.0 ft.

Point located at State Plane Coordinates:
North: 306165.46
East: 1301749.13

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring A-B2

Figure C-2

C-B1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0	C-B1-(0-0.5)			0		SP	Brown, gravelly, medium to coarse SAND (medium dense, damp) (no odor, no stain)
	C-B1-(1.5-2.25)	b3		0 0 0 0		SP	-Trace wood chips at 2.25 ft bgs Gray, very gravelly, fine to medium SAND (very dense) (no odor, no stain)
5	C-B1-(5.5-6.5)	b3		0 0 0 0 0 0 0		SM	Brown, silty, fine to medium SAND (loose, moist to wet) (no odor, no stain) with substantial roots and decayed plant matter
10						SP	Brown, medium SAND with gravel (medium dense, wet) (no odor, no stain, no sheen)

Drilling Method: Geoprobe™

Ground Elevation (ft):

Drilled By: Cascade Drilling Inc.

▽ ATD

Boring Completed 08/20/09
Total Depth of Boring = 10.0 ft.

Point located at State Plane Coordinates:
North: 306459.13
East: 1302136.20

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring C-B1

Figure C-3

C-B2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hand Implements Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0		d		0		GP	Brown, very sandy, fine to coarse GRAVEL (medium dense, damp) (no odor)	Groundwater not encountered.
		d		0				
		d		0				
		d		0				
		d		62.4			Black, tar-like substance; very cohesive and thick (strong petroleum odor) (possible GWP material)	
		d		12.9		SP	Dark brown, gravelly, cobbly, fine to medium SAND (dense, damp) (slight hydrocarbon odor)	
2		d		6.7				

Boring Completed 08/31/09
Total Depth of Boring = 0.7 ft.

Point located at State Plane Coordinates:
North: 306001.77
East: 1302205.42

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring C-B2

Figure C-4

C-B3

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hand Implements Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0		d		0		SP	Brown, very gravelly, fine to coarse SAND (medium dense, damp) (no odor)	Groundwater not encountered.
		d		0				
		d		0				
		d		0				
		d		0				
		d		0				
		d		0				
		d		0				
		d		0				
		d		10.9		SP	Brown, fine to medium SAND	
		d		70.4 42.1			Black, tar-like substance; very cohesive and thick (strong petroleum odor) (possible GWP material)	
		d		13.7		SP	Dark brown, gravelly, fine to medium SAND with cobbles (dense, damp) (slight hydrocarbon odor)	
		d		10.3				
		d		0.6				
		d		1.2				
		d		0				
		d		0				
		d		0				
2								

Boring Completed 08/31/09
Total Depth of Boring = 1.5 ft.

Point located at State Plane Coordinates:
North: 306018.65
East: 1302215.70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring C-B3

Figure C-5

C-SS1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0				0		GP	Light brown to gray, very sandy, fine to coarse GRAVEL (dense, damp) (no odor, no stain)	Groundwater not encountered.
				0				
		b3		0		GP SM	Gray, sandy, fine GRAVEL with trace silt (very dense, damp) (no odor, no stain)	
						SM	Mottled orange, gray, and brown, gravelly, silty, fine to coarse SAND	
5				0			Mottled, brown and light brown, silty, fine to medium SAND (dense, damp) (no odor, no stain) with abundant roots, twigs, and wood chips	
				0				
	C-SS1-(7-8)	b3		0				
				0		GM	-3 inch thick layer of speckled black and gray GRAVEL at 6 to 6.25 ft bgs (dense, damp) (no odor, no stain)	
10							Gray, silty, very sandy, GRAVEL (very dense, damp) (no odor, no stain)	

Boring Completed 08/20/09
Total Depth of Boring = 10.0 ft.

Point located at State Plane Coordinates:
North: 306052.31
East: 1302237.36

15
20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring C-SS1

Figure C-6

C-SS2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0				0		SP	Brown, gravely, fine to medium SAND (medium dense, damp) (no odor, no stain)	Groundwater not encountered.
				0		SP		
		b3		0		SM	Gray, fine to medium SAND (medium dense, damp) (no odor, no stain)	
				0			Dark gray, silty, gravelly, fine to medium SAND (dense, damp) (no odor, no stain)	
5				0				
				0		SM	Brown, silty, fine to medium SAND with gravel (medium dense, damp to moist) (no odor, no stain, no sheen)	
		b3		0				
10	C-SS2-(10-11)			0				
				0		GM	Gray, silty, very sandy, fine to coarse GRAVEL (very dense, damp) (no odor, no stain, no sheen)	
		b3		0				
15				0				
		b3						
20								
25								
30								
35								

Boring Completed 08/21/09
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 306021.53
East: 1302234.12

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring C-SS2

Figure C-7

C-SS3

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): _____ Drilled By: Cascade Drilling Inc.	Water Level
0				0		SP-SM	Brown, gravelly, fine to coarse SAND with silt (medium dense, damp) (no odor, no stain)	
				0				
		b3		0		SM	Very dark brown, gravelly, silty, fine to medium SAND (medium dense, damp to moist) (no odor, no stain)	
				0				
				0				
5				0				
	C-SS3-(5-7.5)			0		SM	Gray, silty, fine to medium SAND (medium dense, moist) (slight hydrocarbon odor)	
		b3		0		SM	Brown, silty, gravelly, fine to medium SAND mixed with pockets of gray, fine SAND (no odor, no stain) with roots	
10						GP	Gray, sandy, fine to coarse GRAVEL (dense, moist) (no odor, no stain)	
				0				
				0		SM	Gray to brown, silty, fine SAND (dense, moist) (no odor, no stain)	
		b3		0				
15								▽ ATD
20								
25								
30								
35								

Boring Completed 08/21/09
Total Depth of Boring = 15.0 ft.

Point located at State Plane Coordinates:
North: 305985.92
East: 1302248.77

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring C-SS3

Figure C-8

D-B1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0				0		SP	Gray to brown and orange, very gravelly, medium to coarse SAND (very dense, damp) (no odor, no stain) with trace wood fragments	Groundwater not encountered.
		b3		0				
				0				
5				0				
				0		SP	Light brown, gravelly, medium to coarse SAND (very dense, damp) (no odor, no stain)	
		b3		0				
				0				
10				0				
				0				
		b3		0				
	D-B1-(12-13)			0			-Refusal at 13 ft bgs	
15								
20								
25								
30								
35								

Boring Completed 08/20/09
Total Depth of Boring = 13.0 ft.

Point located at State Plane Coordinates:
North: 306112.94
East: 1302337.81

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

11730001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B1

Figure C-9

D-B2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0				0		GP	Gray to brown, sandy, fine to coarse GRAVEL (dense, damp) (no odor, no stain)	Groundwater not encountered.
		b3		0		GP/ SP	Brown, very gravelly medium SAND/very sandy fine GRAVEL (medium dense to dense, damp) (no odor, no stain)	
				0				
5		b3		0		GP/ SP	Gray, very sandy, fine to coarse GRAVEL/gravelly medium SAND with silt (dense, damp) (no odor, no stain)	
				0				
10		b3		0			-(very dense, moist)	
				0				
	D-B2-(13-14)	b3		0			-Refusal at 14 ft bgs	
15								
20								
25								
30								
35								

Boring Completed 08/21/09
Total Depth of Boring = 14.0 ft.

Point located at State Plane Coordinates:
North: 306107.51
East: 1302343.57

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B2

Figure C-10

D-B3

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0				0		GP	Gray to brown, sandy, fine to coarse GRAVEL (very dense, damp) (no odor, no stain)	Groundwater not encountered.
		b3		0				
				0				
5				0		GP/ SP	Brown, very gravelly, medium SAND/very sandy, fine to coarse GRAVEL (dense to very dense, damp) (no odor, no stain)	
		b3		0		GP/ SP	Gray, interbedded sandy, fine to coarse GRAVEL and gravelly, medium SAND (very dense, damp) (no odor, no stain)	
10				0				
		b3		0				
	D-B3-(13-14)			0			-Refusal at 14.25 ft bgs	
15								
20								
25								
30								
35								

Boring Completed 08/21/09
Total Depth of Boring = 14.3 ft.

Point located at State Plane Coordinates:
North: 306049.82
East: 1302313.40

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B3

Figure C-11

D-B4

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0				0		GP-GM	Gray to brown, sandy, fine to coarse GRAVEL with silt	Groundwater not encountered.
				0				
		b3		0				
5				0				
				0.3				
		b3		0.9		GP/SP	Gray, very gravelly, medium to coarse SAND/ sandy, fine to coarse GRAVEL (dense to very dense, moist) (slight to moderate hydrocarbon odor)	
10				38.4				
				67.7				
		b3		68.2				
				97.3				
15	D-B4-(15-15.5)	b3		138				
				89.6			-Refusal at 16 ft bgs	

Boring Completed 08/21/09
Total Depth of Boring = 16.0 ft.

Point located at State Plane Coordinates:
North: 306034.33
East: 1302318.75

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B4

Figure
C-12

D-B5

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0				0		GP	Gray, sandy, fine to coarse GRAVEL (dense, damp) (no odor, no stain)	
				0		SP		
		b3		0			Grayish brown, fine to medium SAND with gravel (medium dense to dense, damp) (no odor, no stain)	Groundwater not encountered.
				0				
				0				
5				0				
				0		GP	Gray, sandy, fine to coarse GRAVEL (very dense, damp) (no odor, no stain)	
		b3						
						SM	Brown, silty, gravelly, fine to coarse SAND (very dense, samp) (no odor, no stain)	
10				0				
				0		SP	Gray, very gravelly, fine to medium SAND with silt lenses (very dense, damp) (no odor, no stain)	
		b3		0				
				0				
15	D-B5-(14-15)			0			-Refusal at 15 ft bgs	

Boring Completed 08/21/09
Total Depth of Boring = 15.0 ft.

Point located at State Plane Coordinates:
North: 306039.74
East: 1302333.66

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B5

Figure C-13

D-B6

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0				0		GP	Gray to brown, sandy, fine to coarse GRAVEL (dense, damp) (no odor, no stain)	Groundwater not encountered.
				0		SP		
		b3		0			Gray to brown, medium SAND (medium dense, damp) (no odor, no stain)	
				0		SM	Brown to orange-brown, silty, gravelly, fine to coarse SAND (medium dense, damp) (no odor, no stain)	
5				0				
				0		GP	Grayish brown, very sandy, fine to coarse GRAVEL (dense, damp) (no odor, no stain)	
		b3		0				
10				0				
				0				
		b3		0				
				0				
				0		GP-GM	Dark gray, sandy, fine to coarse GRAVEL with silt (very dense, damp to moist) (no odor, no sheen)	
15				0				
				0				
		b3				SP	Brown, gravelly, medium to coarse SAND (very dense, moist) (no odor, no stain)	
	D-B6-(17.5-19)			0			-Refusal at 19 ft bgs	
20				0				

Boring Completed 08/21/09
Total Depth of Boring = 19.0 ft.

Point located at State Plane Coordinates:
North: 306016.71
East: 1302329.53

25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG
1173001.01

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B6

Figure C-14

D-B7

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): _____ Drilled By: Cascade Drilling Inc.	Water Level
0							See log for D-B3 for profile of upper 14 ft at this location. D-B3 met refusal at 14 ft bgs. D-B7 is located approximately 1.5 ft northeast of D-B3. D-B7 sampled beginning at 12.5 ft bgs to see if any impacts at this location below 14 ft.	
5								
10								
15		a1	28	0		SP	Grayish brown, gravelly, fine to medium SAND (medium dense, damp) (no odor, no stain)	
		a1	78/ 10"	0			-with silt	
	D-B7-(17.5-18.5)	a1	67/ 8"	0				
20							-with trace silt	▽ ATD
		a1	100/ 6"	0				
25								
30								
35								

Boring Completed 08/27/09
Total Depth of Boring = 23.0 ft.

Point located at State Plane Coordinates:
North: 306053.76
East: 1302316.10

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B7

Figure
C-15

D-B8

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): Drilled By: Cascade Drilling Inc.	Water Level
0							See log for D-B4 for profile of upper 15 ft at this location. D-B4 met refusal at 15.5 ft bgs. D-B8 is located approximately 2 ft northeast of D-B4. D-B8 sampled beginning at 15 ft bgs to see if any impacts at this location below 15.5 ft.	
15		a1	63/ 9"	101		SP	Brownish gray, gravelly to very gravelly, medium to coarse SAND (very dense, moist) (slight hydrocarbon odor, no stain)	
	D-B8-(17.5-18.25)	a1	70/ 12"	10.9			-Grades to fine to medium SAND with trace cobbles	
20		a1	46	0			-Grades to gravelly, fine to medium SAND (dense, wet) (no stain)	▽ ATD
						SP	Brown, very gravelly, fine to medium SAND (medium dense to dense, wet) (no odor, no stain, no sheen)	
		a1	41	0				
25								
30								
35								

Boring Completed 08/27/09
Total Depth of Boring = 24.0 ft.

Point located at State Plane Coordinates:
North: 306036.04
East: 1302318.33

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B8

Figure C-16

D-B9

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): _____ Drilled By: Cascade Drilling Inc.	
0							See log for D-B2 for profile of upper 14 ft at this location. D-B2 met refusal at 14 ft bgs. D-B9 is located approximately 3 ft south of D-B2. D-B9 sampled beginning at 14 ft bgs to see if any impacts at this location below 14 ft.	Groundwater not encountered.
15		a1	50/ 6"	5.8		SP	Grayish brown, very gravelly, medium to coarse SAND (very dense, damp) (no odor, no stain)	
		a1	100/ 5"					
20		a1	50/ 6"	0		SP	Gray, very gravelly, fine to coarse SAND with trace silt (very dense, damp) (no odor, no stain)	
		a1	50/ 6"	0				
25		a1	50/ 6"	0				
30	D-B9-(29-30)	a1	78/ 12"	0			-(damp to moist)	

Boring Completed 08/27/09
Total Depth of Boring = 30.0 ft.

Point located at State Plane Coordinates:
North: 306103.00
East: 1302343.03

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B9

Figure C-17

D-B10

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): _____ Drilled By: Cascade Drilling Inc.	Water Level
0							See log for D-B6 for profile of upper 19 ft at this location. D-B6 met refusal at 19 ft bgs. D-B7 sampled beginning at 19 ft bgs to see if any impacts at this location below 19 ft.	
5								
10								
15								
20	D-B10-(19-20)	a1	74/12"	0		SP	Brown, gravely, medium to coarse SAND (dense, moist) (no odor, no stain)	▽ ATD
						GP	Light brown, fine GRAVEL with sand (dense, wet) (no odor, no stain, no sheen)	
25		a1	74/12"	0 0		SP	Light brown, medium to coarse SAND with trace gravel (dense, wet) (no odor, no stain, no sheen)	
30								
35								

Boring Completed 08/27/09
Total Depth of Boring = 25.0 ft.

Point located at State Plane Coordinates:
North: 306019.26
East: 1302330.06

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-B10

Figure C-18

D-SS1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	
0				0		SP	Brown, gravelly, fine to medium SAND (loose, damp) (no odor, no stain)	Groundwater not encountered.
				0		SM	Brown-orange, gravelly, silty, fine to medium SAND (medium dense, damp) (no odor, no stain	
		b3		0				
				0		SP	Brown, gravelly, fine to medium SAND (medium dense, damp) (no odor, no stain)	
5						GP	Gray, very sandy, fine to coarse GRAVEL (no odor, no stain)	
				0				
				0				
		b3		0				
				0				
10	D-SS1-(10-11)			0		GM/SM	Grayish brown, silty, very sandy, GRAVEL/silty, very gravelly, medium to coarse SAND (very dense, damp to moist) (no odor, no stain)	
				0				
		b3		0				
				0		ML	-(wet at 12.5 ft bgs)	
15							Gray, sandy, SILT with gravel (very dense, damp) (no odor, no stain)	
				0				
		b3		0				
				0				
20								
25								
30								
35								

Boring Completed 08/20/09
Total Depth of Boring = 18.0 ft.

Point located at State Plane Coordinates:
North: 306061.12
East: 1302281.25

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-SS1

Figure C-19

D-SS2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	Water Level
0				0		GP	Gray, sandy, fine to coarse GRAVEL (dense, damp) (slight hydrocarbon odor)	
		b3		19.2				
						GP	Grayish brown, very sandy, fine to coarse GRAVEL (dense, damp) (slight to moderate hydrocarbon odor)	
5				75.9				
				11.9				
		b3		6.8		SP	Grayish brown, gravelly, medium to coarse SAND (moderate hydrocarbon odor)	
10				32.9				
	D-SS2-(11-12)			165				
		b3		9.2		GP	Grayish brown, silty, sandy, fine to coarse GRAVEL (dense, damp to moist) (moderate hydrocarbon odor)	
				4.5				
15								ATD
				10.1				
				19.1				
		b3		8.3				
				4.4				
	D-SS2-(19-20)			2.1			-(no odor)	
20								

Boring Completed 08/20/09
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 306008.91
East: 1302293.62

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-SS2

Figure C-20

D-SS3

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0				0		SP	Drilling Method: Geoprobe™
				0		GP	Brown, very gravelly, medium to coarse SAND with trace cobbles (medium dense, damp) (no odor)
				0			Ground Elevation (ft):
		b3		0			Gray, sandy, fine to coarse GRAVEL (dense, damp) (no odor, no stain)
				0		GP/ SM	Drilled By: Cascade Drilling Inc.
5	D-SS3- (5-6.25)						Mixture of: -Brown and orange, silty, fine to medium SAND with abundant roots (moist) -Gray, sandy, fine to coarse GRAVEL (damp)
				0		SP	
		b3		0			Brownish gray, fine to medium SAND (dense, moist) (no odor, no stain)
10				0			
				0		SM	Dark brown, silty, fine to medium SAND with abundant roots (loose, moist) (no odor, no stain)
		b3		0		SM	
				0			Mottled gray and orange, silty, fine to medium SAND (very dense, damp) (no odor, no stain)
15				0			
				0		SP	Brown, gravelly, fine to medium SAND (dense, wet) (no odor, no stain)
		b3		0			▽ ATD
20							

Boring Completed 08/20/09
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 305976.15
East: 1302317.21

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-SS3

Figure C-21

D-SS4

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0				1.8		SP	Gray, very gravelly, fine to coarse SAND (medium dense, damp) (no odor, no stain)
				3.7		SP	Brown, medium SAND with gravel (medium dense, damp) (no odor, no stain)
		b3					
5				139		SM	Brown, gravelly, very silty, fine to medium SAND (medium dense, damp) (strong hydrocarbon odor)
	D-SS4-(5-6)			487			
		b		413			
10						SP-SM	Dark gray, gravelly, fine to medium SAND with silt (medium dense, damp) (slight hydrocarbon odor)
				28.6			
				32.1			
		b3		4.8			
				9.6			
15				6.7			-(moist) ▽ ATD

Drilling Method: Geoprobe™

Ground Elevation (ft): _____

Drilled By: Cascade Drilling Inc.

Boring Completed 08/21/09
Total Depth of Boring = 15.0 ft.

Point located at State Plane Coordinates:
North: 306024.33
East: 1302260.96

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-SS4

Figure
C-22

D-SS5

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): ____ Drilled By: Cascade Drilling Inc.	Water Level
0				0		SP	Brown, gravelly, fine to medium SAND (loose, damp) (no odor, no stain)	
		a1	5	0		SP	Gray, gravelly, fine to medium SAND with abundant wood debris, asphalt chunks, and glass chunks	
5		a1	7	0		SP	Brown, gravelly, fine to medium SAND (loose, damp) (no odor, no stain)	
		a1	29	0		SM	Mottled dark brown and orange, silty, fine to medium SAND with gravel (medium dense, damp) (no odor, no stain)	
10		a1	3	0		SM	Dark brown, silty, fine to medium SAND with gravel (loose, moist)	
	D-SS5-(12.5-13.25)	a1	52	0 0		SP	Dark gray, fine to medium SAND (medium dense, moist to wet) (no odor, no stain, no sheen)	▽ ATD
15		a1	27	0				

Boring Completed 08/27/09
Total Depth of Boring = 16.5 ft.

Point located at State Plane Coordinates:
North: 305968.15
East: 1302281.22

20
25
30
35

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ SOIL BORING LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Boring D-SS5

Figure
C-23

Soil Classification System

MAJOR DIVISIONS			GRAPHIC SYMBOL	USCS LETTER SYMBOL[1]	TYPICAL DESCRIPTIONS[2][3]
COARSE-GRAINED SOIL (More than 50% of material is larger than No. 200 sieve size)	GRAVEL AND GRAVELLY SOIL (More than 50% of coarse fraction retained on No. 4 sieve)	CLEAN GRAVEL (Little or no fines)		GW	Well-graded gravel; gravel/sand mixture(s); little or no fines
				GP	Poorly graded gravel; gravel/sand mixture(s); little or no fines
		GRAVEL WITH FINES (Appreciable amount of fines)		GM	Silty gravel; gravel/sand/silt mixture(s)
				GC	Clayey gravel; gravel/sand/clay mixture(s)
	SAND AND SANDY SOIL (More than 50% of coarse fraction passed through No. 4 sieve)	CLEAN SAND (Little or no fines)		SW	Well-graded sand; gravelly sand; little or no fines
				SP	Poorly graded sand; gravelly sand; little or no fines
		SAND WITH FINES (Appreciable amount of fines)		SM	Silty sand; sand/silt mixture(s)
				SC	Clayey sand; sand/clay mixture(s)
FINE-GRAINED SOIL (More than 50% of material is smaller than No. 200 sieve size)	SILT AND CLAY (Liquid limit less than 50)			ML	Inorganic silt and very fine sand; rock flour; silty or clayey fine sand or clayey silt with slight plasticity
				CL	Inorganic clay of low to medium plasticity; gravelly clay; sandy clay; silty clay; lean clay
				OL	Organic silt; organic, silty clay of low plasticity
	SILT AND CLAY (Liquid limit greater than 50)			MH	Inorganic silt; micaceous or diatomaceous fine sand
				CH	Inorganic clay of high plasticity; fat clay
				OH	Organic clay of medium to high plasticity; organic silt
	HIGHLY ORGANIC SOIL			PT	Peat; humus; swamp soil with high organic content

OTHER MATERIALS	GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
PAVEMENT		AC or PC	Asphalt concrete pavement or Portland cement pavement
ROCK		RK	Rock (See Rock Classification)
WOOD		WD	Wood, lumber, wood chips
DEBRIS		DB	Construction debris, garbage

Notes:
1. USCS letter symbols correspond to symbols used by the Unified Soil Classification System and ASTM classification methods. Dual letter symbols (e.g., SP-SM for sand or gravel) indicate soil with an estimated 5-15% fines. Multiple letter symbols (e.g., ML/CL) indicate borderline or multiple soil classifications.
2. Soil descriptions are based on the general approach presented in the Standard Practice for Description and Identification of Soils (Visual-Manual Procedure), outlined in ASTM D 2488. Where laboratory index testing has been conducted, soil classifications are based on the Standard Test Method for Classification of Soils for Engineering Purposes, as outlined in ASTM D 2487.
3. Soil description terminology is based on visual estimates (in the absence of laboratory test data) of the percentages of each soil type and is defined as follows:

Primary Constituent:	> 50%	- "GRAVEL," "SAND," "SILT," "CLAY," etc.
Secondary Constituents:	> 30% and ≤ 50%	- "very gravelly," "very sandy," "very silty," etc.
	> 15% and ≤ 30%	- "gravelly," "sandy," "silty," etc.
Additional Constituents:	> 5% and ≤ 15%	- "with gravel," "with sand," "with silt," etc.
	≤ 5%	- "with trace gravel," "with trace sand," "with trace silt," etc., or not noted.

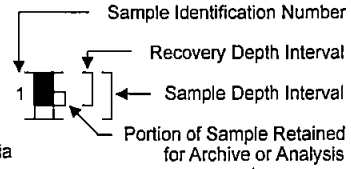
4. Soil density or consistency descriptions are based on judgement using a combination of sampler penetration blow counts, drilling or excavating conditions, field tests, and laboratory tests, as appropriate.

Drilling and Sampling Key

SAMPLER TYPE

Code	Description
a	3.25-inch O.D., 2.42-inch I.D. Split Spoon
b	2.00-inch O.D., 1.50-inch I.D. Split Spoon
c	Shelby Tube
d	Grab Sample
e	Single-Tube Core Barrel
f	Double-Tube Core Barrel
g	2.50-inch O.D., 2.00-inch I.D. WSDOT
h	3.00-inch O.D., 2.375-inch I.D. Mod. California
i	Other - See text if applicable
1	300-lb Hammer, 30-inch Drop
2	140-lb Hammer, 30-inch Drop
3	Pushed
4	Vibrocore (Rotosonic/Geoprobe)
5	Other - See text if applicable

SAMPLE NUMBER & INTERVAL



Field and Lab Test Data

Code	Description
PP = 1.0	Pocket Penetrometer, tsf
TV = 0.5	Torvane, tsf
PID = 100	Photoionization Detector VOC screening, ppm
W = 10	Moisture Content, %
D = 120	Dry Density, pcf
-200 = 60	Material smaller than No. 200 sieve, %
GS	Grain Size - See separate figure for data
AL	Atterberg Limits - See separate figure for data
GT	Other Geotechnical Testing
CA	Chemical Analysis

Groundwater

▽ Approximate water level at time of drilling (ATD)

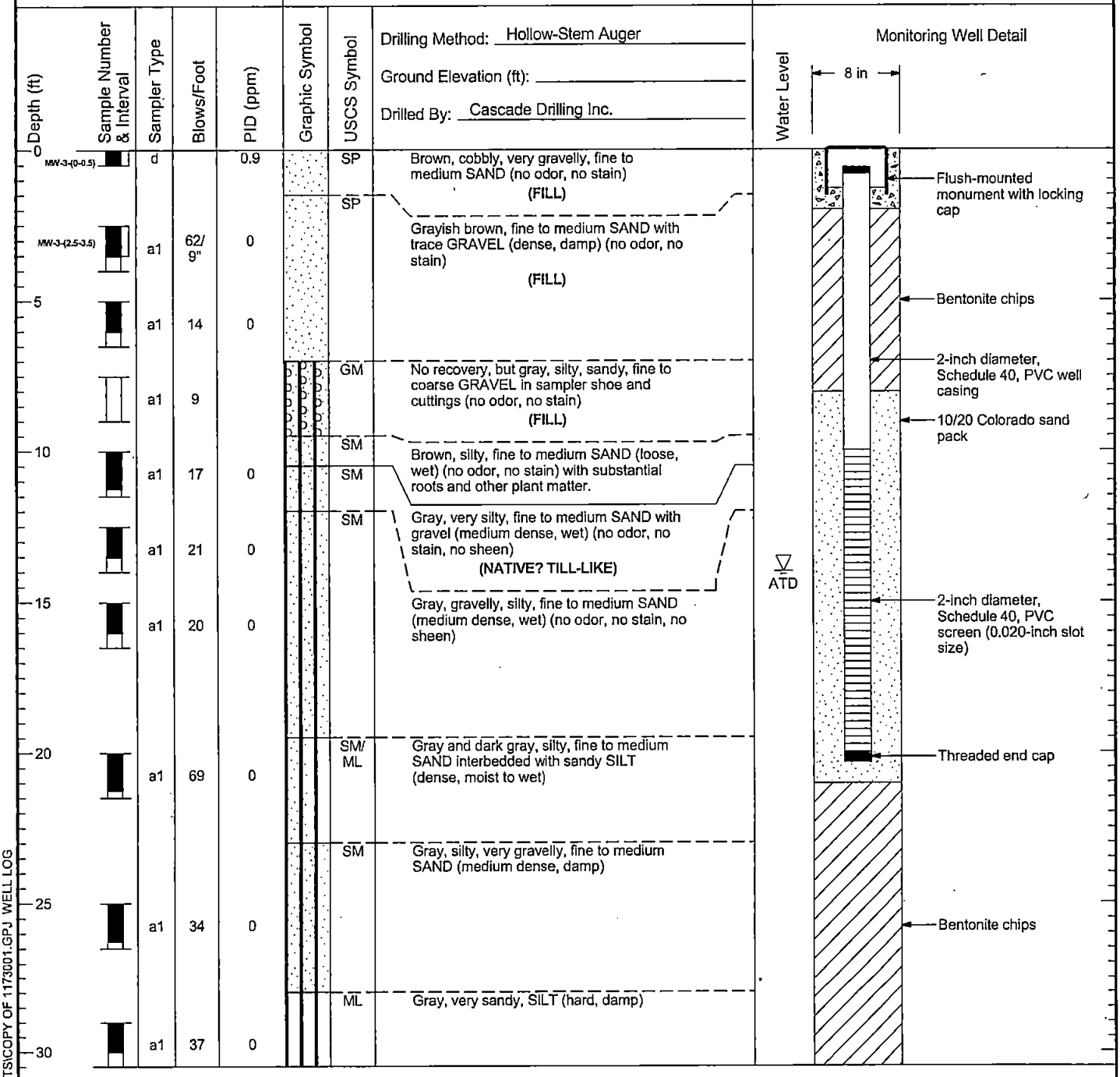
▼ Approximate water level at time other than ATD

12/24/09 N:\PROJECTS\1173001.GPJ SOIL CLASS SHEET

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation Bothell Washington	Soil Classification System and Key	Figure

MW-3



Boring Completed 08/18/09
Total Depth of Boring = 30.5 ft.

Point located at State Plane Coordinates:
North: 306251.72
East: 1301856.81

Monitoring Well Completed 08/18/09
Elevation at Top of Monitoring Well Casing = 267.58 ft.
Total Depth of Monitoring Well = 21.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Ecology Well ID #BSC229

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ WELL LOG

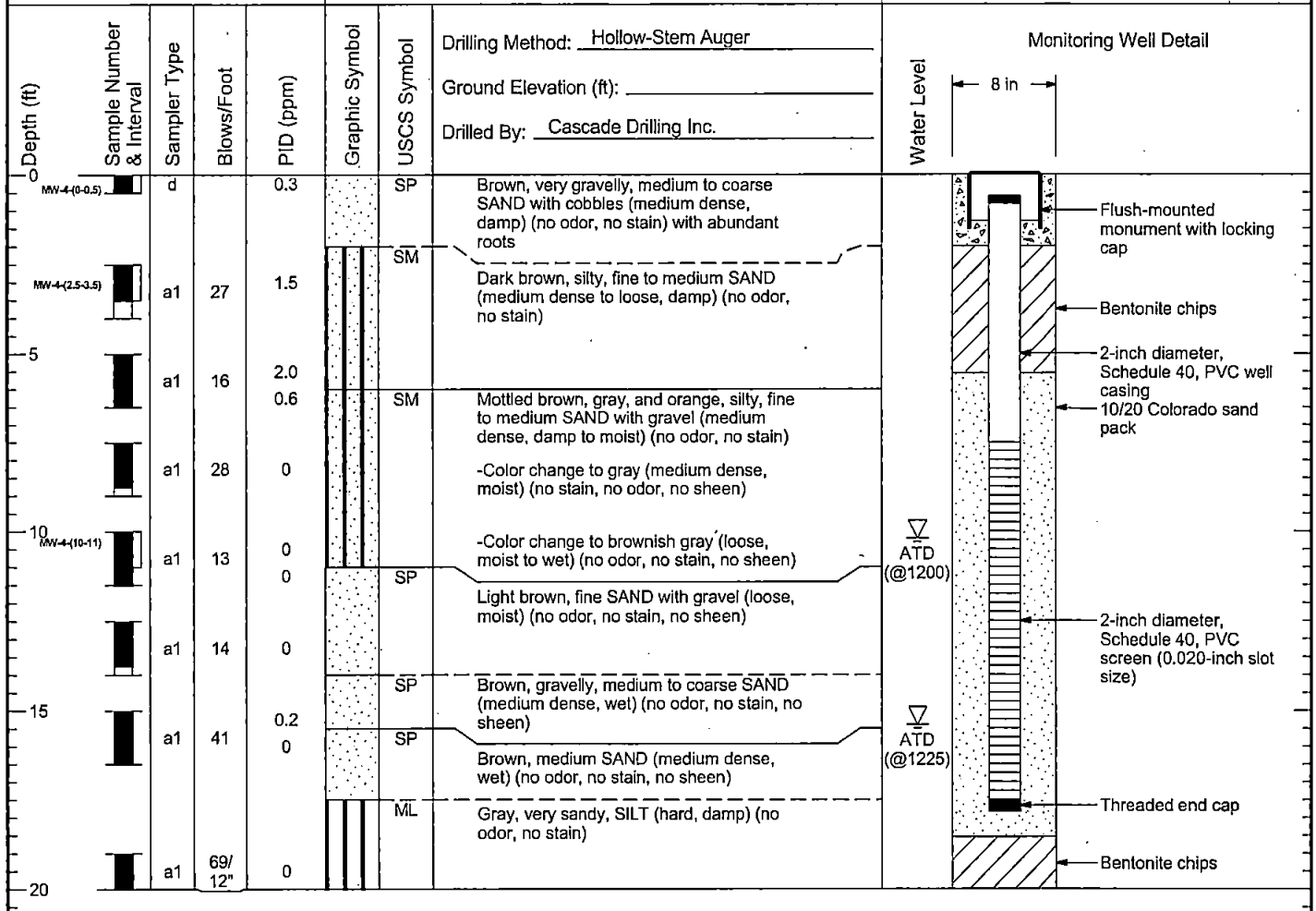
LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Monitoring Well MW-3

Figure D-1

MW-4



Boring Completed 08/18/09
Total Depth of Boring = 20.0 ft.

Point located at State Plane Coordinates:
North: 306091.18
East: 1301872.19

Monitoring Well Completed 08/18/09
Elevation at Top of Monitoring Well Casing = 267.81 ft.
Total Depth of Monitoring Well = 18.5 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Ecology Well ID #BSC230

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ WELL LOG

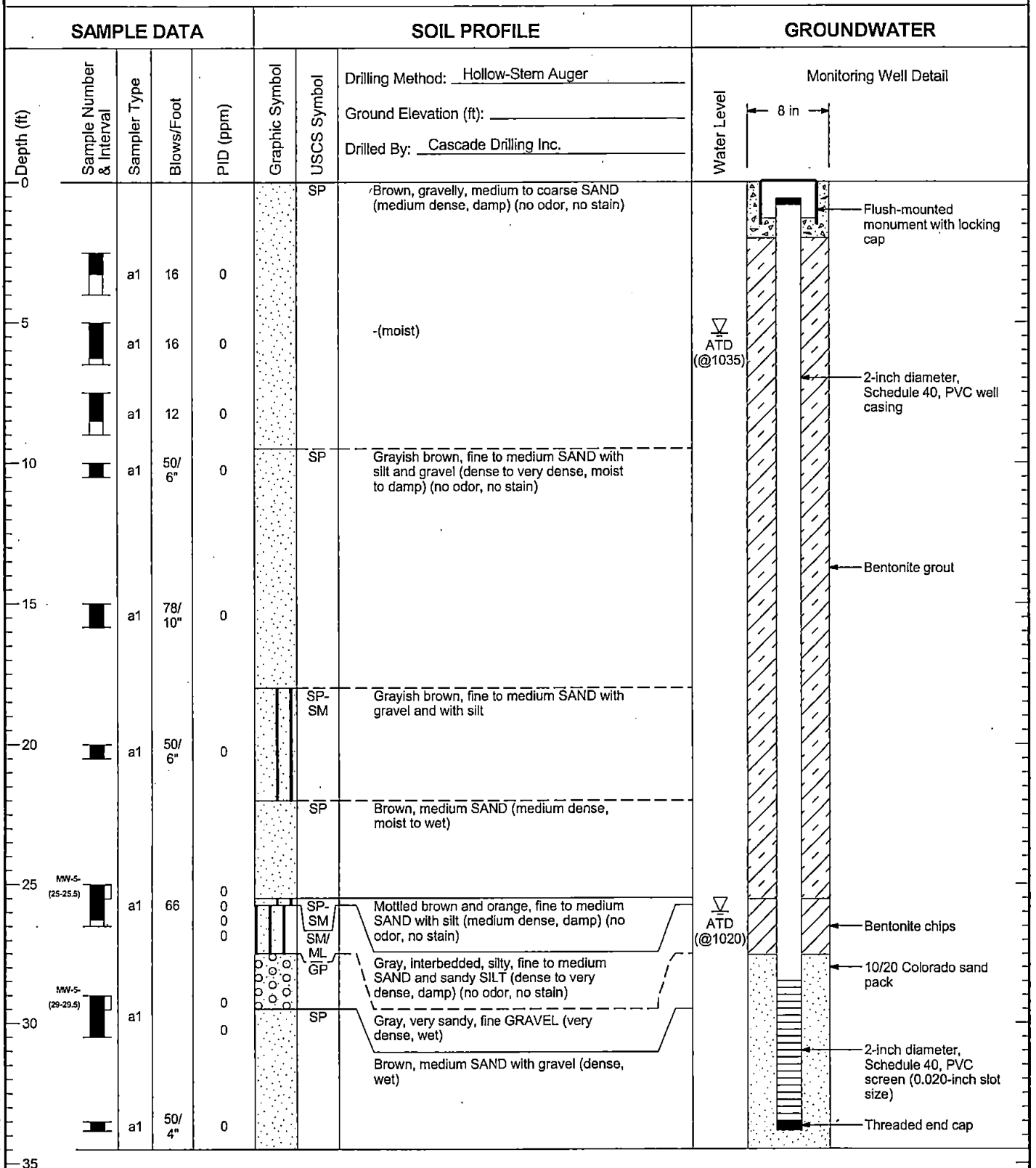
LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Monitoring Well MW-4

Figure D-2

MW-5



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Ecology Well ID #BSC227

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ WELL LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Monitoring Well MW-5

Figure D-3 (1 of 2)

MW-5

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): _____ Drilled By: Cascade Drilling Inc.	Water Level	Monitoring Well Detail
35									

Boring Completed 08/17/09
Total Depth of Boring = 34.5 ft.

Point located at State Plane Coordinates:
North: 306318.86
East: 1302130.65

Monitoring Well Completed 08/17/09
Elevation at Top of Monitoring Well Casing = 267.46 ft.
Total Depth of Monitoring Well = 34.5 ft.

40
45
50
55
60
65
70

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Ecology Well ID #BSC227

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ WELL LOG

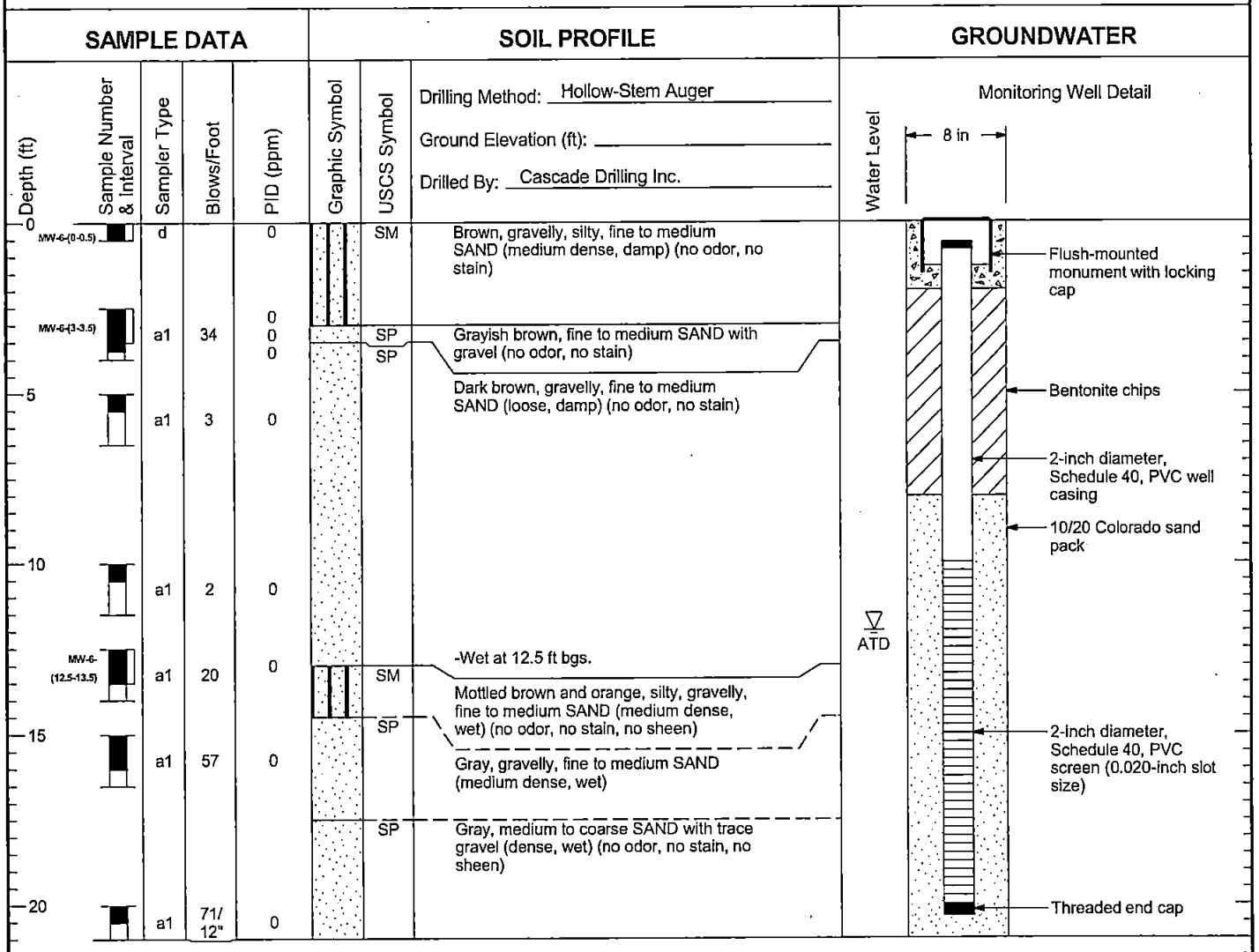
LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Monitoring Well MW-5

Figure D-3 (2 of 2)

MW-6



Boring Completed 08/17/09
Total Depth of Boring = 21.0 ft.

Point located at State Plane Coordinates:
North: 306417.08
East: 1301989.64

Monitoring Well Completed 08/17/09
Elevation at Top of Monitoring Well Casing = 268.16 ft.
Total Depth of Monitoring Well = 21.0 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Ecology Well ID #BSC228

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ WELL LOG

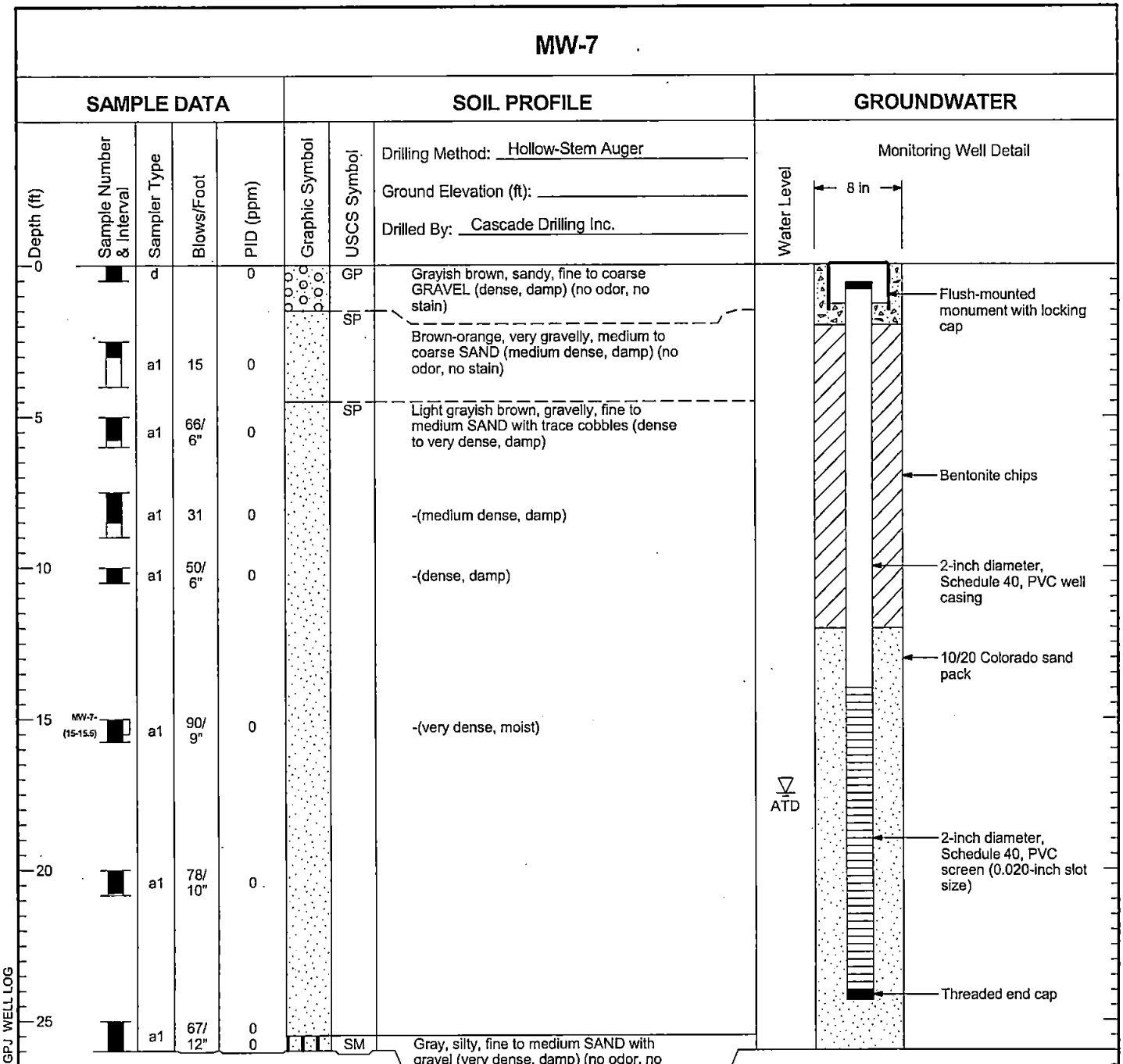
LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Monitoring Well MW-6

Figure D-4

MW-7



Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Ecology Well ID #BSC232

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ WELL LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Monitoring Well MW-7

Figure D-5

MW-8

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): _____ Drilled By: Cascade Drilling Inc.	Water Level
0		d		0		SP	Brown, gravelly, cobbly, medium SAND (loose to medium dense, damp) (no odor, no stain)	
		a1	9	0		SP	Dark brown, medium SAND with gravel (loose, damp) (no odor, no stain)	
5	MW-8-(5-6)	a1	15	34.2			-(loose to medium dense, damp) (slight hydrocarbon odor, no stain)	
		a1	50/ 6"	3.6		SP	Grayish brown, gravelly, medium to coarse SAND (dense, damp) (slight hydrocarbon odor, no stain)	
						SP	Dark brown, fine to medium SAND (medium dense, moist) (no odor, no stain, no sheen)	
10		a1	39	8.6				
	MW-8-(12.5-13.5)	a1	19	89.3		SP-SM	Dark gray, gravelly, fine to medium SAND with silt (medium dense, wet) (moderate hydrocarbon odor, no sheen)	ATD
15		a1	76/ 12"	106				
		a1	50/ 6"	10.9		SM	Dark gray, silty, gravelly, fine to medium SAND with silt (very dense, wet) (moderate hydrocarbon odor, no sheen)	
20						SP-SM	-(no odor) Dark gray, fine to medium SAND with silt and gravel (very dense, damp to moist)	
	MW-8-(22-22.25)	a1	50/ 6"	0.9				
25								
30								
35								

Monitoring Well Detail

8 in

- Flush-mounted monument with locking cap
- Bentonite chips
- 2-inch diameter, Schedule 40, PVC well casing
- 10/20 Colorado sand pack
- 2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)
- Threaded end cap
- Bentonite chips

Boring Completed 08/19/09
Total Depth of Boring = 22.5 ft.

Point located at State Plane Coordinates:
North: 306029.02
East: 1302288.96

Monitoring Well Completed 08/19/09
Elevation at Top of Monitoring Well Casing = 276.16 ft.
Total Depth of Monitoring Well = 22.3 ft.

Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Ecology Well ID #BSC231

1173001.01 11/19/09 N:\PROJECTS\COPY OF 1173001.GPJ WELL LOG

LANDAU ASSOCIATES

Verbeek Wrecking Remedial Investigation
Bothell Washington

Log of Monitoring Well MW-8

Figure D-6

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		A-B1	A-B1	A-B2	A-B2	A-GP-1
Field Sample ID		A-B1-(0-0.5)	A-B1-(2.5-3.25)	A-B2-(0-0.5)	A-B2-(1-2)	A-GP-1
Begin Sample Depth		0	2.5	0	1	
End Sample Depth	Preliminary	0.5	3.25	0.5	2	
Sample Date	Cleanup	8/20/2009	8/20/2009	8/20/2009	8/20/2009	8/31/2009
Lab Sample ID	Level	0908099-03A	0908099-04A	0908099-01A	0908099-02A	0909004-07A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	100 U	100 U	>100	100 U	>100
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	NA	NA	25 U	NA	130
Motor Oil	2,000	NA	NA	110	NA	410
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)	NA	NA	NA	NA	NA
BETX (mg/kg)						
SW8021						
Benzene	0.03	NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA	NA
VOLATILES (mg/kg)						
SW8260B						
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA	NA
2-Chlorotoluene		NA	NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA	NA
4-Chlorotoluene		NA	NA	NA	NA	NA
Acetone		NA	NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA	NA
Benzene	0.03	NA	NA	NA	NA	NA
Bromobenzene		NA	NA	NA	NA	NA
Bromochloromethane		NA	NA	NA	NA	NA
Bromoform		NA	NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA	NA
CFC-11		NA	NA	NA	NA	NA
CFC-12		NA	NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA	NA
Chloroform		NA	NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA	NA
Dichlorobromomethane		NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Ethylene dibromide		NA	NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	NA	NA	NA	NA	NA
m, p-Xylene	84	NA	NA	NA	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA	NA
Naphthalene	4.5	NA	NA	NA	NA	NA
n-Butylbenzene		NA	NA	NA	NA	NA
n-Propylbenzene		NA	NA	NA	NA	NA
o-Xylene	92	NA	NA	NA	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA	NA
Styrene		NA	NA	NA	NA	NA
Tert-Butylbenzene	--	NA	NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		A-B1	A-B1	A-B2	A-B2	A-GP-1
Field Sample ID		A-B1-(0-0.5)	A-B1-(2.5-3.25)	A-B2-(0-0.5)	A-B2-(1-2)	A-GP-1
Begin Sample Depth		0	2.5	0	1	
End Sample Depth	Preliminary	0.5	3.25	0.5	2	
Sample Date	Cleanup	8/20/2009	8/20/2009	8/20/2009	8/20/2009	8/31/2009
Lab Sample ID	Level	0908099-03A	0908099-04A	0908099-01A	0908099-02A	0909004-07A
Trichloroethene		NA	NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA	NA
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene		0.02 U	0.02 U	0.062	0.02 U	0.02 U
Benzo(a)pyrene	see cPAH TEQ	0.02 U	0.02 U	0.13	0.02 U	0.02 U
Benzo(b)fluoranthene		0.02 U	0.02 U	0.11	0.02 U	0.024
Benzo(k)fluoranthene		0.02 U	0.02 U	0.07	0.02 U	0.02 U
Chrysene		0.02 U	0.02 U	0.095	0.02 U	0.02 U
Dibenzo(a,h)anthracene		0.02 U	0.02 U	0.025	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene		0.02 U	0.02 U	0.13	0.02 U	0.02 U
cPAH TEQ	0.14	NA	NA	0.17065	NA	0.0024
PCBs (mg/kg)						
SW8082						
PCB-aroclor 1016		NA	NA	NA	NA	NA
PCB-aroclor 1221		NA	NA	NA	NA	NA
PCB-aroclor 1232		NA	NA	NA	NA	NA
PCB-aroclor 1242		NA	NA	NA	NA	NA
PCB-aroclor 1248		NA	NA	NA	NA	NA
PCB-aroclor 1254		NA	NA	NA	NA	NA
PCB-aroclor 1260		NA	NA	NA	NA	NA
PCB-aroclor 1268		NA	NA	NA	NA	NA
Chlordane		NA	NA	NA	NA	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	5 U	5 U	5 U	5 U
Cadmium	25	1 U	1 U	1 U	1 U	3.7
Chromium	120000 / 48 (a)	22	19	27	23	23
Lead	250 / 220 (a)	5 U	9.3	17	5 U	300
Mercury	2.1 / 0.7 (a)	0.02 U	0.038	0.042	0.022	0.021

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		A-GP-2	A-GP-3	A-GP-4	A-GP-5	A-GP-6
Field Sample ID		A-GP-2	A-GP-3	A-GP-4	A-GP-5	A-GP-6
Begin Sample Depth						
End Sample Depth	Preliminary					
Sample Date	Cleanup	8/31/2009	8/31/2009	8/31/2009	8/31/2009	8/31/2009
Lab Sample ID	Level	0909004-08A	0909004-09A	0909004-10A	0909004-11A	0909004-12A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	>100	>100	>100	>100	>100
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	120	97	210	25 U	25 U
Motor Oil	2,000	410	320	700	110	120
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)	NA	NA	NA	NA	NA
BETX (mg/kg)						
SW8021						
Benzene	0.03	NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA	NA
VOLATILES (mg/kg)						
SW8260B						
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA	NA
2-Chlorotoluene		NA	NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA	NA
4-Chlorotoluene		NA	NA	NA	NA	NA
Acetone		NA	NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA	NA
Benzene	0.03	NA	NA	NA	NA	NA
Bromobenzene		NA	NA	NA	NA	NA
Bromochloromethane		NA	NA	NA	NA	NA
Bromoform		NA	NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA	NA
CFC-11		NA	NA	NA	NA	NA
CFC-12		NA	NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA	NA
Chloroform		NA	NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA	NA
Dichlorobromomethane		NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Ethylene dibromide		NA	NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	NA	NA	NA	NA	NA
m, p-Xylene	84	NA	NA	NA	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA	NA
Naphthalene	4.5	NA	NA	NA	NA	NA
n-Butylbenzene		NA	NA	NA	NA	NA
n-Propylbenzene		NA	NA	NA	NA	NA
o-Xylene	92	NA	NA	NA	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA	NA
Styrene		NA	NA	NA	NA	NA
Tert-Butylbenzene	--	NA	NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		A-GP-2	A-GP-3	A-GP-4	A-GP-5	A-GP-6
Field Sample ID		A-GP-2	A-GP-3	A-GP-4	A-GP-5	A-GP-6
Begin Sample Depth						
End Sample Depth	Preliminary					
Sample Date	Cleanup	8/31/2009	8/31/2009	8/31/2009	8/31/2009	8/31/2009
Lab Sample ID	Level	0909004-08A	0909004-09A	0909004-10A	0909004-11A	0909004-12A
Trichloroethene		NA	NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA	NA
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene		0.02 U	0.02 U	0.03	0.02 U	0.02 U
Benzo(a)pyrene	see cPAH TEQ	0.02 U	0.02 U	0.034	0.02 U	0.02 U
Benzo(b)fluoranthene		0.023	0.02	0.085	0.02 U	0.02 U
Benzo(k)fluoranthene		0.02 U	0.02 U	0.05	0.02 U	0.02 U
Chrysene		0.025	0.026	0.05	0.02 U	0.02 U
Dibenzo(a,h)anthracene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene		0.02 U	0.02 U	0.066	0.02 U	0.02 U
cPAH TEQ	0.14	0.00255	0.00226	0.0576	NA	NA
PCBs (mg/kg)						
SW8082						
PCB-aroclor 1016		NA	NA	NA	NA	NA
PCB-aroclor 1221		NA	NA	NA	NA	NA
PCB-aroclor 1232		NA	NA	NA	NA	NA
PCB-aroclor 1242		NA	NA	NA	NA	NA
PCB-aroclor 1248		NA	NA	NA	NA	NA
PCB-aroclor 1254		NA	NA	NA	NA	NA
PCB-aroclor 1260		NA	NA	NA	NA	NA
PCB-aroclor 1268		NA	NA	NA	NA	NA
Chlordane		NA	NA	NA	NA	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5.1	5 U	8.7	5 U	5 U
Cadmium	25	5.2	3	1.7	1.9	1.9
Chromium	120000 / 48 (a)	18	20	27	11	20
Lead	250 / 220 (a)	190	110	1,200	43	40
Mercury	2.1 / 0.7 (a)	0.059	0.034	0.03	0.02 U	0.02 U

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		A-S1	A-S2	A-S3	C-B1	C-B1
Field Sample ID		A-S1-(0-0.5)	A-S2-(0-0.5)	A-S3-(0-0.5)	C-B1-(0-0.5)	C-B1-(1.5-2.25)
Begin Sample Depth		0	0	0	0	1.5
End Sample Depth	Preliminary	0.5	0.5	0.5	0.5	2.25
Sample Date	Cleanup	8/20/2009	8/31/2009	8/31/2009	8/20/2009	8/20/2009
Lab Sample ID	Level	0908099-15A	0909004-05A	0909004-06A	0908099-05A	0908099-06A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	NA	50 U	50 U	50 U	50 U
Gasoline	30	NA	20 U	20 U	20 U	20 U
Motor Oil	2,000	NA	100 U	100 U	>100	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	NA	NA	NA	**170**	NA
Motor Oil	2,000	NA	NA	NA	**430**	NA
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)	NA	NA	NA	NA	NA
BETX (mg/kg)						
SW8021						
Benzene	0.03	NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA	NA
VOLATILES (mg/kg)						
SW8260B						
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA	NA
2-Chlorotoluene		NA	NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA	NA
4-Chlorotoluene		NA	NA	NA	NA	NA
Acetone		NA	NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA	NA
Benzene	0.03	NA	NA	NA	NA	NA
Bromobenzene		NA	NA	NA	NA	NA
Bromochloromethane		NA	NA	NA	NA	NA
Bromoform		NA	NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA	NA
CFC-11		NA	NA	NA	NA	NA
CFC-12		NA	NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA	NA
Chloroform		NA	NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA	NA
Dichlorobromomethane		NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Ethylene dibromide		NA	NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	NA	NA	NA	NA	NA
m, p-Xylene	84	NA	NA	NA	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA	NA
Naphthalene	4.5	NA	NA	NA	NA	NA
n-Butylbenzene		NA	NA	NA	NA	NA
n-Propylbenzene		NA	NA	NA	NA	NA
o-Xylene	92	NA	NA	NA	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA	NA
Styrene		NA	NA	NA	NA	NA
Tert-Butylbenzene	--	NA	NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		A-S1	A-S2	A-S3	C-B1	C-B1
Field Sample ID		A-S1-(0-0.5)	A-S2-(0-0.5)	A-S3-(0-0.5)	C-B1-(0-0.5)	C-B1-(1.5-2.25)
Begin Sample Depth		0	0	0	0	1.5
End Sample Depth	Preliminary	0.5	0.5	0.5	0.5	2.25
Sample Date	Cleanup	8/20/2009	8/31/2009	8/31/2009	8/20/2009	8/20/2009
Lab Sample ID	Level	0908099-15A	0909004-05A	0909004-06A	0908099-05A	0908099-06A
Trichloroethene		NA	NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA	NA
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(a)pyrene	see cPAH TEQ	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(b)fluoranthene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(k)fluoranthene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Chrysene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Dibenzo(a,h)anthracene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cPAH TEQ	0.14	NA	NA	NA	NA	NA
PCBs (mg/kg)						
SW8082						
PCB-aroclor 1016		0.1 U	0.1 U	NA	NA	NA
PCB-aroclor 1221		0.1 U	0.1 U	NA	NA	NA
PCB-aroclor 1232		0.1 U	0.1 U	NA	NA	NA
PCB-aroclor 1242		0.1 U	0.1 U	NA	NA	NA
PCB-aroclor 1248		0.1 U	0.1 U	NA	NA	NA
PCB-aroclor 1254		0.1 U	0.1 U	NA	NA	NA
PCB-aroclor 1260		0.1 U	0.1 U	NA	NA	NA
PCB-aroclor 1268		0.1 U	0.1 U	NA	NA	NA
Chlordane		NA	0.5 U	NA	NA	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	5 U	5 U	5.3	5 U
Cadmium	25	1 U	1 U	1 U	1 U	1 U
Chromium	120000 / 48 (a)	28	25	25	35	45
Lead	250 / 220 (a)	15	9.9	5 U	41	5 U
Mercury	2.1 / 0.7 (a)	0.038	0.02 U	0.037	0.048	0.043

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		C-B1	C-S1	C-S2	C-S3	C-S5
Field Sample ID		C-B1-(5.5-6.5)	C-S1-(0-0.5)	C-S2-(0-0.5)	C-S3-(0-0.5)	C-S5-(0-0.5)
Begin Sample Depth		5.5	0	0	0	0
End Sample Depth	Preliminary	6.5	0.5	0.5	0.5	0.5
Sample Date	Cleanup	8/20/2009	8/31/2009	8/31/2009	8/31/2009	8/20/2009
Lab Sample ID	Level	0908099-07A	0909004-04A	0909004-02A	0909004-03A	0908099-14A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	100 U	>100	>100	>100	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	NA	**52**	25 U	25 U	NA
Motor Oil	2,000	NA	**200**	**230**	**93**	NA
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)	NA	NA	NA	NA	NA
BETX (mg/kg)						
SW8021						
Benzene	0.03	NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA	NA
VOLATILES (mg/kg)						
SW8260B						
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA	NA
2-Chlorotoluene		NA	NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA	NA
4-Chlorotoluene		NA	NA	NA	NA	NA
Acetone		NA	NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA	NA
Benzene	0.03	NA	NA	NA	NA	NA
Bromobenzene		NA	NA	NA	NA	NA
Bromochloromethane		NA	NA	NA	NA	NA
Bromoform		NA	NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA	NA
CFC-11		NA	NA	NA	NA	NA
CFC-12		NA	NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA	NA
Chloroform		NA	NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA	NA
Dichlorobromomethane		NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Ethylene dibromide		NA	NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	–	NA	NA	NA	NA	NA
m, p-Xylene	84	NA	NA	NA	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA	NA
Naphthalene	4.5	NA	NA	NA	NA	NA
n-Butylbenzene		NA	NA	NA	NA	NA
n-Propylbenzene		NA	NA	NA	NA	NA
o-Xylene	92	NA	NA	NA	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA	NA
Styrene		NA	NA	NA	NA	NA
Tert-Butylbenzene	–	NA	NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		C-B1	C-S1	C-S2	C-S3	C-S5
Field Sample ID		C-B1-(5.5-6.5)	C-S1-(0-0.5)	C-S2-(0-0.5)	C-S3-(0-0.5)	C-S5-(0-0.5)
Begin Sample Depth		5.5	0	0	0	0
End Sample Depth	Preliminary	6.5	0.5	0.5	0.5	0.5
Sample Date	Cleanup	8/20/2009	8/31/2009	8/31/2009	8/31/2009	8/20/2009
Lab Sample ID	Level	0908099-07A	0909004-04A	0909004-02A	0909004-03A	0908099-14A
Trichloroethene		NA	NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA	NA
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene		0.02 U	0.02 U	0.17	0.16	0.028
Benzo(a)pyrene	see cPAH TEQ	0.02 U	0.02 U	0.34	0.24	0.035
Benzo(b)fluoranthene		0.02 U	0.02 U	0.32	0.24	0.029
Benzo(k)fluoranthene		0.02 U	0.02 U	0.19	0.19	0.02 U
Chrysene		0.02 U	0.022	0.27	0.24	0.048
Dibenzo(a,h)anthracene		0.02 U	0.02 U	0.065	0.057	0.02 U
Indeno(1,2,3-cd)pyrene		0.02 U	0.02 U	0.33	0.29	0.022
cPAH TEQ	0.14	NA	0.00022	0.4502	0.3361	0.04338
PCBs (mg/kg)						
SW8082						
PCB-aroclor 1016		NA	NA	NA	0.1 U	NA
PCB-aroclor 1221		NA	NA	NA	0.1 U	NA
PCB-aroclor 1232		NA	NA	NA	0.1 U	NA
PCB-aroclor 1242		NA	NA	NA	0.1 U	NA
PCB-aroclor 1248		NA	NA	NA	0.1 U	NA
PCB-aroclor 1254		NA	NA	NA	0.1 U	NA
PCB-aroclor 1260		NA	NA	NA	0.1 U	NA
PCB-aroclor 1268		NA	NA	NA	0.1 U	NA
Chlordane		NA	NA	NA	0.5 U	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	5 U	5 U	5 U	5 U
Cadmium	25	1 U	1 U	1.3	1.5	1 U
Chromium	120000 / 48 (a)	32	20	39	21	35
Lead	250 / 220 (a)	6.7	17	23	19	13
Mercury	2.1 / 0.7 (a)	0.037	0.032	0.037	0.021	0.039

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		C-S6	C-S7	C-S8	C-S9	C-S10	C-S11	C-S12
Field Sample ID		C-S6-(0-0.5)	C-S7-(0-0.5)	C-S8-(0-0.5)	C-S9-(0-0.5)	C-S10-(0-0.5)	C-S11-(0-0.5)	C-S12-(0-0.5)
Begin Sample Depth		0	0	0	0	0	0	0
End Sample Depth	Preliminary	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sample Date	Cleanup	8/31/2009	9/30/2009	9/30/2009	9/30/2009	9/30/2009	9/30/2009	9/30/2009
Lab Sample ID	Level	0909004-01A	0910008-06A	0910008-05A	0910008-08A	0910008-04A	0910008-07A	0910008-09A
PETROLEUM HYDROCARBONS (mg/kg)								
NWTPH-HCID								
Diesel	2000 / 460 (a)	50 U	NA	NA	NA	NA	NA	NA
Gasoline	30	20 U	NA	NA	NA	NA	NA	NA
Motor Oil	2,000	>100	NA	NA	NA	NA	NA	NA
NWTPH-DX (mg/kg)								
Diesel	2000 / 460 (a)	25 U	NA	NA	NA	NA	NA	NA
Motor Oil	2,000	68	NA	NA	NA	NA	NA	NA
NWTPH-GX (mg/kg)								
Gasoline	100/30 (b)	NA	NA	NA	NA	NA	NA	NA
BETX (mg/kg)								
SW8021								
Benzene	0.03	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA	NA	NA	NA
VOLATILES (mg/kg)								
SW8260B								
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene		NA	NA	NA	NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene		NA	NA	NA	NA	NA	NA	NA
Acetone		NA	NA	NA	NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA	NA	NA	NA
Benzene	0.03	NA	NA	NA	NA	NA	NA	NA
Bromobenzene		NA	NA	NA	NA	NA	NA	NA
Bromochloromethane		NA	NA	NA	NA	NA	NA	NA
Bromoform		NA	NA	NA	NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA	NA	NA	NA
CFC-11		NA	NA	NA	NA	NA	NA	NA
CFC-12		NA	NA	NA	NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA	NA	NA	NA
Chloroform		NA	NA	NA	NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA	NA	NA	NA
Dichlorobromomethane		NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA	NA	NA
Ethylene dibromide		NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	–	NA	NA	NA	NA	NA	NA	NA
m, p-Xylene	84	NA	NA	NA	NA	NA	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA	NA	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA	NA	NA	NA
Naphthalene	4.5	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene		NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene		NA	NA	NA	NA	NA	NA	NA
o-Xylene	92	NA	NA	NA	NA	NA	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA	NA	NA	NA
Styrene		NA	NA	NA	NA	NA	NA	NA
Tert-Butylbenzene	–	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		C-S6	C-S7	C-S8	C-S9	C-S10	C-S11	C-S12
Field Sample ID		C-S6-(0-0.5)	C-S7-(0-0.5)	C-S8-(0-0.5)	C-S9-(0-0.5)	C-S10-(0-0.5)	C-S11-(0-0.5)	C-S12-(0-0.5)
Begin Sample Depth		0	0	0	0	0	0	0
End Sample Depth	Preliminary	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Sample Date	Cleanup	8/31/2009	9/30/2009	9/30/2009	9/30/2009	9/30/2009	9/30/2009	9/30/2009
Lab Sample ID	Level	0909004-01A	0910008-06A	0910008-05A	0910008-08A	0910008-04A	0910008-07A	0910008-09A
Trichloroethene		NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA	NA	NA	NA
cPAHs (mg/kg)								
SW8270SIM								
Benz[a]anthracene		0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.46
Benzo(a)pyrene	see cPAH TEQ	0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.85
Benzo(b)fluoranthene		0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.50
Benzo(k)fluoranthene		0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.51
Chrysene		0.024	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.61
Dibenzo(a,h)anthracene		0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.15
Indeno(1,2,3-cd)pyrene		0.02 U	0.020 U	0.020 U	0.020 U	0.020 U	0.020 U	0.68
cPAH TEQ	0.14	0.00024	NA	NA	NA	NA	NA[1]	1.0861
PCBs (mg/kg)								
SW8082								
PCB-aroclor 1016		0.1 U	NA	NA	NA	NA	NA	NA
PCB-aroclor 1221		0.1 U	NA	NA	NA	NA	NA	NA
PCB-aroclor 1232		0.1 U	NA	NA	NA	NA	NA	NA
PCB-aroclor 1242		0.1 U	NA	NA	NA	NA	NA	NA
PCB-aroclor 1248		0.1 U	NA	NA	NA	NA	NA	NA
PCB-aroclor 1254		0.1 U	NA	NA	NA	NA	NA	NA
PCB-aroclor 1260		0.1 U	NA	NA	NA	NA	NA	NA
PCB-aroclor 1268		0.1 U	NA	NA	NA	NA	NA	NA
Chlordane		0.5 U	NA	NA	NA	NA	NA	NA
TOTAL METALS (mg/kg)								
SW6010/SW7471								
Arsenic	20	5 U	NA	NA	NA	NA	NA	NA
Cadmium	25	1 U	NA	NA	NA	NA	NA	NA
Chromium	120000 / 48 (a)	23	NA	NA	NA	NA	NA	NA
Lead	250 / 220 (a)	13	NA	NA	NA	NA	NA	NA
Mercury	2.1 / 0.7 (a)	0.026	NA	NA	NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		DUP of C-S12	C-SS1	C-SS2	C-SS3	D-B1	D-B2	D-B3	D-B4
Field Sample ID		C-S66-(0-0.5)	C-SS1-(7-8)	C-SS2-(10-11)	C-SS3-(6-7.5)	D-B1-(12-13)	D-B2-(13-14)	D-B3-(13-14)	D-B4-(15-15.5)
Begin Sample Depth		0	7	10	6	12	13	13	15
End Sample Depth	Preliminary	0.5	8	11	7.5	13	14	14	15.5
Sample Date	Cleanup	9/30/2009	8/20/2009	8/21/2009	8/21/2009	8/20/2009	8/21/2009	8/21/2009	8/21/2009
Lab Sample ID	Level	0910008-13A	0908099-12A	0908099-23A	0908099-24A	0908099-13A	0908099-16A	0908099-17A	0908099-18A
PETROLEUM HYDROCARBONS (mg/kg)									
NWTPH-HCID									
Diesel	2000 / 460 (a)	NA	50 U	50 U	50 U	NA	NA	50 U	NA
Gasoline	30	NA	20 U	20 U	20 U	NA	NA	20 U	NA
Motor Oil	2,000	NA	>100	100 U	>100	NA	NA	100 U	NA
NWTPH-DX (mg/kg)									
Diesel	2000 / 460 (a)	NA	25 U	NA	300	NA	25 U	25 U	2,000
Motor Oil	2,000	NA	92	NA	710	NA	50 U	50 U	100 U
NWTPH-GX (mg/kg)									
Gasoline	100/30 (b)	NA	NA	NA	NA	NA	NA	NA	NA
BETX (mg/kg)									
SW8021									
Benzene	0.03	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (mg/kg)									
SW8260B									
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA	0.05 U	0.05 U	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
2-Butanone		NA	NA	NA	NA	0.05 U	0.05 U	NA	NA
2-Chlorotoluene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
2-Hexanone		NA	NA	NA	NA	0.05 U	0.05 U	NA	NA
4-Chlorotoluene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Acetone		NA	NA	NA	NA	0.05 U	0.05 U	NA	NA
Acrylonitrile		NA	NA	NA	NA	0.05 U	0.05 U	NA	NA
Benzene	0.03	NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Bromobenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Bromochloromethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Bromoform		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Bromomethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
CFC-11		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
CFC-12		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Chlorobenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Chloroethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Chloroform		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Chloromethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Dibromochloromethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Dibromomethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Dichlorobromomethane		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Ethylene dibromide		NA	NA	NA	NA	0.005 U	0.005 U	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Isopropylbenzene (Cumene)	–	NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
m, p-Xylene	84	NA	NA	NA	NA	0.02 U	0.02 U	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA	0.05 U	0.05 U	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Methylene Chloride		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Naphthalene	4.5	NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
n-Butylbenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
n-Propylbenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
o-Xylene	92	NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Styrene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Tert-Butylbenzene	–	NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Tetrachloroethene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Toluene	4.7	NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		DUP of C-S12	C-SS1	C-SS2	C-SS3	D-B1	D-B2	D-B3	D-B4
Field Sample ID		C-S66-(0-0.5)	C-SS1-(7-8)	C-SS2-(10-11)	C-SS3-(6-7.5)	D-B1-(12-13)	D-B2-(13-14)	D-B3-(13-14)	D-B4-(15-15.5)
Begin Sample Depth		0	7	10	6	12	13	13	15
End Sample Depth	Preliminary	0.5	8	11	7.5	13	14	14	15.5
Sample Date	Cleanup	9/30/2009	8/20/2009	8/21/2009	8/21/2009	8/20/2009	8/21/2009	8/21/2009	8/21/2009
Lab Sample ID	Level	0910008-13A	0908099-12A	0908099-23A	0908099-24A	0908099-13A	0908099-16A	0908099-17A	0908099-18A
Trichloroethene		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
Vinyl Chloride		NA	NA	NA	NA	0.01 U	0.01 U	NA	NA
cPAHs (mg/kg)									
SW8270SIM									
Benz[a]anthracene		0.51	0.02 U	0.02 U	0.021	0.02 U	0.02 U	NA	NA
Benzo(a)pyrene	see cPAH TEQ	0.86	0.02 U	0.02 U	0.02	0.02 U	0.02 U	NA	NA
Benzo(b)fluoranthene		0.59	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA
Benzo(k)fluoranthene		0.40	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA
Chrysene		0.64	0.02 U	0.02 U	0.029	0.02 U	0.02 U	NA	NA
Dibenzo(a,h)anthracene		0.16	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA
Indeno(1,2,3-cd)pyrene		0.66	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA
cPAH TEQ	0.14	1.0984	NA	NA	0.02239	NA	NA	NA	NA
PCBs (mg/kg)									
SW8082									
PCB-aroclor 1016		NA	NA	NA	NA	NA	NA	NA	NA
PCB-aroclor 1221		NA	NA	NA	NA	NA	NA	NA	NA
PCB-aroclor 1232		NA	NA	NA	NA	NA	NA	NA	NA
PCB-aroclor 1242		NA	NA	NA	NA	NA	NA	NA	NA
PCB-aroclor 1248		NA	NA	NA	NA	NA	NA	NA	NA
PCB-aroclor 1254		NA	NA	NA	NA	NA	NA	NA	NA
PCB-aroclor 1260		NA	NA	NA	NA	NA	NA	NA	NA
PCB-aroclor 1268		NA	NA	NA	NA	NA	NA	NA	NA
Chlordane		NA	NA	NA	NA	NA	NA	NA	NA
TOTAL METALS (mg/kg)									
SW6010/SW7471									
Arsenic	20	NA	5 U	5 U	5 U	5 U	5 U	5 U	NA
Cadmium	25	NA	1 U	1 U	1 U	1 U	1 U	1 U	NA
Chromium	120000 / 48 (a)	NA	22	29	33	24	31	23	NA
Lead	250 / 220 (a)	NA	12	7	19	5 U	5 U	5 U	NA
Mercury	2.1 / 0.7 (a)	NA	0.039	0.04	0.022	0.02 U	0.02 U	0.035	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-B5
Field Sample ID		D-B5-(14-15)
Begin Sample Depth		14
End Sample Depth	Preliminary	15
Sample Date	Cleanup	8/21/2009
Lab Sample ID	Level	0908099-19A
PETROLEUM HYDROCARBONS (mg/kg)		
NWTPH-HCID		
Diesel	2000 / 460 (a)	NA
Gasoline	30	NA
Motor Oil	2,000	NA
NWTPH-DX (mg/kg)		
Diesel	2000 / 460 (a)	25 U
Motor Oil	2,000	50 U
NWTPH-GX (mg/kg)		
Gasoline	100/30 (b)	NA
BETX (mg/kg)		
SW8021		
Benzene	0.03	NA
Ethylbenzene	6	NA
Toluene	4.7	NA
Total Xylenes	15	NA
VOLATILES (mg/kg)		
SW8260B		
1,1,1,2-Tetrachloroethane		NA
1,1,1-Trichloroethane		NA
1,1,2,2-Tetrachloroethane		NA
1,1,2-Trichloroethane		NA
1,1-Dichloroethane		NA
1,1-Dichloroethene		NA
1,1-Dichloropropene		NA
1,2,3-Trichlorobenzene		NA
1,2,3-Trichloropropane		NA
1,2,4-Trichlorobenzene		NA
1,2,4-Trimethylbenzene	4,000	NA
1,2-Dibromo-3-Chloropropane		NA
1,2-Dichlorobenzene		NA
1,2-Dichloroethane		NA
1,2-Dichloropropane		NA
1,3,5-Trimethylbenzene	4,000	NA
1,3-Dichlorobenzene		NA
1,3-Dichloropropane		NA
1,4-Dichlorobenzene		NA
2,2-Dichloropropane		NA
2-Butanone		NA
2-Chlorotoluene		NA
2-Hexanone		NA
4-Chlorotoluene		NA
Acetone		NA
Acrylonitrile		NA
Benzene	0.03	NA
Bromobenzene		NA
Bromochloromethane		NA
Bromoform		NA
Bromomethane		NA
Carbon Tetrachloride		NA
CFC-11		NA
CFC-12		NA
Chlorobenzene		NA
Chloroethane		NA
Chloroform		NA
Chloromethane		NA
Cis-1,2-Dichloroethene		NA
Cis-1,3-Dichloropropene		NA
Dibromochloromethane		NA
Dibromomethane		NA
Dichlorobromomethane		NA
Ethylbenzene	6	NA
Ethylene dibromide		NA
Hexachlorobutadiene		NA
Isopropylbenzene (Cumene)	--	NA
m, p-Xylene	84	NA
Methyl isobutyl ketone		NA
Methyl t-butyl ether		NA
Methylene Chloride		NA
Naphthalene	4.5	NA
n-Butylbenzene		NA
n-Propylbenzene		NA
o-Xylene	92	NA
p-Isopropyltoluene		NA
Sec-Butylbenzene		NA
Styrene		NA
Tert-Butylbenzene	--	NA
Tetrachloroethene		NA
Toluene	4.7	NA
Trans-1,2-Dichloroethene		NA
Trans-1,3-Dichloropropene		NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-B5
Field Sample ID		D-B5-(14-15)
Begin Sample Depth		14
End Sample Depth	Preliminary	15
Sample Date	Cleanup	8/21/2009
Lab Sample ID	Level	0908099-19A
Trichloroethene		NA
Vinyl Chloride		NA
cPAHs (mg/kg)		
SW8270SIM		
Benz[a]anthracene		NA
Benzo(a)pyrene	see cPAH TEQ	NA
Benzo(b)fluoranthene		NA
Benzo(k)fluoranthene		NA
Chrysene		NA
Dibenzo(a,h)anthracene		NA
Indeno(1,2,3-cd)pyrene		NA
cPAH TEQ	0.14	NA
PCBs (mg/kg)		
SW8082		
PCB-aroclor 1016		NA
PCB-aroclor 1221		NA
PCB-aroclor 1232		NA
PCB-aroclor 1242		NA
PCB-aroclor 1248		NA
PCB-aroclor 1254		NA
PCB-aroclor 1260		NA
PCB-aroclor 1268		NA
Chlordane		NA
TOTAL METALS (mg/kg)		
SW6010/SW7471		
Arsenic	20	NA
Cadmium	25	NA
Chromium	120000 / 48 (a)	NA
Lead	250 / 220 (a)	NA
Mercury	2.1 / 0.7 (a)	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-B6	D-B7	D-B8	D-B9
Field Sample ID		D-B-6-(17.5-19)	D-B7-(17.5-18.5)	D-B8-(17.5-18.25	D-B9-(29-30)
Begin Sample Depth		17.5	17.5	17.5	29
End Sample Depth	Preliminary	19	18.5	18.25	30
Sample Date	Cleanup	8/21/2009	8/27/2009	8/27/2009	8/27/2009
Lab Sample ID	Level	0908099-20A	0908125-01A	0908125-02A	0908125-03A
PETROLEUM HYDROCARBONS (mg/kg)					
NWTPH-HCID					
Diesel	2000 / 460 (a)	NA	NA	NA	NA
Gasoline	30	NA	NA	NA	NA
Motor Oil	2,000	NA	NA	NA	NA
NWTPH-DX (mg/kg)					
Diesel	2000 / 460 (a)	25 U	25 U	25 U	25 U
Motor Oil	2,000	50 U	50 U	50 U	50 U
NWTPH-GX (mg/kg)					
Gasoline	100/30 (b)	NA	NA	3 U	NA
BETX (mg/kg)					
SW8021					
Benzene	0.03	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA
VOLATILES (mg/kg)					
SW8260B					
1,1,1,2-Tetrachloroethane		NA	NA	0.01 U	0.01 U
1,1,1-Trichloroethane		NA	NA	0.01 U	0.01 U
1,1,2,2-Tetrachloroethane		NA	NA	0.01 U	0.01 U
1,1,2-Trichloroethane		NA	NA	0.01 U	0.01 U
1,1-Dichloroethane		NA	NA	0.01 U	0.01 U
1,1-Dichloroethene		NA	NA	0.01 U	0.01 U
1,1-Dichloropropene		NA	NA	0.01 U	0.01 U
1,2,3-Trichlorobenzene		NA	NA	0.01 U	0.01 U
1,2,3-Trichloropropane		NA	NA	0.01 U	0.01 U
1,2,4-Trichlorobenzene		NA	NA	0.01 U	0.01 U
1,2,4-Trimethylbenzene	4,000	NA	NA	0.01 U	0.01 U
1,2-Dibromo-3-Chloropropane		NA	NA	0.05 U	0.05 U
1,2-Dichlorobenzene		NA	NA	0.01 U	0.01 U
1,2-Dichloroethane		NA	NA	0.01 U	0.01 U
1,2-Dichloropropane		NA	NA	0.01 U	0.01 U
1,3,5-Trimethylbenzene	4,000	NA	NA	0.01 U	0.01 U
1,3-Dichlorobenzene		NA	NA	0.01 U	0.01 U
1,3-Dichloropropane		NA	NA	0.01 U	0.01 U
1,4-Dichlorobenzene		NA	NA	0.01 U	0.01 U
2,2-Dichloropropane		NA	NA	0.01 U	0.01 U
2-Butanone		NA	NA	0.05 U	0.05 U
2-Chlorotoluene		NA	NA	0.01 U	0.01 U
2-Hexanone		NA	NA	0.05 U	0.05 U
4-Chlorotoluene		NA	NA	0.01 U	0.01 U
Acetone		NA	NA	0.05 U	0.05 U
Acrylonitrile		NA	NA	0.05 U	0.05 U
Benzene	0.03	NA	NA	0.01 U	0.01 U
Bromobenzene		NA	NA	0.01 U	0.01 U
Bromochloromethane		NA	NA	0.01 U	0.01 U
Bromoform		NA	NA	0.01 U	0.01 U
Bromomethane		NA	NA	0.01 U	0.01 U
Carbon Tetrachloride		NA	NA	0.01 U	0.01 U
CFC-11		NA	NA	0.01 U	0.01 U
CFC-12		NA	NA	0.01 U	0.01 U
Chlorobenzene		NA	NA	0.01 U	0.01 U
Chloroethane		NA	NA	0.01 U	0.01 U
Chloroform		NA	NA	0.01 U	0.01 U
Chloromethane		NA	NA	0.01 U	0.01 U
Cis-1,2-Dichloroethene		NA	NA	0.01 U	0.01 U
Cis-1,3-Dichloropropene		NA	NA	0.01 U	0.01 U
Dibromochloromethane		NA	NA	0.01 U	0.01 U
Dibromomethane		NA	NA	0.01 U	0.01 U
Dichlorobromomethane		NA	NA	0.01 U	0.01 U
Ethylbenzene	6	NA	NA	0.01 U	0.01 U
Ethylene dibromide		NA	NA	0.005 U	0.005 U
Hexachlorobutadiene		NA	NA	0.01 U	0.01 U
Isopropylbenzene (Cumene)	--	NA	NA	0.01 U	0.01 U
m, p-Xylene	84	NA	NA	0.02 U	0.02 U
Methyl isobutyl ketone		NA	NA	0.05 U	0.05 U
Methyl t-butyl ether		NA	NA	0.01 U	0.01 U
Methylene Chloride		NA	NA	0.01 U	0.01 U
Naphthalene	4.5	NA	NA	0.01 U	0.01 U
n-Butylbenzene		NA	NA	0.01 U	0.01 U
n-Propylbenzene		NA	NA	0.01 U	0.01 U
o-Xylene	92	NA	NA	0.01 U	0.01 U
p-Isopropyltoluene		NA	NA	0.01 U	0.01 U
Sec-Butylbenzene		NA	NA	0.01 U	0.01 U
Styrene		NA	NA	0.01 U	0.01 U
Tert-Butylbenzene	--	NA	NA	0.01 U	0.01 U
Tetrachloroethene		NA	NA	0.01 U	0.01 U
Toluene	4.7	NA	NA	0.01 U	0.01 U
Trans-1,2-Dichloroethene		NA	NA	0.01 U	0.01 U
Trans-1,3-Dichloropropene		NA	NA	0.01 U	0.01 U

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-B6	D-B7	D-B8	D-B9
Field Sample ID		D-B-6-(17.5-19)	D-B7-(17.5-18.5)	D-B8-(17.5-18.25	D-B9-(29-30)
Begin Sample Depth		17.5	17.5	17.5	29
End Sample Depth	Preliminary	19	18.5	18.25	30
Sample Date	Cleanup	8/21/2009	8/27/2009	8/27/2009	8/27/2009
Lab Sample ID	Level	0908099-20A	0908125-01A	0908125-02A	0908125-03A
Trichloroethene		NA	NA	0.01 U	0.01 U
Vinyl Chloride		NA	NA	0.01 U	0.01 U
cPAHs (mg/kg)					
SW8270SIM					
Benz[a]anthracene		NA	NA	NA	0.02 U
Benzo(a)pyrene	see cPAH TEQ	NA	NA	NA	0.02 U
Benzo(b)fluoranthene		NA	NA	NA	0.02 U
Benzo(k)fluoranthene		NA	NA	NA	0.02 U
Chrysene		NA	NA	NA	0.02 U
Dibenzo(a,h)anthracene		NA	NA	NA	0.02 U
Indeno(1,2,3-cd)pyrene		NA	NA	NA	0.02 U
cPAH TEQ	0.14	NA	NA	NA	NA
PCBs (mg/kg)					
SW8082					
PCB-aroclor 1016		NA	NA	NA	NA
PCB-aroclor 1221		NA	NA	NA	NA
PCB-aroclor 1232		NA	NA	NA	NA
PCB-aroclor 1242		NA	NA	NA	NA
PCB-aroclor 1248		NA	NA	NA	NA
PCB-aroclor 1254		NA	NA	NA	NA
PCB-aroclor 1260		NA	NA	NA	NA
PCB-aroclor 1268		NA	NA	NA	NA
Chlordane		NA	NA	NA	NA
TOTAL METALS (mg/kg)					
SW6010/SW7471					
Arsenic	20	NA	NA	NA	5 U
Cadmium	25	NA	NA	NA	1 U
Chromium	120000 / 48 (a)	NA	NA	NA	20
Lead	250 / 220 (a)	NA	NA	NA	5 U
Mercury	2.1 / 0.7 (a)	NA	NA	NA	0.02 U

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-B10	D-S1	D-S2	D-SS1
Field Sample ID		D-B10-(19-20)	D-S1-(0-0.5)	D-S2-(0-0.5)	D-SS1-(10-11)
Begin Sample Depth		19	0	0	10
End Sample Depth	Preliminary	20	0.5	0.5	11
Sample Date	Cleanup	8/27/2009	9/30/2009	9/30/2009	8/20/2009
Lab Sample ID	Level	0908125-04A	0910008-10A	0910008-11A	0908099-11A
PETROLEUM HYDROCARBONS (mg/kg)					
NWTPH-HCID					
Diesel	2000 / 460 (a)	NA	NA	NA	50 U
Gasoline	30	NA	NA	NA	20 U
Motor Oil	2,000	NA	NA	NA	100 U
NWTPH-DX (mg/kg)					
Diesel	2000 / 460 (a)	25 U	NA	NA	NA
Motor Oil	2,000	50 U	NA	NA	NA
NWTPH-GX (mg/kg)					
Gasoline	100/30 (b)	NA	NA	NA	NA
BETX (mg/kg)					
SW8021					
Benzene	0.03	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA
VOLATILES (mg/kg)					
SW8260B					
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA
2-Chlorotoluene		NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA
4-Chlorotoluene		NA	NA	NA	NA
Acetone		NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA
Benzene	0.03	NA	NA	NA	NA
Bromobenzene		NA	NA	NA	NA
Bromochloromethane		NA	NA	NA	NA
Bromoform		NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA
CFC-11		NA	NA	NA	NA
CFC-12		NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA
Chloroform		NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA
Dichlorobromomethane		NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA
Ethylene dibromide		NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	NA	NA	NA	NA
m, p-Xylene	84	NA	NA	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA
Naphthalene	4.5	NA	NA	NA	NA
n-Butylbenzene		NA	NA	NA	NA
n-Propylbenzene		NA	NA	NA	NA
o-Xylene	92	NA	NA	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA
Styrene		NA	NA	NA	NA
Tert-Butylbenzene	--	NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-B10	D-S1	D-S2	D-SS1
Field Sample ID		D-B10-(19-20)	D-S1-(0-0.5)	D-S2-(0-0.5)	D-SS1-(10-11)
Begin Sample Depth		19	0	0	10
End Sample Depth	Preliminary	20	0.5	0.5	11
Sample Date	Cleanup	8/27/2009	9/30/2009	9/30/2009	8/20/2009
Lab Sample ID	Level	0908125-04A	0910008-10A	0910008-11A	0908099-11A
Trichloroethene		NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA
cPAHs (mg/kg)					
SW8270SIM					
Benz[a]anthracene		NA	0.68	0.056	0.02 U
Benzo(a)pyrene	see cPAH TEQ	NA	1.3	0.14	0.02 U
Benzo(b)fluoranthene		NA	0.88	0.093	0.02 U
Benzo(k)fluoranthene		NA	0.69	0.081	0.02 U
Chrysene		NA	0.90	0.087	0.02 U
Dibenzo(a,h)anthracene		NA	0.23	0.025	0.02 U
Indeno(1,2,3-cd)pyrene		NA	1.1	0.13	0.02 U
cPAH TEQ	0.14	NA	1.667	0.17937	NA
PCBs (mg/kg)					
SW8082					
PCB-aroclor 1016		NA	NA	NA	NA
PCB-aroclor 1221		NA	NA	NA	NA
PCB-aroclor 1232		NA	NA	NA	NA
PCB-aroclor 1242		NA	NA	NA	NA
PCB-aroclor 1248		NA	NA	NA	NA
PCB-aroclor 1254		NA	NA	NA	NA
PCB-aroclor 1260		NA	NA	NA	NA
PCB-aroclor 1268		NA	NA	NA	NA
Chlordane		NA	NA	NA	NA
TOTAL METALS (mg/kg)					
SW6010/SW7471					
Arsenic	20	NA	NA	NA	5 U
Cadmium	25	NA	NA	NA	1 U
Chromium	120000 / 48 (a)	NA	NA	NA	24
Lead	250 / 220 (a)	NA	NA	NA	5 U
Mercury	2.1 / 0.7 (a)	NA	NA	NA	0.02 U

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-SS2	D-SS2	D-SS3	D-SS4	D-SS5
Field Sample ID		D-SS2-(11-12)	D-SS2-(19-20)	D-SS3-(5-6.25)	D-SS4-(6-8)	D-SS5-(12.5-13.25)
Begin Sample Depth		11	19	5	6	12.5
End Sample Depth	Preliminary	12	20	6.25	8	13.25
Sample Date	Cleanup	8/20/2009	8/20/2009	8/20/2009	8/21/2009	8/27/2009
Lab Sample ID	Level	0908099-09A	0908099-10A	0908099-08A	0908099-21A	0908125-05A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	>50	>50	50 U	>50	50 U
Gasoline	30	20 U	20 U	20 U	>20	20 U
Motor Oil	2,000	100 U	100 U	100 U	>100	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	1,300	920	NA	4,000	NA
Motor Oil	2,000	50 U	50 U	NA	15,000	NA
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)	NA	NA	NA	820	NA
BETX (mg/kg)						
SW8021						
Benzene	0.03	NA	NA	NA	0.088	NA
Ethylbenzene	6	NA	NA	NA	2.3	NA
Toluene	4.7	NA	NA	NA	0.3	NA
Total Xylenes	15	NA	NA	NA	24	NA
VOLATILES (mg/kg)						
SW8260B						
1,1,1,2-Tetrachloroethane		NA	NA	NA	0.1 U	NA
1,1,1-Trichloroethane		NA	NA	NA	0.1 U	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	0.1 U	NA
1,1,2-Trichloroethane		NA	NA	NA	0.1 U	NA
1,1-Dichloroethane		NA	NA	NA	0.1 U	NA
1,1-Dichloroethene		NA	NA	NA	0.1 U	NA
1,1-Dichloropropene		NA	NA	NA	0.1 U	NA
1,2,3-Trichlorobenzene		NA	NA	NA	0.1 U	NA
1,2,3-Trichloropropane		NA	NA	NA	0.1 U	NA
1,2,4-Trichlorobenzene		NA	NA	NA	0.1 U	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	50	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	0.5 U	NA
1,2-Dichlorobenzene		NA	NA	NA	0.1 U	NA
1,2-Dichloroethane		NA	NA	NA	0.1 U	NA
1,2-Dichloropropane		NA	NA	NA	0.1 U	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	17	NA
1,3-Dichlorobenzene		NA	NA	NA	0.1 U	NA
1,3-Dichloropropane		NA	NA	NA	0.1 U	NA
1,4-Dichlorobenzene		NA	NA	NA	0.1 U	NA
2,2-Dichloropropane		NA	NA	NA	0.1 U	NA
2-Butanone		NA	NA	NA	0.5 U	NA
2-Chlorotoluene		NA	NA	NA	0.1 U	NA
2-Hexanone		NA	NA	NA	0.5 U	NA
4-Chlorotoluene		NA	NA	NA	0.1 U	NA
Acetone		NA	NA	NA	0.5 U	NA
Acrylonitrile		NA	NA	NA	0.5 U	NA
Benzene	0.03	NA	NA	NA	0.1 U	NA
Bromobenzene		NA	NA	NA	0.1 U	NA
Bromochloromethane		NA	NA	NA	0.1 U	NA
Bromoform		NA	NA	NA	0.1 U	NA
Bromomethane		NA	NA	NA	0.1 U	NA
Carbon Tetrachloride		NA	NA	NA	0.1 U	NA
CFC-11		NA	NA	NA	0.1 U	NA
CFC-12		NA	NA	NA	0.1 U	NA
Chlorobenzene		NA	NA	NA	0.1 U	NA
Chloroethane		NA	NA	NA	0.1 U	NA
Chloroform		NA	NA	NA	0.1 U	NA
Chloromethane		NA	NA	NA	0.1 U	NA
Cis-1,2-Dichloroethene		NA	NA	NA	0.1 U	NA
Cis-1,3-Dichloropropene		NA	NA	NA	0.1 U	NA
Dibromochloromethane		NA	NA	NA	0.1 U	NA
Dibromomethane		NA	NA	NA	0.1 U	NA
Dichlorobromomethane		NA	NA	NA	0.1 U	NA
Ethylbenzene	6	NA	NA	NA	1.7	NA
Ethylene dibromide		NA	NA	NA	0.05 U	NA
Hexachlorobutadiene		NA	NA	NA	0.1 U	NA
Isopropylbenzene (Cumene)	--	NA	NA	NA	1.7	NA
m, p-Xylene	84	NA	NA	NA	20	NA
Methyl isobutyl ketone		NA	NA	NA	0.5 U	NA
Methyl t-butyl ether		NA	NA	NA	0.1 U	NA
Methylene Chloride		NA	NA	NA	0.1 U	NA
Naphthalene	4.5	NA	NA	NA	9.2	NA
n-Butylbenzene		NA	NA	NA	4.9	NA
n-Propylbenzene		NA	NA	NA	6.6	NA
o-Xylene	92	NA	NA	NA	5.1	NA
p-Isopropyltoluene		NA	NA	NA	1.6	NA
Sec-Butylbenzene		NA	NA	NA	1.5	NA
Styrene		NA	NA	NA	0.1 U	NA
Tert-Butylbenzene	--	NA	NA	NA	0.1 U	NA
Tetrachloroethene		NA	NA	NA	0.1 U	NA
Toluene	4.7	NA	NA	NA	0.15	NA
Trans-1,2-Dichloroethene		NA	NA	NA	0.1 U	NA
Trans-1,3-Dichloropropene		NA	NA	NA	0.1 U	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-SS2	D-SS2	D-SS3	D-SS4	D-SS5
Field Sample ID		D-SS2-(11-12)	D-SS2-(19-20)	D-SS3-(5-6.25)	D-SS4-(6-8)	D-SS5-(12.5-13.25)
Begin Sample Depth		11	19	5	6	12.5
End Sample Depth	Preliminary	12	20	6.25	8	13.25
Sample Date	Cleanup	8/20/2009	8/20/2009	8/20/2009	8/21/2009	8/27/2009
Lab Sample ID	Level	0908099-09A	0908099-10A	0908099-08A	0908099-21A	0908125-05A
Trichloroethene		NA	NA	NA	0.1 U	NA
Vinyl Chloride		NA	NA	NA	0.1 U	NA
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene		0.02 U	0.02 U	0.02 U	0.1 U	NA
Benzo(a)pyrene	see cPAH TEQ	0.02 U	0.02 U	0.02 U	0.1 U	NA
Benzo(b)fluoranthene		0.02 U	0.02 U	0.02 U	0.1 U	NA
Benzo(k)fluoranthene		0.02 U	0.02 U	0.02 U	0.1 U	NA
Chrysene		0.02 U	0.02 U	0.02 U	0.1 U	NA
Dibenzo(a,h)anthracene		0.02 U	0.02 U	0.02 U	0.1 U	NA
Indeno(1,2,3-cd)pyrene		0.02 U	0.02 U	0.02 U	0.1 U	NA
cPAH TEQ	0.14	NA	NA	NA	NA	NA
PCBs (mg/kg)						
SW8082						
PCB-aroclor 1016		NA	NA	NA	NA	NA
PCB-aroclor 1221		NA	NA	NA	NA	NA
PCB-aroclor 1232		NA	NA	NA	NA	NA
PCB-aroclor 1242		NA	NA	NA	NA	NA
PCB-aroclor 1248		NA	NA	NA	NA	NA
PCB-aroclor 1254		NA	NA	NA	NA	NA
PCB-aroclor 1260		NA	NA	NA	NA	NA
PCB-aroclor 1268		NA	NA	NA	NA	NA
Chlordane		NA	NA	NA	NA	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	24	5 U	5 U	NA
Cadmium	25	1 U	1 U	1 U	1 U	NA
Chromium	120000 / 48 (a)	22	22	43	24	NA
Lead	250 / 220 (a)	5 U	5 U	5.5	66	NA
Mercury	2.1 / 0.7 (a)	0.02 U	0.02 U	0.028	0.039	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-3	MW-3	MW-4	MW-4	MW-4
Field Sample ID		MW-3-(0-0.5)	MW-3-(2.5-3.5)	MW-4-(0-0.5)	MW-4-(2.5-3.5)	MW-4-(10-11)
Begin Sample Depth		0	2.5	0	2.5	10
End Sample Depth	Preliminary	0.5	3.5	0.5	3.5	11
Sample Date	Cleanup	8/18/2009	8/18/2009	8/18/2009	8/18/2009	8/18/2009
Lab Sample ID	Level	0908084-01A	0908084-02A	0908084-03A	0908084-04A	0908084-05A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	>100	>100	>100	>100	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	25 U	25 U	75	280	NA
Motor Oil	2,000	200	150	250	640	NA
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)	NA	NA	NA	NA	NA
BETX (mg/kg)						
SW8021						
Benzene	0.03	NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA	NA
VOLATILES (mg/kg)						
SW8260B						
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA	NA
2-Chlorotoluene		NA	NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA	NA
4-Chlorotoluene		NA	NA	NA	NA	NA
Acetone		NA	NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA	NA
Benzene	0.03	NA	NA	NA	NA	NA
Bromobenzene		NA	NA	NA	NA	NA
Bromochloromethane		NA	NA	NA	NA	NA
Bromoform		NA	NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA	NA
CFC-11		NA	NA	NA	NA	NA
CFC-12		NA	NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA	NA
Chloroform		NA	NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA	NA
Dichlorobromomethane		NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Ethylene dibromide		NA	NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	NA	NA	NA	NA	NA
m, p-Xylene	84	NA	NA	NA	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA	NA
Naphthalene	4.5	NA	NA	NA	NA	NA
n-Butylbenzene		NA	NA	NA	NA	NA
n-Propylbenzene		NA	NA	NA	NA	NA
o-Xylene	92	NA	NA	NA	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA	NA
Styrene		NA	NA	NA	NA	NA
Tert-Butylbenzene	--	NA	NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-3	MW-3	MW-4	MW-4	MW-4
Field Sample ID		MW-3-(0-0.5)	MW-3-(2.5-3.5)	MW-4-(0-0.5)	MW-4-(2.5-3.5)	MW-4-(10-11)
Begin Sample Depth		0	2.5	0	2.5	10
End Sample Depth	Preliminary	0.5	3.5	0.5	3.5	11
Sample Date	Cleanup	8/18/2009	8/18/2009	8/18/2009	8/18/2009	8/18/2009
Lab Sample ID	Level	0908084-01A	0908084-02A	0908084-03A	0908084-04A	0908084-05A
Trichloroethene		NA	NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA	NA
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene		0.02 U	**0.022**	0.02 U	**0.021**	0.02 U
Benzo(a)pyrene	see cPAH TEQ	0.02 U	**0.026**	0.02 U	**0.024**	0.02 U
Benzo(b)fluoranthene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(k)fluoranthene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Chrysene		0.02 U	**0.033**	0.02 U	**0.032**	0.02 U
Dibenzo(a,h)anthracene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cPAH TEQ	0.14	NA	**0.02853**	NA	**0.02642**	NA
PCBs (mg/kg)						
SW8082						
PCB-aroclor 1016		NA	NA	NA	NA	NA
PCB-aroclor 1221		NA	NA	NA	NA	NA
PCB-aroclor 1232		NA	NA	NA	NA	NA
PCB-aroclor 1242		NA	NA	NA	NA	NA
PCB-aroclor 1248		NA	NA	NA	NA	NA
PCB-aroclor 1254		NA	NA	NA	NA	NA
PCB-aroclor 1260		NA	NA	NA	NA	NA
PCB-aroclor 1268		NA	NA	NA	NA	NA
Chlordane		NA	NA	NA	NA	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	**6.3**	5 U	5 U	**5.3**	5 U
Cadmium	25	1 U	1 U	1 U	1 U	1 U
Chromium	120000 / 48 (a)	**31**	**34**	**26**	**27**	**23**
Lead	250 / 220 (a)	**19**	**15**	**34**	**48**	5 U
Mercury	2.1 / 0.7 (a)	**0.04**	**0.037**	**0.054**	**0.029**	**0.023**

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-5	MW-5	MW-6	MW-6	MW-6
Field Sample ID		MW-5-(25-25.5)	MW-5-(29-29.5)	MW-6-(0-0.5)	MW-6-(3-3.5)	MW-6-(12.5-13.5
Begin Sample Depth		25	29	0	3	12.5
End Sample Depth	Preliminary	25.5	29.5	0.5	3.5	13.5
Sample Date	Cleanup	8/17/2009	8/17/2009	8/17/2009	8/17/2009	8/17/2009
Lab Sample ID	Level	0908072-01A	0908072-02A	0908072-03A	0908072-04A	0908072-05A
PETROLEUM HYDROCARBONS (mg/kg)						
NWTPH-HCID						
Diesel	2000 / 460 (a)	50 U	50 U	50 U	50 U	50 U
Gasoline	30	20 U	20 U	20 U	20 U	20 U
Motor Oil	2,000	100 U	100 U	>100	100 U	100 U
NWTPH-DX (mg/kg)						
Diesel	2000 / 460 (a)	NA	NA	82	NA	NA
Motor Oil	2,000	NA	NA	230	NA	NA
NWTPH-GX (mg/kg)						
Gasoline	100/30 (b)	NA	NA	NA	NA	NA
BETX (mg/kg)						
SW8021						
Benzene	0.03	NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Total Xylenes	15	NA	NA	NA	NA	NA
VOLATILES (mg/kg)						
SW8260B						
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA	NA
2-Chlorotoluene		NA	NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA	NA
4-Chlorotoluene		NA	NA	NA	NA	NA
Acetone		NA	NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA	NA
Benzene	0.03	NA	NA	NA	NA	NA
Bromobenzene		NA	NA	NA	NA	NA
Bromochloromethane		NA	NA	NA	NA	NA
Bromoform		NA	NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA	NA
CFC-11		NA	NA	NA	NA	NA
CFC-12		NA	NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA	NA
Chloroform		NA	NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA	NA
Dichlorobromomethane		NA	NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA	NA
Ethylene dibromide		NA	NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	NA	NA	NA	NA	NA
m, p-Xylene	84	NA	NA	NA	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA	NA
Naphthalene	4.5	NA	NA	NA	NA	NA
n-Butylbenzene		NA	NA	NA	NA	NA
n-Propylbenzene		NA	NA	NA	NA	NA
o-Xylene	92	NA	NA	NA	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA	NA
Styrene		NA	NA	NA	NA	NA
Tert-Butylbenzene	--	NA	NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-5	MW-5	MW-6	MW-6	MW-6
Field Sample ID		MW-5-(25-25.5)	MW-5-(29-29.5)	MW-6-(0-0.5)	MW-6-(3-3.5)	MW-6-(12.5-13.5
Begin Sample Depth		25	29	0	3	12.5
End Sample Depth	Preliminary	25.5	29.5	0.5	3.5	13.5
Sample Date	Cleanup	8/17/2009	8/17/2009	8/17/2009	8/17/2009	8/17/2009
Lab Sample ID	Level	0908072-01A	0908072-02A	0908072-03A	0908072-04A	0908072-05A
Trichloroethene		NA	NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA	NA
cPAHs (mg/kg)						
SW8270SIM						
Benz[a]anthracene		0.02 U	0.02 U	0.026	0.02 U	0.02 U
Benzo(a)pyrene	see cPAH TEQ	0.02 U	0.02 U	0.031	0.02 U	0.02 U
Benzo(b)fluoranthene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(k)fluoranthene		0.02 U	0.02 U	0.021	0.02 U	0.02 U
Chrysene		0.02 U	0.02 U	0.042	0.02 U	0.02 U
Dibenzo(a,h)anthracene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cPAH TEQ	0.14	NA	NA	0.03612	NA	NA
PCBs (mg/kg)						
SW8082						
PCB-aroclor 1016		NA	NA	NA	NA	NA
PCB-aroclor 1221		NA	NA	NA	NA	NA
PCB-aroclor 1232		NA	NA	NA	NA	NA
PCB-aroclor 1242		NA	NA	NA	NA	NA
PCB-aroclor 1248		NA	NA	NA	NA	NA
PCB-aroclor 1254		NA	NA	NA	NA	NA
PCB-aroclor 1260		NA	NA	NA	NA	NA
PCB-aroclor 1268		NA	NA	NA	NA	NA
Chlordane		NA	NA	NA	NA	NA
TOTAL METALS (mg/kg)						
SW6010/SW7471						
Arsenic	20	5 U	5 U	5 U	5 U	5 U
Cadmium	25	1 U	1 U	1 U	1 U	1 U
Chromium	120000 / 48 (a)	28	22	28	20	21
Lead	250 / 220 (a)	5 U	5 U	5 U	5 U	5 U
Mercury	2.1 / 0.7 (a)	0.02 U	0.02 U	0.027	0.02 U	0.02 U

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-7	MW-8	MW-8	MW-8
Field Sample ID		MW-7-(15-15.5)	MW-8-(5-6)	MW-8-(12.5-13.5	MW-8-(22-22.25'
Begin Sample Depth		15	5	12.5	22
End Sample Depth	Preliminary	15.5	6	13.5	22.5
Sample Date	Cleanup	8/19/2009	8/19/2009	8/19/2009	8/19/2009
Lab Sample ID	Level	0908084-09A	0908084-06A	0908084-07A	0908084-08A
PETROLEUM HYDROCARBONS (mg/kg)					
NWTPH-HCID					
Diesel	2000 / 460 (a)	NA	NA	NA	NA
Gasoline	30	NA	NA	NA	NA
Motor Oil	2,000	NA	NA	NA	NA
NWTPH-DX (mg/kg)					
Diesel	2000 / 460 (a)	25 U	790	1,800	25 U
Motor Oil	2,000	50 U	2,300	100 U	50 U
NWTPH-GX (mg/kg)					
Gasoline	100/30 (b)	NA	33 U	32 U	3 U
BETX (mg/kg)					
SW8021					
Benzene	0.03	NA	0.03 U	0.03 U	0.03 U
Ethylbenzene	6	NA	0.19	0.065	0.05 U
Toluene	4.7	NA	0.07	0.05 U	0.05 U
Total Xylenes	15	NA	0.38	0.2 U	0.2 U
VOLATILES (mg/kg)					
SW8260B					
1,1,1,2-Tetrachloroethane		NA	NA	NA	NA
1,1,1-Trichloroethane		NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		NA	NA	NA	NA
1,1,2-Trichloroethane		NA	NA	NA	NA
1,1-Dichloroethane		NA	NA	NA	NA
1,1-Dichloroethene		NA	NA	NA	NA
1,1-Dichloropropene		NA	NA	NA	NA
1,2,3-Trichlorobenzene		NA	NA	NA	NA
1,2,3-Trichloropropane		NA	NA	NA	NA
1,2,4-Trichlorobenzene		NA	NA	NA	NA
1,2,4-Trimethylbenzene	4,000	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		NA	NA	NA	NA
1,2-Dichlorobenzene		NA	NA	NA	NA
1,2-Dichloroethane		NA	NA	NA	NA
1,2-Dichloropropane		NA	NA	NA	NA
1,3,5-Trimethylbenzene	4,000	NA	NA	NA	NA
1,3-Dichlorobenzene		NA	NA	NA	NA
1,3-Dichloropropane		NA	NA	NA	NA
1,4-Dichlorobenzene		NA	NA	NA	NA
2,2-Dichloropropane		NA	NA	NA	NA
2-Butanone		NA	NA	NA	NA
2-Chlorotoluene		NA	NA	NA	NA
2-Hexanone		NA	NA	NA	NA
4-Chlorotoluene		NA	NA	NA	NA
Acetone		NA	NA	NA	NA
Acrylonitrile		NA	NA	NA	NA
Benzene	0.03	NA	NA	NA	NA
Bromobenzene		NA	NA	NA	NA
Bromochloromethane		NA	NA	NA	NA
Bromoform		NA	NA	NA	NA
Bromomethane		NA	NA	NA	NA
Carbon Tetrachloride		NA	NA	NA	NA
CFC-11		NA	NA	NA	NA
CFC-12		NA	NA	NA	NA
Chlorobenzene		NA	NA	NA	NA
Chloroethane		NA	NA	NA	NA
Chloroform		NA	NA	NA	NA
Chloromethane		NA	NA	NA	NA
Cis-1,2-Dichloroethene		NA	NA	NA	NA
Cis-1,3-Dichloropropene		NA	NA	NA	NA
Dibromochloromethane		NA	NA	NA	NA
Dibromomethane		NA	NA	NA	NA
Dichlorobromomethane		NA	NA	NA	NA
Ethylbenzene	6	NA	NA	NA	NA
Ethylene dibromide		NA	NA	NA	NA
Hexachlorobutadiene		NA	NA	NA	NA
Isopropylbenzene (Cumene)	--	NA	NA	NA	NA
m, p-Xylene	84	NA	NA	NA	NA
Methyl isobutyl ketone		NA	NA	NA	NA
Methyl t-butyl ether		NA	NA	NA	NA
Methylene Chloride		NA	NA	NA	NA
Naphthalene	4.5	NA	NA	NA	NA
n-Butylbenzene		NA	NA	NA	NA
n-Propylbenzene		NA	NA	NA	NA
o-Xylene	92	NA	NA	NA	NA
p-Isopropyltoluene		NA	NA	NA	NA
Sec-Butylbenzene		NA	NA	NA	NA
Styrene		NA	NA	NA	NA
Tert-Butylbenzene	--	NA	NA	NA	NA
Tetrachloroethene		NA	NA	NA	NA
Toluene	4.7	NA	NA	NA	NA
Trans-1,2-Dichloroethene		NA	NA	NA	NA
Trans-1,3-Dichloropropene		NA	NA	NA	NA

APPENDIX E, TABLE E-1
REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-7	MW-8	MW-8	MW-8
Field Sample ID		MW-7-(15-15.5)	MW-8-(5-6)	MW-8-(12.5-13.5	MW-8-(22-22.25)
Begin Sample Depth		15	5	12.5	22
End Sample Depth	Preliminary	15.5	6	13.5	22.5
Sample Date	Cleanup	8/19/2009	8/19/2009	8/19/2009	8/19/2009
Lab Sample ID	Level	0908084-09A	0908084-06A	0908084-07A	0908084-08A
Trichloroethene		NA	NA	NA	NA
Vinyl Chloride		NA	NA	NA	NA
cPAHs (mg/kg)					
SW8270SIM					
Benz[a]anthracene		NA	NA	NA	NA
Benzo(a)pyrene	see cPAH TEQ	NA	NA	NA	NA
Benzo(b)fluoranthene		NA	NA	NA	NA
Benzo(k)fluoranthene		NA	NA	NA	NA
Chrysene		NA	NA	NA	NA
Dibenzo(a,h)anthracene		NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene		NA	NA	NA	NA
cPAH TEQ	0.14	NA	NA	NA	NA
PCBs (mg/kg)					
SW8082					
PCB-aroclor 1016		NA	NA	NA	NA
PCB-aroclor 1221		NA	NA	NA	NA
PCB-aroclor 1232		NA	NA	NA	NA
PCB-aroclor 1242		NA	NA	NA	NA
PCB-aroclor 1248		NA	NA	NA	NA
PCB-aroclor 1254		NA	NA	NA	NA
PCB-aroclor 1260		NA	NA	NA	NA
PCB-aroclor 1268		NA	NA	NA	NA
Chlordane		NA	NA	NA	NA
TOTAL METALS (mg/kg)					
SW6010/SW7471					
Arsenic	20	NA	NA	NA	NA
Cadmium	25	NA	NA	NA	NA
Chromium	120000 / 48 (a)	NA	NA	NA	NA
Lead	250 / 220 (a)	NA	NA	NA	NA
Mercury	2.1 / 0.7 (a)	NA	NA	NA	NA

(a) Point of Compliance for cleanup level protective of terrestrial plants and animals is 15 ft BGS.
See Table 3 for cleanup level development.
(b) MTCA Method A cleanup level is 30 mg/kg when benzene is present and 100 mg/kg when benzene is not present.
U = Indicates the compound was undetected at the reported concentration.
Bold = Detected compound.
Box = Exceedance of cleanup level.

APPENDIX E, TABLE E-2
REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-SS4	MW-1	MW-3	MW-4	MW-5	DUP of MW-5 MW-5
Field Sample ID	Preliminary	D-SS4-GW	MW-1	MW-3	MW-4	MW-5	DUP
Sample Date	Cleanup	8/21/2009	8/25/2009	8/25/2009	8/25/2009	8/25/2009	8/25/2009
Lab Sample ID	Level	0908099-22A	0908112-09A	0908112-01A	0908112-02A	0908112-03A	0908112-07A
PETROLEUM HYDROCARBONS (ug/L)							
NWTPH-HCID							
Diesel	500	310 U	310 U	310 U	310 U	310 U	310 U
Gasoline	800	>130	130 U	130 U	130 U	130 U	130 U
Motor Oil	500	>310	310 U	310 U	310 U	310 U	310 U
NWTPH-DX (ug/L)							
Diesel	500	270	NA	NA	NA	NA	NA
Motor Oil	500	460	NA	NA	NA	NA	NA
NWTPH-GX (ug/L)							
Gasoline	800	750	NA	NA	NA	NA	NA
BETX (ug/L)							
SW8021							
Benzene	5	1 U	NA	NA	NA	NA	NA
Ethylbenzene	700	2.3	NA	NA	NA	NA	NA
Toluene	640	1 U	NA	NA	NA	NA	NA
Total Xylenes	1,600	46	NA	NA	NA	NA	NA
VOLATILES (ug/L)							
SW8260B							
1,1,1,2-Tetrachloroethane		2 U	NA	NA	NA	NA	NA
1,1,1-Trichloroethane		2 U	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane		2 U	NA	NA	NA	NA	NA
1,1,2-Trichloroethane		2 U	NA	NA	NA	NA	NA
1,1-Dichloroethane		2 U	NA	NA	NA	NA	NA
1,1-Dichloroethene		2 U	NA	NA	NA	NA	NA
1,1-Dichloropropene		2 U	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene		2 U	NA	NA	NA	NA	NA
1,2,3-Trichloropropane		2 U	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene		2 U	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	400	54	NA	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane		10 U	NA	NA	NA	NA	NA
1,2-Dichlorobenzene		2 U	NA	NA	NA	NA	NA
1,2-Dichloroethane		2 U	NA	NA	NA	NA	NA
1,2-Dichloropropane		2 U	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	400	12	NA	NA	NA	NA	NA
1,3-Dichlorobenzene		2 U	NA	NA	NA	NA	NA
1,3-Dichloropropane		2 U	NA	NA	NA	NA	NA
1,4-Dichlorobenzene		2 U	NA	NA	NA	NA	NA
2,2-Dichloropropane		2 U	NA	NA	NA	NA	NA
2-Butanone	4,800	10 U	NA	NA	NA	NA	NA
2-Chlorotoluene		2 U	NA	NA	NA	NA	NA
2-Hexanone		10 U	NA	NA	NA	NA	NA
4-Chlorotoluene		2 U	NA	NA	NA	NA	NA
Acetone	800/1000 (a)	25 U	NA	NA	NA	NA	NA
Acrylonitrile		10 U	NA	NA	NA	NA	NA
Benzene	5	2 U	NA	NA	NA	NA	NA
Bromobenzene		2 U	NA	NA	NA	NA	NA
Bromochloromethane		2 U	NA	NA	NA	NA	NA
Bromoform		2 U	NA	NA	NA	NA	NA
Bromomethane		2 U	NA	NA	NA	NA	NA
Carbon Disulfide		2 U	NA	NA	NA	NA	NA
Carbon Tetrachloride		2 U	NA	NA	NA	NA	NA
CFC-11		2 U	NA	NA	NA	NA	NA
CFC-12		2 U	NA	NA	NA	NA	NA
Chlorobenzene		2 U	NA	NA	NA	NA	NA
Chloroethane		2 U	NA	NA	NA	NA	NA
Chloroform		2 U	NA	NA	NA	NA	NA
Chloromethane		2 U	NA	NA	NA	NA	NA
Cis-1,2-Dichloroethene		2 U	NA	NA	NA	NA	NA
Cis-1,3-Dichloropropene		2 U	NA	NA	NA	NA	NA
Dibromochloromethane		2 U	NA	NA	NA	NA	NA
Dibromomethane		2 U	NA	NA	NA	NA	NA
Dichlorobromomethane		2 U	NA	NA	NA	NA	NA
Ethanol		NA	NA	NA	NA	NA	NA
Ethylbenzene	700	2.1	NA	NA	NA	NA	NA
Ethylene dibromide		2 U	NA	NA	NA	NA	NA
Hexachlorobutadiene		2 U	NA	NA	NA	NA	NA
Isopropylbenzene (Cumene)		2.4	NA	NA	NA	NA	NA
m, p-Xylene		35	NA	NA	NA	NA	NA

APPENDIX E, TABLE E-2
REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		D-SS4	MW-1	MW-3	MW-4	MW-5	DUP of MW-5 MW-5
Field Sample ID	Preliminary	D-SS4-GW	MW-1	MW-3	MW-4	MW-5	DUP
Sample Date	Cleanup	8/21/2009	8/25/2009	8/25/2009	8/25/2009	8/25/2009	8/25/2009
Lab Sample ID	Level	0908099-22A	0908112-09A	0908112-01A	0908112-02A	0908112-03A	0908112-07A
Methyl isobutyl ketone		10 U	NA	NA	NA	NA	NA
Methyl t-butyl ether	24	2 U	NA	NA	NA	NA	NA
Methylene Chloride		5 U	NA	NA	NA	NA	NA
Naphthalene	160	12	NA	NA	NA	NA	NA
n-Butylbenzene		2 U	NA	NA	NA	NA	NA
n-Propylbenzene		4.6	NA	NA	NA	NA	NA
o-Xylene		8	NA	NA	NA	NA	NA
p-Isopropyltoluene		2 U	NA	NA	NA	NA	NA
Sec-Butylbenzene		2 U	NA	NA	NA	NA	NA
Styrene		2 U	NA	NA	NA	NA	NA
Tert-Butylbenzene		2 U	NA	NA	NA	NA	NA
Tetrachloroethene		2 U	NA	NA	NA	NA	NA
Toluene	640	2 U	NA	NA	NA	NA	NA
Trans-1,2-Dichloroethene		2 U	NA	NA	NA	NA	NA
Trans-1,3-Dichloropropene		2 U	NA	NA	NA	NA	NA
Trichloroethene		2 U	NA	NA	NA	NA	NA
Vinyl Chloride		0.2 U	NA	NA	NA	NA	NA
PAHS (ug/L)							
SW8270SIM							
1-Methylnaphthalene	160	5.1	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
2-Methylnaphthalene	32	6.5	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Acenaphthene	960	0.097	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Acenaphthylene		0.032	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Anthracene	4,800	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benz[a]anthracene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(a)pyrene	0.12	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(b)fluoranthene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(ghi)perylene		0.029	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Benzo(k)fluoranthene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Chrysene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Dibenzo(a,h)anthracene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Fluoranthene	640	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Fluorene	640	0.2	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Indeno(1,2,3-cd)pyrene		0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Naphthalene	160	6	0.027	0.02 U	0.02 U	0.02 U	0.02 U
Phenanthrene		0.22	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
Pyrene	480	0.02	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U
cPAH TEQ	0.12	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (ug/L)							
SW6010/SW7471							
Arsenic	5	NA	1.0 U	5.2	1.0 U	1.4	1.4
Cadmium	5	NA	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Chromium	100	NA	7.0 U	7.0 U	7.0 U	7.0 U	7.0 U
Lead	15	NA	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Mercury		NA	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
TOTAL METALS (ug/L)							
SW6010/SW7471							
Arsenic	5	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA
Chromium	100	NA	NA	NA	NA	NA	NA
Lead	15	NA	NA	NA	NA	NA	NA
Mercury		NA	NA	NA	NA	NA	NA
Zinc		NA	NA	NA	NA	NA	NA
CONVENTIONALS							
Total Organic Carbon (SM5310B; ug/L)		NA	NA	12,000	NA	NA	NA

APPENDIX E, TABLE E-2
REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-6	MW-7	MW-8	DUP of MW-8 MW-8 DUP	MW-8	DUP of MW-8 MW-98
Field Sample ID	Preliminary	MW-6	MW-7	MW-8		MW-8	
Sample Date	Cleanup	8/25/2009	8/25/2009	8/25/2009	8/25/2009	9/30/2009	9/30/2009
Lab Sample ID	Level	0908112-04A	0908112-05A	0908112-06A	0908112-07A	0910008-02A	0910008-03A
PETROLEUM HYDROCARBONS (ug/L)							
NWTPH-HCID							
Diesel	500	310 U	NA	NA	NA	NA	NA
Gasoline	800	130 U	NA	NA	NA	NA	NA
Motor Oil	500	310 U	NA	NA	NA	NA	NA
NWTPH-DX (ug/L)							
Diesel	500	NA	130 U	380	NA	660 J	480 J
Motor Oil	500	NA	250 U	250 U	NA	250 U	250 U
NWTPH-GX (ug/L)							
Gasoline	800	NA	NA	NA	NA	NA	NA
BETX (ug/L)							
SW8021							
Benzene	5	NA	NA	NA	NA	NA	NA
Ethylbenzene	700	NA	NA	NA	NA	NA	NA
Toluene	640	NA	NA	NA	NA	NA	NA
Total Xylenes	1,600	NA	NA	NA	NA	NA	NA
VOLATILES (ug/L)							
SW8260B							
1,1,1,2-Tetrachloroethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,1,1-Trichloroethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,1,2,2-Tetrachloroethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,1,2-Trichloroethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,1-Dichloroethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,1-Dichloroethene		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,1-Dichloropropene		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,2,3-Trichlorobenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,2,3-Trichloropropane		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,2,4-Trichlorobenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,2,4-Trimethylbenzene	400	NA	2 U	2 U	2 U	2.0 U	2.0 U
1,2-Dibromo-3-Chloropropane		NA	10 U	10 U	10 U	10 U	10 U
1,2-Dichlorobenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,2-Dichloroethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,2-Dichloropropane		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,3,5-Trimethylbenzene	400	NA	2 U	2 U	2 U	2.0 U	2.0 U
1,3-Dichlorobenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,3-Dichloropropane		NA	2 U	2 U	2 U	2.0 U	2.0 U
1,4-Dichlorobenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
2,2-Dichloropropane		NA	2 U	2 U	2 U	2.0 U	2.0 U
2-Butanone	4,800	NA	10 U	10 U	10 U	10 U	10 U
2-Chlorotoluene		NA	2 U	2 U	2 U	2.0 U	2.0 U
2-Hexanone		NA	10 U	10 U	10 U	10 U	10 U
4-Chlorotoluene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Acetone	800/1000 (a)	NA	25 U	25 U	25 U	25 U	25 U
Acrylonitrile		NA	10 U	10 U	10 U	10 U	10 U
Benzene	5	NA	2 U	2 U	2 U	2.3	2.6
Bromobenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Bromochloromethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
Bromoform		NA	2 U	2 U	2 U	2.0 U	2.0 U
Bromomethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
Carbon Disulfide		NA	2 U	2 U	2 U	2.0 U	2.0 U
Carbon Tetrachloride		NA	2 U	2 U	2 U	2.0 U	2.0 U
CFC-11		NA	2 U	2 U	2 U	2.0 U	2.0 U
CFC-12		NA	2 U	2 U	2 U	2.0 U	2.0 U
Chlorobenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Chloroethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
Chloroform		NA	2 U	2 U	2 U	2.0 U	2.0 U
Chloromethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
Cis-1,2-Dichloroethene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Cis-1,3-Dichloropropene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Dibromochloromethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
Dibromomethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
Dichlorobromomethane		NA	2 U	2 U	2 U	2.0 U	2.0 U
Ethanol		NA	10 U	10 U	10 U	NA	NA
Ethylbenzene	700	NA	2 U	2 U	2 U	2.0 U	2.0 U
Ethylene dibromide		NA	2 U	2 U	2 U	2.0 U	2.0 U
Hexachlorobutadiene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Isopropylbenzene (Cumene)		NA	2 U	2 U	2 U	2.0 U	2.0 U
m, p-Xylene		NA	4 U	4 U	4 U	4.0 U	4.0 U

APPENDIX E, TABLE E-2
REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		MW-6	MW-7	MW-8	DUP of MW-8 MW-8	MW-8	DUP of MW-8 MW-8
Field Sample ID	Preliminary	MW-6	MW-7	MW-8	DUP	MW-8	MW-98
Sample Date	Cleanup	8/25/2009	8/25/2009	8/25/2009	8/25/2009	9/30/2009	9/30/2009
Lab Sample ID	Level	0908112-04A	0908112-05A	0908112-06A	0908112-07A	0910008-02A	0910008-03A
Methyl isobutyl ketone		NA	10 U	10 U	10 U	10 U	10 U
Methyl t-butyl ether	24	NA	2 U	2 U	2 U	2.0 U	2.0 U
Methylene Chloride		NA	5 U	5 U	5 U	5.0 U	5.0 U
Naphthalene	160	NA	2 U	2 U	2 U	3.4	4.8
n-Butylbenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
n-Propylbenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
o-Xylene		NA	2 U	2 U	2 U	2.0 U	2.0 U
p-Isopropyltoluene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Sec-Butylbenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Styrene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Tert-Butylbenzene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Tetrachloroethene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Toluene	640	NA	2 U	2 U	2 U	2.0 U	2.0 U
Trans-1,2-Dichloroethene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Trans-1,3-Dichloropropene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Trichloroethene		NA	2 U	2 U	2 U	2.0 U	2.0 U
Vinyl Chloride		NA	0.2 U	0.2 U	0.2 U	0.20 U	0.20 U
PAHS (ug/L)							
SW8270SIM							
1-Methylnaphthalene	160	0.02 U	0.02 U	NA	NA	4.3 J	5.8 J
2-Methylnaphthalene	32	0.02 U	0.02 U	NA	NA	0.51 J	3.2 J
Acenaphthene	960	0.02 U	0.02 U	NA	NA	0.38	0.36
Acenaphthylene		0.02 U	0.02 U	NA	NA	0.021	0.023
Anthracene	4,800	0.02 U	0.02 U	NA	NA	0.041	0.051
Benz[a]anthracene		0.02 U	0.02 U	NA	NA	0.020 U	0.020 U
Benzo(a)pyrene	0.12	0.02 U	0.02 U	NA	NA	0.020 U	0.020 U
Benzo(b)fluoranthene		0.02 U	0.02 U	NA	NA	0.020 U	0.020 U
Benzo(ghi)perylene		0.02 U	0.02 U	NA	NA	0.020 U	0.020 U
Benzo(k)fluoranthene		0.02 U	0.02 U	NA	NA	0.020 U	0.020 U
Chrysene		0.02 U	0.02 U	NA	NA	0.020 U	0.020 U
Dibenzo(a,h)anthracene		0.02 U	0.02 U	NA	NA	0.020 U	0.020 U
Fluoranthene	640	0.02 U	0.02 U	NA	NA	0.020 U	0.020
Fluorene	640	0.02 U	0.02 U	NA	NA	0.88	1.0
Indeno(1,2,3-cd)pyrene		0.02 U	0.02 U	NA	NA	0.020 U	0.020 U
Naphthalene	160	0.02 U	0.02 U	NA	NA	0.32 J	1.5 J
Phenanthrene		0.02 U	0.02 U	NA	NA	0.028 J	0.15 J
Pyrene	480	0.02 U	0.02 U	NA	NA	0.040 J	0.064 J
cPAH TEQ	0.12	NA	NA	NA	NA	NA	NA
DISSOLVED METALS (ug/L)							
SW6010/SW7471							
Arsenic	5	1.8	1.0 U	1.1	NA	3.0	3.5
Cadmium	5	5.0 U	5.0 U	5.0 U	NA	5.0 U	5.0 U
Chromium	100	7.0 U	7.0 U	7.0 U	NA	7.0 U	7.0 U
Lead	15	1.0 U	1.0 U	1.0 U	NA	1.0 U	1.0 U
Mercury		0.20 U	0.20 U	0.20 U	NA	0.20 U	0.20 U
TOTAL METALS (ug/L)							
SW6010/SW7471							
Arsenic	5	NA	NA	NA	NA	NA	NA
Cadmium	5	NA	NA	NA	NA	NA	NA
Chromium	100	NA	NA	NA	NA	NA	NA
Lead	15	NA	NA	NA	NA	NA	NA
Mercury		NA	NA	NA	NA	NA	NA
Zinc		NA	NA	NA	NA	NA	NA
CONVENTIONALS							
Total Organic Carbon (SM5310B; ug/L)		14,000	NA	NA	NA	NA	NA

APPENDIX E, TABLE E-2
REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID Field Sample ID Sample Date Lab Sample ID	Preliminary Cleanup Level	SW-1 SW-1 10/16/2009 0910008-01
PETROLEUM HYDROCARBONS (ug/L)		
NWTPH-HCID		
Diesel	500	310 U
Gasoline	800	130 U
Motor Oil	500	310 U
NWTPH-DX (ug/L)		
Diesel	500	NA
Motor Oil	500	NA
NWTPH-GX (ug/L)		
Gasoline	800	NA
BETX (ug/L)		
SW8021		
Benzene	5	NA
Ethylbenzene	700	NA
Toluene	640	NA
Total Xylenes	1,600	NA
VOLATILES (ug/L)		
SW8260B		
1,1,1,2-Tetrachloroethane		2.0 U
1,1,1-Trichloroethane		2.0 U
1,1,2,2-Tetrachloroethane		2.0 U
1,1,2-Trichloroethane		2.0 U
1,1-Dichloroethane		2.0 U
1,1-Dichloroethene		2.0 U
1,1-Dichloropropene		2.0 U
1,2,3-Trichlorobenzene		2.0 U
1,2,3-Trichloropropane		2.0 U
1,2,4-Trichlorobenzene		2.0 U
1,2,4-Trimethylbenzene	400	2.0 U
1,2-Dibromo-3-Chloropropane		10 U
1,2-Dichlorobenzene		2.0 U
1,2-Dichloroethane		2.0 U
1,2-Dichloropropane		2.0 U
1,3,5-Trimethylbenzene	400	2.0 U
1,3-Dichlorobenzene		2.0 U
1,3-Dichloropropane		2.0 U
1,4-Dichlorobenzene		2.0 U
2,2-Dichloropropane		2.0 U
2-Butanone	4,800	10 U
2-Chlorotoluene		2.0 U
2-Hexanone		10 U
4-Chlorotoluene		2.0 U
Acetone	800/1000 (a)	25 U
Acrylonitrile		10 U
Benzene	5	2.0 U
Bromobenzene		2.0 U
Bromochloromethane		2.0 U
Bromoform		2.0 U
Bromomethane		2.0 U
Carbon Disulfide		2.0 U
Carbon Tetrachloride		2.0 U
CFC-11		2.0 U
CFC-12		2.0 U
Chlorobenzene		2.0 U
Chloroethane		2.0 U
Chloroform		2.0 U
Chloromethane		2.0 U
Cis-1,2-Dichloroethene		2.0 U
Cis-1,3-Dichloropropene		2.0 U
Dibromochloromethane		2.0 U
Dibromomethane		2.0 U
Dichlorobromomethane		2.0 U
Ethanol		NA
Ethylbenzene	700	2.0 U
Ethylene dibromide		2.0 U
Hexachlorobutadiene		2.0 U
Isopropylbenzene (Cumene)		2.0 U
m, p-Xylene		4.0 U

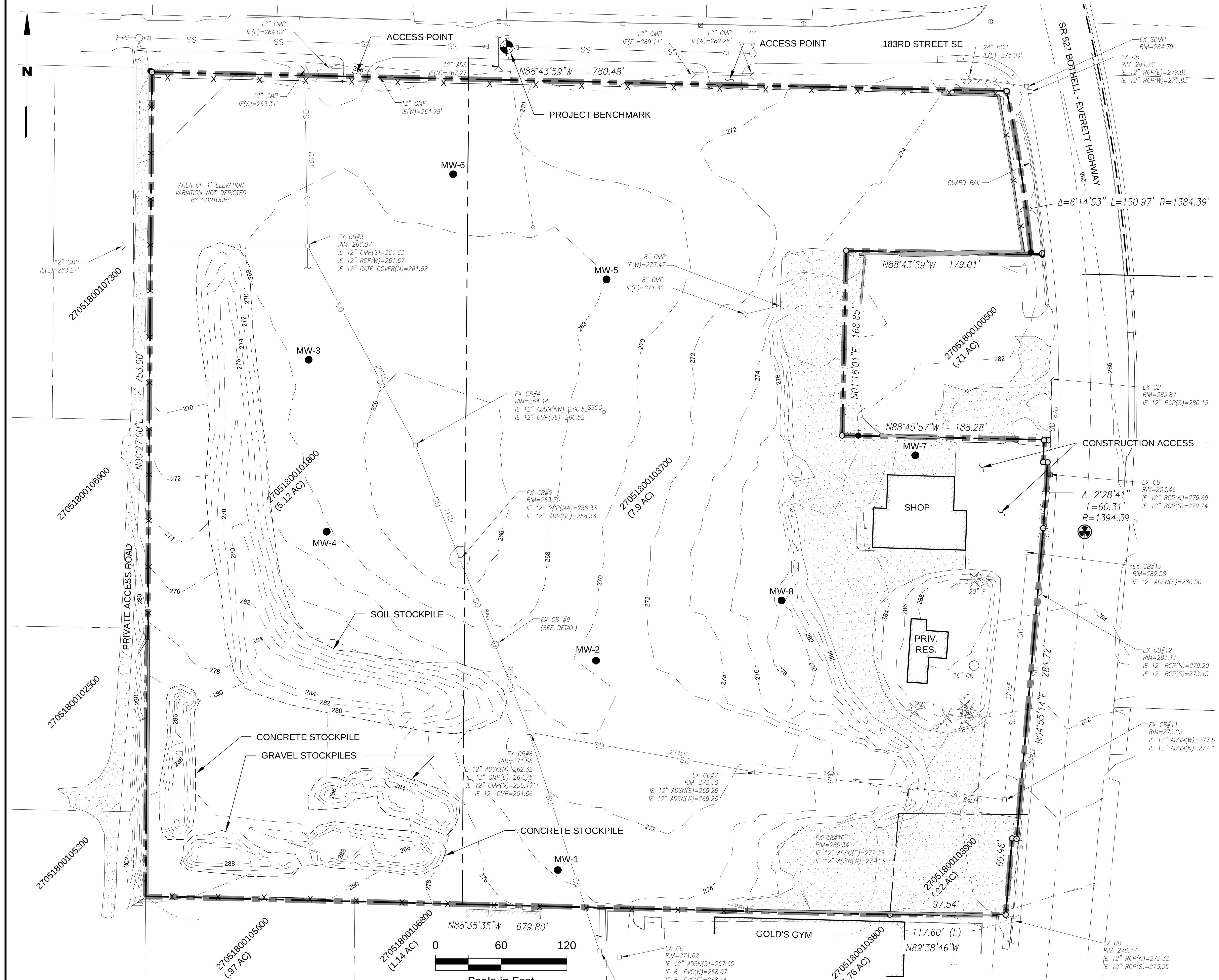
APPENDIX E, TABLE E-2
REMEDIAL INVESTIGATION
GROUNDWATER ANALYTICAL RESULTS
VERBEEK WRECKING
BOTHELL, WASHINGTON

Site ID		SW-1
Field Sample ID	Preliminary	SW-1
Sample Date	Cleanup	10/16/2009
Lab Sample ID	Level	0910008-01
Methyl isobutyl ketone		10 U
Methyl t-butyl ether	24	2.0 U
Methylene Chloride		5.0 U
Naphthalene	160	2.0 U
n-Butylbenzene		2.0 U
n-Propylbenzene		2.0 U
o-Xylene		2.0 U
p-Isopropyltoluene		2.0 U
Sec-Butylbenzene		2.0 U
Styrene		2.0 U
Tert-Butylbenzene		2.0 U
Tetrachloroethene		2.0 U
Toluene	640	2.0 U
Trans-1,2-Dichloroethene		2.0 U
Trans-1,3-Dichloropropene		2.0 U
Trichloroethene		2.0 U
Vinyl Chloride		0.20 U
PAHS (ug/L)		
SW8270SIM		
1-Methylnaphthalene	160	0.020 U
2-Methylnaphthalene	32	0.020 U
Acenaphthene	960	0.020 U
Acenaphthylene		0.020 U
Anthracene	4,800	0.020 U
Benz[a]anthracene		0.020 U
Benzo(a)pyrene	0.12	0.020 U
Benzo(b)fluoranthene		0.020 U
Benzo(ghi)perylene		0.020 U
Benzo(k)fluoranthene		0.020 U
Chrysene		0.020 U
Dibenzo(a,h)anthracene		0.020 U
Fluoranthene	640	0.020 U
Fluorene	640	0.020 U
Indeno(1,2,3-cd)pyrene		0.020 U
Naphthalene	160	**0.028**
Phenanthrene		0.020 U
Pyrene	480	0.020 U
cPAH TEQ	0.12	NA
DISSOLVED METALS (ug/L)		
SW6010/SW7471		
Arsenic	5	NA
Cadmium	5	NA
Chromium	100	NA
Lead	15	NA
Mercury		NA
TOTAL METALS (ug/L)		
SW6010/SW7471		
Arsenic	5	7.3
Cadmium	5	5.0 U
Chromium	100	7.0 U
Lead	15	1.1
Mercury		0.20 U
Zinc		10 U
CONVENTIONALS		
Total Organic Carbon (SM5310B; ug/L)		NA

(a) Preliminary cleanup level of gasoline-range petroleum hydrocarbons is 800 ug/L if benzene is present, or is 1,000 ug/L if no detectable benzene is present in groundwater.
U = Indicates the compound was undetected at the reported concentration.
Bold = Detected compound.
Box = Exceedance of cleanup level.

VERBEEK - GRADING PLAN

PSE 1/4, NE 1/4, SEC.18, T.27N., R.5E., W.M.



LEGEND:

- PROJECT BOUNDARY
- CENTERLINE ROAD
- 270 EXISTING CONTOURS POST GRADING (2 FT)
- EXISTING PARCEL BOUNDARY
- X EXISTING FENCE LINE
- EXISTING ECOLOGY BLOCK WALL
- EXISTING BUILDING
- EXISTING GRAVEL ACCESS ROAD
- EXISTING CONCRETE PAVEMENT
- MW-1 EXISTING MONITORING WELL LOCATION
- PROJECT BENCHMARK
  EX SSMH
  I.E. (W) 256.94'
  DATUM: NGVD 29

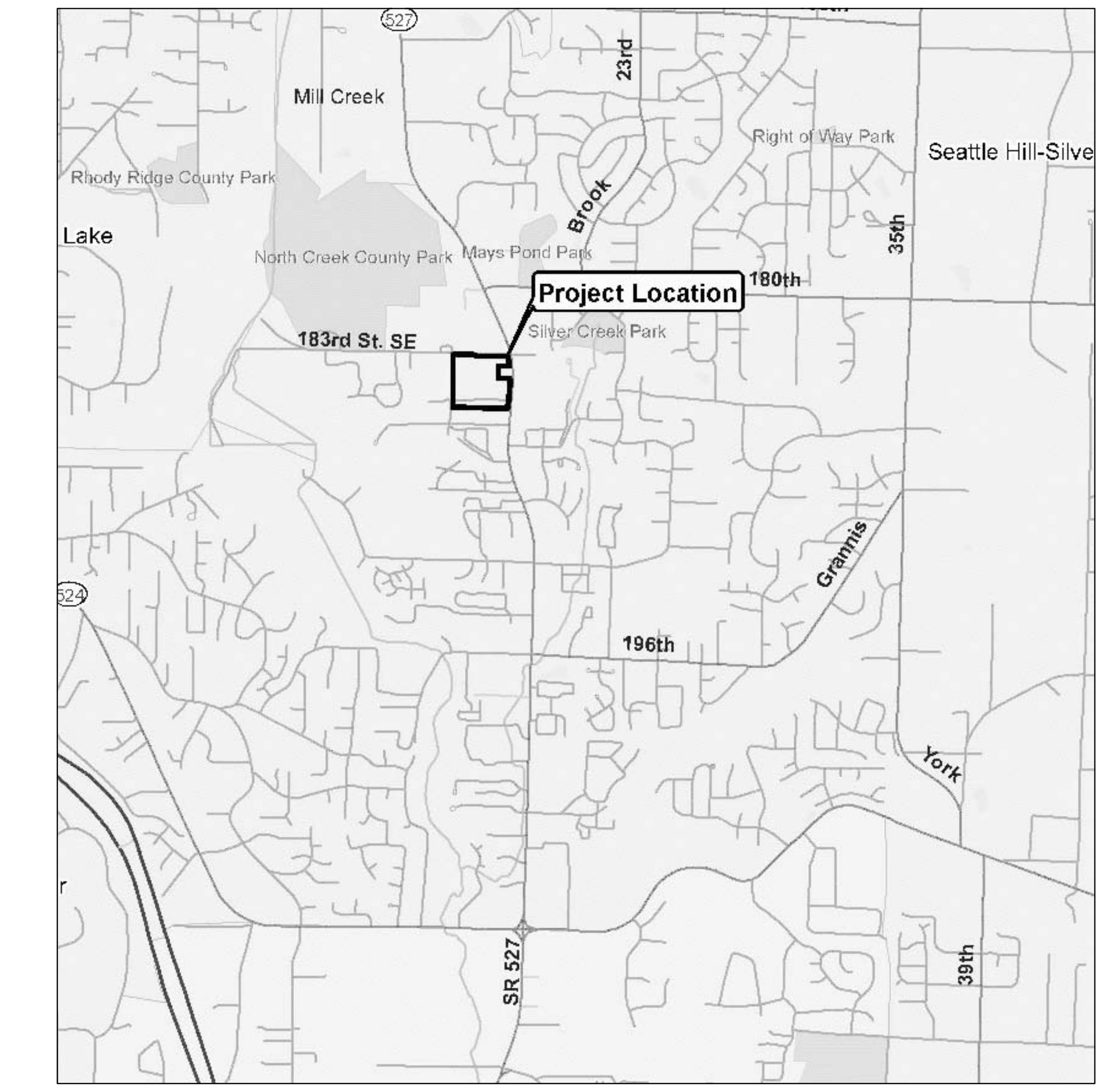
  TO CONVERT TO NAVD 88 ADD 3.6'

SURVEY NOTE:

1. BOUNDARY AND LEGAL DESCRIPTIONS FROM SURVEY BY WESTERN ENGINEERS, SEE SHEETS 6-8.

MISC. NOTES:

1. THERE ARE NO KNOWN STORMWATER TREATMENT FACILITIES LOCATED WITHIN 15' OF THE PROPERTY.
2. THE STORMWATER POLLUTION SOURCE CONTROL B.M.P.S BEING PROPOSED AT THIS SITE IS GOOD HOUSEKEEPING.
3. THE PERMANENT WATER QUALITY AND QUANTITY CONTROL FACILITIES AT THIS SITE IS THE EXISTING DETENTION SYSTEM.
4. THE TEMPORARY B.M.P.S BEING PROPOSED ON THIS SITE SHALL CONSIST OF THE INSTALLATION OF FILTER FABRIC FENCES, A CONSTRUCTION ENTRANCE, SETTLING BASINS, AND COMPOST SOCKS, SEE SHEET 2.
5. THERE IS NO NEW IMPERVIOUS SURFACE PROPOSED FOR THE PROJECT SITE.
6. SOME TEMPORARY CUT SLOPES ON THE SITE EXCEED 33%.
7. NO ACCESS POINTS ARE TO BE MODIFIED AS PART OF THIS WORK.



VICINITY MAP

0 0.5 1

MILES

TAX PARCEL NUMBERS: 270518-001-018-00, 270518-001-037-00, 270518-001-039-00

SITE ADDRESS: 18416 BOTHELL-EVERETT HWY
BOTHELL, WA 98012

CONTACT PERSONS: LANDAU ASSOCIATES
LARRY BEARD, PE
KELLEY E. WRIGG, PE
130 2ND AVE S.
EDMONDS, WA. 98020
PHONE: (425)778-0907

CERTIFIED EROSION CONTROL SPECIALIST: LANDAU ASSOCIATES
JASON LONG, RLA, CESCL
130 2ND AVE S.
EDMONDS, WA. 98020
PHONE: (425)778-0907

APPLICANT: VERBEEK WRECKING, LLC
RENEE WEST
18416 BOTHELL-EVERETT HWY
BOTHELL, WA. 98012 PHONE:
(425) 478-2251

SITE INFORMATION:

CURRENT ZONING:	LI - LIGHT INDUSTRIAL
NUMBER OF LOTS:	3
WATER SUPPLY:	ALDERWOOD WATER AND SEWER DISTRICT
SEWAGE DISPOSAL:	ALDERWOOD WATER AND SEWER DISTRICT

SHEET INDEX

#	SHEET DESCRIPTION
1	COVER SHEET
2	EROSION CONTROL PLAN
3	GRADING PLAN
4	SECTIONS
5	DETAILS
6	RECORD OF SURVEY - SHEET 1
7	RECORD OF SURVEY - SHEET 2
8	RECORD OF SURVEY - SHEET 3

SITE CONDITIONS:

SOILS:
ACCORDING TO THE S.C.S. SOIL SURVEY OF SNOHOMISH COUNTY THE EASTERN 50 TO 150 FEET OF THE ON-SITE SOILS CONSIST OF EVERETT GRAVELLY SANDY LOAM. OF THE REMAINDER, THE NORTHERN HALF IS NOTED AS BEING ALDERWOOD GRAVELLY SANDY LOAM AND THE SOUTHERN HALF ARE LISTED AS URBAN LAND. A PORTION OF THE ONSITE SOILS IN THE URBAN LAND AREA WERE FILL SOILS FROM GASWORKS PARK (GWP). RECENT SITE EXPLORATORY WORK INDICATES THAT THE SOILS NOTED AS BEING ALDERWOOD GRAVELLY SANDY LOAMS OR URBAN LAND ARE ALL FILL SOILS WITHIN THE UPPER 4 TO 6 FEET ACROSS THE SITE. THE SOIL LOGS LIST MOST OF THIS MATERIAL AS A SILTY SAND WITH GRAVEL.

SIGNIFICANT LANDSCAPING FEATURES AND NATIVE VEGETATION:

ALL PERIMETER AND OPEN SPACE VEGETATION TO REMAIN.

VEGETATION:
THE MAJORITY OF THE SITE IS CURRENTLY BARE GROUND. THE AREA AROUND THE HOUSE HAS GRASS, ORNAMENTAL VEGETATION AND A FEW TREES.

AFTER CONSTRUCTION IS COMPLETED, THE BARE SOIL SURFACE WILL BE STABILIZED USING A BEST MANAGEMENT PLAN SELECTED FROM THE DOE 2005 STORMWATER MANAGEMENT MANUAL.

DRAINAGE:
CURRENTLY THE RAINFALL THAT LANDS ON THE SITE TENDS TO EITHER SHEET FLOW OR FLOW IN SHALLOW CHANNELS TO STORMWATER CATCHBASINS #4 OR #5 LOCATED IN THE WESTERN MIDDLE OF THE SITE. THERE IS A CONTROL STRUCTURE LOCATED IN THE STORMWATER DRAINAGE MANHOLE #9 WHICH BACKS UP STORMWATER VIA A RESTRICTOR ORIFICE UNTIL IT PONDS ON THE LOW AREA ON THE SURFACE OF THE GROUND ADJACENT TO CATCHBASIN #4 AND #5. THIS IS THE DESIGNED STORMWATER DETENTION SYSTEM AS PREVIOUSLY APPROVED BY SNOHOMISH COUNTY. AFTER GRADING IS FINALIZED THE SYSTEM AND GRADING WILL BE IN SUBSTANTIALLY THE SAME CONFIGURATION AS PRIOR TO GRADING AND SHOULD FUNCTION AS INTENDED AND APPROVED.

RISK ASSESSMENT:
SLOPE: THE SITE HAS GENTLE SLOPES THAT GENERALLY DRAIN TO A LOW AREA IN THE WEST-CENTER OF THE PROPERTY. RAINFALL UPON THE PROPERTY IS TREATED BY AN EXISTING DETENTION SYSTEM BEFORE RELEASE FROM THE PROPERTY.

SOURCE OF WATER EROSION: RAINFALL.

SOILS: FILL SOILS, CONSISTING MAINLY OF POORLY COMPACTED SILTY SANDS WITH GRAVEL. THESE SOILS SHOULD BE CONSIDERED MOISTURE SENSITIVE AND VEHICLE TRAFFIC SHOULD BE LIMITED TO TRACKED VEHICLES WHEN SOILS ARE WET.

CONCLUSION: THE CHANCE FOR SIGNIFICANT EROSION/SILTATION IMPACT IS LOW DUE TO THE FOLLOWING:

1. PROPOSED AREAS OF DEVELOPMENT ARE IN GENTLE SLOPE AREAS.
2. THE SOIL PERMEABILITY IS LOW.
3. AVAILABLE WATER CAPACITY OF THE SOIL IS MODERATE.
4. WATER EROSION IS MODERATE (RUNOFF IS SLOW BUT FINE SOILS ARE PRESENT).
5. EXISTING DETENTION SYSTEM WILL REDUCE SEDIMENT LOAD.
6. EROSION CONTROL MEASURES ARE IN PLACE AND ADDITIONAL MEASURES ARE PROPOSED.

CALL 48 HOURS BEFORE YOU DIG
1-800-424-5555

SNOHOMISH COUNTY PLANNING AND DEVELOPMENT SERVICES APPROVED FOR CONSTRUCTION

By: ____________ Date: ____________

R/W PERMIT NO. ____________ PFN ____________

NO.	DATE	REVISIONS	DESIGNED	REVIEWED	APPROVED

DRAFTED BY:	B.TAYLOR	BLT	11-17-2009
DESIGNED BY:	K.WRIGG	KEW	11-17-2009
REVIEWED BY:	D.PISCHER	DAP	11-17-2009
APPROVED BY:			
STATUS:	DRAFT	INITIAL	DATE

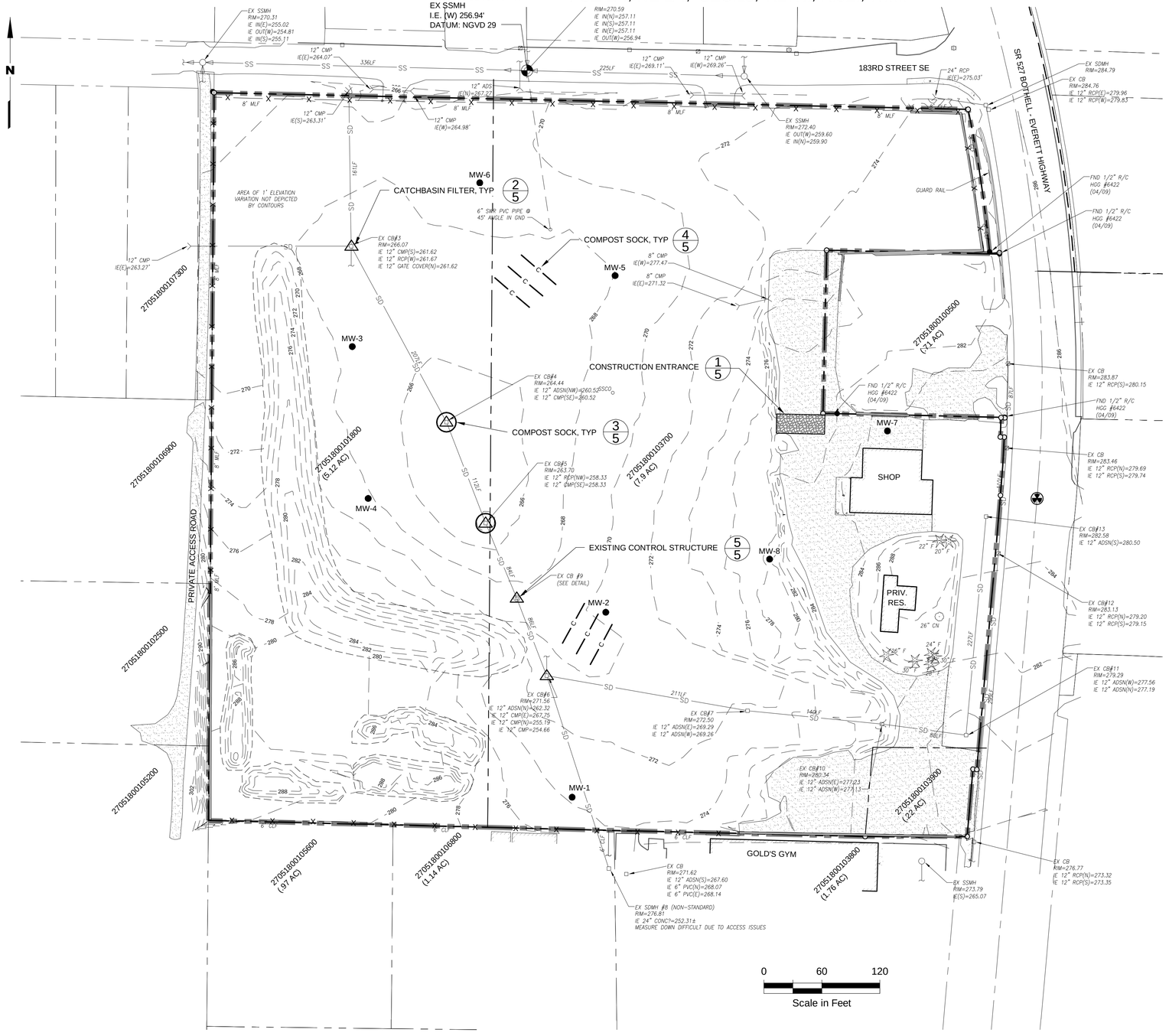
LANDAU ASSOCIATES
130 2nd AVENUE S.
EDMONDS, WA. 98020
(425) 778-0907, FAX (425) 778-6409

VERBEEK PROPERTIES, LLC
GRADING PROJECT
BOTHELL, WASHINGTON

COVER SHEET

PROJECT NO. 1173001.010.021
DATE 11-17-2009
SHEET 1 OF 8
DRAWING NO. 1

PSE 1/4, NE 1/4, SEC.18, T.27N., R.5E., W.M.



LEGEND:

- CATCH BASIN FILTER
- COMPOST SOCK CATCH BASIN PROTECTION
- PROJECT BOUNDARY
- C — COMPOST SOCK
- CENTERLINE ROAD
- 270 — EXISTING CONTOURS POST GRADING (2 FT)
- EXISTING PARCEL BOUNDARY
- X — EXISTING FENCE LINE
- EXISTING ECOLOGY BLOCK WALL
- EXISTING BUILDING
- EXISTING GRAVEL ACCESS ROAD
- EXISTING CONCRETE PAVEMENT
- MW-1 — EXISTING MONITORING WELL LOCATION
- PROJECT BENCHMARK
  EX SSMH
  I.E. (W) 256.94'
  DATUM: NGVD 29
  TO CONVERT TO NAVD 88 ADD 3.6'

GENERAL NOTES (GRADING AND TESC):

1. NON-COMPLIANCE WITH THE EROSION CONTROL REQUIREMENTS, WATER QUALITY REQUIREMENTS AND CLEARING LIMITS VIOLATIONS MAY RESULT IN REVOCATION OF PROJECT PERMITS, PLAN APPROVAL AND BOND FORECLOSURES.
2. PRIOR TO ANY SITE CONSTRUCTION TO INCLUDE CLEARING/LOGGING OR GRADING THE SITE/LOT CLEARING LIMITS SHALL BE LOCATED AND FIELD IDENTIFIED BY THE PROJECT SURVEYOR AS REQUIRED BY THESE PLANS. THE PROJECT SURVEYORS NAME AND TELEPHONE NUMBER ARE WESTERN ENGINEERS, (425) 356-2700.
3. THE DEVELOPER/OWNER IS RESPONSIBLE FOR WATER QUALITY.
4. PRIOR TO ANY SITE WORK, THE CONTRACTOR SHALL CONTACT THE CHIEF INSPECTOR FOR LAND DEVELOPMENT DIVISION AT (425) 388-3385 TO SCHEDULE A PRECONSTRUCTION CONFERENCE. DUE TO FIELD CHANGES (REVISIONS), ENGINEERED AS-BUILTS SHALL BE REQUIRED PRIOR TO SITE APPROVAL.
5. THE TEMPORARY EROSION/SEDIMENTATION CONTROL FACILITY SHALL BE CONSTRUCTED PRIOR TO ANY GRADING OR EXTENSIVE LAND CLEARING IN ACCORDANCE WITH THE APPROVED TEMPORARY EROSION/SEDIMENTATION CONTROL PLAN. THESE FACILITIES MUST BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION AND LANDSCAPING IS COMPLETED AND THE POTENTIAL FOR ON-SITE EROSION HAS BEEN REDUCED.
6. ALL SITE WORK MUST COMPLY TO CHAPTER 33 OF THE INTERNATIONAL BUILDING CODE AND TITLES 30.63B AND 30.63A OF THE SNOHOMISH COUNTY CODE.
7. ALL EARTH WORK SHALL BE PERFORMED IN ACCORDANCE WITH COUNTY STANDARDS. PRECONSTRUCTION SOILS INVESTIGATION MAY BE REQUIRED TO EVALUATE SOILS STABILITY.
8. T.E.S.C. MEASURES SHALL BE INSTALLED PRIOR TO ANY OTHER SITE WORK. THESE T.E.S.C. MEASURES SHALL BE CONSIDERED MINIMUM TO BE INSTALLED UNLESS DIRECTED OTHERWISE.
9. A GRADING PERMIT ISSUED PURSUANT TO TITLE 30.63B SCC AND CHAPTER 33 IBC AND APPROVAL OF THE TEMPORARY EROSION AND SEDIMENTATION CONTROL PLAN SHALL HAVE BEEN OBTAINED FROM SNOHOMISH COUNTY PDS FOR ANY ON-SITE GRADING WHICH IS NOT EXPRESSLY EXCEPTED BY SECTION SCC 30.68B.020.
10. PUBLIC STREETS ARE TO BE KEPT CLEAR OF DIRT AND DEBRIS DURING DURING DURATION OF WORK.
11. THE SITE SOILS ARE GENERALLY CONSIDERED MOISTURE SENSITIVE AND AS SUCH ARE SUSCEPTIBLE TO DISTURBANCE BY CONSTRUCTION EQUIPMENT, PARTICULARLY DURING PERIODS OF WET WEATHER. THE GRADING CONTRACTOR SHALL TAKE ALL PRECAUTIONS TO LIMIT SURFACE DISTURBANCE AND PROTECT THE SITE GRADING AREA FROM EXCESSIVE RUNOFF EROSION.
12. ALL DISTURBED AREAS SHALL BE SEEDED WITH A TEMPORARY SEED MIX CONSISTING OF 20% ANNUAL, PERENNIAL OR HYBRID RYE GRASS, 40% CREEPING RED FESCUE, 40% WHITE CLOVER. HYDROSEED PREFERRED.
13. BACKFILL SHALL BE PLACED AND COMPACTED TO 92% MAXIMUM DENSITY IN ACCORDANCE WITH SECTION 2-03.3(14)C OF THE WSDOT/APWA SPECIFICATIONS (METHOD B). THE UPPER 2' SHALL BE COMPACTED TO 95% MAXIMUM DENSITY (MODIFIED PROCTOR).
14. CLEAR PLASTIC SHEETING SHALL BE APPLIED TO LOOSE SOIL PILES WITH 24 HOURS OF CREATION OF THE PILE.
15. CLEAR PLASTIC SHEETING SHALL HAVE A MIN. THICKNESS OF 6 MIL. AND MEET THE REQUIREMENTS OF WSDOT/APWA SECTION 9-14.5.
16. PLASTIC SHEETING SHOULD BE TOED IN AT THE TOP OF THE SLOPE TO PREVENT SURFACE FLOW BENEATH THE PLASTIC.
17. PLASTIC SHEETING SHALL BE ANCHORED WITH SANDBAGS OR TIRES ON ROPES WITH A MAXIMUM GRID SPACING OF 10' IN ALL DIRECTIONS.
18. WHERE POSSIBLE NATURAL VEGETATIVE FILTER STRIPS SHOULD BE RETAINED TO LESSEN RUNOFF ON STEEP SLOPES.
19. UNVEGETATED SLOPES SHOULD BE TEMPORARILY SCARIFIED TO MINIMIZE RUNOFF. THIS MAY BE ACCOMPLISHED BY RUNNING A DOZER UP THE SLOPE TO CREATE GROOVES PERPENDICULAR TO THE SLOPE DIRECTION.
20. IMMEDIATELY FOLLOWING FINISH GRADING, PERMANENT VEGETATION (CONSISTING OF RAPID, PERSISTENT AND LEGUME) WILL BE APPLIED TO ALL DISTURBED AREAS. (MINIMUM 80# PER ACRE). THIS TO INCLUDE THE FOLLOWING: 20% ANNUAL, PERENNIAL OR HYBRID RYE GRASS 40% CREEPING RED FESCUE 40% WHITE CLOVER HYDRO-SEED PREFERRED.
21. FERTILIZER SHALL BE APPLIED AT 400# PER ACRE OF 10-20-20 (10 POUNDS PER 1100 SQUARE FEET) OR EQUIVALENT. PREPARATION OF SURFACE: ALL AREAS TO BE SEEDED SHALL BE CULTIVATED TO THE SATISFACTION OF THE COUNTY INSPECTOR. THIS MAY BE ACCOMPLISHED BY DISCING, RAKING, HARROWING OR OTHER ACCEPTABLE MEANS.
22. CONSTRUCTION ACCEPTANCE WILL BE SUBJECT TO A WELL ESTABLISHED GROUND COVER ON LANDSCAPE AREAS THAT FULFILLS THE REQUIREMENT OF THE APPROVED CONSTRUCTION PLANS AND TITLE 30.63B SCC.
23. WHEN RAINFALL IS HEAVY (DEFINED AS RAINFALL HARD ENOUGH TO PRODUCE SEDIMENT RUN-OFF FROM EXPOSED DIRT), ALL EXPOSED EARTHWORK SHALL BE COVERED. NO OTHER CONSTRUCTION ACTIVITY SHALL OCCUR ON PERVIOUS SURFACES DURING THESE PERIODS OF HEAVY RAIN.
24. SEDIMENT DEPOSITS SHALL BE REMOVED FROM ALL TEMP. DRAINAGE FACILITIES AND STRUCTURES UPON REACHING A DEPTH OF 6 INCHES.
25. SUFFICIENT TESC BMP MATERIALS AND SUPPLIES TO PROTECT THE ENTIRE SITE SHALL BE STOCKPILED ON-SITE.
26. FROM OCTOBER 1 TO APRIL 30 , NO LOOSE SOIL MAY REMAIN EXPOSED FOR MORE THAN 2 DAYS.
27. FROM MAY 1 TO SEPTEMBER 30 , NO LOOSE SOIL MAY REMAIN EXPOSED FOR MORE THAN 7 DAYS.
28. DENUDED AREAS SHALL BE COVERED BY MULCH, SOD, PLASTIC, OR OTHER BMP'S AS NEEDED.
29. SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT RETENTION BMP'S WITHIN 24 HOURS OF FORMATION.
30. GRADING AND CONSTRUCTION SHALL BE TIMED AND CONDUCTED IN STAGES TO MINIMIZE SOIL EXPOSURE.
31. CATCHBASINS AND INLETS OF THE PERMANENT DRAINAGE SYSTEM SHALL BE PROTECTED FROM SEDIMENT INFLUX BY USE OF FILTER FABRIC, MICROPORE BAGS, AND SIMILAR FILTERING MATERIALS AND METHODS. (SEE DETAIL ON THIS SHEET).
32. THE T.E.S.C. MEASURES TO BE REMOVED UPON THE COMPLETION OF SITE WORK AND/OR SITE STABILIZATION.
33. ALL WORK SHALL BE PERFORMED UNDER THE SUPERVISION OF THE EROSION CONTROL SPECIALIST:

NAME: JASON LONG, RLA, CESCL
COMPANY: LANDAU ASSOCIATES
130 2ND AVE S. EDMONDS, WA. 98020
PHONE: (425)778-0907
EMAIL: JLONG@LANDAUINC.COM

PROJECT SURVEYOR:

Western Engineers, Inc.
SURVEYORS + PLANNERS + ENGINEERS
(425) 356-2700
LAND USE CONSULTANTS
CIVIL ENGINEERS & LAND SURVEYORS
*** 13000 HWY 99 SOUTH * EVERETT * WA * 98204 ***

SNOHOMISH COUNTY PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

By: _____ Date: _____

R/W PERMIT NO. _____ PFN _____

KELLEY E WRIGG — STATE OF WASHINGTON — 35715 — REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	DESIGNED	REVIEWED	APPROVED

DRAFTED BY:	B.TAYLOR	BLT	11-17-2009
DESIGNED BY:	K.WRIGG	KEW	11-17-2009
REVIEWED BY:	D.PISCHER	DAP	11-17-2009
APPROVED BY:			
STATUS:		INITIAL	DATE

LANDAU ASSOCIATES
130 2nd AVENUE S.
EDMONDS, WA. 98020
(425) 778-0907, FAX (425) 778-6409

VERBEEK PROPERTIES, LLC
GRADING PROJECT
BOTHELL, WASHINGTON

EROSION CONTROL PLAN

PROJECT NO. 1173001.010.021
DATE 11-17-2009
SHEET 2 OF 8
DRAWING NO. **2**

LANDAU ASSOCIATES, INC. (V:\1173\010\021\01\Grading 01-16-14-2009

PSE 1/4, NE 1/4, SEC.18, T.27N., R.5E., W.M.

LEGEND:

- PROJECT BOUNDARY
- GRADING BOUNDARY
- CENTERLINE ROAD
- 270 EXISTING CONTOURS POST GRADING (2 FT)
- 270 PROPOSED CONTOURS (2 FT)
- EXISTING PARCEL BOUNDARY
- X EXISTING FENCE LINE
- EXISTING ECOLOGY BLOCK WALL
- EXISTING BUILDING
- EXISTING GRAVEL ACCESS ROAD
- EXISTING CONCRETE PAVEMENT
- AREA OF RECENT SITE DISTURBANCE
- AREA OF FUTURE EXCAVATION
- AREA OF OIL TANK EXCAVATION
- AREA OF SURFACE SOIL CONTAMINATION
- A 3/4 SECTION DESIGNATION AND LOCATION
- MW EXISTING MONITORING WELL LOCATION
- C-B3 BORING 2009
- DOF-P7 DOF AUGUST 2009 BORING LOCATION (APPROX.)
- TP-28 DOF SEPTEMBER 2009 TEST PIT LOCATION (APPROX.)
- TP-18 DOF APRIL 2009 TEST PIT LOCATION (APPROX.)
- PROJECT BENCHMARK

VERTICAL DATUM: USCGS - NGVD 29

BENCH MARK IS INVERT OF SANITARY SEWER MANHOLE (IE OUT TO WEST) LOCATED IN THE CENTERLINE OF 183RD ST SE, APPROXIMATELY 324' EAST OF THE NORTHWEST CORNER OF SITE

REFERENCE KEGAL & ASSOC. JOB NO. 7900
CONDITIONAL USE PERMIT APPLICATION 09/26/90

NAVD 88 = NGVD 29 + 3.6'
NGVD 29 = NAVD 88 - 3.6'

UTILITY CONFLICT NOTE:

CAUTION:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT BY POTHOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE @ 1-800-424-5555 AND THEN POTHOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT LANDAU ASSOCIATES, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

GRADING NARRATIVE:

THE UNPERMITTED GRADING OCCURRED WITH AREAS A, B, AND C (SEE MAP). THE GRADING WHICH OCCURRED IN AREAS A AND C FOLLOWED THE GENERAL PROCESS OF REMOVE, TREAT, AND REPLACE WHILE THE GRADING WHICH OCCURRED IN AREA B WAS EXCAVATION AND STOCKPILE (IN AREA A) FOR EVENTUAL TRANSPORT TO AN APPROVED DISPOSAL FACILITY.

THE GRADING WHICH OCCURRED IN AREAS A AND C FOLLOWED THE FOLLOWING PROCESS:

1. THE UPPER 4 TO 6 INCHES OF GRAVEL IN THE CLEANUP ACTION AREAS WAS SCRAPED UP AND STOCKPILED IN THE SOUTHWEST CORNER OF THE SITE.
2. FIELD SCREENING: SOILS BELOW THE UPPER GRAVEL LAYER IN AREAS A AND C WERE FIELD SCREENED FOR PETROLEUM STAINING, AND VISUAL OR OLFACTORY INDICATIONS OF CONTAMINATION.
3. SOIL EXCAVATION: AREAS OF CONTAMINATED SOIL IDENTIFIED BASED ON THE RESULTS OF THE FIELD SCREENING WHERE EXCAVATED. SOIL WAS EXCAVATED BEYOND THE LIMITS OF OBSERVABLE CONTAMINATION (I.E., POTENTIALLY CLEAN SOIL WAS EXCAVATED).
4. CONFIRMATION SOIL TESTING: CONFIRMATION SOIL SAMPLES WERE COLLECTED THROUGHOUT THE EXCAVATION AREAS FOR ANALYTICAL LABORATORY TESTING TO DETERMINE IF ADDITIONAL CONTAMINATED SOIL NEEDED TO BE EXCAVATED. SAMPLES WERE COLLECTED FROM LOCATIONS THAT WOULD BE CONSIDERED "WORST CASE" SOIL INTERVALS IF OBSERVABLE SIGNS OF CONTAMINATION WERE PRESENT. ONLY 3 OF 115 CONFIRMATION SOIL SAMPLES EXCEEDED THE CLEANUP CRITERIA.
5. SOIL REMEDIATION: THE EXCAVATED SOIL WAS PLACED INTO SOIL CELLS THAT WERE APPROXIMATELY 1.5 FT DEEP AND A BIO-ENHANCEMENT PRODUCT WAS ADDED TO THE SOIL TO FACILITATE BIO-REMEDIATION OF THE CONTAMINANTS PRESENT IN THE SOIL. BASED ON FIELD OBSERVATIONS OF THE BIO-ENHANCEMENT PRODUCT, LANDAU ASSOCIATES BELIEVES THE BIO-ENHANCEMENT PRODUCT WAS A NITROGEN-BASED FERTILIZER. THE REMEDIATION CELLS WERE CULTIVATED (MECHANICALLY MIXED) USING A BACKHOE OR SIMILAR EQUIPMENT, REPORTEDLY UNTIL SOIL CLEANUP LEVELS WERE ACHIEVED.
6. REMEDIATION SOIL TESTING: WHEN FIELD SCREENING INDICATED THAT SOIL CONTAMINATION WAS NOT PRESENT IN A REMEDIATION CELL, SOIL SAMPLES WERE COLLECTED FROM THE CELL FOR LABORATORY TESTING. GREENCO/CMSI COMPARED THE ANALYTICAL SOIL RESULTS TO MTCA METHOD A VALUES.
7. EXCAVATION BACKFILLING: IN AREAS A AND C, SOIL FROM REMEDIATION SOIL PILES WITH SOIL SAMPLE ANALYTICAL RESULTS BELOW MTCA METHOD A CLEANUP LEVELS WAS PLACED BACK IN THE EXCAVATION FROM WHICH IT ORIGINATED.

APPROXIMATELY 15,700 CY OF SOIL WERE REPORTED TO HAVE BEEN TEMPORARILY EXCAVATED FROM AREAS A AND C, TREATED AND REPLACED AS PART OF THESE ACTIVITIES.

GREENCO (THE CONTRACTOR) EXCAVATED ABOUT 6,000 CUBIC YARDS OF SOIL WHICH WAS ORIGINALLY IMPORTED FROM THE GASWORKS PARK SITE (GWP) FROM AREA B IN AUGUST 2008 AND STOCKPILED THE MATERIAL IN AREA A, AS SHOWN ON THE MAP. THE EXCAVATION REPORTEDLY EXTENDED TO MORE THAN 15 FT BGS AND ALL OF THE GWP SOIL WITHIN THE EXCAVATION FOOTPRINT WAS REMOVED. HOWEVER, GWP SOIL EXTENDS BEYOND THE EXCAVATION LIMITS TO THE NORTH AND SOUTH BASED ON RECENT SOIL EXPLORATION WORK.

THE NORTHERN PORTION OF THE REMAINING GWP SOIL (B-N, SEE PLAN) COVERS AN AREA OF ABOUT 17,800 SF (INCLUDING 2 FEET OF OVER-EXCAVATION ALONG THE EDGES). THE SOIL HAS AN AVERAGE THICKNESS OF ABOUT 4.75 FEET (INCLUDING 0.5 FEET OF OVER-EXCAVATION IN THE WESTERN FIFTH OF THIS AREA AND ABOUT 2.75 FEET THICK IN EASTERN FOUR-FIFTHS OF THIS AREA. THE ESTIMATED AMOUNT OF GWP SOIL REMAINING ON THE NORTHERN SIDE OF THE EXCAVATION IS 2,000 CY. THIS SOIL IS COVERED BY AN OVERBURDEN WHICH AVERAGES 0.5 FEET THICK. MOST OF THIS OVERBURDEN AND SOME ADDITIONAL SOIL OUTSIDE OF THIS AREA IS CONTAMINATED WITH CPAH. APPROXIMATELY 380 CY OF CPAH CONTAMINATED SOIL WILL BE REMOVED FROM THE SITE. AFTER THE CPAH SOIL IS REMOVED ABOUT 25 CY OF CLEAN OVERBURDEN WILL REMAIN WITHIN AREA B-N WHICH IS TO BE EXCAVATED, STOCKPILED AND REPLACED IN THE EXCAVATION IN ORDER TO REMOVE THE GWP SOIL.

THE SOUTHERN PORTION OF THE REMAINING GWP SOIL (B-S, SEE PLAN) COVERS AN AREA OF ABOUT 25,000 SF (INCLUDING 0.5 FEET OF OVEREXCAVATION ALONG THE EDGES). THE SOIL HAS AN AVERAGE THICKNESS THAT VARIES BETWEEN 1.5 FEET AND 3 FEET THROUGHOUT THIS AREA (INCLUDING 0.5 FEET OF OVEREXCAVATION). THE ESTIMATED AMOUNT OF GWP SOIL REMAINING ON THE SOUTHERN SIDE OF THE EXCAVATION IS 1,550 CY. THIS SOIL IS COVERED BY AN OVERBURDEN WHICH IS BETWEEN 3 AND 11 FEET THICK AND ABOUT 6,950 CY OF OVERBURDENT SOIL IS ESTIMATED TO BE EXCAVATED, STOCKPILED AND REPLACED IN THE EXCAVATION IN ORDER TO REMOVE THE GWP SOIL.

THERE IS DIESEL SOIL CONTAMINATION NEAR MONITORING WELL MW-8. THE CONTAMINATED SOILS ARE ABOUT 10' THICK AND IN AN AREA OF ABOUT 1,488 SF. THERE IS APPROXIMATELY 600 CY OF DIESEL CONTAMINATED SOILS TO BE REMOVED. AFTER THE REMOVAL OF THE CPAH AND GWP SOILS IN THE OVERBURDEN AREA (SEE SECTION C), ABOUT 2,900 CY OF OVERBURDEN ARE ESTIMATED TO BE EXCAVATED, STOCKPILED AND REPLACED IN THE EXCAVATION IN ORDER TO REMOVE THE DIESEL CONTAMINATED SOIL.

OFFSITE MATERIAL EQUAL TO THE FINAL EXCAVATED AMOUNT OF GWP, CPAH, AND DIESEL CONTAMINATED SOILS TO BE HAULED OFFSITE (APPROXIMATELY 10,530 CY) WILL BE IMPORTED TO FILL THE EXCAVATED AREA WITHIN AREA B TO PRE-EXISTING GRADES.

AS A RESULT OF THE SITE GRADING THAT HAS OCCURRED WITHIN AREA A AND C, APPROXIMATELY 250 CY OF MATERIAL WILL HAVE TO BE RELOCATED IN THE SURFACE DETENTION AREA TO RESTORE THE APPROPRIATE STORAGE VOLUME FOR THE SYSTEM.

HISTORICAL GRADING ACTIVITIES					
	AREA	GWP SOIL EXCAVATION	GWP SOIL STOCKPILED	NON-GWP SOIL EXCAVATED	NON-GWP SOIL FILLED
POST GRADING	A		6,000 CY	7,700 CY	7,700 CY
	B	6,000 CY		4,000 CY	4,000 CY
	C			8,000 CY	8,000 CY
FUTURE GRADING ACTIVITIES					
		GWP/CPAH SOILS TO EXCAVATE	DIESEL SOILS TO EXCAVATE	NON-GWP SOIL TO EXCAVATE	FILL - IMPORT
FUTURE GRADING	A				
	B	3,930 CY	600 CY	9,875 CY	10,000 CY
	C			300 CY	

CUT: 40,400 CY (ESTIMATED)
FILL: 40,400 CY (ESTIMATED)

SNOHOMISH COUNTY PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

By: _____ Date: _____

R/W PERMIT NO._____ PFN _____

KELLEY E WRIGG — STATE OF WASHINGTON — 35715 — REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	DESIGNED	REVIEWED	APPROVED

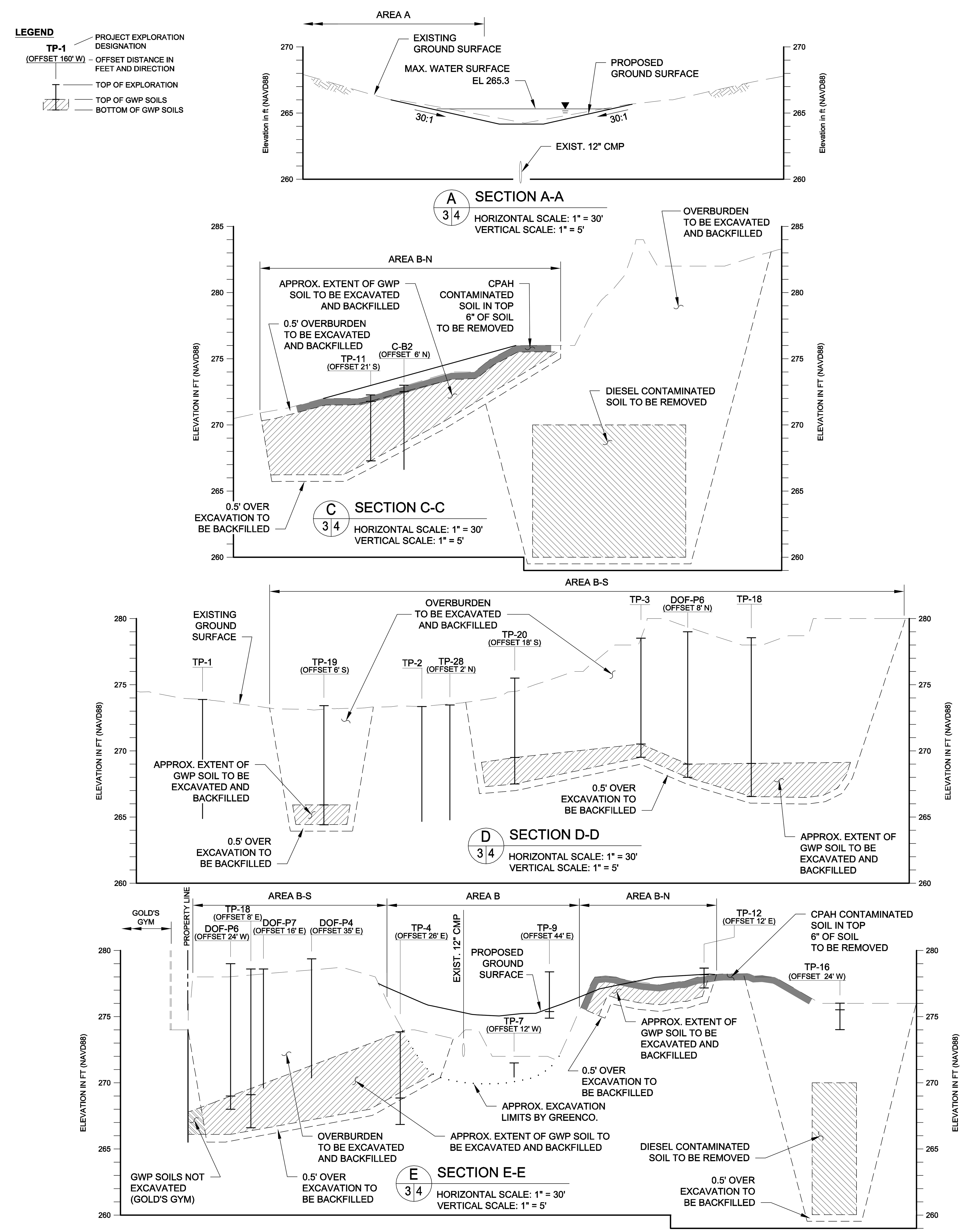
DRAFTED BY:	B.TAYLOR	BLT	11-17-2009
DESIGNED BY:	K.WRIGG	KEW	11-17-2009
REVIEWED BY:	D.PISCHER	DAP	11-17-2009
APPROVED BY:			
STATUS:		INITIAL	DATE

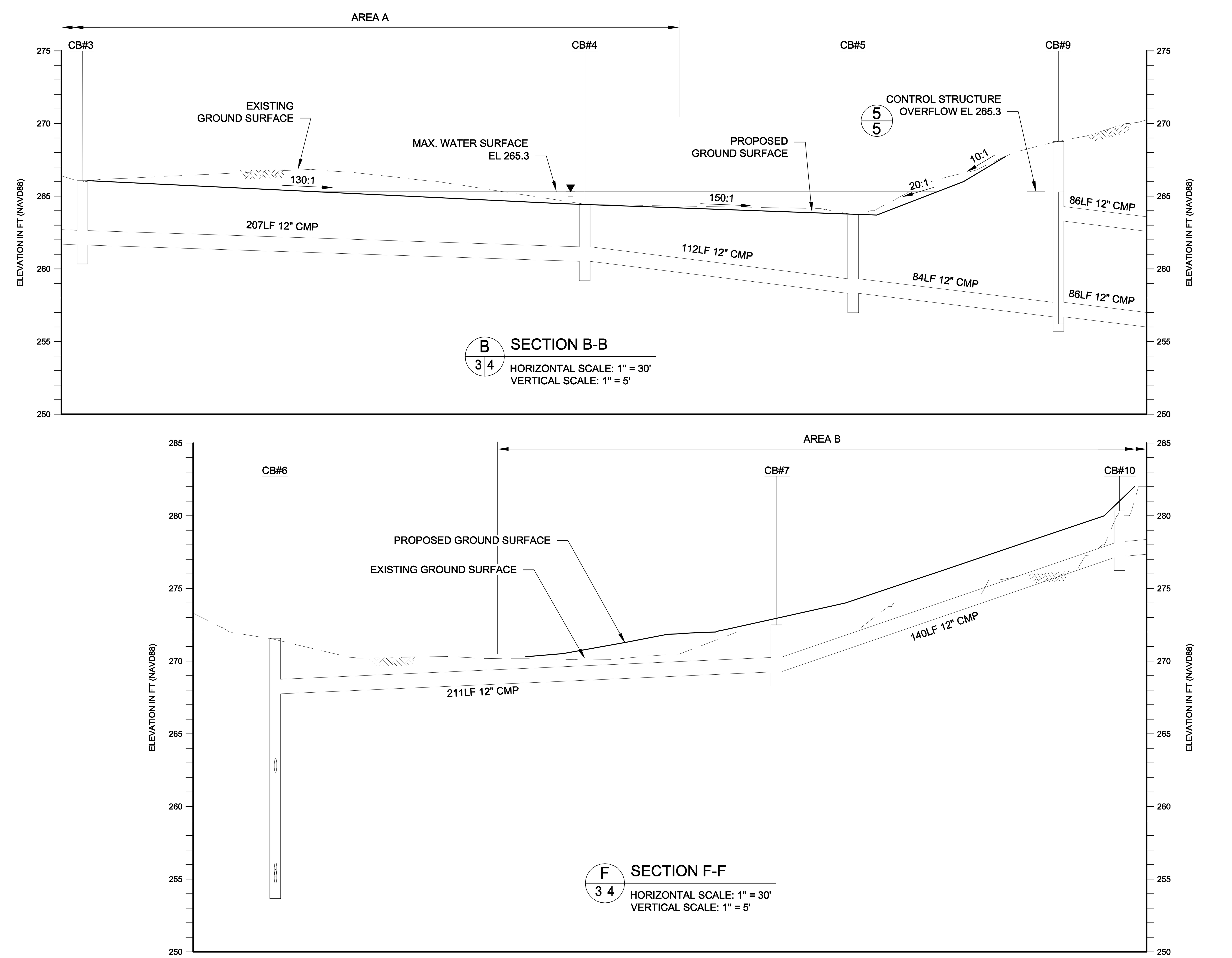
LANDAU ASSOCIATES
130 2nd AVENUE S.
EDMONDS, WA. 98020
(425) 778-0907, FAX (425) 778-6409

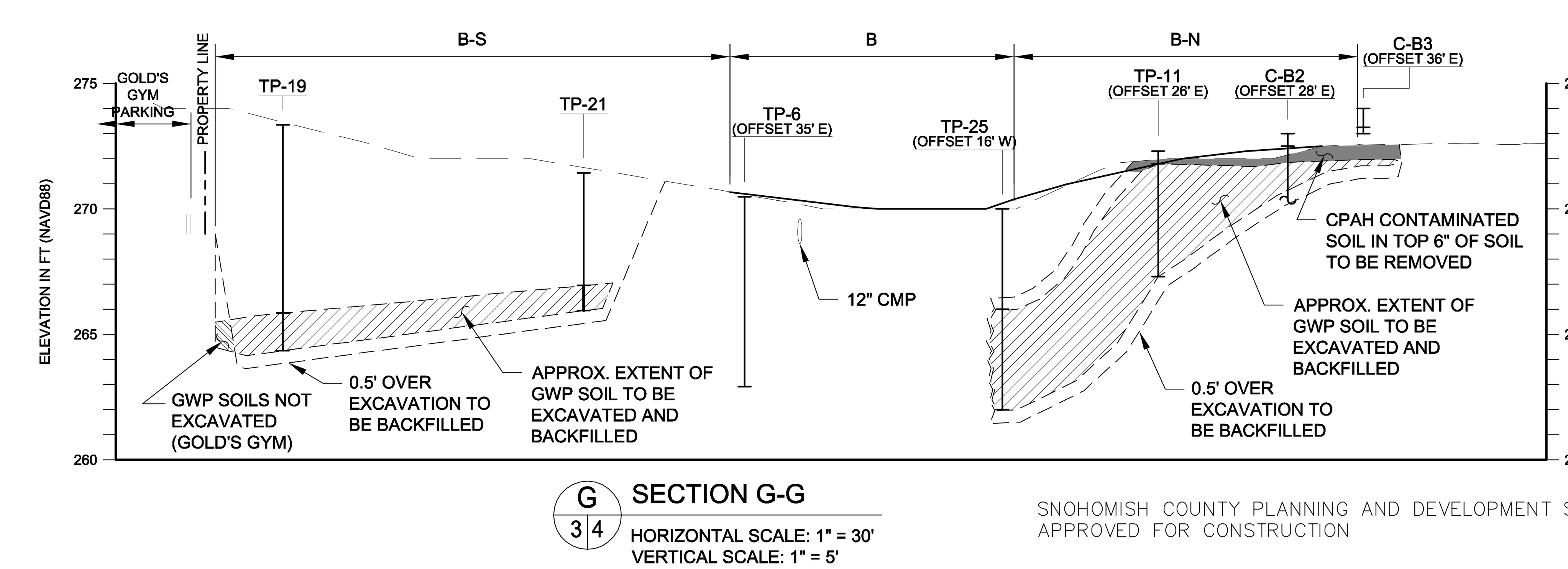
VERBEEK PROPERTIES, LLC
GRADING PROJECT
BOTHELL, WASHINGTON

GRADING PLAN

PROJECT NO. 1173001.010.021
DATE 11-17-2009
SHEET 3 OF 8
DRAWING NO. 3







SNOHOMISH COUNTY PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

By: ______________ Date: ______________

R/W PERMIT NO. ______________ PFN ______________

KELLEY E. WRIGG — STATE OF WASHINGTON — 35715 — REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	REVISIONS	DESIGNED	REVIEWED	APPROVED

		INITIAL	DATE
DRAFTED BY:	B.TAYLOR	BLT	11-17-2009
DESIGNED BY:	K.WRIGG	KEW	11-17-2009
REVIEWED BY:	D.PISCHER	DAP	11-17-2009
APPROVED BY:			
STATUS:			

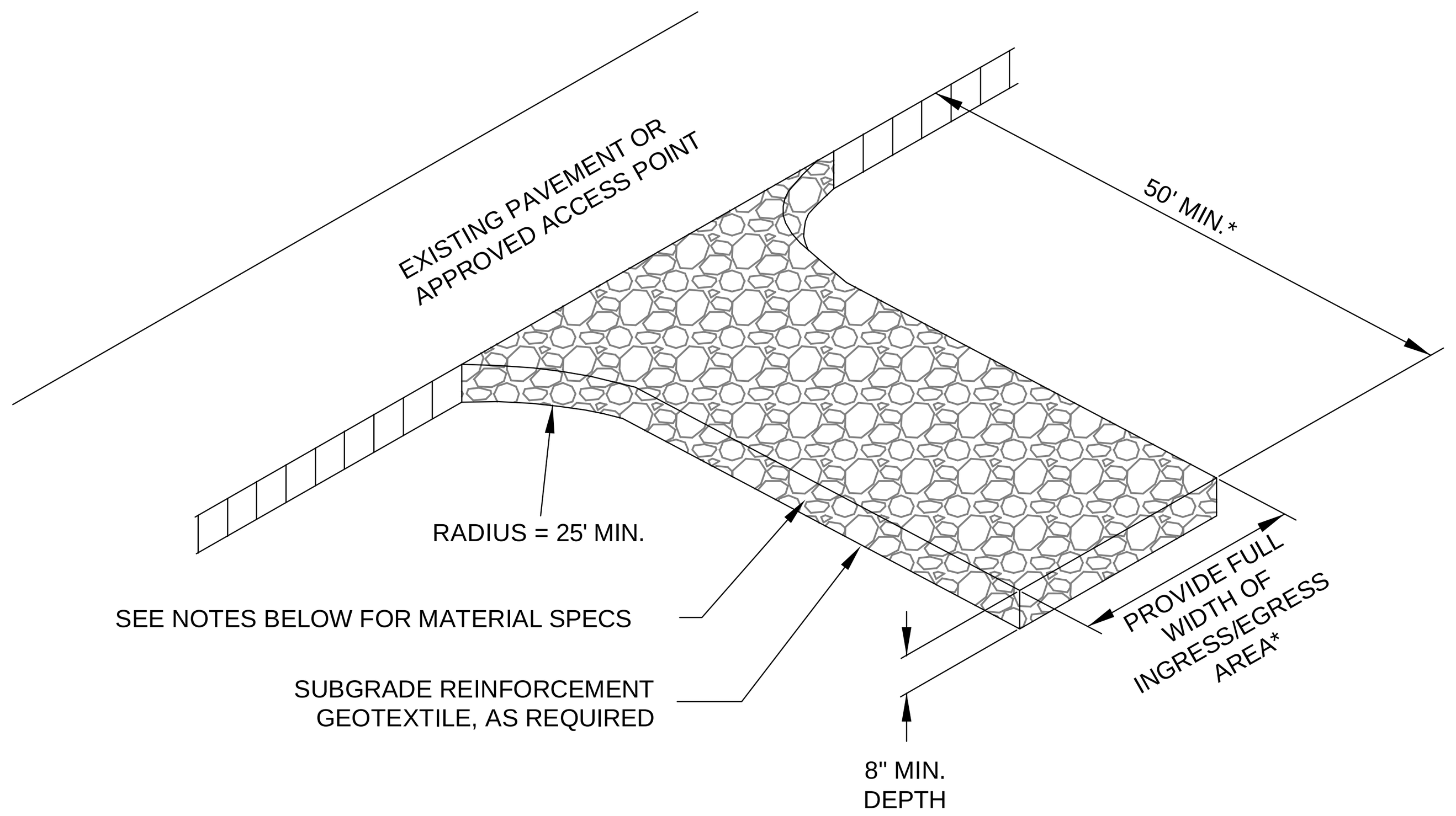
LANDAU ASSOCIATES
130 2nd AVENUE S.
EDMONDS, WA. 98020
(425) 778-0907, FAX (425) 778-6409

VERBEEK PROPERTIES, LLC
GRADING PROJECT
BOTHELL, WASHINGTON

GRADING SECTIONS AND DETAILS

PROJECT NO. 1173001.010.021
DATE 11-17-2009
SHEET 4 OF 8
DRAWING NO. 4

LANDAU ASSOCIATES, INC. (V:\1173\001\021\LA) Grading R1 10-14-2009

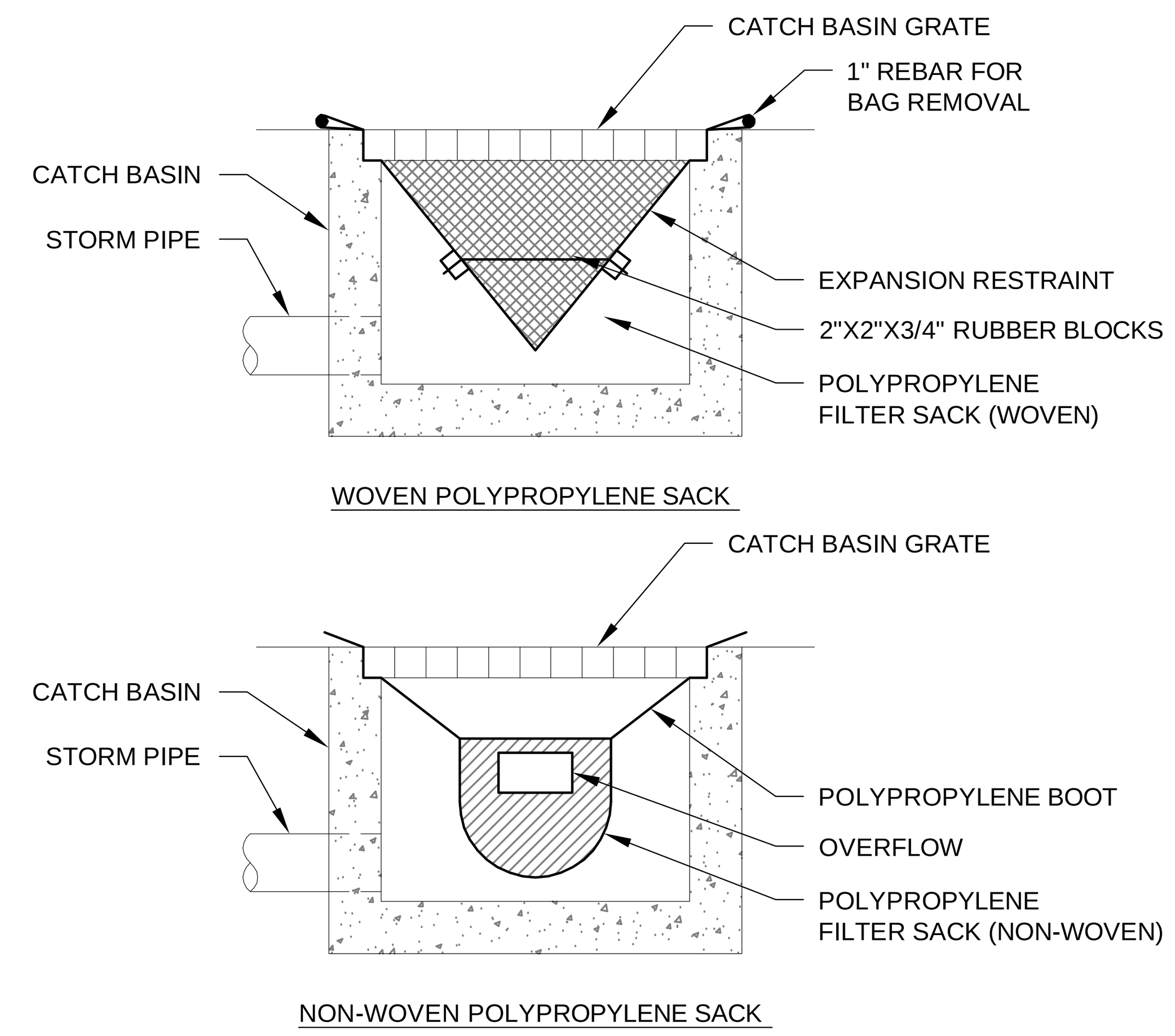


1/5 CONSTRUCTION ENTRANCE
NTS

NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEAN OUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.
4. WHERE RUNOFF CONTAINING SEDIMENT-LADEN WATER IS LEAVING THE SITE VIA THE CONSTRUCTION ENTRANCE, OTHER MEASURES SHALL BE IMPLEMENTED TO DIVERT RUNOFF THROUGH AN APPROVED FILTERING SYSTEM.
5. DIMENSIONS:

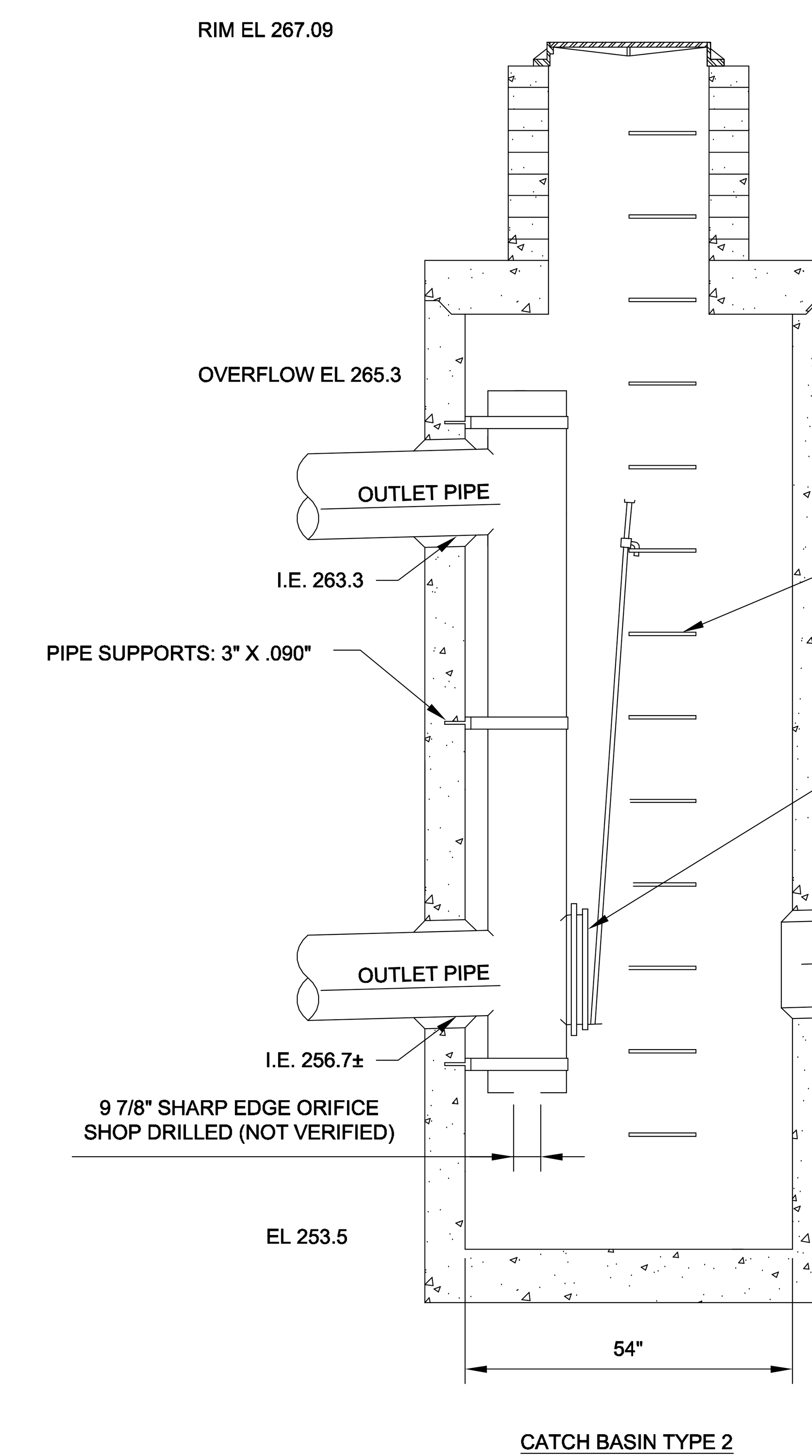
   SINGLE FAMILY AND DUPLEX - 20' LONG BY 20' WIDE, 8" DEEP OF 3/4" MINUS CLEAN ROCK.
   COMMERCIAL - 50' LONG BY 20' WIDE, 3-6" DEEP CLEAN ROCK. GOVERNING AUTHORITY MAY REQUIRE GEOTEXTILE FABRIC TO PREVENT SUB-SOIL PUMPING.

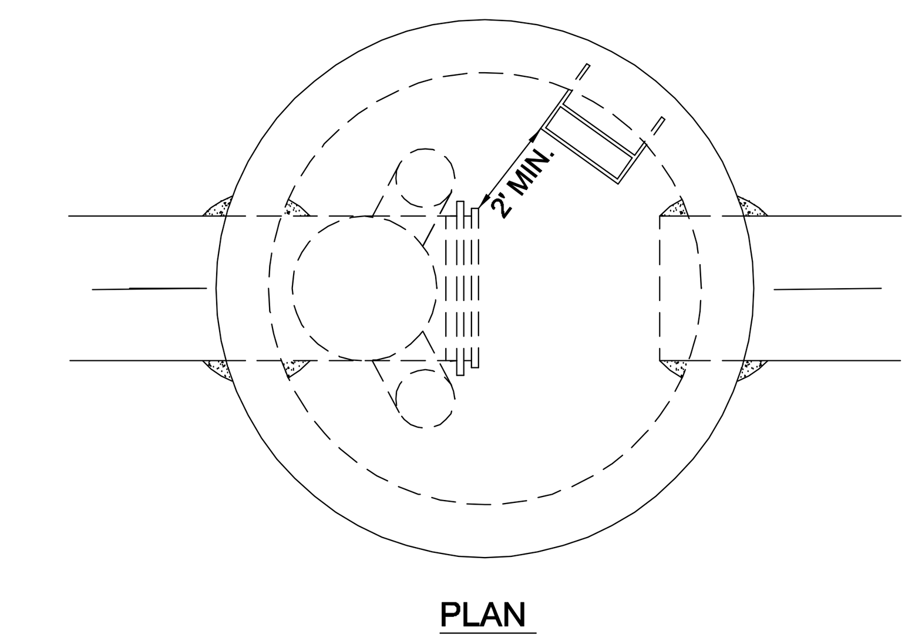


2/5 CATCH BASIN POLYPROPYLENE SACK
NTS

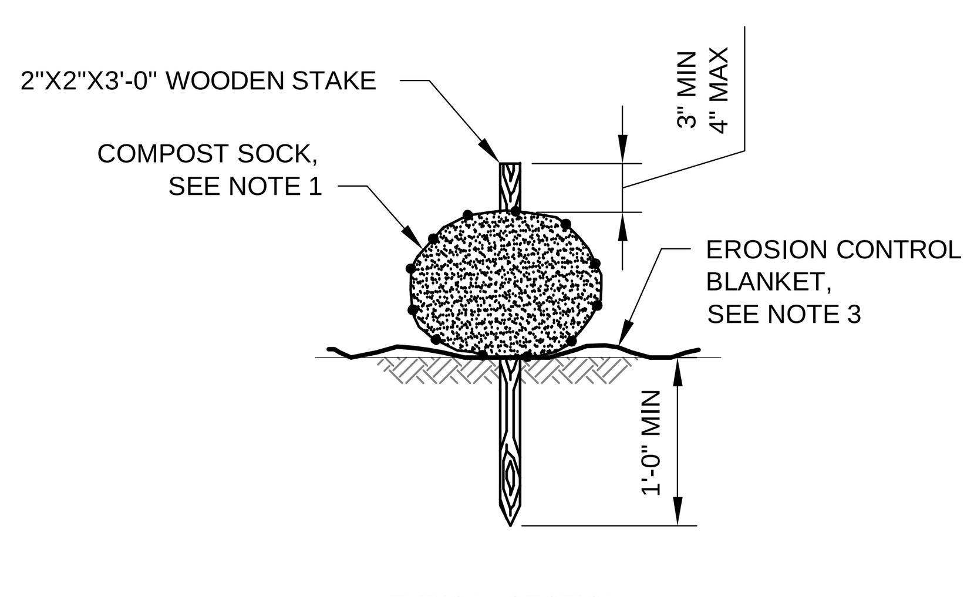
NOTE:

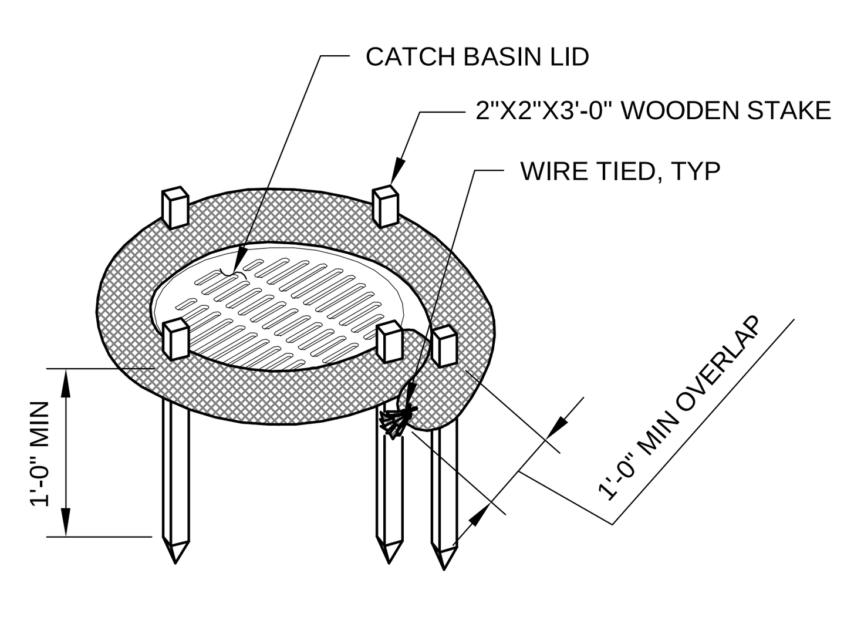
RECESSED CURB INLET CATCH BASINS MUST BE BLOCKED WHEN USING FILTER FABRIC INLET SACKS. SIZE OF FILTER FABRIC INLET SACKS TO BE DETERMINED BY MANUFACTURER.



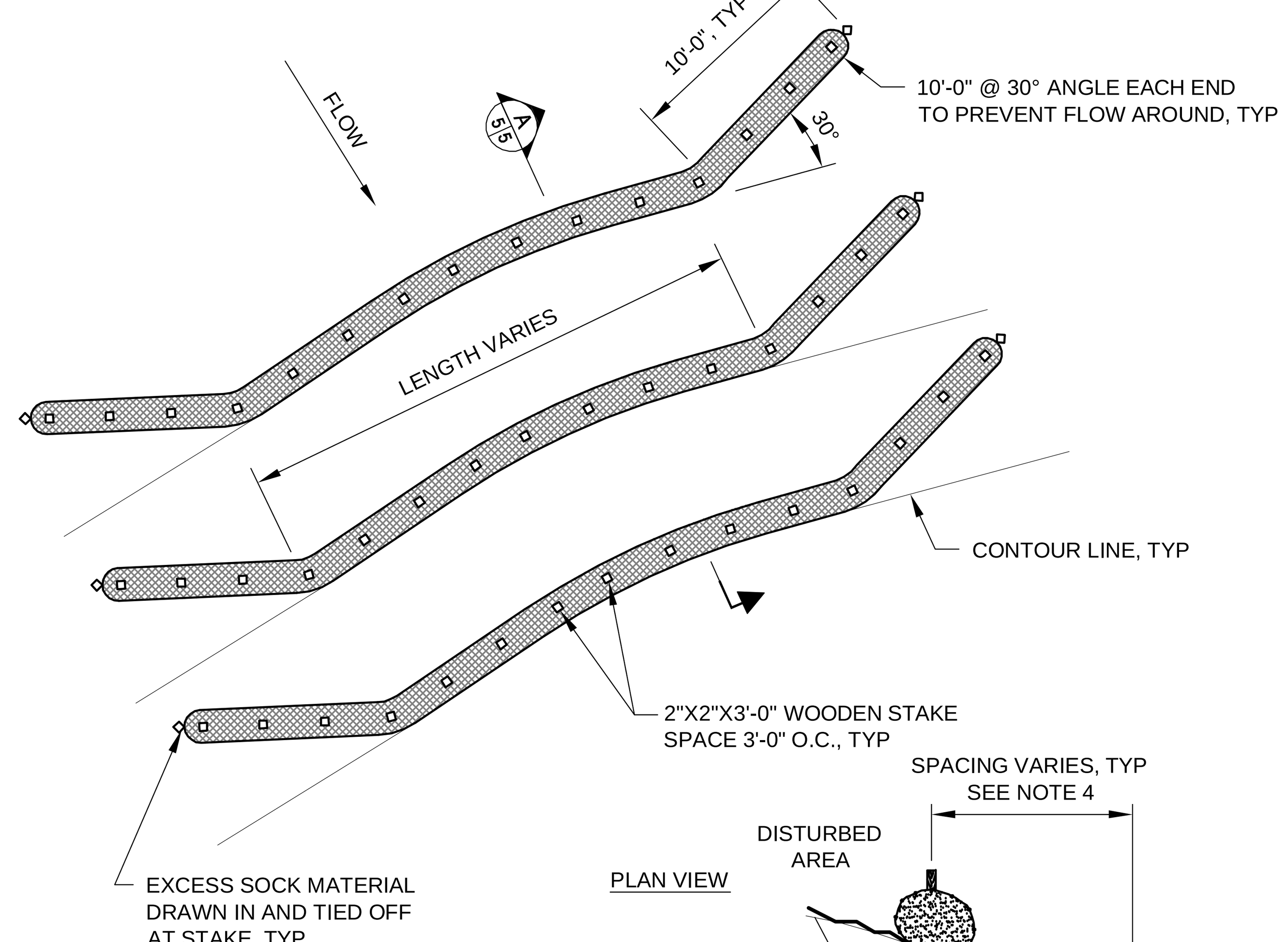


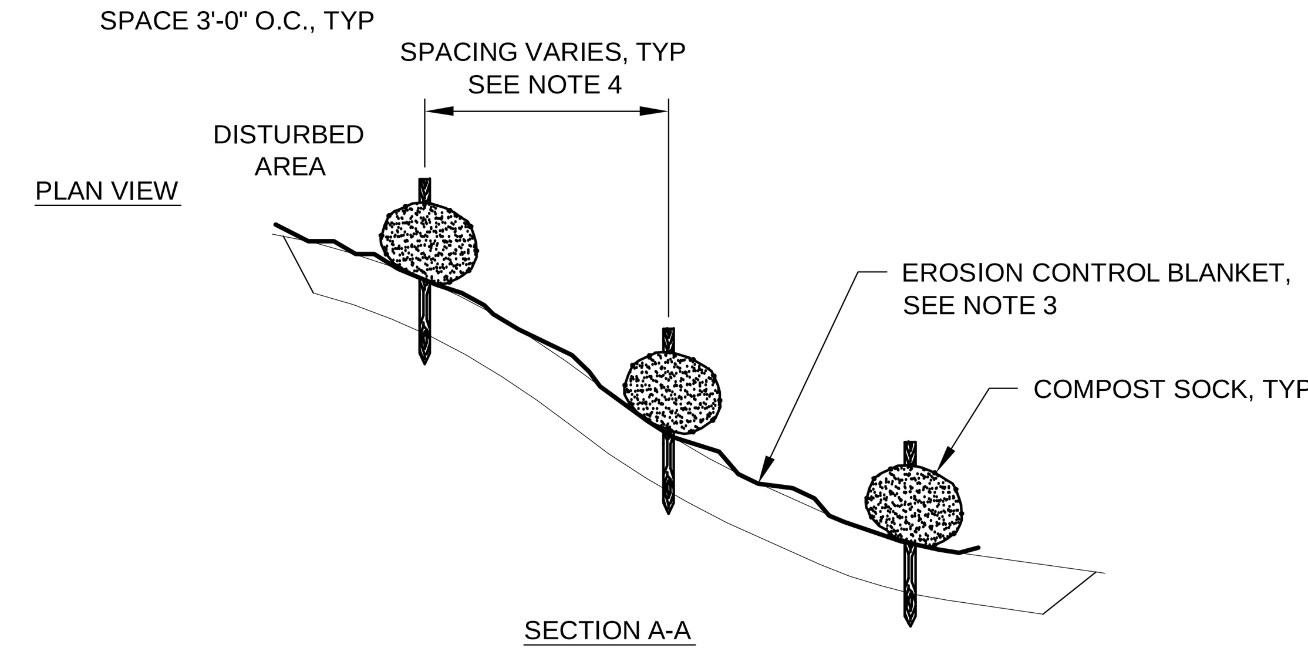
5/5 EXISTING CONTROL STRUCTURE (CB#9)
SCALE: 1" = 2'





3/5 COMPOST SOCK DETAIL CATCH BASIN INSTALLATION
NTS





4/5 COMPOST SOCK DETAIL SLOPE INSTALLATION
NTS

NOTES:

1. COMPOST SOCK SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION 9-14.5(6). COMPOST SOCK SHALL BE A MINIMUM OF 8" IN DIAMETER OR SIZED TO SUIT CONDITIONS AS SPECIFIED BY THE ENGINEER OR CONTRACTOR.
2. COMPOST MATERIAL TO BE DISPERSED ON SITE, AS DETERMINED BY THE ENGINEER.
3. WHEN PLACING COMPOST SOCK ON SLOPES, USE EROSION CONTROL BLANKET IF SPECIFIED BY THE ENGINEER AND IN ACCORDANCE WITH STANDARD SPECIFICATION 9-14.5(2). SEE STANDARD PLAN 1-60.10.
4. ALWAYS INSTALL COMPOST SOCK PERPENDICULAR TO SLOPE AND ALONG CONTOUR LINES.
5. REMOVE SEDIMENT FROM THE UP SLOPE SIDE OF THE COMPOST SOCK WHEN ACCUMULATION HAS REACHED 1/12 OF THE EFFECTIVE HEIGHT OF THE COMPOST SOCK.
6. LIVE STAKES CAN BE USED IN ADDITION TO WOODEN STAKES AND SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION 9-14.6(1). SEE PLANS FOR SPECIES SELECTION AND SPACING.

SNOHOMISH COUNTY PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

By: ____________________ Date: ____________________

R/W PERMIT NO.____________________ PFN ____________________

LANDAU ASSOCIATES, INC. (V:\1173\001\021\LAI Grading R1 10-14-2009

NO.	DATE	REVISIONS	DESIGNED	REVIEWED	APPROVED

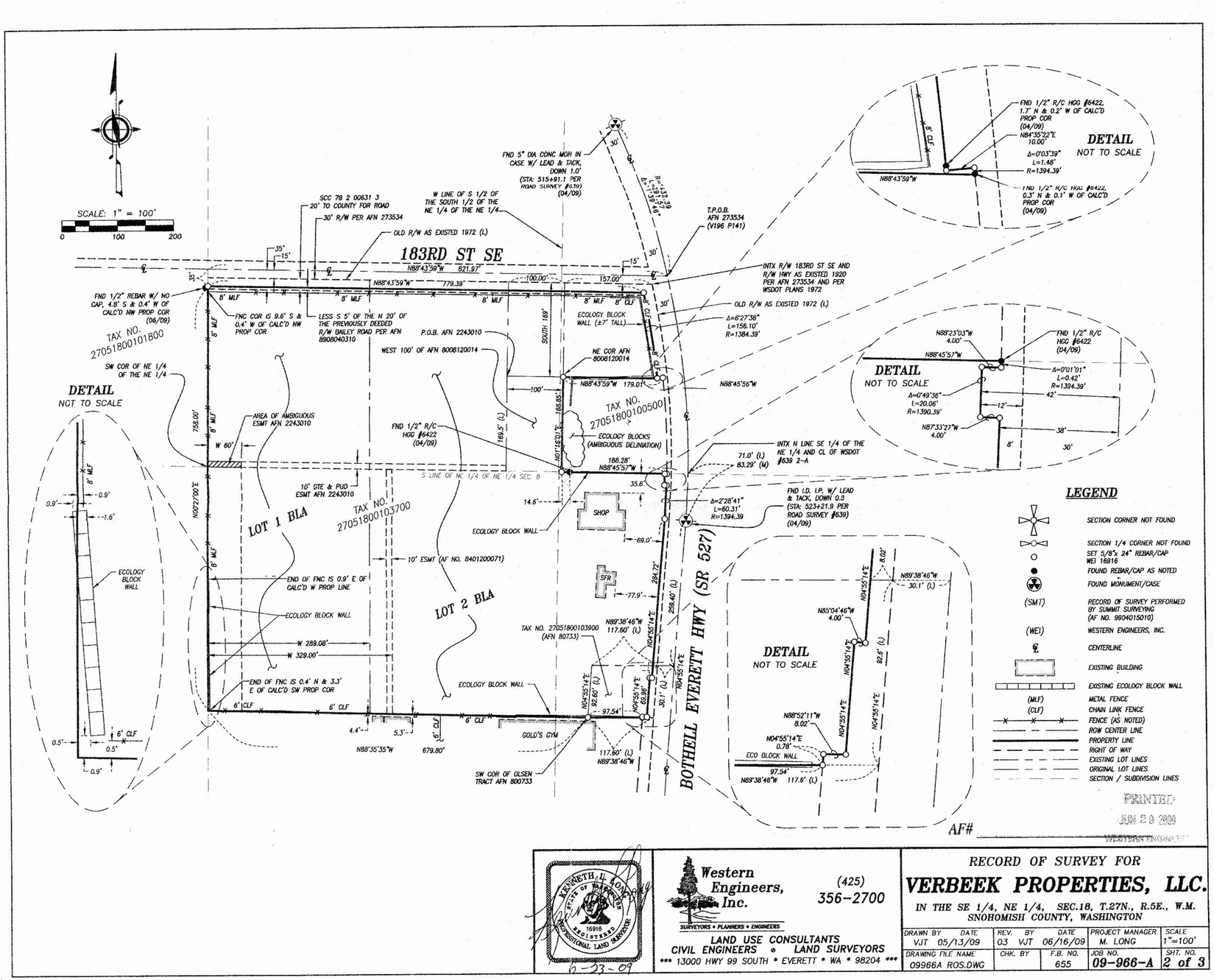
		INITIAL	DATE
DRAFTED BY:	B.TAYLOR	BLT	11-17-2009
DESIGNED BY:	K.WRIGG	KEW	11-17-2009
REVIEWED BY:	D.PISCHER	DAP	11-17-2009
APPROVED BY:			
STATUS:			

LANDAU ASSOCIATES
130 2nd AVENUE S.
EDMONDS, WA. 98020
(425) 778-0907, FAX (425) 778-6409

VERBEEK PROPERTIES, LLC
GRADING PROJECT
BOTHELL, WASHINGTON

MISCELLANEOUS DETAILS

PROJECT NO. 1173001.010.021
DATE 11-17-2009
SHEET 5 OF 8
DRAWING NO. 5



KENNETH L. LONG
STATE OF WASHINGTON
16916
REGISTERED
PROFESSIONAL LAND SURVEYOR
12-23-09

Western Engineers, Inc. (425) 356-2700
SURVEYORS • PLANNERS • ENGINEERS
LAND USE CONSULTANTS
CIVIL ENGINEERS ⊗ LAND SURVEYORS
*** 13000 HWY 99 SOUTH * EVERETT * WA * 98204 ***

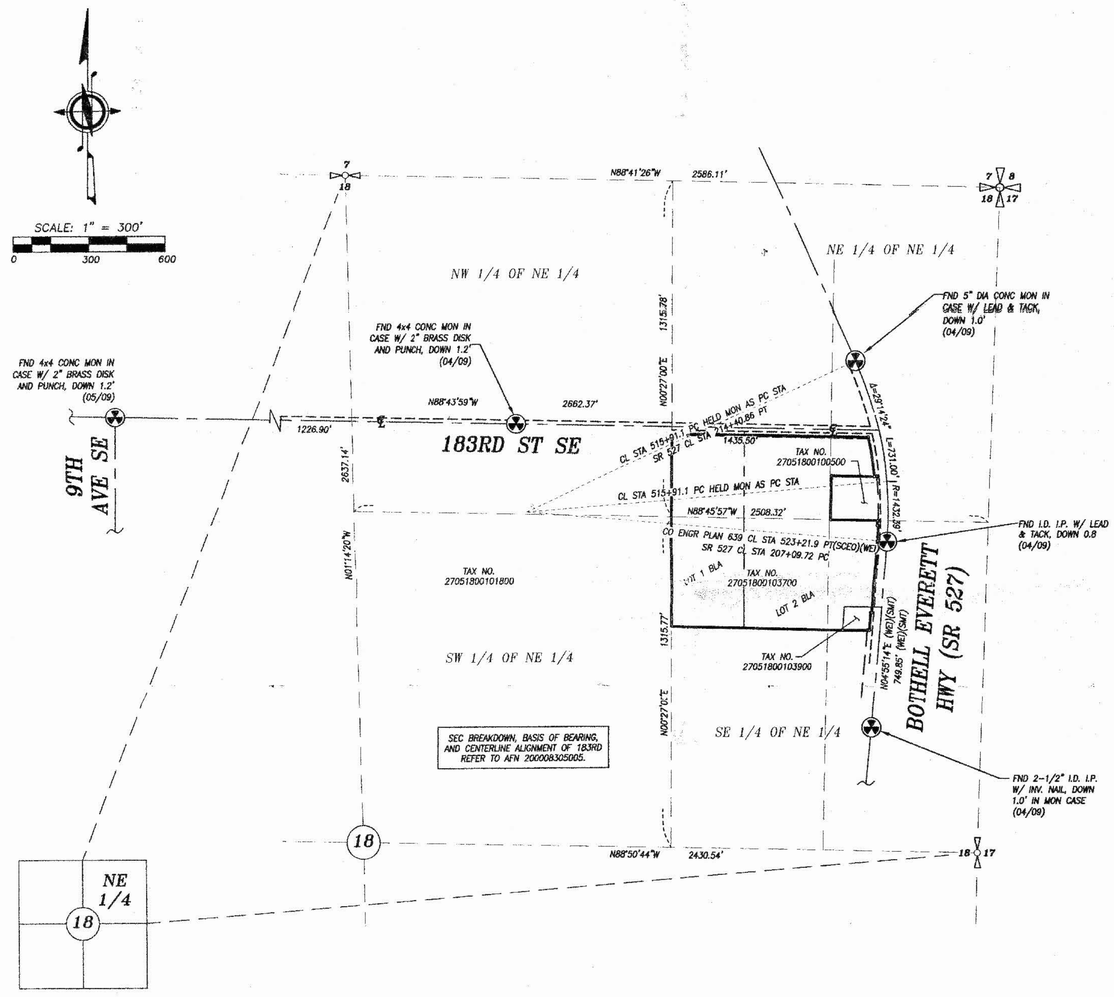
RECORD OF SURVEY FOR
VERBEEK PROPERTIES, LLC.
IN THE SE 1/4, NE 1/4, SEC.18, T.27N., R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON

DRAWN BY	DATE	REV.	BY	DATE	PROJECT MANAGER	SCALE
VJT	05/13/09	03	VJT	06/16/09	M. LONG	1"=100'
DRAWING FILE NAME		CHK. BY		F.B. NO.	JOB NO.	SHT. NO.
09966A ROS.DWG				655	09-966-A	2 of 3

VERBEEK PROPERTIES, LLC
GRADING PROJECT
BOTHELL, WASHINGTON

RECORD OF SURVEY
SHEET 1

PROJECT NO.	1173001.010.021
DATE	11-17-2009
SHEET	6 OF 8
DRAWING NO.	6



EQUIPMENT AND PROCEDURES

METHOD OF SURVEY
SURVEY PERFORMED BY FIELD TRAVERSE

INSTRUMENTATION
LEICA TCRM-1105 ELECTRONIC TOTAL STATION

PRECISION
MEETS OR EXCEEDS STATE STANDARDS WAC 322-130-090

BASIS OF BEARING
THE MONUMENTED CENTERLINE OF 183RD ST SE AS THE BEARING OF N88°43'59"W PER SURVEY RECORDED UNDER AF NO. 200008305005.

SURVEY NOTES:

1.) THIS SURVEY HAS BEEN PREPARED FOR THE EXCLUSIVE USE OF PARTIES WHOSE NAMES APPEAR HEREON ONLY, AND DOES NOT EXTEND TO ANY UNNAMED THIRD PARTIES WITHOUT EXPRESS RECERTIFICATION BY THE LAND SURVEYOR.

2.) BOUNDARY LINES SHOWN AND CORNERS SET REPRESENT DEED LOCATION; OWNERSHIP LINES MAY VARY. NO GUARANTEE OF OWNERSHIP IS EXPRESSED OR IMPLIED. THIS SURVEY WAS PERFORMED WITH THE BENEFIT OF A TITLE REPORT FROM PACIFIC NORTHWEST TITLE COMPANY OF SNOHOMISH COUNTY, INC. (ORDER NO. SNO-1055643 / DATED: FEB. 22, 2008) AND DOES NOT PURPORT TO SHOW ALL EASEMENTS, RESTRICTIONS, RESERVATIONS, AND OCCUPATION WHICH MAY ENCUMBER TITLE TO OR USE OF THIS PROPERTY.

3.) THE BOUNDARY INFORMATION SHOWN ON THIS PLAN IS BASED ON A FIELD SURVEY PERFORMED APRIL 2009.

4.) THIS SURVEY HAS DEPICTED OCCUPATIONAL INDICATORS (IE: EDGE OF ASPHALT DRIVE, FENCE LINES, BUILDINGS AND RETAINING WALLS-SEE MAP FOR SITE SPECIFICS) AS PER W.A.C. 332-130. LINES OF OCCUPATION, AS DEPICTED, MAY INDICATE AREAS FOR POTENTIAL CLAIMS OF UNWRITTEN OWNERSHIP. THIS BOUNDARY SURVEY HAS ONLY DEPICTED THE RELATIONSHIP BETWEEN LINES OF OCCUPATION AND DEEDED LINES OF RECORD. NO RESOLUTION OF OWNERSHIP BASED ON UNWRITTEN RIGHTS HAS BEEN MADE BY THIS SURVEY OR BY ANY PERSONNEL OF WESTERN ENGINEERS, INC.

5.) INSUFFICIENT EVIDENCE TO ESTABLISH EASEMENT AF NO. 301705.

LEGAL DESCRIPTION

PACIFIC NORTHWEST TITLE COMPANY OF SNOHOMISH COUNTY, INC.
ORDER NO. SNO-1055643 (DATED: FEB. 22, 2008)

PARCEL A

COMMENCING AT THE INTERSECTION OF THE NORTH LINE OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 18, TOWNSHIP 27 NORTH, RANGE 5 EAST, W.M. AND THE CENTER LINE OF STATE SECONDARY HIGHWAY 2-A AS RECORDED IN SNOHOMISH COUNTY ENGINEER'S OFFICE AS SURVEY #639;
THENCE SOUTHERLY ALONG THE CENTER LINE OF SAID STATE SECONDARY HIGHWAY FOLLOWING THE ARC OF A CURVE TO THE RIGHT FOR 71 FEET, MORE OR LESS TO STATION 523.219,
THENCE SOUTH 3°52' WEST FOR 259.4 FEET;
THENCE SOUTH 89°18' WEST FOR 30.1 FEET TO THE WESTERLY RIGHT OF WAY LINE OF SAID ROAD, THE TRUE POINT OF BEGINNING;
THENCE CONTINUE SOUTH 89°18' WEST FOR AN ADDITIONAL 117.6 FEET;
THENCE SOUTH 3°52' WEST FOR 92.6 FEET;
THENCE NORTH 89°18' EAST FOR 117.6 FEET TO THE WESTERLY RIGHT OF WAY LINE OF SAID ROAD;
THENCE NORTH 3°52' EAST FOR 92.6 FEET TO THE TRUE POINT OF BEGINNING.

EXCEPT ANY PORTION THEREOF THAT LIES SOUTH OF A LINE RUNNING NORTH 89°08'15" EAST FROM A POINT ON THE WEST LINE OF SAID SOUTHEAST QUARTER OF THE NORTHEAST QUARTER 640.13 FEET NORTH OF THE SOUTHWEST CORNER OF SAID SUBDIVISION;

ALSO EXCEPT THAT PORTION CONVEYED TO THE STATE OF WASHINGTON UNDER RECORDING NUMBER 9208130078

SITUATE IN COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

PARCEL B

LOTS 1 AND 2 OF BOUNDARY LINE ADJUSTMENT DATED JUNE 29, 1984, RECORDED ON JANUARY 22, 1990 UNDER RECORDING NUMBER 9001220502, BEING A PORTION OF THE NORTHEAST QUARTER IN SECTION 18, TOWNSHIP 27 NORTH, RANGE 5 EAST, W.M.,

EXCEPT THAT PORTION CONVEYED TO THE STATE OF WASHINGTON UNDER RECORDING NUMBER 9208130078.

SITUATE IN COUNTY OF SNOHOMISH, STATE OF WASHINGTON.

PRINTED
JUN 2 6 2009
WESTERN ENGINEERS

AF# _____

CONTROL

AF# _____

AUDITOR'S CERTIFICATE

Filed for record this ..... day of ....., 20.....
at .....M in book ..... of ..... at page .....
at the request of WESTERN ENGINEERS, INC.

....
COUNTY AUDITOR DEPUTY AUDITOR

SURVEYOR'S CERTIFICATE

THIS MAP CORRECTLY REPRESENTS A SURVEY MADE BY ME OR UNDER MY DIRECTION IN CONFORMANCE WITH THE REQUIREMENTS OF THE SURVEY RECORDING ACT AT THE REQUEST OF DEWEY VERBEEK IN MAY, 2009

KENNETH L. LONG
REGISTRATION NO. 16916

KENNETH L. LONG · STATE OF WASHINGTON · 16916 · REGISTERED PROFESSIONAL LAND SURVEYOR

6-23-09

Western Engineers, Inc.
SURVEYORS • PLANNERS • ENGINEERS
(425) 356-2700
LAND USE CONSULTANTS
CIVIL ENGINEERS • LAND SURVEYORS
*** 13000 HWY 99 SOUTH * EVERETT * WA * 98204 ***

RECORD OF SURVEY FOR

VERBEEK PROPERTIES, LLC.

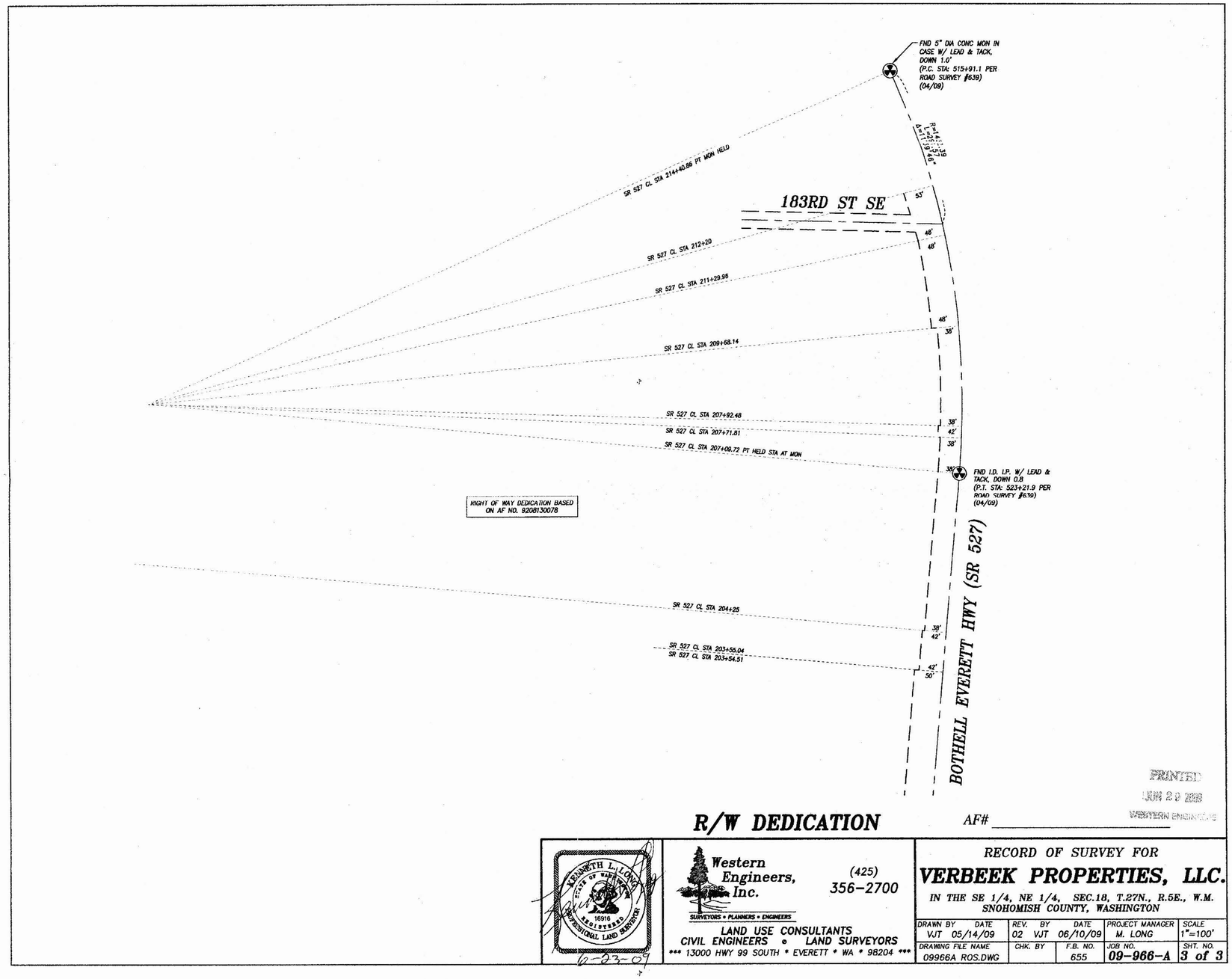
IN THE SE 1/4, NE 1/4, SEC.18, T.27N., R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON

DRAWN BY	DATE	REV. BY	DATE	PROJECT MANAGER	SCALE
VJT	05/13/09	02 VJT	06/10/09	M. LONG	1"=300'
DRAWING FILE NAME		CHK. BY	F.B. NO.	JOB NO.	SHT. NO.
09966A ROS.DWG			655	09-966-A	1 of 3

VERBEEK PROPERTIES, LLC
GRADING PROJECT
BOTHELL, WASHINGTON

RECORD OF SURVEY
SHEET 2

PROJECT NO. 1173001.010.021
DATE 11-17-2009
SHEET 7 OF 8
DRAWING NO. 7



PRINTED
JUN 29 2009
WESTERN ENGINEERS

R/W DEDICATION

AF# _____

KENNETH L. LONG
STATE OF WASHINGTON
16916
REGISTERED
PROFESSIONAL LAND SURVEYOR
6-23-09

Western Engineers, Inc.
SURVEYORS • PLANNERS • ENGINEERS
(425) 356-2700
LAND USE CONSULTANTS
CIVIL ENGINEERS ◦ LAND SURVEYORS
*** 13000 HWY 99 SOUTH * EVERETT * WA * 98204 ***

RECORD OF SURVEY FOR

VERBEEK PROPERTIES, LLC.

IN THE SE 1/4, NE 1/4, SEC.18, T.27N., R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON

DRAWN BY	DATE	REV.	BY	DATE	PROJECT MANAGER	SCALE
VJT	05/14/09	02	VJT	06/10/09	M. LONG	1"=100'
DRAWING FILE NAME		CHK. BY		F.B. NO.	JOB NO.	SHT. NO.
09966A ROS.DWG				655	09-966-A	3 of 3

VERBEEK PROPERTIES, LLC GRADING PROJECT BOTHELL, WASHINGTON	PROJECT NO. 1173001.010.021 DATE 11-17-2009 SHEET 8 OF 8 DRAWING NO. 8
RECORD OF SURVEY SHEET 3	

Compliance Monitoring Plan
Verbeek Wrecking Property
18416 Bothell-Everett Highway
Bothell, Washington

December 23, 2009

Prepared for

Verbeek Wrecking
Bothell, Washington

LANDAU ASSOCIATES
130 2nd Avenue South
Edmonds, WA 98020
(425) 778-0907

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1.0 INTRODUCTION

This Compliance Monitoring Plan documents the compliance monitoring program for the cleanup action of the Verbeek Wrecking Site located in Bothell, Washington (Site), shown on Figure 1 of the Cleanup Action Plan. The site will be redeveloped in the future, although the specific nature of the redevelopment has not yet been determined. The cleanup action will focus on environmental cleanup to a degree necessary for the Site to conform to current environmental regulations acceptable for a wide range of future land uses.

This plan addresses compliance monitoring for three important aspects of the cleanup action: 1) protection of human health and the environment during cleanup activities, 2) performance of the remedial action in meeting cleanup standards, and 3) confirmation of the long-term effectiveness of the cleanup action. This plan was prepared on behalf of Verbeek Properties LLC (the owner) to meet the requirements of the Model Toxics Control Act (MTCA; WAC 173-340) and is consistent with MTCA compliance monitoring requirements [WAC 173-340-400 (4)(b) and WAC 173-340-410]. It is the intent of the owner that Site cleanup be adequate to meet MTCA requirements and to obtain a no further action (NFA) determination from the Washington State Department of Ecology (Ecology).

MTCA requires compliance monitoring for all cleanup actions, as described in WAC 173-340-410. Compliance monitoring is conducted for the following three purposes:

- **Protection monitoring** to confirm that human health and the environment are adequately protected during construction, operation, and maintenance associated with the cleanup action.
- **Performance monitoring** to confirm that the cleanup action has attained cleanup standards and any other performance standards.
- **Confirmational monitoring** to confirm the long-term effectiveness of the cleanup action once the cleanup standards and other performance standards have been attained.

The following sections of this plan present the approach and procedures for addressing these compliance monitoring requirements.

2.0 PROTECTION MONITORING

This section describes planned monitoring activities for the protection of human health and the environment during implementation of the cleanup action.

2.1 HUMAN HEALTH

Monitoring for protection of human health addresses worker safety for activities related to construction, operation, and maintenance of the cleanup action and will be addressed through a project health and safety plan (HASP). The requirements for a project HASP will be included in the project construction documents, and the contractor will prepare the HASP. The HASP will address potential physical and chemical hazards associated with site activities consistent with the requirements of WAC 173-340-810. Anticipated potential physical hazards include working in proximity to heavy equipment, heat or cold stress, and working near open excavations. Anticipated potential chemical hazards include exposure to Site contaminants through various exposure pathways (i.e., direct contact, inhalation, and ingestion).

2.2 ENVIRONMENT

Monitoring for protection of the environment addresses environmental receptors that may be exposed to chemical or physical hazards at levels that may cause adverse effects. For this action, the primary receptors of concern are humans and terrestrial plants and animals, and aquatic organisms.

Potential adverse chemical impacts associated with the cleanup action are due to exposure of humans and terrestrial organisms to metals, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), and petroleum hydrocarbons present in soil through direct contact, inhalation of dust, ingestion of soil, or similar direct contact with surface water runoff potentially carrying affected stormwater or excavation dewatering water.

Environmental protection monitoring will include visual monitoring to verify that excessive dust is not generated and that stormwater runoff is not being impacted. Additionally, stormwater discharge and extracted groundwater (if applicable) will be monitored for water quality and will be properly managed based on the monitoring results.

Dust will be visually monitored and the construction documents will require the contractor to apply dust suppression methods, such as watering and street sweeping, as needed. A stormwater pollution prevention plan will be developed as part of the construction documents that will specify the requirements to minimize and control stormwater runoff from contaminated soil cleanup areas during construction.

Groundwater extracted to dewater excavations will be discharged to holding tanks to separate any petroleum hydrocarbon free product and to allow any suspended sediment to settle. Extracted groundwater will be tested for petroleum hydrocarbons following gravity separation and settling and will be discharged to stormwater if groundwater concentrations are below the MTCA Method A cleanup levels. Otherwise, groundwater will either be treated with activated carbon on site prior to discharge or will be removed from the Site for treatment and disposal by a licensed waste management firm.

3.0 PERFORMANCE MONITORING

Performance monitoring will be conducted during and after construction associated with the cleanup action. Performance monitoring conducted during excavation will include verifying that the lateral and vertical extent of contaminated soil is removed as specified in the cleanup action plan (CAP). Performance monitoring of soil quality implemented after excavation and before backfilling will be used to verify that soil cleanup levels have been attained. Performance monitoring of uncovered ground surface following gravel pile removal will be used to verify that no trace of contamination remains. Performance monitoring of groundwater quality implemented during excavation and following completion of cleanup activities will be used to verify that groundwater cleanup levels have been attained in the TPH contamination area. The performance monitoring will, therefore, include confirmation soil and groundwater sampling and analysis. The remainder of this section describes the performance monitoring approach to confirm that cleanup levels are achieved.

3.1 TPH CONTAMINATION AREA

This section describes the soil and groundwater performance monitoring that will be implemented following excavation of the total petroleum hydrocarbon (TPH) contaminated area shown in Figure G-1. Performance monitoring of this excavation will include confirmation soil sampling, confirmation groundwater grab sampling, and groundwater monitoring well sampling.

3.1.1 SOIL

Following excavation and prior to backfilling, soil samples will be collected at the base and along the sidewalls of the excavation to evaluate the performance of the soil cleanup action. Soil samples collected from the excavations will be submitted for analysis and evaluated to determine the need for any additional excavation and will be analyzed for petroleum hydrocarbons in the diesel-, oil-, and gasoline-ranges, and VOCs (including naphthalene). The soil analytical data will be compared to the proposed cleanup levels listed in Table 5 of the CAP. Soil excavation and performance monitoring will continue until concentrations remaining in the soil meet the proposed cleanup levels.

Two evenly spaced samples will be collected from the base of the excavation at the locations shown on Figure G-1. Soil samples from the base of the excavation will be collected from the upper 6 inches of soil. If field observations of the soil at the base of the excavation indicate evidence of potential contamination either through visual observation (e.g., soil discoloration, presence of debris or sheen) or through the use of appropriate instrumentation (e.g., photoionization detector), the confirmation sample nearest to the observation will be moved to the area of potential contamination. If moving the

planned sample causes an area of the excavation bottom to be insufficiently characterized, an additional sample will be collected in the area of potential contamination.

To collect data representative of the soil remaining along the sidewalls of the excavation, at least six samples will be collected from the sidewalls of the excavation at evenly spaced locations. Sidewall samples will be collected from the depth interval identified as contaminated in that area of the excavation. If field observations of the soil along the excavation sidewall indicate evidence of contamination either through visual observation (e.g., soil discoloration, presence of debris or sheen) or through the use of appropriate instrumentation (e.g., photoionization detector), an additional confirmation sidewall sample will be collected within the area of potential contamination if the potentially contaminated soil is not excavated prior to compliance monitoring.

3.1.2 GROUNDWATER SAMPLING

Two types of groundwater performance monitoring will be implemented in the area of TPH contamination. Water grab samples will be collected from the excavation prior to backfilling, and groundwater monitoring wells will be installed and sampled upon completion of cleanup activities. The groundwater samples collected from the new monitoring well will also function as confirmational monitoring, assuming the proposed groundwater cleanup levels are achieved. The two types of confirmation water sampling are described below.

3.1.2.1 Excavation Grab Samples

Following excavation and prior to backfilling, groundwater samples will be collected from any water that collects at the base of the excavation. Groundwater samples collected from the excavations will be submitted for analysis for petroleum hydrocarbons in the diesel range, and evaluated to determine the need for any additional cleanup.

To collect data representative of the groundwater remaining in the area surrounding the excavation, one groundwater grab sample will be collected. If water is pooling in multiple locations with sufficient volume, more than one water grab sample may be collected. No grab water sample will be collected if there is not a sufficient volume of water in the excavation.

If field observations of the excavation water indicate evidence of potential contamination either through visual observation (e.g., soil discoloration or sheen) or through the use of appropriate instrumentation (e.g., photoionization detector), and there is sufficient seepage from the area of observation, an attempt will be made to collect the groundwater grab sample from that area.

Groundwater grab sample analytical results will be compared to the cleanup levels listed in Table 6 of the CAP. Groundwater extraction, possibly supplemented by additional excavation if evidence of source material is present (e.g., sheen), will continue until groundwater grab samples exhibit concentrations below the groundwater cleanup levels.

3.1.2.2 Groundwater Monitoring Well Samples

Immediately following backfilling of the TPH contamination excavation, a new monitoring well will be installed at the location of RI Boring D-SS4 (CAP, Figure 8), the boring location where the highest concentrations of diesel-, oil-, and gasoline-range petroleum hydrocarbons were detected in soil during the RI. A groundwater sample will be collected from this well and the sample will be submitted for laboratory analysis to determine the effectiveness of the excavation in remediating groundwater contamination. The groundwater sample will be analyzed for TPH in the diesel-range and the analytical results will be compared to the proposed cleanup levels listed in Table 6 of the CAP. If groundwater analytical results exceed the diesel-range petroleum hydrocarbons cleanup level, the need for further monitoring and cleanup action will be evaluated in consultation with Ecology. If the results are below the cleanup level, a second round of groundwater monitoring will be conducted for confirmational sampling, as described in Section 4.0.

3.2 CPAH CONTAMINATION AREA

Confirmation sampling in the cPAH contaminated area will consist of sampling soil at the base of the excavation following the surface scrape removal of the contaminated soil. This section describes the scope of confirmation soil sampling for this cleanup area.

3.2.1 CONFIRMATION SOIL SAMPLING

Soil compliance monitoring samples will be collected from the area of cPAH surface contamination to confirm that cleanup levels have been achieved. Soil confirmation samples will only be collected from areas that are not immediately underlain by GWP material because the GWP material will also be removed as part of the Site cleanup action and the soil underlying the GWP material will be subjected to compliance monitoring under a separate plan (see DOF 2010).

A total of six soil samples will be collected from the excavation surface following removal of the cPAH-contaminated soil. Three of the samples will be located within the area of removal that is not underlain by GWP material. Three additional samples will be collected in the area south of the cPAH contamination area to confirm that the cPAH affected area was accurately delineated. Planned

confirmation sample locations are illustrated on Figure G-1. The area to the north and northwest of the contamination is considered adequately characterized by RI sample locations CS-8, CS-9, CS-11, and D-SS1 (CAP, Figure 14).

Confirmation soil samples will be collected from the upper 6 inches of soil. If field observations of the soil indicate evidence of potential contamination through visual observation (e.g., soil discoloration or sheen), the confirmation sample nearest to the observation will be moved to the area of potential contamination. If moving the planned sample causes an area to be insufficiently characterized, an additional sample will be collected in the area of potential contamination.

The confirmation surface soil samples will be submitted for laboratory analysis of cPAHs and the data will be compared to the proposed cleanup levels listed in Table 5 of the CAP. Soil excavation and confirmation sampling will continue until concentrations remaining in the soil meet the cleanup levels.

3.3 GRAVEL PILES

Confirmation monitoring following cleanup of this area will consist of evaluating soil quality at the former location of the piles. This section describes the scope of the confirmation soil sampling for the gravel pile cleanup area.

3.3.1 CONFIRMATION SOIL SAMPLING

Following removal of the gravel piles, confirmation surface soil samples will be collected in the footprint of the former pile locations. Three samples will be collected from the surface soil in the footprint of each former pile, evenly spaced to adequately cover the area. Preliminary confirmation soil sample locations are illustrated on Figure G-1.

Confirmation surface soil samples will be collected from the upper 6 inches of soil. If field observations of the soil indicate evidence of potential contamination either through visual observation (e.g., soil discoloration) or through the use of appropriate instrumentation (e.g., photo ionization detector), the confirmation sample nearest to the observation will be moved to the area of potential contamination. If moving the planned sample causes an area to be insufficiently characterized, an additional sample will be collected in the area of potential contamination.

The confirmation surface soil samples will be submitted for laboratory analysis to confirm that cleanup levels are achieved. Samples will be analyzed for lead, and the data will be compared to the proposed cleanup level listed in Table 5 of the CAP. If surface soil data exceed the lead cleanup level, the excavation bottom will be excavated an additional 6 inches over the area associated with the exceedance,

and the area will be re-sampled and tested. Excavation and compliance monitoring will continue until the soil remaining does not exceed the proposed cleanup levels.

3.4 SAMPLE COLLECTION PROCEDURES

This section describes in further detail the sample collection procedures that will be implemented in the field to collect soil and water confirmation samples.

3.4.1 EXCAVATION CONFIRMATION SOIL SAMPLES

Confirmation samples representative of the soil remaining at the base of the excavation will be collected from the upper 6 inches of soil located at the base of the excavation. A shallow hole will be hand dug at each sample location using decontaminated hand implements, including stainless-steel spoons and steel shovels, picks, or similar equipment. The surface of the hand-dug hole will be scraped to expose a fresh surface for sample collection. Equal amounts of soil from the excavation bottom sample locations will be collected using a decontaminated stainless-steel spoon, placed in a decontaminated stainless-steel bowl, homogenized, and transferred to the appropriate sample container. Material greater than about ¼ inch will be removed from the sample prior to placing the soil in the sample container. The same procedures will be used for sampling surficial soil beneath the gravel piles and following the removal of surface soil in the cPAH surface soil contamination area.

Confirmation samples collected from the excavation sidewalls will be collected from a depth interval extending the full length of the contaminated soil depth. The surface of the sidewall will be scraped to expose a fresh surface for sample collection using decontaminated hand implements, including stainless-steel spoons and steel shovels, picks, and similar equipment. Equal amounts of soil from the sidewalls will be collected using a decontaminated stainless-steel spoon, placed in a decontaminated stainless-steel bowl, homogenized, and transferred to the appropriate sample container. Material greater than about ¼ inch will be removed from the sample prior to placing the soil in the sample container.

If the excavation sidewalls are potentially unstable and the excavation cannot be safely entered, the confirmation samples will be collected via excavator bucket. If an excavator bucket is used to collect confirmation samples, the bucket will be thoroughly cleaned using a high pressure, hot water washer prior to sampling. The excavator will collect a soil sample from the target location (excavation bottom or sidewall, as applicable), and the excavator bucket will be sub-sampled using hand tools and following the procedures described above.

The U.S. Environmental Protection Agency (EPA) 5035A soil sampling procedures will be used to collect soil samples planned for VOCs), gasoline-range total petroleum hydrocarbons (TPH-G), and

benzene, toluene, ethylbenzene, and xylene (BTEX) analyses, consistent with Ecology guidance. The EPA 5035A soil sampling method is intended to reduce volatilization and biodegradation of samples. The EPA 5035A procedure for soil sample collection is as follows:

- Collect soil "cores" using coring devices (i.e., EnCore® sampler, EasyDraw Syringe®, or a Terra Core™ sampling device). Each "core" will consist of approximately 5 grams of soil. Collect three discrete "cores" from each sampling location. One EasyDraw Syringe® or Terra Core™ device will be used to collect the three discrete "cores;" however, if the EnCore® samplers are used, then three sampling devices are required.

- Remove excess soil from coring device. If EasyDraw Syringe® or Terra Core™ sampling device are used for sample collection then place the "cored" soil directly into unpreserved 40 ml vials with a stirbar. If the EnCore® sampler is used, then close the sampler for transport to the laboratory.

- Collect one 2-oz soil jar of representative soil for moisture content and laboratory screening purposes. Fill the jar to minimize headspace.

3.4.2 CONFIRMATION WATER EXCAVATION GRAB SAMPLING

Groundwater grab samples representative of the water remaining in the petroleum hydrocarbon excavation area will be collected from water pooled at the base of the excavation, if present. Water will either be collected directly from the excavation by filling the laboratory provided sample containers, or using a decontaminated bucket, bailer or other sampling device if the excavation cannot be safely entered. Samples collected using a sampling device will be allowed to settle prior to being transferred to the appropriate sample container to reduce turbidity. Samples may also be centrifuged in the laboratory prior to analysis if turbidity is present so that the analytical results are not biased high by particulates present in the sample.

3.4.3 CONFIRMATION GROUNDWATER MONITORING WELL SAMPLES

Groundwater sample collection will be performed at the new monitoring well using the following procedures:

- Immediately following removal of the well monument cover, the well head will be observed for damage, leakage, and staining. Additionally, immediately following removal of the well head cap, any odors will be recorded and the condition of the well opening will be observed. Any damage, leakage, or staining to the well head or well opening will be recorded.

- Prior to sampling, the well will be purged using a pump that is attached to dedicated purge and sample collection tubing (types of pumps used may vary depending on purge volume and depth and include a centrifugal pump, a peristaltic pump, and an electric submersible pump). Purging will begin with a small pumping rate. The rate will be adjusted upward slowly to minimize drawdown (with a target drawdown of less than 0.33 ft) during purging. Purging will continue until at least three casing volumes of water have been removed and specific

conductance and temperature have stabilized or until the well goes dry. The purge volume will be calculated based on the following formula:

$$1 \text{ casing volume (gallons)} = \pi r^2 h \times 7.48 \text{ gal/ft}^3$$

where: $\pi = 3.14$
r = radius of well casing in ft
h = height of water column from the bottom of the well, in feet.

- Field parameters, including pH, temperature, conductivity, dissolved oxygen, and turbidity, will be continuously monitored during purging using a flow cell. Purging of the well will be considered to be complete when all field parameters become stable for three successive readings. The successive readings should be within +/- 0.1 pH units for pH, +/- 3 percent for conductivity, and +/- 10 percent for dissolved oxygen and turbidity.

- Purge data will be recorded on a Groundwater Sample Collection form including purge volume; time of commencement, and termination of purging; any observations regarding color, turbidity, or other factors that may have been important in evaluation of sample quality; and field measurements of pH, specific conductance, temperature, dissolved oxygen, and turbidity.

- Following the stabilization of field parameters, the flow cell will be disconnected and groundwater sample will be collected. Sample data will be recorded on a Groundwater Sample Collection form, including sample number and time collected; the observed physical characteristics of the sample (e.g., color, turbidity); and field parameters (pH, specific conductance, temperature, and turbidity).

- Four replicate field measurements of temperature, pH, specific conductance, dissolved oxygen, and turbidity will be obtained using the following procedures:

  - A 250-mL plastic beaker will be rinsed with deionized water followed by sample water.

  - The electrodes and temperature compensation probe will be rinsed with deionized water followed by sample water.

  - The beaker will be filled with sample water; the probes will be placed in the beaker until the readings are stabilized. Temperature, pH, specific conductance, dissolved oxygen, and turbidity measurements will be recorded on the Groundwater Sample Collection form.

  - The above step will be repeated to collect remaining replicates.

- Any problems or significant observations will be noted in the "comments" section of the Groundwater Sample Collection form.

- Groundwater samples will be collected into the appropriate sample containers using a peristaltic pump. Samples will be chilled to 4°C immediately after collecting the sample. Clean gloves will be worn when collecting each sample. Similar to excavation grab samples, monitoring well samples may be centrifuged in the lab prior to analysis to avoid results being biased high by suspended particulates

3.5 SAMPLE TRANSPORTATION AND HANDLING

The transportation and handling of samples will be accomplished in a manner that protects the integrity of the sample and also prevents release of hazardous substances from the samples. Samples will be kept in coolers on ice until delivery to the analytical laboratory. At the end of each day, samples will be logged on a chain-of-custody (COC) form. The COC form will accompany each shipment of samples to the laboratory.

3.6 SAMPLE CUSTODY AND DOCUMENTATION

The primary objective of sample custody is to create an accurate, written record that can be used to trace the possession and handling of samples so that their quality and integrity can be maintained from collection until completion of all required analyses. Adequate sample custody will be achieved by means of approved field and analytical documentation. Such documentation includes the COC record that is initially completed by the sampler and is thereafter signed by those individuals who sequentially accept custody of the sample. A sample is in custody if at least one of the following is true:

- It is in someone's physical possession.
- It is in someone's view.
- It is secured in a locked container or otherwise sealed so that tampering will be evident.
- It is kept in a secured area, restricted to authorized personnel only.

Sample control and COC in the field and during transportation to the laboratory will be conducted in general conformance with the procedures described below:

- As few people as possible will handle samples.
- Sample bottles will be obtained new or pre-cleaned from the laboratory performing the analyses.
- The sample collector will be personally responsible for the completion of the COC record and the care and custody of samples collected until the samples are transferred to another person or dispatched properly under COC rules.
- The coolers in which the samples are shipped will be accompanied by the COC record identifying their contents. The original record and laboratory copy will accompany the shipment (sealed inside the shipping container). The other copy will be forwarded to Landau Associates along with sample collection forms.
- Coolers will be sealed with strapping tape and custody seals for shipment to the laboratory. The method of shipment, name of courier, and other pertinent information will be entered in the "remarks" section of the COC record and traffic report.

When samples are transferred, the individuals relinquishing and receiving the samples will sign the COC form and record the date and time of transfer. The sample collector will sign the form in the first signature space. Each person taking custody will observe whether the shipping container is correctly sealed and in the same condition as noted by the previous custodian; deviations will be noted on the appropriate section of the COC record.

A designated sample custodian at the laboratory will accept custody of the shipped samples, verify the integrity of the custody seals, and certify that the sample identification numbers match those on the COC record. The custodian will then enter sample identification number data into a bound logbook, which is arranged by a project code and station number. If containers arrive with broken custody seals, the laboratory will note this on the COC record and will immediately notify the sampler and Landau Associates.

All documentation and other project records will be safeguarded to prevent loss, damage, or alteration. If an error is made on a document, corrections will be made by drawing a single line through the error and entering the correct information. The erroneous information will not be obliterated. Corrections will be initialed and dated and, if necessary, a footnote explaining the corrections will be included. Errors will be corrected by the person who made the entry, whenever possible.

3.7 EQUIPMENT DECONTAMINATION

All sampling equipment used (e.g., stainless-steel bowls, stainless-steel spoons, shovels) will be cleaned using a three-step process, as follows:

1. Scrub surfaces of equipment that would be in contact with the sample with brushes using an Alconox solution.
2. Rinse and scrub equipment with clean tap water.
3. Rinse equipment a final time with deionized water to remove tap water impurities.

Decontamination of the reusable sampling devices will occur following collection of each sample. Decontamination of sampling equipment that contains a visible sheen will include a hexane rinse (or other appropriate solvent) prior to the tap water rinse.

3.8 RESIDUAL WASTE MANAGEMENT

This section describes the waste management of the soil and decontamination water generated during the confirmation sampling.

3.8.1 SOIL CUTTINGS

Soil excavated from the hand-dug hole will be stockpiled on the ground surface next to the hole during sample collection. Following sample collection at the hole, the excavated soil will be placed back in the hole from which it was removed.

3.8.2 PURGE WATER

Purge water generated during groundwater sampling will be temporarily stored onsite (currently expected to be in 55-gallon drums). Disposal methods will be determined based on the analytical results for the groundwater samples.

3.8.3 DECONTAMINATION WATER

Water generated during decontamination of sampling equipment will be temporarily stored onsite (currently expected to be in 55-gallon drums). A sample of the water will be collected and analyzed for lead, cPAHs, and diesel- and motor oil-range petroleum hydrocarbons. Disposal methods will be determined based on the analytical results for the water sample.

3.9 QUALITY ASSURANCE/QUALITY CONTROL

The confirmation sample analytical results must be accurate, precise, representative, complete, and comparable.

Accuracy of the data will be determined through recovery of spiked surrogates and spiked laboratory control samples. Control limits for spike recovery will be laboratory acceptance limits generated according to EPA guidelines. For each analysis, the following quality control samples will be collected to evaluate accuracy:

- **Laboratory Control Sample.** When sampling soil or water, a minimum of one laboratory control sample per 20 samples, not including QC samples, or one laboratory control sample per sample batch if fewer than 20 samples are obtained, will be analyzed for all parameters.

- **Method Blank.** When sampling water, a minimum of one method blank sample will be performed for each analysis and each batch of samples analyzed.

Precision of the data will be determined through evaluation of the relative percent difference between duplicate samples. To evaluate precision, the following QC samples will be collected and/or analyzed:

- **Laboratory Duplicates.** In sampling soil, a minimum of one laboratory duplicate will be analyzed for metals, cPAHs, and diesel- and motor oil-range petroleum hydrocarbons.

Laboratory duplicates will be performed using project samples. The laboratory duplicate will follow EPA guidance in the method.

- **Blind Field Duplicate.** When sampling water, one blind field duplicate sample will be collected and analyzed for the same constituents as the groundwater sample. The blind field duplicate will consist of a split sample collected at the sample location. Blind field duplicates will be collected by alternately filling sample containers for both the original and the corresponding duplicate sample at the same location to decrease variability between the duplicates.

Representativeness of the data will be optimized through appropriate selection of sampling locations and methods. Analyses will be performed promptly within established holding times identified in Table G-3.

Completeness for the project will be established as the proportion of data generated that is determined to be valid. The data quality objective for completeness is 90 percent.

Comparability is an expression of the confidence with which one data set can be compared to another. In this project, standard methods, promulgated by EPA or Ecology where available, will be used. Data generated will be reported in units consistent with Ecology or EPA guidelines.

3.10 LABORATORY ANALYSES

Analytical Resources, Inc. (ARI), located in Seattle, Washington, will perform laboratory analysis. Soil analytical methods and reporting limits goals are presented in Table G-1. Water analytical methods and reporting limits goals are presented in Table G-2. The target reporting limits are only goals because instances may arise where sample concentration, heterogeneity of samples, or matrix interferences preclude achieving the desired reporting limits and associated quality control (QC) criteria. If this occurs, the laboratory will report the reason(s) for deviations from these reporting limits or noncompliance with QC criteria.

4.0 CONFIRMATIONAL MONITORING

Since all contaminated soil will be removed as part of the cleanup action, confirmational monitoring is not planned for soil. Confirmational monitoring for groundwater will be implemented once it has been demonstrated that groundwater cleanup standards are being achieved through post-construction groundwater monitoring. Groundwater confirmational sampling will include one additional round of groundwater monitoring at the new well installed at D-SS4 to confirm that petroleum hydrocarbon concentrations remain below the diesel-range petroleum hydrocarbons proposed cleanup levels. The sampling and analysis procedures described in Section 3.4.3 will be used for groundwater confirmational sampling.

* * * * *

This document has been prepared under the supervision and direction of the following key staff.

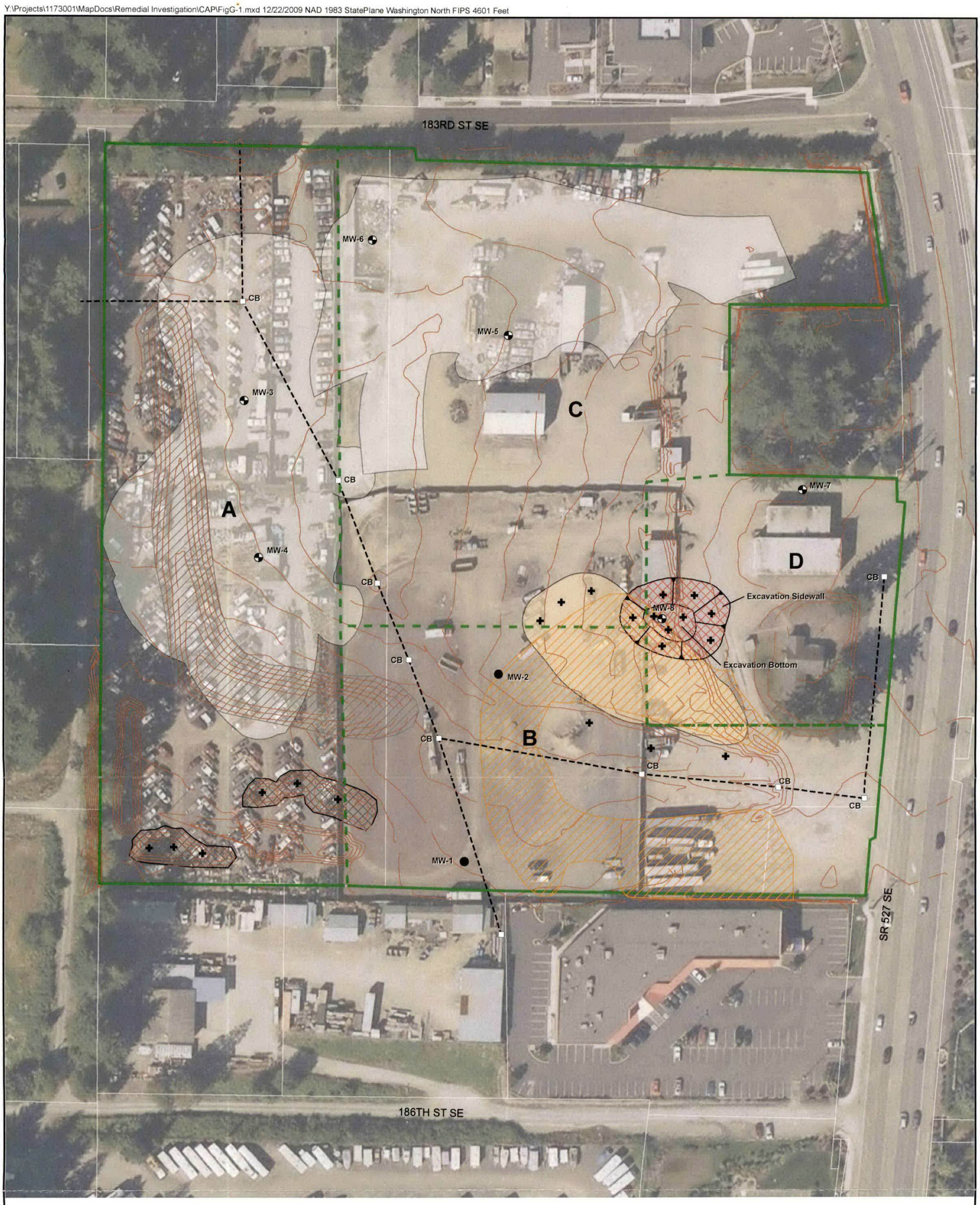
LANDAU ASSOCIATES, INC.

Lawrence D. Beard, P.E., L.G.
Principal

For Alyssa B. Johnson
Staff Scientist

ABJ/LDB/rgm

Y:\Projects\1173001\MapDocs\Remedial Investigation\CAP\FigG-1.mxd 12/22/2009 NAD 1983 StatePlane Washington North FIPS 4601 Feet



Legend

- Approximate Soil Confirmation Sample Locations
- Existing Monitoring Well - Green Co. 2008
- RI Monitoring Well Location
- Elevation Contour
- Storm Drains and Sanitary Sewer Lines
- Gravel Stockpile
- Soil Stockpile
- cPAH Affected Area
- Soil cleanup action area (approximate limits)
- TPH Excavation Area
- Approximate Extent of Remaining GWP Fill

N

0 100 200

Scale in Feet

Data Source: Snohomish County; ESRI; Western Engineers Inc.

Note

1. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

LANDAU ASSOCIATES

Verbeek Wrecking CAP
Bothell/Snohomish County
Washington

Proposed Confirmation Sampling Locations

Figure G-1

5.0 REFERENCES

Ecology. 1993. *Supplement to Statistical Guidance for Ecology Site Managers*. Washington State Department of Ecology. August 11.

TABLE G-1
COMFIRMATION SOIL SAMPLE ANALYTICAL METHODS AND REPORTING LIMIT GOALS
VERBEEK WRECKING SITE
BOTHELL, WASHINGTON

Analyte	Analytical Method (a)	Reporting Limits Groundwater
Petroleum Hydrocarbons		
Gasoline-Range Petroleum Hydrocarbons	NWTPH-Gx (c)	0.25 mg/L
Diesel-Range Petroleum Hydrocarbons	NWTPH-Dx (d)	0.25 mg/L
Heavy Oil-Range Petroleum Hydrocarbons	NWTPH-Dx	0.5 mg/L
BTEX		
Benzene	EPA Method 8022	1 µg/L
Toluene	EPA Method 8023	1 µg/L
Ethylbenzene	EPA Method 8024	1 µg/L
Xylenes	EPA Method 8025	1 µg/L
	EPA Method 8026	
Metals		
Arsenic	EPA Method 200.8	0.2 µg/L
Cadmium	EPA Method 6010	2.0 µg/L
Chromium	EPA Method 6010	5.0 µg/L
Copper	EPA Method 6020/200.8	2.0 µg/L
Lead	EPA Method 200.8	1.0 µg/L
Mercury	EPA Method 7470	0.1 µg/L
Zinc	EPA Method 6020/200.8	10.0 µg/L
CARCINOGENIC POLYCYCLIC AROMATIC HYDROCARBONS (cPAHs)		
Benzo(a)anthracene	EPA Method 8270	0.1 µg/L
Benzo(a)pyrene	EPA Method 8270	0.1 µg/L
Benzo(b)fluoranthene	EPA Method 8270	0.1 µg/L
Benzo(k)fluoranthene	EPA Method 8270	0.1 µg/L
Chrysene	EPA Method 8270	0.1 µg/L
Dibenz(a,h)anthracene	EPA Method 8270	0.1 µg/L
Indeno(1,2,3-cd)pyrene	EPA Method 8270	0.1 µg/L
Volatile Organic Compounds (VOCs)		
1,1,1,2-Tetrachloroethane	EPA Method 8260B	0.2 µg/L
1,1,1-Trichloroethane	EPA Method 8260B	0.2 µg/L
1,1,2,2-Tetrachloroethane	EPA Method 8260B	0.2 µg/L
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA Method 8260B	0.2 µg/L
1,1,2-Trichloroethane	EPA Method 8260B	0.2 µg/L
1,1-Dichloroethane	EPA Method 8260B	0.2 µg/L
1,1-Dichloroethene	EPA Method 8260B	0.2 µg/L
1,1-Dichloropropene	EPA Method 8260B	0.2 µg/L
1,2,3-Trichlorobenzene	EPA Method 8260B	0.5 µg/L
1,2,3-Trichloropropane	EPA Method 8260B	0.5 µg/L
1,2,4-Trichlorobenzene	EPA Method 8260B	0.5 µg/L
1,2,4-Trimethylbenzene	EPA Method 8260B	0.2 µg/L
1,2-Dibromo-3-Chloropropane	EPA Method 8260B	0.5 µg/L
1,2-Dibromoethane	EPA Method 8260B	0.2 µg/L
1,2-Dichlorobenzene	EPA Method 8260B	0.2 µg/L
1,2-Dichloroethane	EPA Method 8260B	0.2 µg/L
1,2-Dichloropropane	EPA Method 8260B	0.2 µg/L
1,3,5-Trimethylbenzene	EPA Method 8260B	0.2 µg/L
1,3-Dichlorobenzene	EPA Method 8260B	0.2 µg/L
1,3-Dichloropropane	EPA Method 8260B	0.2 µg/L
1,4-Dichlorobenzene	EPA Method 8260B	0.2 µg/L
2,2-Dichloropropane	EPA Method 8260B	0.2 µg/L
2-Butanone	EPA Method 8260B	2.5 µg/L
2-Chloroethyl Vinyl Ether	EPA Method 8260B	1.0 µg/L
2-Chlorotoluene	EPA Method 8260B	0.2 µg/L
2-Hexanone	EPA Method 8260B	2.5 µg/L

TABLE G-1
COMFIRMATION SOIL SAMPLE ANALYTICAL METHODS AND REPORTING LIMIT GOALS
VERBEEK WRECKING SITE
BOTHELL, WASHINGTON

4-Chlorotoluene	EPA Method 8260B	0.2 µg/L
4-Isopropyl Toluene	EPA Method 8260B	0.2 µg/L
4-Methyl-2-Pentanone	EPA Method 8260B	2.5 µg/L
Acetone	EPA Method 8260B	3.0 µg/L
Acrolein	EPA Method 8260B	5.0 µg/L
Acrylonitrile	EPA Method 8260B	1.0 µg/L
Benzene	EPA Method 8260B	0.2 µg/L
Bromobenzene	EPA Method 8260B	0.2 µg/L
Bromochloromethane	EPA Method 8260B	0.2 µg/L
Bromodichloromethane	EPA Method 8260B	0.2 µg/L
Bromoethane	EPA Method 8260B	0.2 µg/L
Bromoform	EPA Method 8260B	0.2 µg/L
Bromomethane	EPA Method 8260B	0.5 µg/L
Carbon Disulfide	EPA Method 8260B	0.2 µg/L
Carbon Tetrachloride	EPA Method 8260B	0.2 µg/L
Chlorobenzene	EPA Method 8260B	0.2 µg/L
Chlorodibromomethane	EPA Method 8260B	0.2 µg/L
Chloroethane	EPA Method 8260B	0.2 µg/L
Chloroform	EPA Method 8260B	0.2 µg/L
Chloromethane	EPA Method 8260B	0.2 µg/L
cis-1,2-Dichloroethene	EPA Method 8260B	0.2 µg/L
cis-1,3-Dichloropropene	EPA Method 8260B	0.2 µg/L
Dibromomethane	EPA Method 8260B	0.2 µg/L
Ethyl Benzene	EPA Method 8260B	0.2 µg/L
Hexachloro-1,3-Butadiene	EPA Method 8260B	0.2 µg/L
Iodomethane	EPA Method 8260B	1.0 µg/L
Isopropyl Benzene	EPA Method 8260B	0.2 µg/L
m,p-Xylene	EPA Method 8260B	0.4 µg/L
Methylene Chloride	EPA Method 8260B	0.5 µg/L
Methyl-t-butyl ether (MTBE)	EPA Method 8260B	0.2 µg/L
Naphthalene	EPA Method 8260B	0.5 µg/L
n-Butylbenzene	EPA Method 8260B	0.2 µg/L
n-Propyl Benzene	EPA Method 8260B	0.2 µg/L
o-Xylene	EPA Method 8260B	0.2 µg/L
s-Butylbenzene	EPA Method 8260B	0.2 µg/L
Styrene	EPA Method 8260B	0.2 µg/L
t-Butylbenzene	EPA Method 8260B	0.2 µg/L
Tetrachloroethene	EPA Method 8260B	0.2 µg/L
Toluene	EPA Method 8260B	0.2 µg/L
trans-1,2-Dichloroethene	EPA Method 8260B	0.2 µg/L
trans-1,3-Dichloropropene	EPA Method 8260B	0.2 µg/L
trans-1,4-Dichloro-2-Butene	EPA Method 8260B	1.0 µg/L
Trichloroethene	EPA Method 8260B	0.2 µg/L
Trichlorofluoromethane	EPA Method 8260B	0.2 µg/L
Vinyl Acetate	EPA Method 8260B	1.0 µg/L
Vinyl Chloride	EPA Method 8260B	0.2 µg/L

SIM = Selected ion monitoring

(a) Analytical methods are from SW-846 (EPA 1986) and upddates, unless otherwise noted.

(b) Reporting limits goals are based on current laboratory data and may be modified during the investigation process as methodology is refined. Laboratory reporting will be based on the lowest standard on the calibration curve. Instances may arise where high sample concentrations, nonhomogeneity of samples, or matrix interferences preclude achieving the desired reporting limits.

(c) NWTPH-Gx Method as described in *Analytical Methods for Petroleum Hydrocarbons* , Washington State Department of Ecology, Publication ECY97-602, June 1997 (Ecology 1997).

(d) Method NWTPH-DX as described in *Analytical Methods for Petroleum Hydrocarbons* , Washington State Department of Ecology, Publication ECY97-602, June 1997 (Ecology 1997).

TABLE G-2
CONFIRMATION GROUNDWATER AND SURFACE WATER SAMPLE ANALYTICAL METHODS AND REPORTING LIMIT GOALS
VERBEEK WRECKING SITE
BOTHELL, WASHINGTON

Analyte	Analytical Method (a)	Reporting Limits (b) Groundwater
Petroleum Hydrocarbons		
Gasoline-Range Petroleum Hydrocarbons	NWTPH-Gx (c)	0.25 mg/L
Diesel-Range Petroleum Hydrocarbons	NWTPH-Dx (d)	0.25 mg/L
Heavy Oil-Range Petroleum Hydrocarbons	NWTPH-Dx	0.5 mg/L
BTEX		
Benzene	EPA Method 8022	1 µg/L
Toluene	EPA Method 8023	1 µg/L
Ethylbenzene	EPA Method 8024	1 µg/L
Xylenes	EPA Method 8025	1 µg/L
	EPA Method 8026	
Dissolved Metals		
Arsenic	EPA Method 200.8	0.2 µg/L
Cadmium	EPA Method 6010	2.0 µg/L
Chromium	EPA Method 6010	5.0 µg/L
Copper	EPA Method 6020/200.8	2.0 µg/L
Lead	EPA Method 200.8	1.0 µg/L
Mercury	EPA Method 7470	0.1 µg/L
Zinc	EPA Method 6020/200.8	10.0 µg/L
Volatile Organic Compounds (VOCs)		
1,1,1,2-Tetrachloroethane	EPA Method 8260B	0.2 µg/L
1,1,1-Trichloroethane	EPA Method 8260B	0.2 µg/L
1,1,2,2-Tetrachloroethane	EPA Method 8260B	0.2 µg/L
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA Method 8260B	0.2 µg/L
1,1,2-Trichloroethane	EPA Method 8260B	0.2 µg/L
1,1-Dichloroethane	EPA Method 8260B	0.2 µg/L
1,1-Dichloroethene	EPA Method 8260B	0.2 µg/L
1,1-Dichloropropene	EPA Method 8260B	0.2 µg/L
1,2,3-Trichlorobenzene	EPA Method 8260B	0.5 µg/L
1,2,3-Trichloropropane	EPA Method 8260B	0.5 µg/L
1,2,4-Trichlorobenzene	EPA Method 8260B	0.5 µg/L
1,2,4-Trimethylbenzene	EPA Method 8260B	0.2 µg/L
1,2-Dibromo-3-Chloropropane	EPA Method 8260B	0.5 µg/L
1,2-Dibromoethane	EPA Method 8260B	0.2 µg/L
1,2-Dichlorobenzene	EPA Method 8260B	0.2 µg/L
1,2-Dichloroethane	EPA Method 8260B	0.2 µg/L
1,2-Dichloropropane	EPA Method 8260B	0.2 µg/L
1,3,5-Trimethylbenzene	EPA Method 8260B	0.2 µg/L
1,3-Dichlorobenzene	EPA Method 8260B	0.2 µg/L
1,3-Dichloropropane	EPA Method 8260B	0.2 µg/L
1,4-Dichlorobenzene	EPA Method 8260B	0.2 µg/L
2,2-Dichloropropane	EPA Method 8260B	0.2 µg/L
2-Butanone	EPA Method 8260B	2.5 µg/L
2-Chloroethyl Vinyl Ether	EPA Method 8260B	1.0 µg/L
2-Chlorotoluene	EPA Method 8260B	0.2 µg/L
2-Hexanone	EPA Method 8260B	2.5 µg/L
4-Chlorotoluene	EPA Method 8260B	0.2 µg/L
4-Isopropyl Toluene	EPA Method 8260B	0.2 µg/L
4-Methyl-2-Pentanone	EPA Method 8260B	2.5 µg/L

TABLE G-2
CONFIRMATION GROUNDWATER AND SURFACE WATER SAMPLE ANALYTICAL METHODS AND REPORTING LIMIT GOALS
VERBEEK WRECKING SITE
BOTHELL, WASHINGTON

Acetone	EPA Method 8260B	3.0 µg/L
Acrolein	EPA Method 8260B	5.0 µg/L
Acrylonitrile	EPA Method 8260B	1.0 µg/L
Benzene	EPA Method 8260B	0.2 µg/L
Bromobenzene	EPA Method 8260B	0.2 µg/L
Bromochloromethane	EPA Method 8260B	0.2 µg/L
Bromodichloromethane	EPA Method 8260B	0.2 µg/L
Bromoethane	EPA Method 8260B	0.2 µg/L
Bromoform	EPA Method 8260B	0.2 µg/L
Bromomethane	EPA Method 8260B	0.5 µg/L
Carbon Disulfide	EPA Method 8260B	0.2 µg/L
Carbon Tetrachloride	EPA Method 8260B	0.2 µg/L
Chlorobenzene	EPA Method 8260B	0.2 µg/L
Chlorodibromomethane	EPA Method 8260B	0.2 µg/L
Chloroethane	EPA Method 8260B	0.2 µg/L
Chloroform	EPA Method 8260B	0.2 µg/L
Chloromethane	EPA Method 8260B	0.2 µg/L
cis-1,2-Dichloroethene	EPA Method 8260B	0.2 µg/L
cis-1,3-Dichloropropene	EPA Method 8260B	0.2 µg/L
Dibromomethane	EPA Method 8260B	0.2 µg/L
Ethyl Benzene	EPA Method 8260B	0.2 µg/L
Hexachloro-1,3-Butadiene	EPA Method 8260B	0.2 µg/L
Iodomethane	EPA Method 8260B	1.0 µg/L
Isopropyl Benzene	EPA Method 8260B	0.2 µg/L
m,p-Xylene	EPA Method 8260B	0.4 µg/L
Methylene Chloride	EPA Method 8260B	0.5 µg/L
Methyl-t-butyl ether (MTBE)	EPA Method 8260B	0.2 µg/L
Naphthalene	EPA Method 8260B	0.5 µg/L
n-Butylbenzene	EPA Method 8260B	0.2 µg/L
n-Propyl Benzene	EPA Method 8260B	0.2 µg/L
o-Xylene	EPA Method 8260B	0.2 µg/L
s-Butylbenzene	EPA Method 8260B	0.2 µg/L
Styrene	EPA Method 8260B	0.2 µg/L
t-Butylbenzene	EPA Method 8260B	0.2 µg/L
Tetrachloroethene	EPA Method 8260B	0.2 µg/L
Toluene	EPA Method 8260B	0.2 µg/L
trans-1,2-Dichloroethene	EPA Method 8260B	0.2 µg/L
trans-1,3-Dichloropropene	EPA Method 8260B	0.2 µg/L
trans-1,4-Dichloro-2-Butene	EPA Method 8260B	1.0 µg/L
Trichloroethene	EPA Method 8260B	0.2 µg/L
Trichlorofluoromethane	EPA Method 8260B	0.2 µg/L
Vinyl Acetate	EPA Method 8260B	1.0 µg/L
Vinyl Chloride	EPA Method 8260B	0.2 µg/L

SIM = Selected ion monitoring

(a) Analytical methods are from SW-846 (EPA 1986) and upddates, unless otherwise noted.

(b) Reporting limits goals are based on current laboratory data and may be modified during the investigation process as methodology is refined. Laboratory reporting will be based on the lowest standard on the calibration curve. Instances may arise where high sample concentrations, nonhomogeneity of samples, or matrix interferences preclude achieving the desired reporting limits.

(c) NWTPH-Gx Method as described in *Analytical Methods for Petroleum Hydrocarbons* , Washington State Department of Ecology, Publication ECY97-602, June 1997 (Ecology 1997).

(d) Method NWTPH-DX as described in *Analytical Methods for Petroleum Hydrocarbons* , Washington State Department of Ecology, Publication ECY97-602, June 1997 (Ecology 1997).

(f) Soil samples will be analyzed by Method 8270. Groundwater samples will be analyzed by Method 8270 SIM.

TABLE G-3
SAMPLE CONTAINERS, PRESERVATIVES, AND HOLDING TIMES
VERBEEK WRECKING SITE
BOTHELL, WASHINGTON

Analysis	Analytical Method	Container	Preservation	Maximum Holding Time
Soil Samples				
cPAHs	EPA 8270-SIM	8 oz. jar - glass	Store cool at 4°C	14 days
Metals	EPA 6000/7000 Series	4 oz jar - glass	Store cool at 4°C	6 months
TPH (Diesel and Oil Range)	NWTPH-Dx	4 oz jar - glass	Store cool at 4°C	14 days
TPH (Gasoline Range)	NWTPH-Gx	4-40 ml vial - glass	$Na_2S_2O_4$ (2 vials), methanol (2 vials); Cool 4°C	14 days
VOCs/BTEX	SW8260B/SW8021	4 - 40 ml vial	$Na_2S_2O_4$ (2 vials), methanol (2 vials); Cool 4°C	14 days
Water Samples				
TPH (Diesel and Oil Range)	NWTPH-Dx	1 L amber jar - glass	Store cool at 4°C	7 days
TPH (Gasoline Range)	NWTPH-Gx	3-40 ml vial	HCl to pH <2; Cool 4°C	14 days
Dissolved Metals	EPA 200.8	1 L polyethylene	5 ml- HNO3 (a); Cool 4°C	6 months

cPAH = Carcinogenic Polycyclic Aromatic Hydrocarbons
SIM = Selected ion monitoring

(a) Dissolved arsenic samples must be filtered prior to preservation; therefore, samples will be filtered in the field.