FOCUSED SITE ASSESSMENT REPORT

FORMER WENATCHEE PUBLIC WORKS YARD PROPERTY

Prepared for

CITY OF WENATCHEE

WENATCHEE, WA

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MAUL FOSTER ALONGI

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The material and data in this report were prepared under the supervision and direction of the undersigned.

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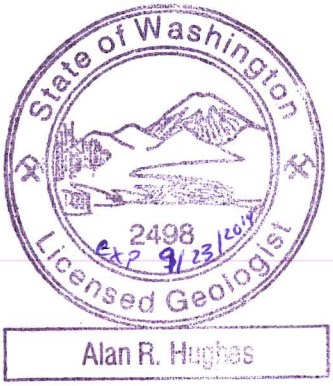

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ACRONYMS AND ABBREVIATIONS

B&A	Budinger & Associates
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
City	City of Wenatchee
COI	chemical of interest
cPAH	carcinogenic polycyclic aromatic hydrocarbon
CSM	conceptual site model
CUL	cleanup level
E&E	Ecology & Environment, Inc.
Ecology	Washington State Department of Ecology
Forsgren	Forsgren Associates, Inc.
IHS	indicator hazardous substance
MFA	Maul Foster & Alongi, Inc.
mg/kg	milligrams per kilogram
MTCA	Model Toxics Control Act
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
POC	point of compliance
Property	former Wenatchee Public Works Yard property
RCRA	Resource Conservation and Recovery Act
Site	non-landfill portion of the Property
TEE	terrestrial ecological evaluation
TEQ	toxic equivalency quotient
UST	underground storage tank
VOC	volatile organic compound
WAC	Washington Administrative Code

1 INTRODUCTION

On behalf of the City of Wenatchee (the City), Maul Foster & Alongi, Inc. (MFA) has prepared this focused site assessment report associated with the former Wenatchee Public Works Yard property (the Property) located at 25 North Worthen Street in Wenatchee, Washington (see Figure 1). The Property comprises two distinct areas: one consisting of a portion of the Property that is underlain with a closed municipal landfill, and the other consisting of the non-landfill portion of the Property (Washington State Department of Ecology [Ecology] facility site ID 98691464) (the Site). The closed Worthen Street municipal landfill is a separate Ecology site (facility site ID 343) which extends north, south, and east of the Property. Figure 2 shows the location of the landfill boundary on the Property. The Property is currently vacant but historically was used as an operations facility by the City's Public Works Department. The City is currently facilitating a public-private partnership for redevelopment of the Site.

1.1 Regulatory Framework

In 2010, the City received an Integrated Planning Grant from Ecology supporting environmental characterization and redevelopment planning, and has since entered Ecology's Voluntary Cleanup Program. The purpose of this focused site assessment is to characterize the nature and extent of hazardous substances, evaluate potential risk to human and ecological receptors, and identify the preferred cleanup alternative for the Site. This assessment meets the substantive requirements of Washington Administrative Code (WAC) 173-340 of the Model Toxics Control Act (MTCA), while identifying efficiencies that may be gained through integrating planned redevelopment design components with the remedial action.

1.2 Site Assessment Objectives

Previous investigations conducted on the Property detected contaminants with concentrations above MTCA cleanup levels (CULs) in subsurface soil and groundwater, and identified potential environmental conditions that may have resulted in impacts to soil and/or groundwater on the Property. This focused site assessment was completed to assess known environmental impacts and potential environmental concerns specific to redevelopment of the Site. Site assessment objectives included the following:

- Development of a conceptual site model (CSM) and data quality objectives for site characterization.
- Assessment of potential sources of contamination and of hazardous substances above relevant CULs in environmental media.

- Evaluation of potential risk to current and reasonably likely future human and ecological receptors, as appropriate.
- Evaluation of potential remedial options for impacted media.

2 BACKGROUND

2.1 Property Description

The Property consists of an approximately 3.35-acre portion of the much larger Chelan County parcel number 222003821007 located in section 3, township 22 north, range 20 east of the Willamette Meridian. The Property is currently zoned "Waterfront Mixed Use" and is bordered by the municipal wastewater treatment plant to the northwest, North Worthen Street to the southwest, Palouse Street and the Pybus Public Market to the southeast, and Riverfront Park and the Columbia River to the northeast. Generally, land use in the vicinity of the Property is mixed-use and commercial business.

The Property is generally flat, with elevations ranging between approximately 639 and 645 feet above mean sea level. The Property is partially underlain by a closed municipal landfill (see Figure 2), which operated on the bank of the Columbia River from approximately 1950 to 1970. This landfill extends approximately from Orondo Avenue north to 5th Street. Based on exploratory excavations, geophysical investigation, and anecdotal reports, the landfill underlies the northern and eastern portions of the Property and extends laterally under Riverfront Park. The western side of the Property is not underlain by the landfill.

Former operations/office buildings have been removed and there are no structures, with the exception of a below ground oil/water separator, on the Property at this time. The ground surface is mostly paved with worn asphalt, with little vegetation and only a few trees and shrubs located along street frontage.

2.2 Site Definition

As indicated above, this focused site assessment pertains specifically to the non-landfill portion of the Property (i.e., the Site) and contamination resulting from historical public works operations. The nature and extent of contamination specific to the Site are defined, and potential remedial actions evaluated, in this report. Remedial actions will also take into account protection against the potential migration of contamination onto the Site from the Worthen Street landfill.

2.3 Property History

According to historical sources and personal interviews, the Property was undeveloped until sometime between the 1930s and the 1950s, when landfill operations began. Landfilling, including municipal refuse and incinerated material, took place at the Property through approximately the

early 1970s. In the 1950s, the City constructed a public works facility at the Property that was used for general equipment maintenance and repair. The public works facility also maintained fueling operations, with associated underground storage tanks (USTs) that were decommissioned and removed in 1994. A heating oil UST was used to heat the former structures on the Property and has also been removed. Public works operations at the Property ceased in approximately 2009, and all building structures were demolished.

2.4 Previous Investigations

A number of environmental studies have been conducted on the Property, including:

- A soil investigation conducted by Budinger & Associates (B&A, 1981).
- A site check/site assessment for the permanent closure of USTs, performed by Forsgren Associates, Inc. (Forsgren, 1995).
- A targeted brownfield assessment conducted by Ecology & Environment, Inc. (E&E, 2000).
- A Phase I environmental site assessment conducted by MFA (MFA, 2011a).
- A focused site characterization performed by MFA (MFA, 2011b).
- A data gap investigation conducted by MFA (MFA, 2013).

In December 1981, a soil gas generation investigation was conducted by B&A to understand the feasibility of construction of a public park on top of the historical landfill. The investigation was conducted on the overall known boundaries of the landfill, which was a larger area that included a portion of the Property. Based on this work, B&A indicated that, while a great deal of refuse landfilling had taken place at the Property and in adjoining areas, the vicinity was suitable for park construction, with some exceptions. B&A recommended the following: a cap of a minimum of 5 feet in thickness of clean, imported cover material, placed throughout the areas to be developed; passive gas well installation throughout the park area to facilitate venting of methane generated during active decomposition of landfill refuse; air monitoring for methane; construction of park buildings in areas with adequate subsurface conditions allowing for minimal subsidence; and selective planting of trees that do not have deeply invasive root structures (B&A, 1981).

Forsgren oversaw the removal of three 2,000-gallon fuel USTs (referred to as the former fueling area and associated USTs) at the Site in December 1994. Eight soil samples were collected from the UST excavations and from beneath the fuel island and were analyzed for gasoline- and diesel-range petroleum hydrocarbons; benzene, toluene, ethylbenzene, and xylenes (BTEX); and lead. All analytical results were below Ecology MTCA Method A CULs for unrestricted land use, with the exception of one lead detection at 1,920 milligrams per kilogram (mg/kg; the MTCA Method A CUL is 250 mg/kg). The CUL exceedance was collected from the excavation base beneath a former gasoline UST (sample depth not recorded). Analytical results associated with the UST removal are provided in the appendix.

In June 2000, E&E, in coordination with the U.S. Environmental Protection Agency, conducted a targeted brownfield assessment and associated subsurface investigation at the Property to assess areas of potential contamination resulting from the known historical landfilling activities. E&E collected 41 soil samples from 14 soil borings (borings LF01 through LF14) and five groundwater samples (from borings LF02, LF03, LF04, LF11, and LF14) for laboratory analysis. Boring locations were separated into areas from the inferred landfill portion of the Property as well as inferred non-landfill portion of the Property. Analytical results indicated elevated concentrations of many analytes of concern—including heavy metals, carcinogenic polycyclic aromatic hydrocarbons (cPAHs), semivolatile organic compounds, and volatile organic compounds (VOCs)—exceeding Ecology MTCA Method A CULs in both soil and groundwater from samples obtained in and outside the landfill area (E&E, 2000). Boring locations are shown on Figure 2, and analytical results associated with the targeted brownfield assessment are provided in the appendix.

In October 2010, MFA conducted a subsurface assessment at the Property (MFA, 2011a). This investigation included installation of three piezometers (PZ1 through PZ3), a combustible gas assessment (four soil gas samples collected from borings SG1 through SG4), a surface soil staining assessment (one soil sample collected from boring GP1), and a landfill delineation and geologic cross section interpretation based on a geophysical evaluation. Piezometers were installed to measure shallow groundwater elevations in order to interpret groundwater flow direction at the Property. Piezometer and boring locations are shown on Figure 2, and analytical results associated with the October 2010 investigation are provided in the appendix. The investigation concluded the following:

- Shallow groundwater migration at the Property is approximately south-southwest.
- Combustible gases are present at the Property, but at relatively low concentrations, and engineering controls should be considered during design and implementation of redevelopment at the Property.
- Stained surface soil on the Site is below MTCA Method A CULs for unrestricted land use.
- There is a varied thickness of landfill debris and overburden material above shallow basalt, which varies in depth.

In September 2011, MFA conducted a focused investigation at the Property to delineate cPAH-impacted soil on the Site and to define the landfill/native soil boundary (MFA, 2011b). Nine soil borings (GP2 through GP10) were used to delineate cPAH impacts in the southern portion of the Site in the vicinity of the former fueling area and associated USTs. Seven test pits (TP1 through TP7) were used to delineate the landfill/native soil boundary. Soil boring and test pit locations are shown on Figure 2, and analytical results associated with the September 2011 investigation are provided in the appendix. The results of the focused investigation concluded that impacts at the Property were distinguishable as two separate sites: landfill and non-landfill portions of the Property. The landfill extends well beyond the Property boundaries to the north, east, and south. The Site has groundwater and soil vapor impacts that appear to be the result of migration from the landfill site. Impacts of cPAHs in soil on the Site likely are related to USTs, which were removed in 1994 (Forsgren, 1995).

Site characterization activities were conducted in November 2013 to assess data gaps and environmental concerns pertaining to the Site (MFA, 2013). Thirty-two soil samples and one groundwater sample were collected from 12 borings (GP11 through GP22), and three groundwater samples were collected from the three existing piezometers (PZ1, PZ2, and PZ3) (Figure 2). Analytical results associated with the November 2013 investigation are provided in the appendix. The results are as follows:

- Minimal soil impacts (benzene/cPAHs) were identified between 7 and 13 feet below ground surface (bgs) in the vicinity of the former heating oil UST.
- No contamination associated with operation of the two oil/water separators was identified.
- The lateral extent of cPAH contamination was fully defined and no lead CUL exceedances were found in the vicinity of the former fueling area and associated USTs.
- Two of five composite samples collected across the Site from 0 to 6 feet bgs indicated metals (arsenic and lead) in excess of CULs. The five samples were collected from borings GP11, GP14, GP15, GP17 and GP20. Each sample was composited from six discrete samples collected at 1-foot intervals from each of the five borings.
- Groundwater samples collected from the Site did not indicate the presence of petroleum hydrocarbons, while samples collected from within the landfill boundaries did indicate the presence of diesel and lube oil, validating prior interpretations that groundwater impacts beneath the Site are the result of migration from impacts originating from the landfill.

2.5 Potential Environmental Conditions

Based on the findings of site characterization activities and known site uses, the following potential environmental conditions were identified on the Site (as shown in Figure 2):

- Former heating oil UST
- Former fueling area and associated USTs
- Surface soil (0 to 6 feet bgs) resulting from public works operations
- Groundwater contamination migrating onto the Site from landfill impacts
- Combustible gas in soil vapor migrating onto the Site from landfill decomposition

The following chemicals of interest (COIs), associated with the potential environmental conditions listed above, were identified: petroleum hydrocarbons, BTEX, polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and metals (arsenic and lead).

2.6 Geology and Hydrogeology

The Property is at an elevation of approximately 642 feet above mean sea level. In general, the Property slopes gently to the west-northwest from its highest elevation at 645 feet in its eastern

portion, downward to an elevation of 639 feet in the northwest. The Property is adjacent to Riverfront Park and the Columbia River to the northeast.

Lithology was interpreted from subsurface investigations completed by B&A in 1981; a geophysical investigation completed by Northwest Geophysical Associates, Inc. in 2010; and subsurface investigation activities completed by MFA. Based on the available information, the area interpreted to be part of the former landfill includes northern and eastern portions of the Property (see Figure 2). Depth to shallow bedrock in these areas interpreted as the historical landfill ranges from approximately 25 to more than 50 feet bgs. Throughout much of the Property, the landfill debris is covered with silty sandy gravel and sandy silt interpreted to be imported fill material. In general, based on field observations, there is less noticeable landfill debris in the southern area of the interpreted landfill (piezometer PZ2) than in the north (piezometer PZ3). The overall thickness of landfill debris in these areas is difficult to ascertain, based on inconstancies of soil conditions, compaction, and poor soil recovery during probe activities.

The geology beneath the Site generally consists of an approximately 5- to 10-foot-thick surficial layer of gravelly silt. Underlying the surficial gravel is a silt unit that extends to approximately 20 feet bgs. Below the silt is another gravel unit, in which groundwater was first encountered. The soil types encountered at the Site are consistent with Quaternary alluvial deposits from the adjacent Columbia River.

Groundwater is encountered at depths ranging from approximately 20 to 26 feet bgs. The piezometers installed on the Property in 2010 indicate that groundwater generally flows to the south-southwest, away from the Columbia River (see Figure 3). However, groundwater measurements during the most recent November 2013 event indicated that flow was to the northwest (see Figure 4). It appears that while the groundwater flow direction varies from the landfill portion of the Property toward the Site and from the Site toward the landfill. There may be specific hydraulic conditions in the landfill that temporarily influence local flow directions or elevation variations caused by the Columbia River height.

3 NATURE AND EXTENT OF CONTAMINATION

This section defines the nature and extent of contamination on the Site associated with each of the potential environmental conditions identified in Section 2.5, based on previous site investigations summarized in Section 2.4.

3.1 Former Heating Oil Underground Storage Tank

Analytical results of soil samples collected from borings GP11 and GP12, in the vicinity of the former heating oil UST, indicated Method A CUL exceedances for benzene in GP11 (13 feet bgs) and cPAH toxic equivalency quotient (TEQ) in GP12 (7 feet bgs); however, samples collected at a greater depth from those borings (17.5 feet and 11 feet bgs, respectively) did not indicate CUL exceedances. Therefore, while the former heating oil UST did impact the Site, impacts are shallow,

do not extend to groundwater, and likely are limited to the immediate vicinity and footprint of the former UST.

3.2 Former Fueling Area and Associated USTs

The investigations have delineated the extent of cPAH contamination associated with the former fueling area and associated USTs (see Figure 5) that exceeds the Method A CUL up to 11.0 feet bgs (GP3) but does not extend to groundwater. The investigations completed by MFA also attempted to delineate the extent of lead impacts identified during the UST removal. However, the investigations in November 2013 did not detect lead in soil above the CUL, indicating that lead contamination, if present, is limited to the immediate vicinity of the former UST.

3.3 Shallow Soil

Prior to the November 2013 investigation, assessment of shallow (0 to 6 feet bgs) soil on the Site had been limited to four samples collected during the Targeted Brownfield Assessment (E&E, 2000). The analytical results indicated that shallow soil impacts were limited to one potential location with elevated cPAHs in the vicinity of the former fueling area and associated USTs (LF14) and one for arsenic (LF04). To assess the suitability of considering the existing 0-to-6-foot-bgs soil layer as a cap for deeper contamination, five composite soil samples were collected between 0 and 6 feet bgs from across the Site during the November 2013 investigation. Two of five composite soil samples (GP14 and GP15) collected between 0 and 6 feet bgs indicated the presence of arsenic and lead in excess of MTCA Method A CULs, but did not detect other elevated compounds (i.e., PCBs, PAHs, and petroleum hydrocarbons). Based on the relatively limited sample points, the extent of shallow soil contamination appears to be confined to the central portion of the Site.

3.4 Groundwater

Elevated metals, VOCs, and PCBs were identified in groundwater throughout the Property (E&E, 2000). These impacts on the Site are similar to and likely related to those detected within the boundary of the landfill. Groundwater depth has ranged from approximately 20 to 26 feet bgs in MFA's field studies. Groundwater flow has been observed to be from the northeast to southwest, with variation in flow direction over time (MFA, 2011). The November 2013 investigation detected diesel and lube oil beneath the landfill portion of the Property, but not beneath the Site. Based on this evidence, the groundwater beneath the Site appears to be impacted by a groundwater plume originating from the landfill. There is no indication that groundwater impacts originated from soil impacts on the Site.

3.5 Soil Vapor

Soil vapor sampling indicates the presence of VOCs and combustible gases characteristic of active biodegradation of refuse in the vicinity of the historical landfill. Therefore, soil vapor contamination impacts originating beneath the landfill are migrating under the Site and are not a result of soil impacts on the Site.

4 CONCEPTUAL SITE MODEL

The CSM describes potential chemical sources, release mechanisms, environmental transport processes, exposure routes, and receptors for the Site. The primary purpose of the CSM is to describe pathways by which human and ecological receptors could be exposed to site-related chemicals. A complete exposure pathway consists of four necessary elements: (1) a source and mechanism of chemical release to the environment, (2) an environmental transport medium for a released chemical, (3) a point of potential contact with the impacted medium (referred to as the exposure point), and (4) an exposure route (e.g., soil ingestion) at the exposure point. The CSM describes potential exposure scenarios based on information collected during the site assessment. Elements of potentially complete exposure scenarios relevant to human health and ecological receptors for the Site and Site-related chemicals are discussed below and are presented in Figure 6. The CSM diagram takes into account the risk screening discussed in Section 5. In addition, the potential exposures to the Site from impacts migrating from the landfill site (i.e., groundwater and soil vapor) are presented in Figure 7.

4.1 Source Characterization

The Property was used as a facility supporting public works operations from the 1950s until 2009, and a portion of the Property is underlain by solid waste associated with a closed municipal landfill. The Site is the portion of the Property which is not within the landfill boundary. Based on site investigations, the following Property-related activities and sources have contributed to contamination of environmental media at the Site:

- Releases from heating oil and fuel USTs (i.e., soil)
- General public works equipment operation and maintenance (i.e., soil)
- Releases from the municipal landfill site (i.e., soil vapor and groundwater)

These sources and release mechanisms have resulted in contaminant releases to soil, soil gas, and groundwater.

As described in Section 5, the investigations have identified the following indicator hazardous substances (IHSs) in soil for the Site: arsenic, lead, benzene, and cPAHs. The groundwater investigation in 2000 identified elevated concentrations of VOCs, PCBs, and metals in groundwater beneath the Site, which are the results of migration from the landfill site and are not related to Site soil impacts. Similarly soil vapor impacts on the Site are the result of migration from the landfill site.

Impacts of cPAHs, benzene, and lead in soil on the Site are related to historical USTs, which have been removed. Surface soil (from the uppermost 6 feet) of the Site also had two sample locations indicating CUL exceedances of arsenic, and one sample location indicating CUL exceedances of lead and arsenic.

4.2 Fate and Transport of Contaminants

Contaminant releases to surface soil have the potential to migrate vertically downward to the water table, but through evaluation of empirical data not appear to significantly impact groundwater. Surface and subsurface soil contaminants may also partition to the vapor phase, potentially resulting in impacts to air quality.

Impacts in the adjacent landfill site migrate to the Site via groundwater transport and vapor migration.

4.3 Potential Soil Exposure Scenarios

The Site is currently a vacant lot and contains no structures. The redevelopment plan for the Site likely will be for commercial use as a hotel.

4.3.1 Human Health

It is likely that the public will access the Site at some time in the foreseeable future and that construction workers will be conducting work associated with the redevelopment activities at the Site.

The following pathways are potentially complete for human health exposure to soil:

On-site occupational workers—There are currently no workers on the Site, as it is undeveloped. However, there are plans to redevelop the Site within the next year. Therefore, there is the possibility for future occupational workers to come in contact with chemicals in soil through incidental ingestion, dermal contact, and inhalation of impacted soil particulates (see Figure 6). Soil vapor impacts are potentially present on the Site through migration from the landfill site. Therefore, there is the possibility for future occupational workers to be exposed to soil vapor through inhalation (see Figure 7).

On-site construction workers—There are currently no construction workers (e.g., excavation workers, trench workers) on the Site. However, construction activities would be performed as part of redevelopment. Future construction workers could contact chemicals in soil through incidental ingestion, dermal contact, and inhalation of impacted soil particulates (see Figure 6). Soil vapor impacts are potentially present on the Site through migration from the landfill site and future construction workers could contact chemicals in soil through inhalation of outdoor air vapors (see Figure 7).

4.3.2 Ecological Receptors

The Site is a highly disturbed vacant lot, consisting primarily of asphalt and gravel or compacted soil. Vegetation is absent, with the exception of some isolated ruderal species and a few trees and shrubs located along street frontage. The Site therefore provides minimal important resources and is

unlikely to attract wildlife. Ecological receptors present may contact chemicals in soil through root/dermal contact and ingestion; however, the potential for ecological exposure is low.

4.4 Potential Groundwater Exposure Scenarios

The groundwater impacts beneath the Site are present due to migration from the landfill site. Groundwater exposure due to Site-related chemicals is therefore considered incomplete or insignificant (see Figure 6). Groundwater is encountered at depths ranging from approximately 20 to 26 feet bgs. Groundwater flows to the south-southwest and south-southeast (see Figures 3 and 4). It appears that groundwater flow direction varies and can flow from the landfill portion of the Property toward the Site or from the Site to the landfill.

4.4.1 Human Health

The following pathways are potentially complete for human health exposure for groundwater impacts related to the landfill site (see Figure 7):

On-site occupational workers—The Site is undeveloped and there are currently no workers on the Site. However, there are plans to redevelop the Site in the future. One pathway by which future workers could potentially be exposed to chemicals in groundwater is from ingestion of tap water from a drinking water well; however, municipal water service is available next to the Site and this exposure scenario is considered insignificant. Another potential pathway is inhalation of indoor/outdoor air vapors emanating from groundwater.

On-site construction workers—There are currently no construction workers (e.g., excavation workers, trench workers) on the Site; however, construction activities would be performed as part of redevelopment. Depth to groundwater is greater than typical excavation depths (i.e., up to 15 feet bgs). Future construction worker dermal contact with chemicals in groundwater is therefore considered insignificant. A potential pathway is inhalation of outdoor air vapors emanating from groundwater.

4.4.2 Ecological Receptors

The Site provides minimal important habitat resources, and groundwater is encountered at depths well below the typical mammal burrowing depths or plant rooting depths. The direct-contact-with-groundwater pathway is therefore considered incomplete.

4.5 Cleanup Standards

According to MTCA, the cleanup standards for a particular site have two primary components: chemical-specific CULs and points of compliance (POCs). The CUL is the concentration of a chemical, in a specific environmental medium, that will not pose unacceptable risks to human health or the environment. The POC is the location where the CUL must be met.

MTCA provides three different options for establishing CULs for human health: Method A, Method B, and Method C. For Methods B and C, either the standard or the modified approach can be used. The standard method uses generic default assumptions to calculate CULs, and the modified method allows for site-specific adjustments to some assumptions when calculating CULs.

MTCA Method A is designed for cleanups at relatively simple sites, such as those that are small and that have only a few hazardous substances. Method B can be used at any site. Method C is used primarily for industrial sites.

4.5.1 Soil Cleanup Levels

The Site historically has been used for commercial purposes and it is anticipated that it will be used for commercial purposes in the future. Soil was screened to MTCA Method A CULs for unrestricted land use.

Soil CULs for the protection of potable groundwater (leaching-to-groundwater pathway) are not recommended as potential cleanup targets for soil on the Site. The leaching-to-groundwater criteria are helpful in providing an initial screening of soil data to assess the potential for impacts to groundwater. However, empirical groundwater data, when available, may be used to demonstrate a lack of impacts in groundwater and, therefore, an incomplete leaching-to-groundwater pathway.

4.5.1.1 Points of Compliance in Soil

The soil POC is the depth bgs at which soil CULs shall be attained. The standard POC is soil within 15 feet of the ground surface throughout the Site. This standard POC is applied to soil on the Site.

4.5.2 Groundwater Cleanup Levels

Groundwater was screened to MTCA Method A CULs.

4.5.2.1 Points of Compliance in Groundwater

For groundwater, the POC is the point or points where the groundwater CULs must be attained for a site to be in compliance with the cleanup standards. Groundwater CULs shall be attained in all groundwater from the POC to the outer boundary of the hazardous-substance plume.

5 RISK EVALUATION

Soil and groundwater analytical results of previous investigations were compared to MTCA CULs for unrestricted land use, as described in Section 4.5. As discussed below, IHSs were evaluated by comparing the concentrations found in soil and groundwater to their respective CULs. An IHS is defined as a chemical having exceeded a CUL at one or more locations. An ecological assessment is

provided in Section 5.3. For reference, analytical results from previous investigations are included in the appendix.

5.1 Soil

Based on historical investigations, there are known impacts on the landfill portion of the Property that are isolated from shallow soils on the Site. Therefore, for the purposes of this report, the following risk screening discussion focuses on CUL chemical exceedances observed in soil on the Site (see Figure 2 and the appendix):

- Chemical exceedances in soil include arsenic, lead, benzene, and cPAHs.
- All non-metals exceedances were observed near the former fueling area and associated USTs and the former heating oil UST. Generally, non-metals exceedances were observed at approximately 7 to 12 feet bgs.
  - A TEQ concentration was calculated for the cPAHs for comparison to the CUL, and exceedances were observed in GP3, GP4, GP5, GP8, GP12, and LF14.
  - A benzene exceedance was observed in one location, GP11.
- Metals exceeding CULs were arsenic and lead. Metals exceedances were constrained to the top 6 feet at three locations, LF04, GP14, and GP15, with the only other CUL exceedance (lead) being reported at the base of the excavation during the 1994 removal of one of the former fueling area USTs (specific depth unknown); however, the investigation in November 2013 could not replicate the detection.

In summary, IHSs in soil are limited to arsenic, lead, benzene, and cPAHs. Metals are present in soil above CULs in the central portions of the Site at depths shallower than 6 feet bgs. Benzene and cPAHs are present in soil at depths of approximately 7 to 12 feet bgs near the former USTs. Based on these data, there is the potential for construction workers or future occupational workers to come in contact with impacted soil on the Site.

5.2 Groundwater

Elevated metals, VOCs, and PCBs were identified in groundwater throughout the Property (E&E, 2000) and diesel and lube oil beneath the landfill portion of the Property (MFA, 2013). The impacts in groundwater beneath the Site are similar to and likely are related to those detected within the boundary of the landfill. Groundwater flow has been observed to be from the northeast to southwest, with variation in flow direction over time (MFA, 2011b). Based on this evidence, the groundwater beneath the Site appears to be impacted by a groundwater plume originating from the landfill.

The objective of the November 2013 sampling for petroleum hydrocarbons was to evaluate whether contamination at the Site was potentially impacting groundwater. Groundwater samples were analyzed for petroleum hydrocarbons. Groundwater samples collected from boring GP18 and piezometer PZ1, both of which are located outside the boundary of the delineated landfill, did not

indicate the presence of petroleum hydrocarbons. Groundwater samples collected from piezometers PZ2 and PZ3, both of which are located within the boundary of the delineated landfill, indicated the presence of diesel- and lube-oil-range petroleum hydrocarbons (see the appendix).

Analytical results of groundwater collected from piezometers PZ2 and PZ3 detected diesel and lube oil at concentrations above the MTCA Method A criteria. The results support the previous conclusion that impacts in groundwater originate from the landfill and not from soil impacts on the Site.

Based on available groundwater data, there is the potential for construction workers to come in contact with impacted groundwater on the Site. One pathway by which future workers could potentially be exposed to chemicals in groundwater is from ingestion of tap water from a drinking water well; however, city water is available next to the Site and it is unlikely that this scenario would occur. Another potential pathway is inhalation of indoor/outdoor air vapors emanating from groundwater.

Because of the proximity to the Columbia River, there is the potential for groundwater beneath the Site to impact surface water. However, as noted above, impacts are associated with the former landfill, and this pathway is not considered further in regard to non-landfill-related impacts.

5.3 Soil Vapor

Elevated soil gas readings of combustible gas and organic vapors were identified in soil gas on the landfill portion of the Property (MFA, 2011a). Combustible gas and organic vapors were also identified on the Site but at lower levels. The impacts in soil gas on the Site are the result of migration from impacts originating from the landfill site.

Based on these observations, there is the potential for construction or future commercial workers to be exposed to soil gases.

5.4 Terrestrial Ecological Evaluation

Under MTCA, a terrestrial ecological evaluation (TEE) is performed to determine if hazardous substances in soil pose a potential threat to the environment (WAC 173-340-7490). A site may be excluded from the TEE process if any of the criteria in WAC 173-340-7491 (1a-d) are met, as specified below:

> All soil contaminated with hazardous substances is, or will be, covered by buildings, paved roads, pavement, or other physical barriers that will prevent plants or wildlife from being exposed to the soil contamination. To qualify for this exclusion, an institutional control shall be required by the department under WAC 173-340-440. An exclusion based on planned future land use shall include a completion date for such future development that is acceptable to the department. (WAC 173-340-7491 (1b))

The Site qualifies for a TEE exclusion based on the following. A hotel and associated infrastructure will be developed. Institutional controls will be implemented, and are likely to include environmental

covenants against groundwater use, a vapor intrusion barrier associated with the hotel, and a cap (consisting of building foundation, parking/sidewalk pavement, and a minimum of 1 foot of clean fill in landscaped areas) managed under a soil management plan. Site development is anticipated to be completed within the next year.

Site soil samples (see the appendix) at the POC for ecological receptors (0 to 6 feet bgs) were evaluated to determine if (1) concentrations are above ecological screening criteria, and (2) whether development plans call for physical barriers at locations above screening criteria. Locations GP14 and GP15 exceed the lowest ecological indicator soil concentration for arsenic (7 mg/kg) and lead (50 mg/kg) (MTCA Table 749-3). Similarly, the historical surface soil sample locations LF04, LF05, LF06, LF09, and LF14 exceed ecological indicator soil concentrations for arsenic, barium, and/or lead. Development plans show that GP14, LF05, LF06, LF09, and LF14 will be located under the hotel or parking lot and will therefore not be accessible to ecological receptors. GP15 and LF04 will be located under an entry garden and landscaped area, respectively, with a minimum 1 foot of clean fill (see Figure 8). Provided that appropriate protection against burrowing mammals (e.g., a varmint barrier beneath the clean fill) is provided and only shallow-rooting plants (e.g., native grasses/shrubs without taproots) are planted, soils in the landscaped areas are not expected to result in unacceptable risk. Specifications for all landscaped areas will be included in the soil management plan.

5.5 Summary

Impacts in soil include metals and cPAHs and one exceedance of benzene. Based on the current and future use of the Site, there is the potential for construction and occupational workers to come in contact with impacted soil.

Groundwater and soil vapor impacts at the Site have been attributed to the former landfill. Contamination that has migrated from the landfill to the Site has the potential to impact construction workers and future occupational workers through direct contact or through vapor migration.

The Site qualifies for a TEE exclusion based on planned development and associated institutional controls that will prevent plants or wildlife from exposure to the soil contamination. Redevelopment is anticipated within the next year.

6 FOCUSED CLEANUP ACTION EVALUATION

This section summarizes two remedial alternatives for addressing the contamination identified at the Site. These alternatives are not all-inclusive, but represent the most likely cleanup scenarios and encompass a range of remedial actions that integrate with current redevelopment plans.

The cleanup alternatives address soil on the Site impacted by metals, benzene, and cPAHs. Metals (arsenic and/or lead) impacts were observed at three locations from the ground surface to approximately 6 feet bgs, and there is anecdotal evidence indicating a lead CUL exceedance at the

base of the excavation associated with the removal of the former fueling area USTs. Impacts from cPAHs were observed primarily in soil in the vicinity of the former fueling area and associated USTs, with one additional detection exceeding associated CULs in the vicinity of the former heating oil UST. Benzene was also detected in excess of its CUL in one location in the vicinity of the former heating oil UST.

In addition, there is a potentially complete migration pathway for organic vapors and combustible gases to migrate from the landfill onto the Site, as well as for groundwater contamination from the landfill to migrate under the Site.

6.1 Alternative 1: Excavation and Off-Site Disposal of Contaminated Soil

Alternative 1 includes excavation and off-site disposal at an appropriate landfill of all soil that exceeds MTCA CULs. The remedial action consists of:

- Excavation. The lateral extent of cPAH contamination associated with the former fueling area and associated USTs, defined in Figure 5, will be excavated to a depth of 14 feet bgs (this will also capture the single lead CUL exceedance identified in the 1995 UST decommissioning report); an approximate 35-foot by 20-foot box centered on borings GP11 and GP12 will be excavated to a depth of 15 feet bgs to capture the benzene and cPAH CUL exceedances at these locations; and it is assumed that one-half of the Site will require excavation to 6 feet bgs to capture metals CUL exceedances. Preliminary excavation areas are shown in Figure 9. Excavation extents will be screened with x-ray fluorescence and a photoionization detector, as appropriate, before confirmation sampling. Characterization samples will be collected from soil stockpiles for waste profiling. The excavation volume is estimated to be approximately 11,390 cubic yards. For the purposes of estimating costs, and based on existing data, it is assumed that all material will be classified as nonhazardous and disposed of at a Resource Conservation and Recovery Act (RCRA) Subtitle D permitted landfill.
- Backfill. The Site will be backfilled with clean, imported fill to the recommended ground surface elevation for stormwater management and redevelopment. Finished grade is to be constructed of a crushed gravel surface to stabilize and prevent soil erosion.
- Institutional Controls. Environmental covenants will be placed on the Property that prohibit the use of groundwater from beneath the Property and require the construction of a vapor intrusion barrier beneath any future buildings.
- Estimated Cost. The estimated cost for Alternative 1 is $2,458,000 (including 30% contingency). Details are presented in Table 1.

6.2 Alternative 2: Capping and Targeted Excavation Integrated with Redevelopment

Alternative 2 includes targeted soil excavation with on-site consolidation and/or off-site disposal, and capping of the Site integrated with the anticipated redevelopment. Figure 10 presents the redevelopment plans. The remedial action includes:

- Targeted Soil Removal. Excavate areas necessary to provide adequate cap cover based on the final site grade, including overexcavation of the hotel foundation and utility trenches. The excavation volume is estimated to be approximately 1,400 cubic yards. Characterization samples will be collected from soil stockpiles for waste profiling. For cost estimating purposes, it is assumed that the soil may be disposed of at a RCRA Subtitle D landfill. This assumption is based on the relatively low contaminant concentrations observed in shallow soils at the Site.
- Soil Consolidation. If final site grade allows, soil excavated during redevelopment may be consolidated on site beneath the cap. For conservative cost estimating, it is assumed that all excavated material will require off-site disposal.
- Capping. Contaminants in soil that are left in place will be capped with a minimum 1 foot of clean soil and demarcation layer (e.g., landscape area), asphalt surface (e.g., parking lot), and concrete surface (e.g., walkway), or located within the footprint of a building. The cap will apply to the entire Site. Clean soil will be imported and placed on top of a demarcation fabric or the existing asphalt pavement, delineating the contaminated soil from clean cap material for future site workers.
- Institutional Controls. Environmental covenants will be placed on the Site that prohibit the use of groundwater from beneath the Site and require the construction of a vapor intrusion barrier beneath any future buildings. In addition, a soil management plan will be developed and an environmental covenant placed on the Site to protect the engineered cap. The soil management plan will describe the nature and locations of contaminated soil that is left in place, discuss potential worker safety considerations, and identify the type of demarcation fabric that is placed for future site activities that involve penetration of the soil cap. In addition, a cap inspection plan will be implemented to provide annual inspections to ensure that the demarcation material is not visible in any area of the Site.
- Estimated Cost. The estimated cost for Alternative 2 is $714,500 (including 30% contingency). Details are presented in Table 2.

6.3 Cleanup Alternative Evaluation Requirements

6.3.1 MTCA Threshold Requirements

Cleanup actions are subject to the threshold requirements set forth in WAC 173-340-360 (2)(a). Under the threshold requirements, the cleanup action shall:

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

6.3.1.1 Protect Human Health and the Environment and Comply with Cleanup Standards

Both alternatives 1 and 2 reduce or eliminate risk due to contaminated soil through removal or a combination of removal, consolidation, and capping. Therefore, they would eliminate exposure pathways and protect human health and the environment and would comply with cleanup standards.

6.3.1.2 Comply with Applicable State and Federal Laws

The selected CULs are consistent with MTCA. Additionally, local, state, and federal laws related to environmental protection, health and safety, transportation, and disposal apply to each proposed alternative. During remedial design, the selected alternative would be designed to comply with applicable, relevant, and appropriate requirements.

6.3.1.3 Provide for Compliance Monitoring

There are three types of compliance monitoring: protection, performance, and confirmational. Protection monitoring is designed to protect human health and the environment during the construction and operation and maintenance phases of the cleanup action. Performance monitoring confirms that the cleanup action has met cleanup and/or performance standards. Confirmational monitoring confirms the long-term effectiveness of the cleanup action once cleanup standards have been met or other performance standards have been attained. Both cleanup alternatives would meet this provision, as both would require varying levels of all three types of compliance monitoring.

6.4 Evaluation of Site Cleanup Alternatives

MTCA states that when selecting a cleanup alternative, preference shall be given to "permanent solutions to the maximum extent practicable." "Permanent" is defined in WAC 173-340-200 as a cleanup action in which the cleanup standards of WAC 173-340-700 through 760 are met without further action being required at the site being cleaned up or at any other site involved with the cleanup action, other than the approved disposal of any residue from the treatment of hazardous substances.

In order to determine the "maximum extent practicable" for each alternative, a disproportionate-cost analysis outlined in WAC 173-340-360(3)(e) is used. Costs are determined to be disproportionate to benefits if the incremental cost of a more expensive alternative over that of a lower-cost alternative exceeds the incremental degree of benefits achieved by the more expensive alternative. Consistent with WAC 173-340-360(3)(f), the evaluation criteria used were a mix of qualitative and quantitative factors, including protectiveness, permanence, effectiveness over the

long term, management of short-term risks, technical and administrative implementability, and consideration of public concerns.

The cleanup alternatives are evaluated by the criteria below.

6.4.1 Protectiveness

Protectiveness is a factor by which human health and the environment are protected by the cleanup action, including the degree to which existing risks are reduced; time required to reduce risk at the facility and attain cleanup standards; on-site and off-site risks resulting from implementing the cleanup action alternative; and improvement of the overall environmental quality. Alternatives 1 and 2 are equally protective, preventing human and ecological exposure by removing from the Site all soils exceeding CULs or capping them in place.

6.4.2 Permanence

Permanence is a factor by which the cleanup action alternative permanently reduces the toxicity, mobility, or volume of hazardous substances. It takes into account the adequacy of the alternative in destroying the hazardous substances, the reduction or elimination of hazardous-substance releases and sources of releases, the degree of irreversibility of the waste-treatment process, and the characteristics and quantity of treatment residuals generated. Removal of soil would be considered the most permanent soil action because it permanently eliminates the source of releases at the Site. Alternatives that include less soil removal would be equivalently less permanent because they would rely on institutional controls, which could be violated or removed from the Site in the future. Therefore, Alternative 1 would be ranked higher for permanence than Alternative 2.

6.4.3 Effectiveness over Long Term

Long-term effectiveness includes the degree of certainty that the alternative will be successful; the reliability of the alternative for the expected duration of hazardous substances remaining on site at concentrations that exceed CULs; the magnitude of residual risk with the alternative in place; and the effectiveness of controls required to manage treatment residues or remaining wastes. Long-term effectiveness of Alternative 1 would be considered slightly higher than for Alternative 2, since it removes all contaminated soil.

6.4.4 Management of Short-Term Risks

Short-term risks to remediation workers, the public, and the environment are assessed under this criterion. Generally, short-term risks are expected to be linearly related to the amount of material handled, treated, and/or transported and disposed of (e.g., worker injury per cubic yard excavated [equipment failure], public exposure per cubic yard-mile transported [highway accident]).

This factor addresses the risk to human health and the environment associated with the alternative during construction and implementation, and the effectiveness of measures that will be taken to manage such risks. Potential public exposure during transport, handling, and excavation required for

both of the alternatives could lead to short-term risks. Alternative 2 requires less off-site transportation and handling of impacted soil and so would involve lower short-term risks; it is therefore ranked higher.

6.4.5 Technical and Administrative Implementability

This factor addresses whether the alternative can be implemented and is technically possible. The availability of necessary materials, regulatory requirements, scheduling, access for construction operations and monitoring, and integration with existing and neighboring site uses must be considered. The proposed alternatives are both well proven and have been employed at many sites throughout the United States, so both are readily implementable and rank equivalently.

6.4.6 Public Concerns

This factor includes considering concerns from individuals, community groups, local governments, tribes, federal and state agencies, and any other organization that may have an interest in or knowledge of the Site and that may have a preferred alternative. The City has involved the public in the proposed reuse of the Site dating back to the development of the Waterfront Subarea Plan, where it was determined with public support that the existing public works facility should relocate off of the waterfront and be replaced with a higher and better use. After the Public Works Facility was relocated, an intense visioning and planning process involving community members provided further focus on what uses would best serve the community. This process was augmented with the Integrated Planning Grant-funded activities, which allowed for site characterization and environmental considerations to be included in the planning process. The planning process determined that the best use for the site would be a privately run hotel which would complement the Public Market and the Wenatchee Historic Downtown and Convention Center. The environmental considerations associated with the property helped in this redevelopment planning process.

Both alternatives would provide opportunity for further review and comment on the plans by the public.

6.4.7 Disproportionate-Cost Analysis

In accordance with WAC 173-340-360(3)(e), the most practicable permanent solution evaluated will be the baseline cleanup action alternative to which the other cleanup action alternatives are compared. On this basis, Alternative 2 is the baseline alternative for this analysis. Table 3 summarizes the comparative analysis. Each alternative was given a rating between 1 and 5 (5 being optimal, 1 being inadequate). Where there were only slight differences, fractional ratings were applied.

Based on these criteria, Alternatives 1 and 2 have close ratings, 4.8 and 4.6, respectively (see Table 3). Evaluating the above factors with the estimated cost for each alternative and a relative increased benefit, Alternative 1 is preferred by 4 percent; however, the cost of Alternative 1 ($2,458,000) is nearly three and a half times the cost of Alternative 2 ($714,500).

6.4.8 Recommended Cleanup Alternative

In evaluating each alternative in relation to protectiveness, permanence, effectiveness over the long term, management of short-term risks, technical and administrative implementability, consideration of public concerns, and cost, Alternative 1 provides negligible gain in consideration of practicable permanent solution criteria when compared to the significantly higher cost. Therefore, Alternative 2 is selected as the preferred cleanup alternative because it is much more cost-effective in meeting the practicable permanent solution criteria.

LIMITATIONS

The services undertaken in completing this report were performed consistent with generally accepted professional consulting principles and practices. No other warranty, express or implied, is made. These services were performed consistent with our agreement with our client. This report is solely for the use and information of our client unless otherwise noted. Any reliance on this report by a third party is at such party's sole risk.

Opinions and recommendations contained in this report apply to conditions existing when services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this report.

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E&E. 2000. Wenatchee landfill targeted brownfield assessment report. TDD: 98-11-0007. Contract: 68-W-0008. Prepared for U.S. Environmental Protection Agency. Ecology & Environment, Inc. June.

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MFA. 2011b. Focused site characterization—25 North Worthen Street property. Prepared for City of Wenatchee Department of Public Works. Maul Foster & Alongi, Inc., Vancouver, Washington. December 9.

MFA. 2013. Data gap investigation summary—former public works yard property. Prepared for City of Wenatchee. Maul Foster & Alongi, Inc., Bellingham, Washington. December 17.

TABLES

Table 1
Cost Estimate Alternative 1—Excavation of All Contaminated Soils
Former Public Works Yard, City of Wenatchee
Wenatchee, Washington

Remedy Components

1 Excavate all impacted soil and dispose of off site.

2 Backfill with clean, imported material.

3 Grade site for stormwater drainage.

Assumptions

1 Density of soil = 1.85 tons/cy.

2 Density of select borrow = 1.85 tons/cy.

3 Density of asphalt = 2 tons/cy.

4 The volume of impacted soil reflects areas shown on Figure 8.

5 Excavated material will be characterized prior to off-site disposal. For cost estimating purposes, it is assumed that all material will be nonhazardous and disposed of at a Subtitle D landfill.

6 One characterization sample will be taken for every 100 cy of soil to be disposed of.

7 Excavation will be screened using field equipment (XRF and PID) to guide the excavation extent prior to confirmation sampling.

8 Import fill will be clean material and compacted to a minimum of 95 percent, based on the Modified Proctor Test (ASTM, 2012).

9 Final grade will be made consistent with surrounding grades.

10 Thirty percent contingency.

Item	Description	Quantity	Units	Unit Cost	Total Cost
Remedial Action					
	Mobilization	1	LS	$62,000	$62,000
	Erosion and sediment control	1	LS	$2,000	$2,000
	Excavation				
	Excavate and direct load impacted material	21,072	TON	$6.50	$136,965
	Confirmation sampling (cPAH/benzene excavations)	36	EA	$400	$14,400
	Confirmation sampling (metals excavation)	203	EA	$60	$12,180
	Imported backfill	21,072	TON	$15	$316,073
	Backfill and compact excavation	21,072	TON	$6.50	$136,965
	Disposal characterization	114	EA	$200	$22,800
	Transport and Subtitle D disposal	21,072	TON	$50	$1,053,575
	Contingency			30%	$527,000
				Remedial Action Subtotal	**$2,284,000**
Professional Services					
	Permitting and agency negotiations	1	LS	$5,000	$5,000
	Survey	1	LS	$5,000	$5,000
	Remedial design	1	LS	$25,000	$25,000
	Procurement	1	LS	$5,000	$5,000
	Construction oversight	6	WK	$14,000	$84,000
	Reporting	1	LS	$10,000	$10,000
	Contingency			30%	$40,000
				Professional Services Subtotal	**$174,000**
TOTAL COST					**$2,458,000**

NOTES: % = percent; ASTM = American Society for Testing and Materials; cPAH = carcinogenic polycyclic hydrocarbon; cy = cubic yard; EA = each; LS = lump sum; PID = photoionization detector; WK = week; XRF = x-ray fluorescence.

Table 2
Cost Estimate Alternative 2—Targeted Excavation and Capping
Former Public Works Yard, City of Wenatchee
Wenatchee, Washington

Remedy Components

1 Excavate impacted soil necessary to support redevelopment (e.g., foundation, utility corridors) and dispose of off site.
2 Cap site through redevelopment (building footprint, parking/walkways, and landscaped areas).

Assumptions

1 Density of soil = 1.85 tons/cy.
2 Density of select borrow = 1.85 tons/cy.
3 Density of asphalt = 2 tons/cy.
4 The volume of impacted soil based on architect's estimate for redevelopment.
5 Import fill (landscape cap) will be clean material and compacted to a minimum of 95 percent, based on the Modified Proctor Test (ASTM, 2012).
6 Excavated material will be characterized prior to off-site disposal at a Subtitle D landfill.
7 Thirty percent contingency.

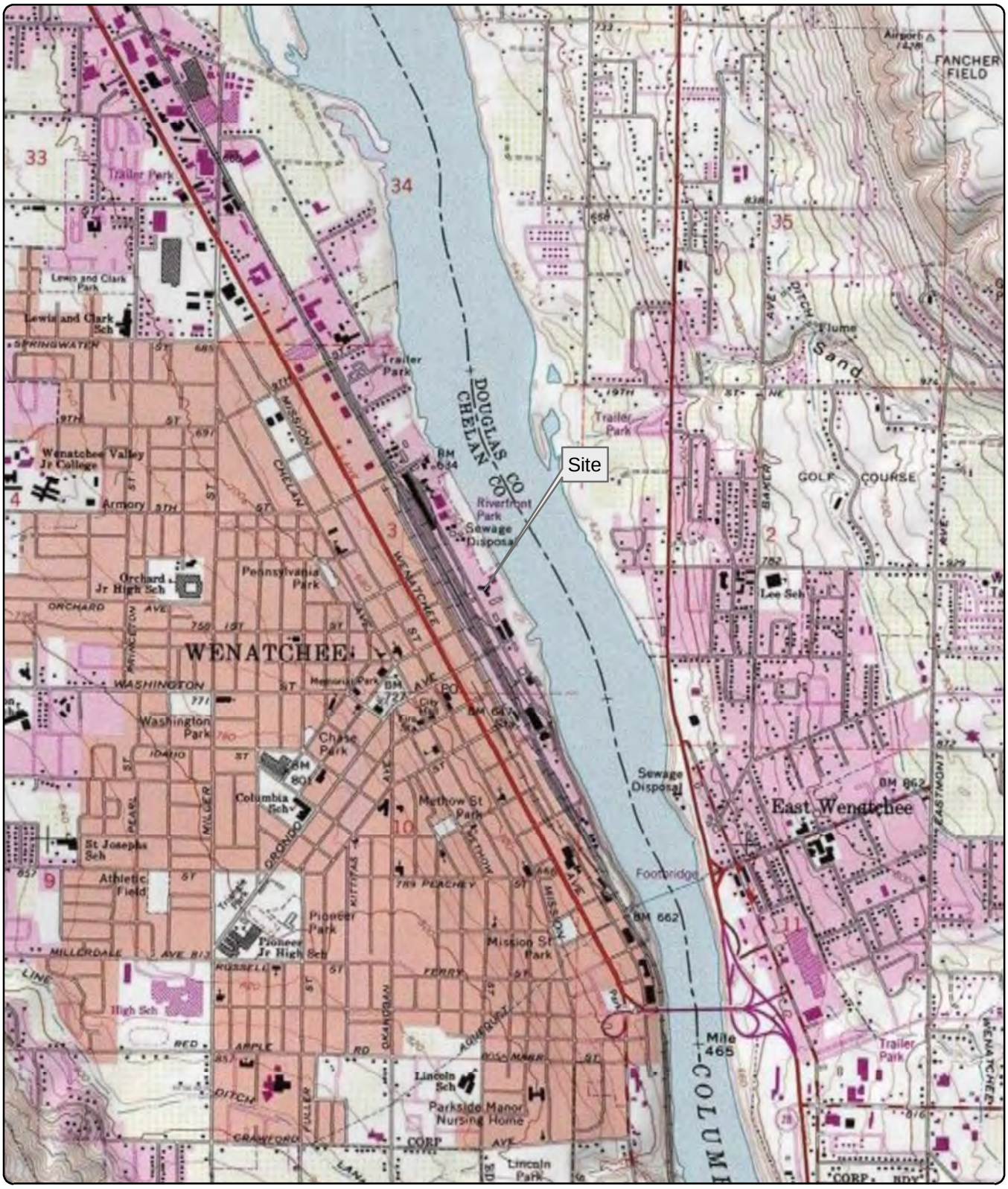
Item	Description	Quantity	Units	Unit Cost	Total Cost
Remedial Action					
	Mobilization	1	LS	$10,000	$10,000
	Erosion and sediment control	1	LS	$2,000	$2,000
	Excavation				
	Excavate and direct load impacted material	2,590	TON	$6.50	$16,835
	Install demarcation fabric	5,000	SY	$2.00	$10,000
	Disposal characterization	14	EA	$300	$4,200
	Transport and Subtitle D disposal	2,590	TON	$50	$129,500
	Building foundation	5,800	CF	$9	$53,704
	Vapor intrusion barrier (building)	30,000	SF	$4.50	$135,000
	Select granular base for future parking	1,591	TON	$19	$30,229
	Asphalt cap/parking lot (cost borne by developer)	574	TON	$70	$40,180
	Landscape cap consisting of 1 ft clean fill	1,521	TON	$15	$22,811
	Contingency			30%	$129,000
				Remedial Action Subtotal	**$583,500**
Professional Services					
	Permitting and agency negotiations	1	LS	$5,000	$5,000
	Environmental covenant	1	LS	$2,000	$2,000
	Soil management plan	1	LS	$5,000	$5,000
	Survey	1	LS	$5,000	$5,000
	Remedial design	1	LS	$25,000	$25,000
	Procurement	1	LS	$5,000	$5,000
	Construction oversight	3	WK	$14,000	$42,000
	Reporting	1	LS	$12,000	$12,000
	Contingency			30%	$30,000
				Professional Services Subtotal	**$131,000**
TOTAL COST					**$714,500**

NOTES: % = percent; ASTM = American Society for Testing and Materials; CF = cubic feet; cy = cubic yard; EA = each; LS = lump sum; SF = square foot; SY = square yard; WK= week.

Table 3
Disproportionate Cost Analysis
Former Public Works Yard, City of Wenatchee
Wenatchee, Washington

Alternative	Description	Protectiveness	Permanence	Long-Term Effectiveness	Management of Short-Term Risks	Implementability	**Average**	Public Concerns	**Total Cost**
Alternative 1	Excavation and off-site disposal of all impacted soil	5	5	5	4	5	**4.8**	TBD	**$ 2,458,000**
Alternative 2	Targeted excavation of impacted soil supporting redevelopment. Capping of remaining impacted soil.	5	4	4	5	5	**4.6**	TBD	**$ 714,500**

FIGURES



Site Address: 25 N Worthen St, Wenatchee, WA
Source: US Geological Survey (1990) 7.5-minute topographic quadrangle: Wenatchee
Section 3, Township 22N, Range 20E

Figure 1
Site Location

Former Public Works Yard Site
Wenatchee, Washington

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0 1,000 2,000
Feet

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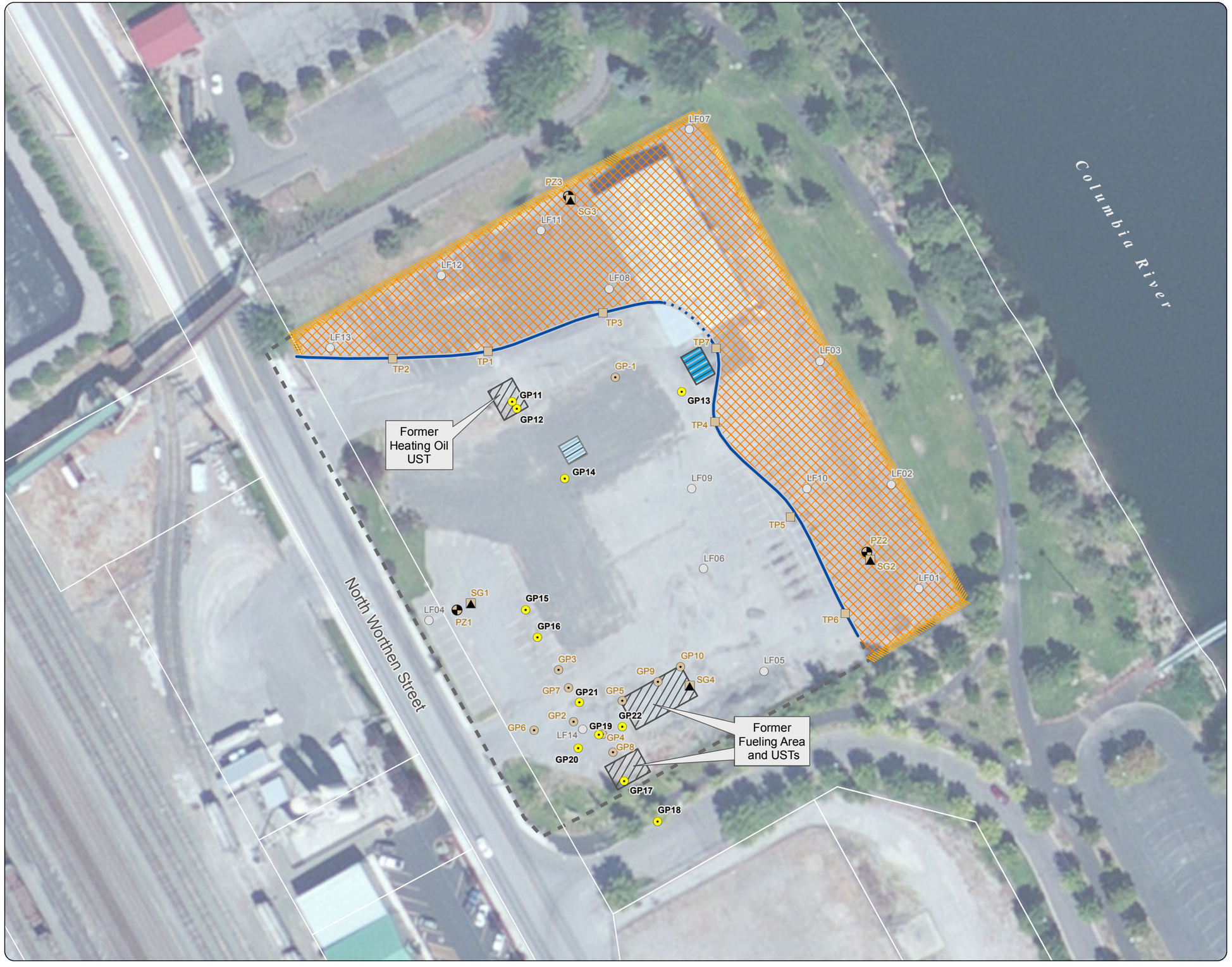
Print Date: 01/23/2014
Approved By: J. Clary
Produced By: A. Padilla
Project: 0380.02.04-05

Figure 2
Site Features and Investigation Locations

Former Public Works Yard Site
Wenatchee, Washington



Legend

- 2000 Sample Location

2010/2011 Sample Locations

- Geoprobe Boring
- Test Pit
- Soil Gas Sample
- Piezometer

2013 Investigation Locations

- Geoprobe

- Landfill Boundary (dashed where approximate)
- Measured Landfill Area
- Former USTs
- Oil-Water Separator
- Former Oil-Water Separator
- Property
- Chelan County Taxlots

Notes:
1. USTs = Underground storage tanks

0 35 70
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; taxlots obtained from Chelan County; 2000 sample locations from targeted brownfield assessment conducted by Ecology & Environment, Inc. and are approximate; 2011 and 2013 sample locations surveyed by Maul Foster & Alongi, Inc. using GeoXH 2005.

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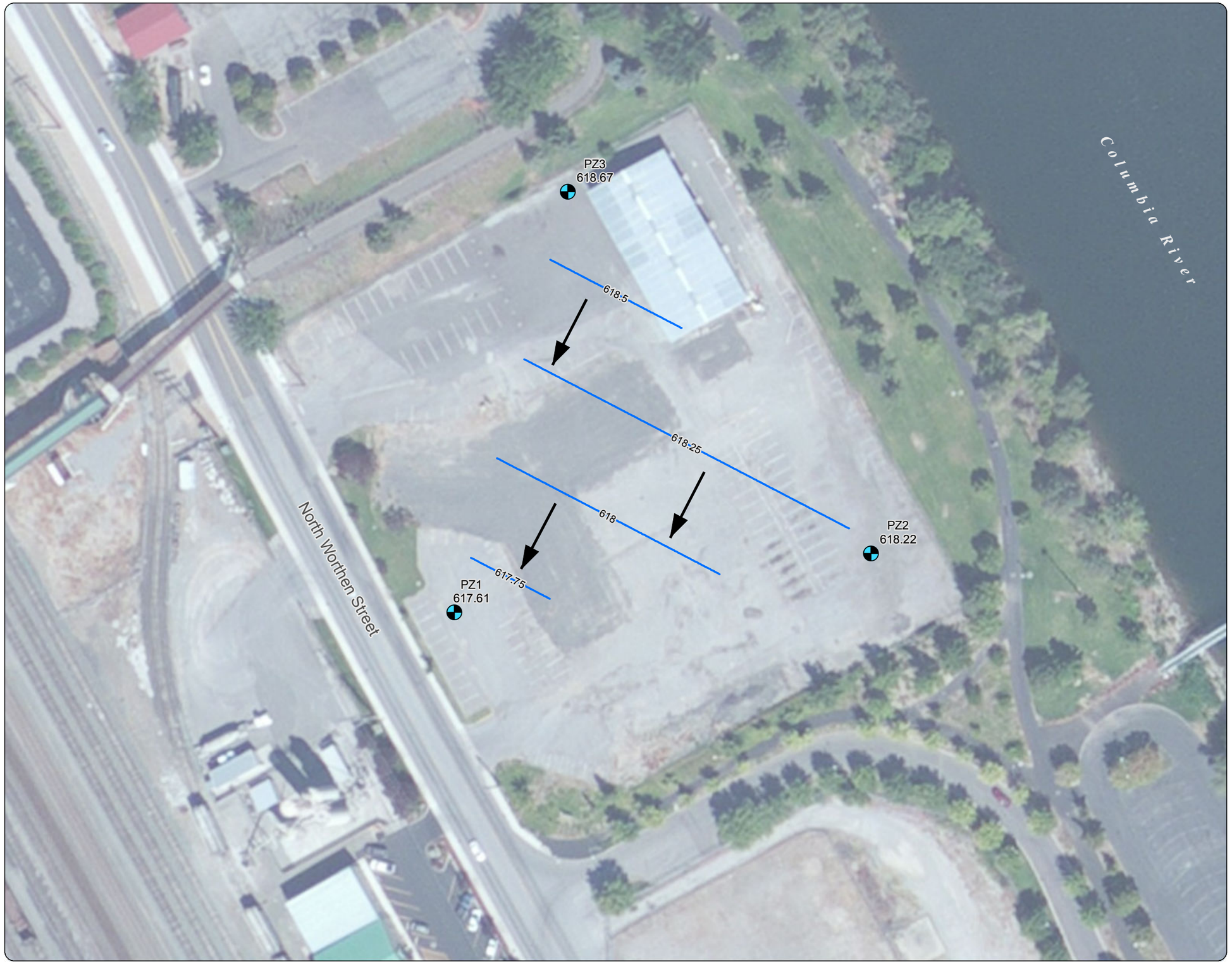
Print Date: 1/31/2014
Approved By: J. Clary
Produced By: apadilla
Project: 0380.02.04

Figure 3
Potentiometric Surface Map
November 2010

Former Public Works Yard Site
Wenatchee, Washington



Legend

- Monitoring Well (with Groundwater Elevation Measurement, in Feet)
- 618 — Groundwater Elevation Contour (Feet)
- Flow Direction

0 35 70
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online

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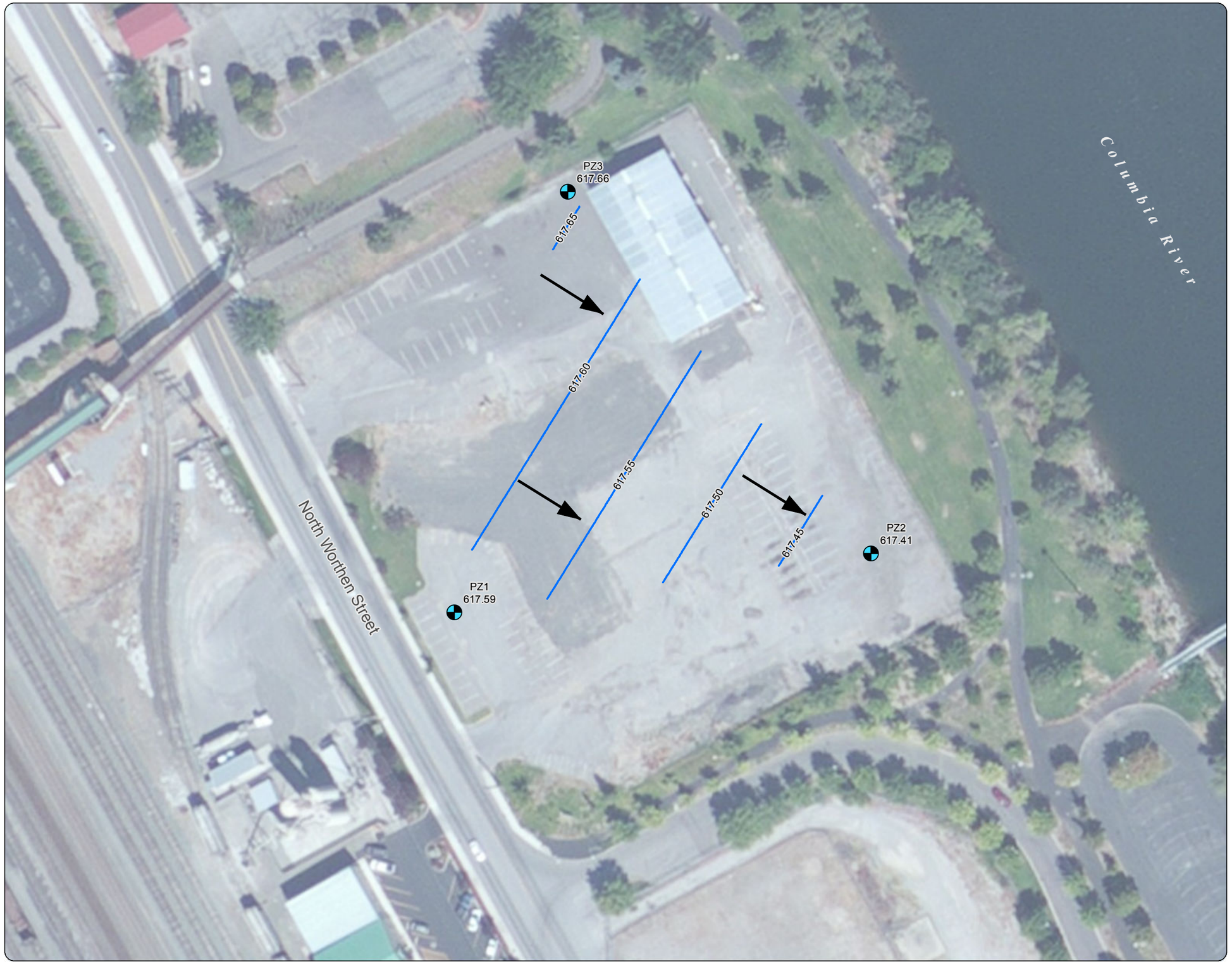
File: X:\0380.02 City of Wenatchee\04 Data Gap Investigation\05\Projects\Fig3_Potentiometric Surface Map November 2010.mxd
Print Date: 01/23/2014
Approved By: J. Clary
Produced By: A. Padilla
Project: 0380.02.04-05

Figure 4
Potentiometric Surface Map
November 2013

Former Public Works Yard Site
Wenatchee, Washington



Legend

- Monitoring Well (with Groundwater Elevation Measurement, in Feet)
- 617.50 Groundwater Elevation Contour (Feet)
- Flow Direction

0 35 70
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online

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File: X:\0380.02 City of Wenatchee\04 Data Gap Investigation\05\Projects\Fig3_Potentiometric Surface Map November 2013.mxd
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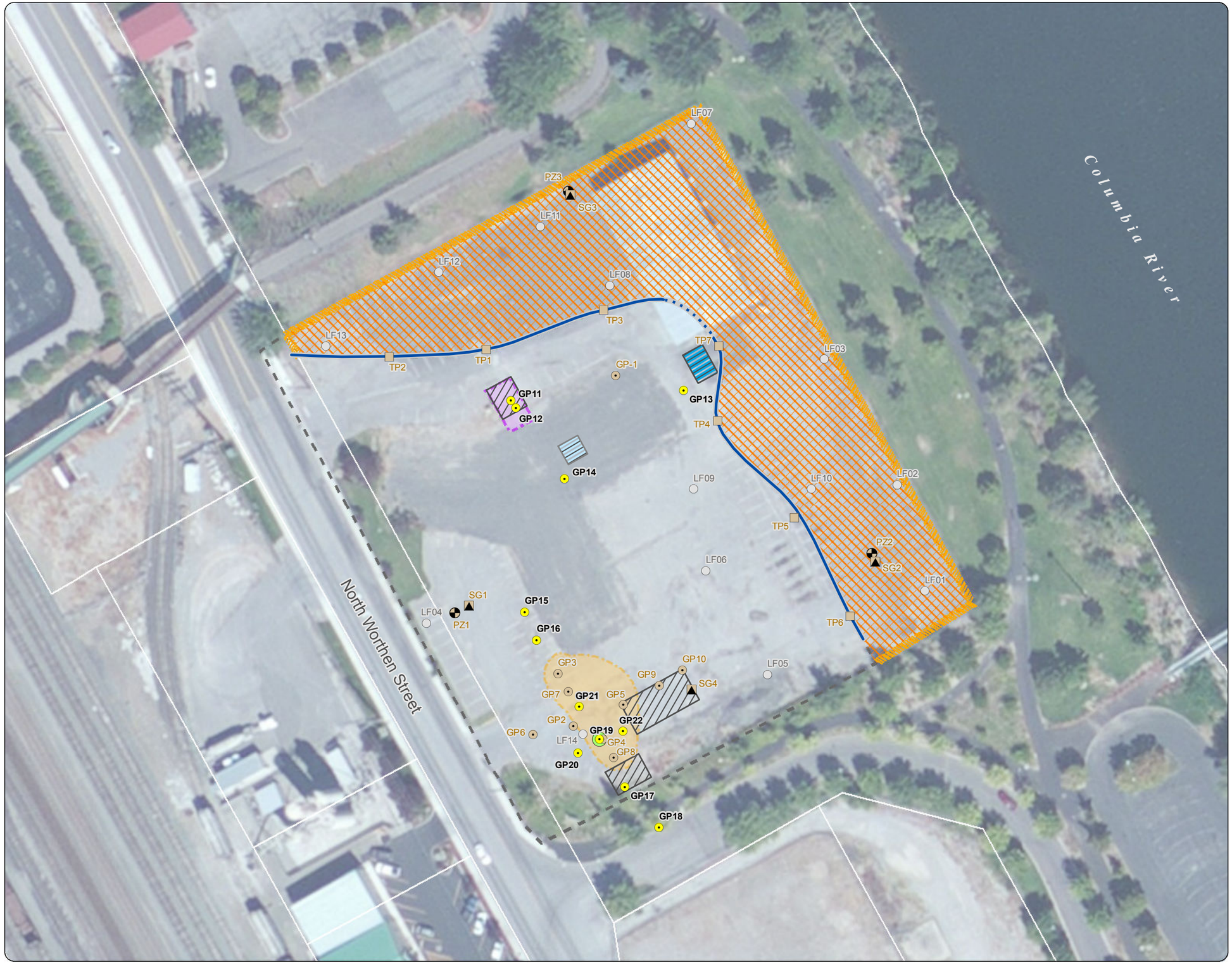

Figure 5
Approximate Lateral Extent of Impacted Soil

Former Public Works Yard Site
Wenatchee, Washington

Legend

- 2000 Sample Location

2010/2011 Sample Locations

- Geoprobe Boring
- Test Pit
- Soil Gas Sample
- Piezometer

2013 Investigation Locations

- Geoprobe

- Landfill Boundary (dashed where approximate)
- Approximate Lateral Extent of cPAH Impacted Soil
- Approximate Lateral Extent of Benzene and cPAH Impacted Soil
- Measured Landfill Area
- Former USTs
- Oil-Water Separator
- Former Oil-Water Separator
- Property
- Chelan County Taxlots

Notes:
1. cPAH = Carcinogenic polycyclic aromatic hydrocarbons
2. USTs = Underground storage tanks

0 35 70
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; taxlots obtained from Chelan County; 2000 sample locations from targeted brownfield assessment conducted by Ecology & Environment, Inc. and are approximate; 2011 and 2013 sample locations surveyed by Maul Foster & Alongi, Inc. using GeoXH 2005.

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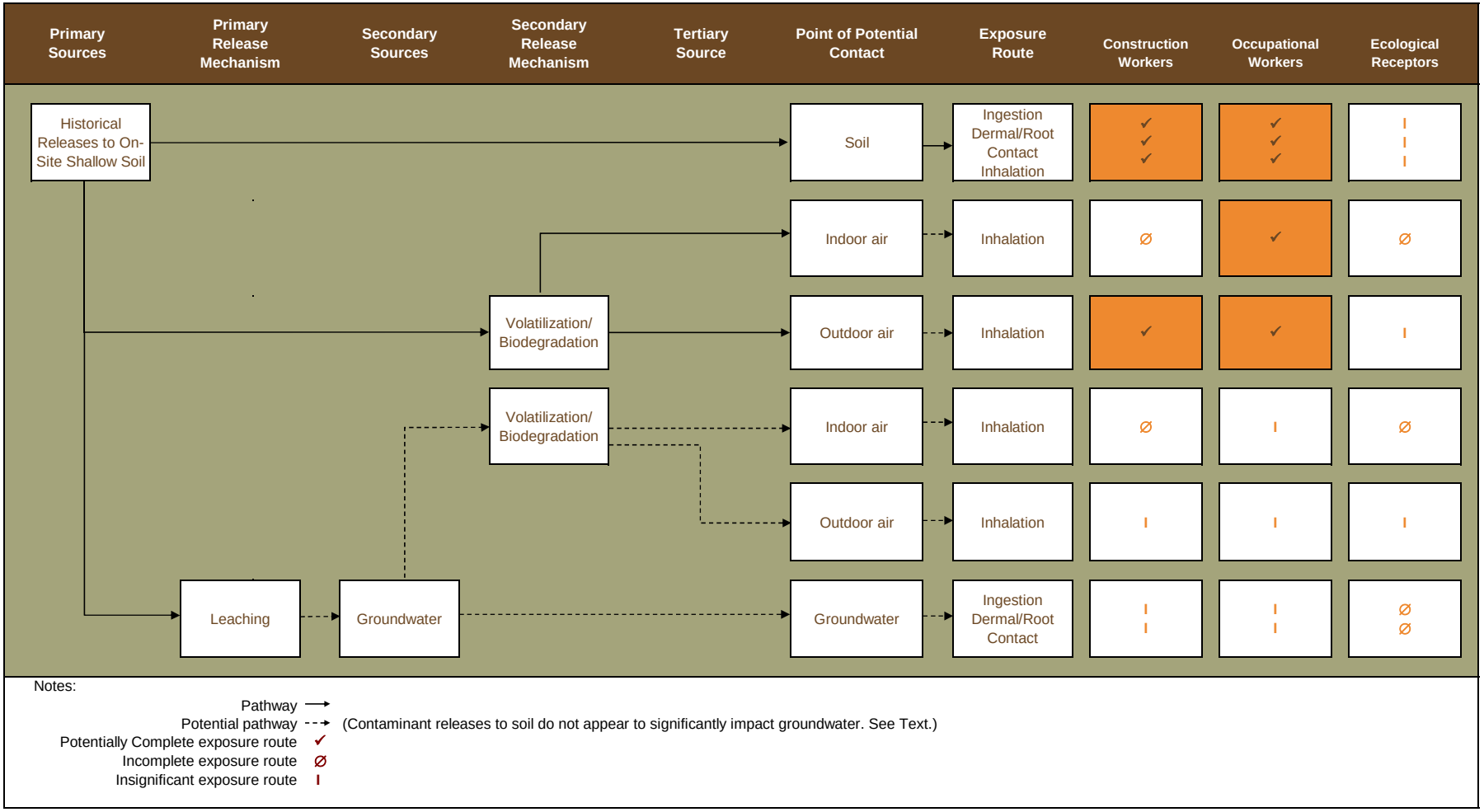
Path: X:\0380.02 City of Wenatchee\04 Data Gap Investigation\05\Projects\Fig5_Approximate Lateral Extent of Impacted Soil.mxd
Print Date: 1/31/2014
Approved By: J. Clary
Produced By: apadilla
Project: 0380.02.04-05

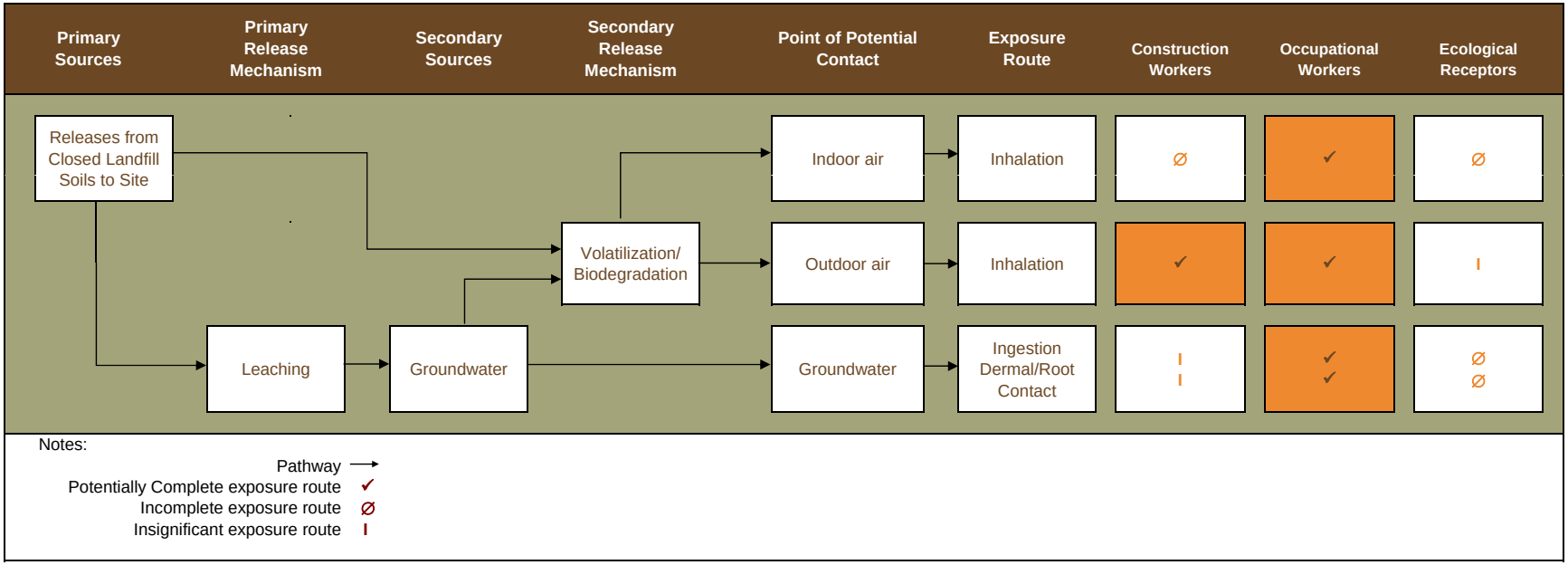
Figure 6
Conceptual Site Model
Former Public Works Yard Site, City of Wenatchee
Wenatchee, Washington



Notes:

Pathway →
Potential pathway --→ (Contaminant releases to soil do not appear to significantly impact groundwater. See Text.)
Potentially Complete exposure route ✓
Incomplete exposure route Ø
Insignificant exposure route I

Figure 7
Exposure Scenario from Landfill to the Site
Former Public Works Yard Site, City of Wenatchee
Wenatchee, Washington

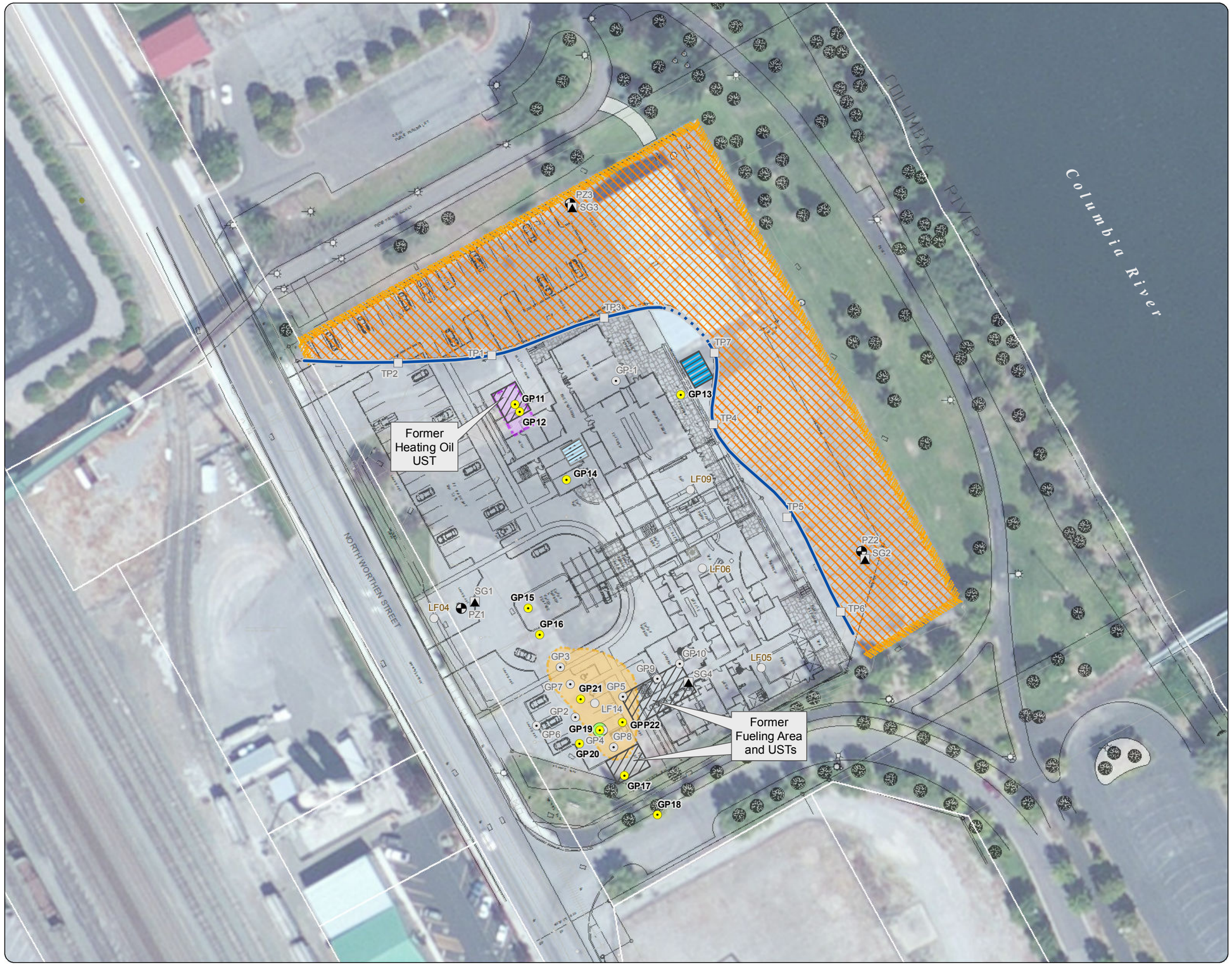


Notes:

Pathway →
Potentially Complete exposure route ✓
Incomplete exposure route Ø
Insignificant exposure route I

Figure 8
Site Development Plans Related to Environmental Contamination

Former Public Works Yard Site
Wenatchee, Washington



Legend

- 2000 Sample Location
- 2011 Sample Locations
  - Geoprobe Boring
  - Test Pit
  - Soil Gas Sample
  - Piezometer
- 2013 Investigation Locations
  - Geoprobe
- Landfill Boundary (dashed where approximate)
- Approximate Lateral Extent of cPAH Impacted Soil
- Approximate Lateral Extent of Benzene and cPAH Impacted Soil
- Measured Landfill Area
- Former USTs
- Oil-Water Separator
- Former Oil-Water Separator
- Chelan County Taxlots

Notes:
1. cPAH = Carcinogenic polycyclic aromatic hydrocarbons
4. USTs = Underground storage tanks

0 35 70
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; taxlots obtained from Chelan County; 2000 sample location from targeted brownfield assessment conducted by Ecology & Environment, Inc. and is approximate; 2011 and 2013 sample locations surveyed by Maul Foster & Alongi, Inc. using GeoXH 2005.

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Path: X:\0380.02 City of Wenatchee\04 Data Gap Investigation\05\Projects\Fig8_Site Development Plans Related to Environmental Contamination.mxd
Print Date: 1/31/2014
Approved By: koslund
Produced By: apadilla
Project: 0380.02.04-03

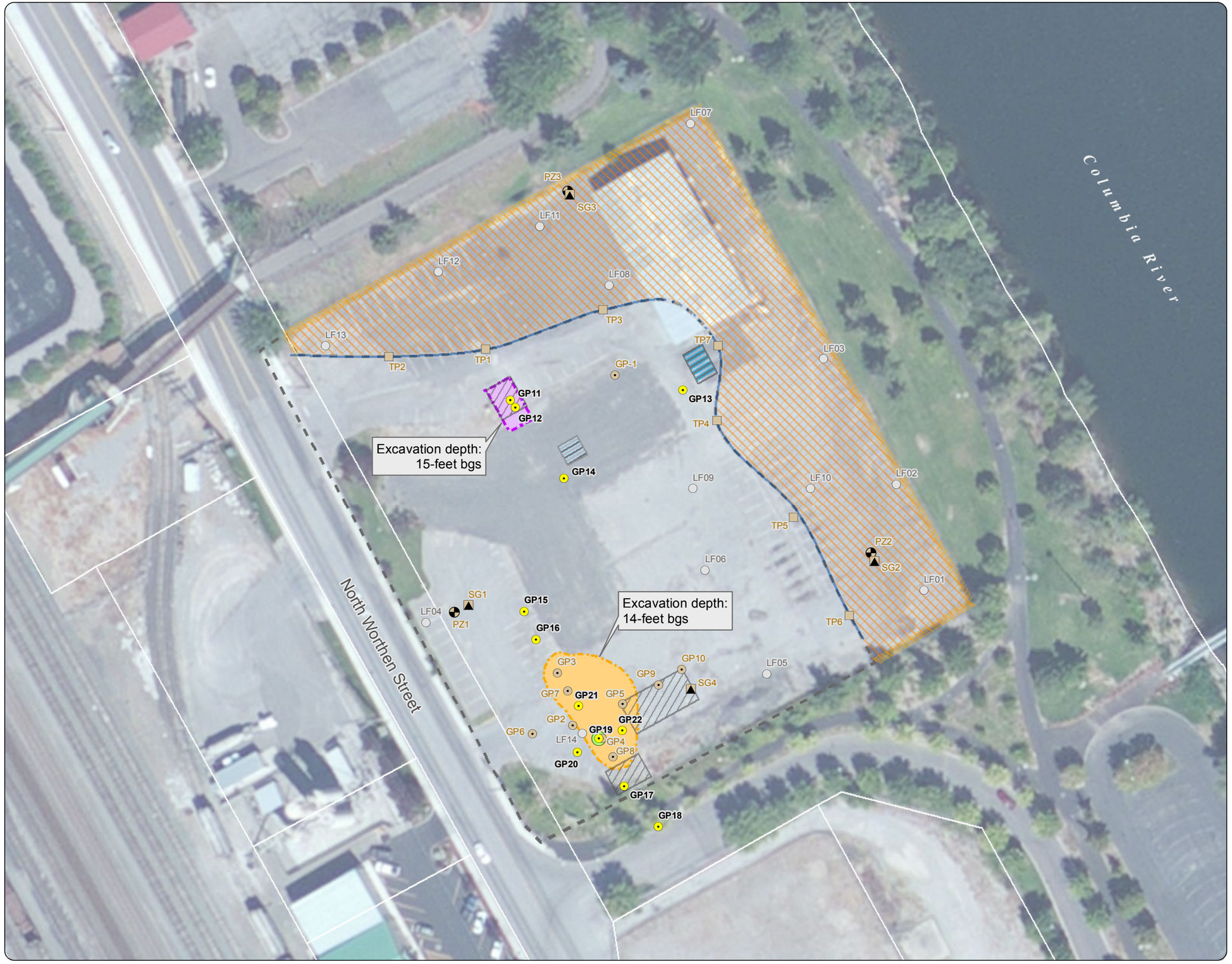

Figure 9
Alternative 1 Extent of Excavation

Former Public Works Yard Site
Wenatchee, Washington

Legend

- 2000 Sample Location

2010/2011 Sample Locations

- Geoprobe Boring
- Test Pit
- Soil Gas Sample
- Piezometer

2013 Investigation Locations

- Geoprobe

- Landfill Boundary (dashed where approximate)
- Approximate Lateral Extent of cPAH Impacted Soil
- Approximate Lateral Extent of Benzene and cPAH Impacted Soil
- Measured Landfill Area
- Former USTs
- Oil-Water Separator
- Former Oil-Water Separator
- Property
- Chelan County Taxlots

Notes:
1. cPAH = Carcinogenic polycyclic aromatic hydrocarbons
2. USTs = Underground storage tanks
3. Shallow soils impacted by arsenic and/or lead requiring excavation to 6-feet bgs are not defined on this figure, but assumed to cover one-half of the non-landfill portion of the property.

0 35 70
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; taxlots obtained from Chelan County; 2000 sample locations from targeted brownfield assessment conducted by Ecology & Environment, Inc. and are approximate; 2011 and 2013 sample locations surveyed by Maul Foster & Alongi, Inc. using GeoXH 2005.

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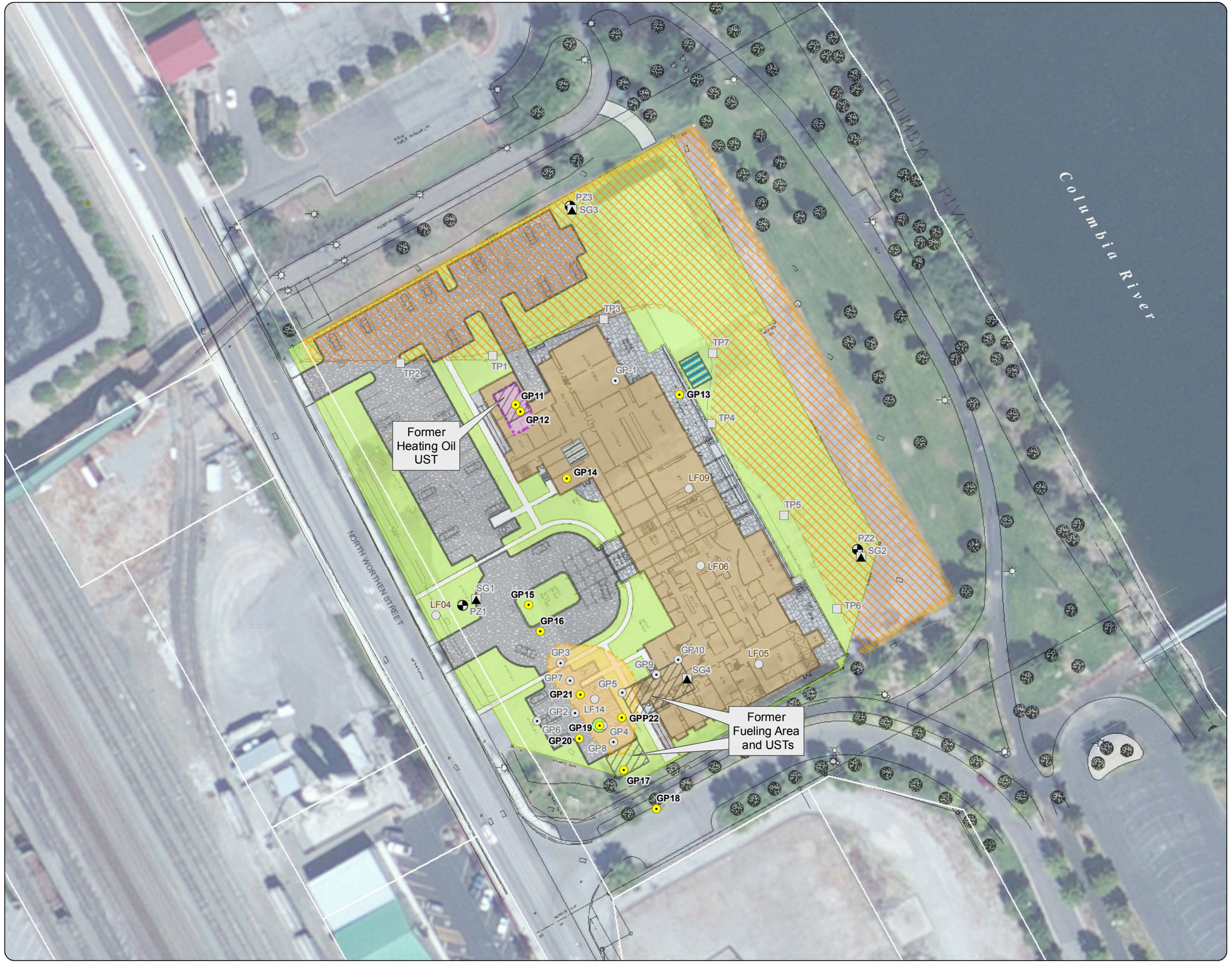
Print Date: 1/31/2014
Approved By: J. Clary
Produced By: apadilla
Project: 0380.02.04-05

Figure 10
Alternative 2
Redevelopment Cap

Former Public Works Yard Site
Wenatchee, Washington



Legend

- 2000 Sample Location

2011 Sample Locations

- Geoprobe Boring
- Test Pit
- Soil Gas Sample
- Piezometer

2013 Investigation Locations

- Geoprobe
- Landfill Boundary (dashed where approximate)
- Approximate Lateral Extent of cPAH Impacted Soil
- Approximate Lateral Extent of Benzene and cPAH Impacted Soil
- Measured Landfill Area
- Former USTs
- Oil-Water Separator
- Former Oil-Water Separator
- Chelan County Taxlots

Notes:
1. cPAH = Carcinogenic polycyclic aromatic hydrocarbons
4. USTs = Underground storage tanks

0 35 70
Feet

Source: Aerial photograph obtained from Esri ArcGIS Online; taxlots obtained from Chelan County; 2000 sample location from targeted brownfield assessment conducted by Ecology & Environment, Inc. and is approximate; 2011 and 2013 sample locations surveyed by Maul Foster & Alongi, Inc. using GeoXH 2005.

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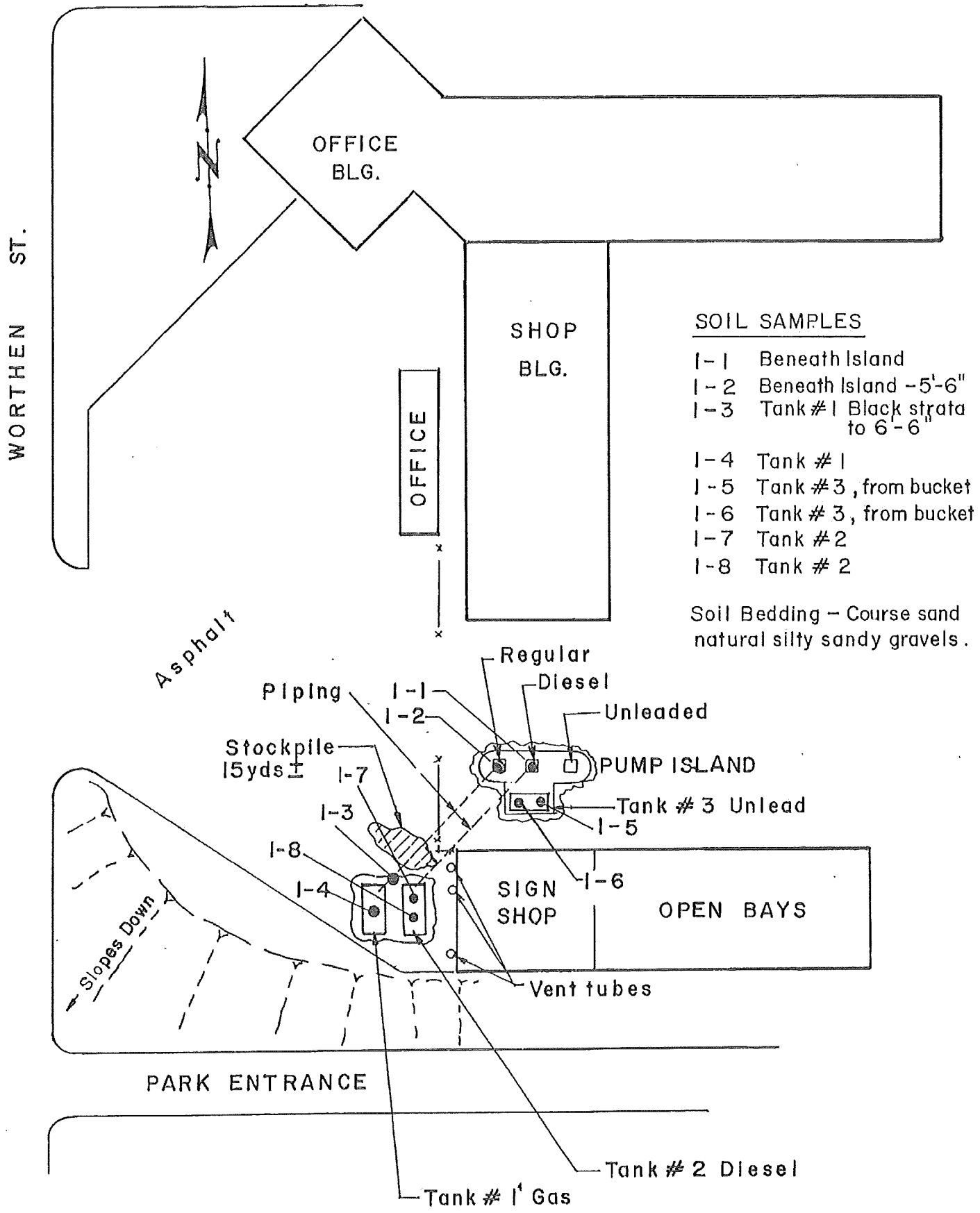
Path: X:\0380.02 City of Wenatchee\04 Data Gap Investigation\05\Projects\Fig10_Alternative 2 Redevelopment Cap.mxd
Print Date: 1/31/2014
Approved By: koslund
Produced By: apadilla
Project: 0380.02.04-03

APPENDIX

PREVIOUS INVESTIGATION RESULTS

SITE CHECK/SITE ASSESSMENT FOR PERMANENT CLOSURE OF UNDERGROUND STORAGE TANKS ANALYTICAL RESULTS (FORSGREN, 1995)



SITE MAP

FORSGREN ASSOCIATES/P.A.

Anatek Labs
1917 S. Main Moscow, ID 83843 (208) 883-BTEX (2839) FAX: (208) 882-9246

December 20, 1994

Forsgren Associates / P.A.
125 McGee Street, S.E.
East Wenatchee, WA 98802
Attn: Scott Morrill

Items: Results of analysis for samples received 12/14/94.
Sample Log-in number: **20595**
Project Name: City of Wenatchee
Date Sampled: 12/13/94
Report # 94-1220-FAP Page 1 of 2

Diesel by WTPH-D; Gasoline by WTPH-G; BTEX by EPA 8020
Lead by EPA 3050 & 7420; mg/Kg = ppm

Sample Name	*Matrix*	*Analysis Date*	*Analyte*	*Concentration*
# 1-1	Soil	12/14/94	Diesel	510 mg/Kg
# 1-2	Soil	12/15/94	Gasoline	< 5.0 mg/Kg
			Benzene	< 0.005 mg/Kg
			Toluene	< 0.005 mg/Kg
			Ethylbenzene	< 0.005 mg/Kg
			Xylene(total)	< 0.015 mg/Kg
		12/19/94	Lead	8.7 mg/Kg
# 1-3	Soil	12/15/94	Gasoline	< 5.0 mg/Kg
			Benzene	< 0.005 mg/Kg
			Toluene	< 0.005 mg/Kg
			Ethylbenzene	< 0.005 mg/Kg
			Xylene(total)	< 0.015 mg/Kg
		12/19/94	Lead	140 mg/Kg
# 1-4	Soil	12/15/94	Gasoline	< 5.0 mg/Kg
			Benzene	< 0.005 mg/Kg
			Toluene	< 0.005 mg/Kg
			Ethylbenzene	< 0.005 mg/Kg
			Xylene(total)	0.034 mg/Kg
		12/19/94	Lead	1,920 mg/Kg

Anatek Labs
1917 S. Main Moscow, ID 83843 (208) 883-BTEX (2839) FAX: (208) 882-9246

Sample Name	*Matrix*	*Analysis Date*	*Analyte*	*Concentration*
# 1-5	Soil	12/15/94	Gasoline	< 5.0 mg/Kg
			Benzene	< 0.005 mg/Kg
			Toluene	< 0.005 mg/Kg
			Ethylbenzene	< 0.005 mg/Kg
			Xylene(total)	< 0.015 mg/Kg
# 1-6	Soil	12/15/94	Gasoline	< 5.0 mg/Kg
			Benzene	< 0.005 mg/Kg
			Toluene	< 0.005 mg/Kg
			Ethylbenzene	< 0.005 mg/Kg
			Xylene(total)	< 0.015 mg/Kg
# 1-7	Soil	12/14/94	Diesel	< 25.0 mg/Kg
# 1-8	Soil	12/14/94	Diesel	90 mg/Kg

Mike Pearson
Laboratory Director

Anatek Labs
1917 S. Main Moscow, ID 83843 (208) 883-BTEX (2839) FAX: (208) 882-9246

February 27, 1995

Forsgren Associates / P.A.
125 McGee Street, S.E.
East Wenatchee, WA 98802
Attn: Scott Morrill

Items: Results of analysis for samples received 2/16/95.
Sample Log-in number: **20753**
Project Name: City of Wenatchee Shops
Date Sampled: 2/15/95
Report # 95-0227-FAP

Total Lead by EPA 3050 & 7420; TCLP Lead by EPA 1311 & 7420
mg/Kg & mg/L = ppm

Sample Name	*Matrix*	*Analysis Date*	*Analyte*	*Concentration*
# 1	Soil	2/21/95	Total Lead	166 mg/Kg
		2/24/95	TCLP Lead	0.3 mg/L
# 2	Soil	2/21/95	Total Lead	181 mg/Kg
		2/24/95	TCLP Lead	0.2 mg/L
# 3	Soil	2/21/95	Total Lead	197 mg/Kg
# 4	Soil	2/21/95	Total Lead	272 mg/Kg

Mike Rearson
Laboratory Director

WENATCHEE LANDFILL TARGETED BROWNFIELD ASSESSMENT REPORT ANALYTICAL RESULTS (E&E, 2000)

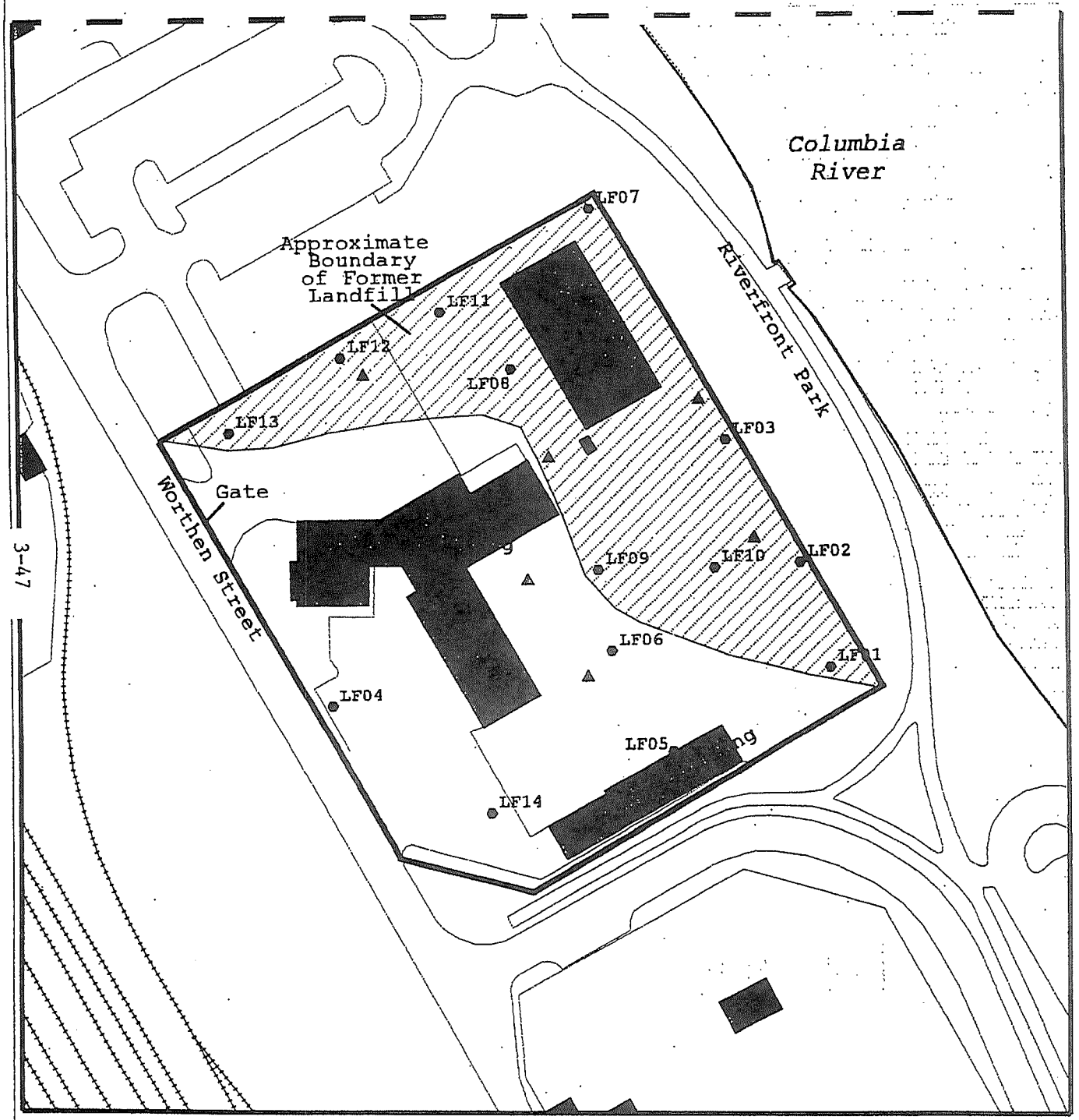


Figure 3-1

Sample Location Map

Wenatchee, Washington

Legend

- PWD Property
- Sample Location
- Building
- Approximate Boundary of Former Landfill
- Railroad
- Storm Drain

N

100 0 100

Feet

ecology and environment, inc.
International Specialists in the Environment
Seattle, Washington

Table 3-1

SAMPLE COLLECTION INFORMATION
WENATCHEE, WASHINGTON

Date	Time	Station ID	Matrix	Depth[a]	Sample Description	Analyses
6/29/99	0800	LF01TB00	Water	N/A	Trip blank	VOCs
6/29/99	0800	LF01TB01	Water	N/A	Trip blank	VOCs
6/29/99	0930	LF01SB04	Subsurface soil	0' - 4' bgs	Dry gray to brown sand/gravel fill	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/29/99	1000	LF01SB12	Subsurface soil	8' - 12' bgs	Moist brown sand with silt and gravel; Red brick 9' - 10'; Wood at 10'.	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/29/99	1030	LF01SB22	Subsurface soil	18' - 22' bgs	Dry gray clay 18'; medium brown sand 19' - 20'; fine gray sand 22'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/29/99	1120	LF02SB04	Subsurface soil	0' - 4' bgs	Dry brown sand, little silt	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/29/99	1145	LF02SB12	Subsurface soil	8' - 12' bgs	Dry brown silt and sand, clay to 9'; dry white coarse sand 9' - 10'; dry brown silt and sand 10' - 11'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/29/99	1215	LF02SB22	Subsurface soil	18' - 22' bgs	Dry brown/gray sand	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/29/99	1430	LF02SB32	Subsurface soil	28' - 32' bgs	Dry brown/gray sand	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/29/99	1545	LF02GW32	Groundwater	32' bgs	Groundwater	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/30/99	0900	LF03SB04	Subsurface soil	0' - 4' bgs	Dry brown and gray sand with gravel	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/30/99	0920	LF03SB12	Subsurface soil	8' - 12' bgs	Brown sand, little gravel, clay, and silt; wood fragments 10' - 10.5'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/30/99	1740	LF03SB22	Subsurface soil	18' - 22' bgs	Dry black sand, rocks, and wood; wet at 22'; some garbage debris	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
6/30/99	1800	LF03SB32	Subsurface soil	28' - 32' bgs	Wet black organic sand with brown sand at 30' grading to gray sand at bottom; few fines	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs

Key is at the end of the table.

Table 3-1 (CONTINUED)

SAMPLE COLLECTION INFORMATION
WENATCHEE, WASHINGTON

Date	Time	Station ID	Matrix	Depth[a]	Sample Description	Analyses
6/30/99	1900	LF03GW32	Groundwater	32' bgs	Groundwater	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/30/99	1000	LF04SB04	Subsurface soil	0' - 4' bgs	Dry brown sand, little silt, trace gravel	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/30/99	1145	LF04SB12	Subsurface soil	8' - 12' bgs	Dry brown sand, trace silt and gravel	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
6/30/99	1400	LF04GW24	Groundwater	24' bgs	Groundwater	VOCs, SVOCs, CL Pesticides/PCBs, TAL metals, PCDDs/PCDFs
7/1/99	1100	LF05SB04	Subsurface soil	0' - 4' bgs	Dry brown sand with gravel	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/1/99	1140	LF05SB12	Subsurface soil	8' - 12' bgs	Dry brown sand with gravel	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
6/30/99	0830	LF01TB02	Water	N/A	Trip blank	VOCs
6/30/99	0830	LF01TB03	Water	N/A	Trip blank	VOCs
7/1/99	1240	LF06SB04	Subsurface soil	0' - 4' bgs	Dry brown sand with little gravel	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/1/99	1330	LF06SB12	Subsurface soil	8' - 12' bgs	Dry brown sand with trace gravel	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/1/99	1415	LF07SB04	Subsurface soil	0' - 4' bgs	Brown sand with gravel; little glass and paper from 3' - 3.5'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/1/99	1445	LF07SB12	Subsurface soil	8' - 12' bgs	Dry brown sand with gravel; Styrofoam and paper 8' - 10.5'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/1/99	1455	LF07SB22	Subsurface soil	18' - 22' bgs	Dry brown sand with gravel; wood chips and paper; Wet below 20'.	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/1/99	1620	LF08SB04	Subsurface soil	0' - 4' bgs	Dry brown sand, trace gravel and silt	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/1/99	1710	LF08SB12	Subsurface soil	8' - 12' bgs	Dry brown sand, gravel and silt	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs

Key is at the end of the table.

Table 3-1 (CONTINUED)

SAMPLE COLLECTION INFORMATION
WENATCHEE, WASHINGTON

Date	Time	Station ID	Matrix	Depth[a]	Sample Description	Analyses
7/2/99	0839	LF01RB00	Water	N/A	Rinsate blank	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/2/99	0845	LF01RB01	Water	N/A	Rinsate blank	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/6/99	1625	LF14SS00	Subsurface soil	0' - 4' bgs	Dry brown sand, gravel and silt	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/6/99	1720	LF14SB08	Subsurface soil	8' - 12' bgs	Dry brown sand, gravel and silt	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/7/99	1000	LF14GW24	Groundwater	24' bgs	Groundwater	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/799	1000	LF01TB04	Water	N/A	Trip blank	VOCs
7/799	1415	LF11SS00	Subsurface soil	0' - 4' bgs	Dry brown and gray sand	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/799	1505	LF11SB12	Subsurface soil	8' - 12' bgs	Dry dark gray/black sand with brown and white glass; charcoal 9' - 11'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/799	1540	LF11SB22	Subsurface soil	18' - 22' bgs	Dry gray sand and gravel to cobbles 18' - 21'; gray gravel 21' - 22'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/799	1625	LF11GW24	Groundwater	24' bgs	Groundwater	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/8/99	0910	LF12SB04	Subsurface soil	0' - 4' bgs	Dry dark gray sand with a small interval of electric blue debris	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/8/99	0920	LF12SB12	Subsurface soil	8' - 12' bgs	Moist dark gray sandy loam	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/8/99	0935	LF12SB22	Subsurface soil	18' - 22' bgs	Dry gray sandy silt 18' - 20'; white quartzitic sand 20' - 20.5'; poorly sorted gray sand 20.5' - 22'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/8/99	1000	LF12SB29	Subsurface soil	25' - 29' bgs	Dry quartzitic gravel and very fine well-sorted sand; Geoprobe™ refusal at 29'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/8/99	0800	LF01TB05	Water	N/A	Trip blank	VOCs

Key is at the end of the table.

Table 3-1 (CONTINUED)

SAMPLE COLLECTION INFORMATION
WENATCHEE, WASHINGTON

Date	Time	Station ID	Matrix	Depth[a]	Sample Description	Analyses
7/8/99	1340	LF13SB04	Subsurface soil	0' - 4' bgs	Dry dark gray sand with gravel 0' -2'; dry dark brown well-sorted sand 2' - 3'; dry light brown fine sand 3' - 4'; 1" diameter quartzitic rock	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/8/99	1400	LF13SB12	Subsurface soil	8' - 12' bgs	Dry dark gray very fine sand 8' - 10'; dry light brown quartzitic sand 10' - 12'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/8/99	1440	LF13SB22	Subsurface soil	18' - 22' bgs	Dry brown gravel 18' - 18.5'; Moist gray fine sorted sand 18.5' - 22';	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/8/99	1625	LF13SB32	Subsurface soil	24' - 25' bgs	Moist dark gray well-sorted sand	TAL metals, VOCs, SVOCs
7/8/99	1745	LF06SB04B	Subsurface soil	0' - 4' bgs	Dry brown sand with little gravel	PCDDs/PCDFs
7/9/99	0900	LF09SB04	Subsurface soil	0' - 3' bgs	Dry fine sand and cobbles with white quartzitic rocks	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/9/99	0945	LF09SB12	Subsurface soil	8' - 12' bgs	Dry gray fine sand and pebbles 8' - 9.5'; Dry red-stained soil 9.5' - 10'; Dry gray fine well-sorted sand 10'-12'	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/9/99	0930	LF09SB22	Subsurface soil	18' - 21' bgs	Dry dark brown sand and gravel; cobbles up to 3" diameter with white and black ground up quartzitic granite	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/9/99	0700	LF01TB06	Water	N/A	Trip blank	VOCs
7/9/99	0705	LF01TB07	Water	N/A	Trip blank	VOCs
7/9/99	1350	LF01RB03	Water	N/A	Rinsate blank	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/9/99	1500	LF10SB04	Subsurface soil	0' - 4' bgs	Asphalt, gravel and sand	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs
7/9/99	1530	LF10SB12	Subsurface soil	8' - 12' bgs	Woody debris	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs, PCDDs/PCDFs

Key is at the end of the table.

Table 3-1 (CONTINUED)

SAMPLE COLLECTION INFORMATION
WENATCHEE, WASHINGTON

Date	Time	Station ID	Matrix	Depth[a]	Sample Description	Analyses
7/9/99	1600	LF011DWA	Water	N/A	Investigation-derived waste	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs
7/9/99	1605	LF011DWB	Water	N/A	Investigation-derived waste	TAL metals, VOCs, SVOCs, CL Pesticides/PCBs

[a] The soil samples were composite samples except as listed in Section 3.3.1 for the VOC aliquots

Key:

bgs = Below ground surface.
CL Pesticides = Chlorinated pesticides.
CLP = Contract Laboratory Program.
EPA = United States Environmental Protection Agency.
Geoprobe™ = Geoprobe™ direct-push sampler.
ID = Identification.
N/A = Not applicable.
PCBs = Polychlorinated biphenyls.
PCDDs = Polychlorinated dibenzo-dioxins.
PCDFs = Polychlorinated dibenzo-furans.
SVOCs = Semivolatile organic compounds.
TAL = Target analyte list.
VOCs = Volatile organic compounds.

Table 3-2

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

LOCATION ID	Residential Cleanup	Industrial Cleanup	LF01SB04	LF01SB12	LF01SB22	LF02SB04	LF02SB12	LF02SB22	LF02SB32
DEPTH	Standards	Standards	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	28 - 32 ft bgs
VOCs (µg/kg)									
2-Butanone	6,900,000[d]	27,000,000[d]	4 J	3 J	13 J	2 J	11 U	31	2 J
Acetone	8,000,000[b]	350,000,000	32 U	14 U	150 U	12 U	11 U	110	11 U
Benzene	500[a]	500[a]	11 U	12 U	14 U	11 U	11 U	13 U	11 U
Chlorobenzene	1,600,000[b]	70,000,000[c]	11 U	12 U	14 U	11 U	11 U	4 J	11 U
Ethylbenzene	20,000[a]	20,000[a]	11 U	2 J	14 U	11 U	11 U	8 J	11 U
Xylene (total)	20,000[a]	20,000[a]	3 J	14	14 U	2 J	2 J	43	11 U
SVOCs (µg/kg)									
2-Methylnaphthalene	-	-	350 UJ	99 J	460 U	350 U	350 U	420 U	380 U
Acenaphthene	4,800,000[b]	210,000,000	350 UJ	400 UJ	460 U	350 U	350 U	420 U	380 U
Anthracene	24,000,000[b]	100,000,000	350 UJ	400 UJ	460 U	350 U	350 U	420 U	380 U
Benzo(a)pyrene	137[b]	18,000[c]	58 J	400 UJ	460 U	350 U	350 U	44 J	380 U
Benzo(b)fluoranthene	137[b]	18,000[c]	350 UJ	400 UJ	460 U	350 U	350 U	48 J	380 U
Benzo(k)fluoranthene	137[b]	18,000[c]	350 UJ	400 UJ	460 U	350 U	350 U	48 J	380 U
Bis(2-ethylhexyl)phthalate	71,400[b]	9,370,000[c]	90 J	460 J	460 U	350 U	350 U	120 J	380 U
Butylbenzylphthalate	16,000,000[b]	700,000,000	350 UJ	400 UJ	460 U	350 U	350 U	420 U	380 U
Carbazole	50,000[b]	6,560,000[c]	350 UJ	400 UJ	460 U	350 U	350 U	420 U	380 U
Chrysene	137[b]	18,000[c]	350 UJ	77 J	460 U	350 U	350 U	420 U	380 U
Di-n-butylphthalate	8,000,000[b]	350,000,000	350 UJ	400 UJ	460 U	350 U	350 U	420 U	380 U
Dimethylphthalate	80,000,000[b]	350,000,000	350 UJ	400 UJ	460 U	350 U	350 U	420 U	380 U
Fluoranthene	3,200,000[b]	140,000,000	350 UJ	60 J	460 U	350 U	350 U	48 J	380 U
Fluorene	3,200,000[b]	140,000,000	350 UJ	50 J	460 U	350 U	350 U	420 U	380 U
Naphthalene	3,200,000[b]	140,000,000	350 UJ	160 J	460 U	350 U	350 U	420 U	380 U
Phenanthrene	-	-	350 UJ	140 J	460 U	350 U	80 J	420 U	380 U
Pyrene	2,400,000[b]	105,000,000	59 J	87 J	460 U	350 U	52 J	57 J	380 U

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial							
LOCATION ID	Cleanup	Cleanup	LF01SB04	LF01SB12	LF01SB22	LF02SB04	LF02SB12	LF02SB22	LF02SB32
DEPTH	Standards	Standards	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	28 - 32 ft bgs
Pesticides/PCBs (µg/kg)									
4,4'-DDD	4,170[b]	547,000[c]	21	86	8.1	48	47	230 J	0.91 J
4,4'-DDE	2,940[b]	386,000[c]	12	100	6.1 J	42	23	180	0.87 J
4,4'-DDT	1,000[a]	5,000[a]	43	4.0 U	3.0 J	3.5 J	52	18	0.67 J
Aldrin	58.8[b]	7,720[c]	2.1 J	2.0 U	2.4 U	1.8 U	1.8 U	8.2	1.9 U
Alpha-BHC	159[b]	20,800[c]	1.8 U	2.0 U	2.4 U	1.8 U	1.8 U	4.4 U	1.9 U
Alpha-chlordane	769[b]	101,000[c]	1.8 U	4.5	1.1 J	3.7 J	1.8 U	6.1 J	1.9 U
Aroclor1242	1,000[a]	10,000[a]	35 U	40 U	46 U	35 U	35 U	85 U	38 U
Aroclor1254	1,000[a]	10,000[a]	35 U	40 U	46 U	35 U	35 U	85 U	38 U
Beta-BHC	556[b]	72,900[c]	1.8 U	2.2 J	2.4 U	1.8 U	1.8 U	5 J	1.9 U
Delta-BHC	-	-	1.8 U	2.0 U	2.4 U	1.8 U	1.8 U	5.0 J	1.9 U
Dieldrin	62.5[b]	8,200[c]	5.6	7.1 J	4.6 U	4.9	3.5 U	21	3.8 U
Endosulfan I	480,000[b]	21,000,000[c]	5.2	2.0 U	2.4 U	1.8 U	1.8 U	51	1.9 U
Endosulfan sulfate	-	-	4.9 J	4.0 U	4.6 U	3.5 U	3.5 U	8.5 U	3.8 U
Endrin	24,000[b]	1,050,000[c]	9.0 J	4.0 U	4.6 U	3.5 U	3.5 U	8.5 U	3.8 U
Endrin aldehyde	-	-	3.5 U	4.0 U	4.6 U	3.5 U	4.6 J	8.5 U	3.8 U
Endrin ketone	-	-	11 J	4.0 U	4.6 U	3.5 U	3.5 U	8.5 U	3.8 U
Gamma chlordane	-	-	1.9 J	7.6 J	1.8 J	3.0	2.0 J	13	1.9 U
Inorganics (µg/kg)									
Antimony	30[d]	750[d]	R	R	R	R	R	R	R
Arsenic	20[a]	200.0[a]	6.7 J	17.3 J	7.1 J	11.9 J	6.6 J	19.4 J	3.9 J
Barium	5,600[b]	245,000[c]	92.1	112	202	94.8	92.9	137	169
Beryllium	0.233[b]	30.5[c]	0.26 J	0.24 J	0.34 J	0.29 J	0.24 J	0.27 J	0.49 J
Cadmium	2[a]	10.0[a]	0.11 U	0.27 J	0.12 U	0.11 U	0.11 U	0.13 U	0.13 U
Chromium	100[a]	500.0[a]	20.4	22.8	62.5	18.4	19.1	26	29.7
Cobalt	3,300[d]	29,000[d]	6.8 J	6.4 J	13.7	6.9 J	6.7 J	7.9 J	14.7

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial							
LOCATION ID	Cleanup	Cleanup	LF01SB04	LF01SB12	LF01SB22	LF02SB04	LF02SB12	LF02SB22	LF02SB32
DEPTH	Standards	Standards	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	28 - 32 ft bgs
Inorganics (µg/kg)									
Copper	2,960[b]	130,000[c]	16.2	20.2	40.3	15.4	14.5	24.2	26.2
Lead	250[a]	1,000.0[a]	64.6 J	103 J	39.3 J	62.2 J	29.8 J	127 J	24.3 J
Manganese	11,200[b]	490,000[c]	316	344	462	349	308	420	1,780
Mercury	1.0[a]	1.0[a]	0.13	0.05 U	0.06 U	0.05 U	0.05 U	0.06 U	0.06 U
Nickel	1,600[b]	70,000[c]	14.9	15.0	61.9	13.7	12.0	23.6	31.5
Selenium	400[b]	17,500[c]	1.4 U	1.7 U	2.5 U	1.5 U	1.4 U	2.3	2.2
Silver	400[b]	17,500[c]	0.56 J	0.69 J	1.2 J	0.64 J	0.62 J	1.1 J	1.3 J
Thallium	5.6[b]	245[c]	0.87 J	1.1 J	1.7 J	1.0 J	0.96 J	0.93 J	2.1 J
Vanadium	560[b]	24,500[c]	36.2	37.4	71.8	35.8	35.6	41.2	74.1
Zinc	24,000[b]	1,050,000[c]	58.0 J	93.2 J	120 J	59.9 J	54.7 J	186 J	73.0 J
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8-HpCDD	-	-	17.823 J	55.530	17.605	8.273	6.546	67.457	0.374
1,2,3,4,6,7,8-HpCDF	-	-	3.854 J	11.487	12.375	2.586	2.736 J	20.229	0.095 U
1,2,3,4,7,8,9-HpCDF	-	-	1.776 U	0.694 U	1.629 J	0.274 U	0.642 U	1.393	0.133 U
1,2,3,4,7,8-HxCDD	-	-	0.581 U	3.754 J	1.183 U	0.273 U	0.290 U	0.471 U	0.200 U
1,2,3,4,7,8-HxCDF	-	-	2.749 J	4.377 J	13.473 J	2.354 J	2.168 J	8.953 J	0.091 U
1,2,3,6,7,8-HxCDD	-	-	0.391 U	1.329 J	0.797 U	0.184 U	0.195 U	1.713	0.135 U
1,2,3,6,7,8-HxCDF	-	-	0.557 U	0.176 U	0.565 U	0.461 U	0.433 U	1.055 J	0.068 U
1,2,3,7,8,9-HxCDD	-	-	0.449 U	0.181 U	0.913 U	0.211 U	0.224 U	0.870	0.155 U
1,2,3,7,8-PeCDD	-	-	0.530 U	1.027 J	1.975 U	0.243 U	0.398 U	0.775 U	0.180 U
2,3,4,6,7,8-HxCDF	-	-	0.652 U	0.206 U	1.044	0.730 U	0.506 U	1.361	0.080 U
2,3,4,7,8-PeCDF	-	-	0.538 UJ	0.372 U	1.693	0.209 U	0.301 J	1.851 J	0.093 U
2,3,7,8-TCDD	-	-	0.306 U	1.119 J	0.251 U	0.144 U	0.388 J	0.322 U	0.097 U
2,3,7,8-TCDF	-	-	0.224 UJ	0.7219	1.705	0.499	0.3798	1.880	0.414
OCDD	-	-	178.019 J	756.461	269.807	79.196	71.891	827.747	3.764 U
OCDF	-	-	5.307	23.689	30.361	3.743	4.122	53.484	0.212 U
Total toxicity equivalency	6.67[b]	875[c]	0.675	4.03	3.09	0.432	0.924	4.28	0.045

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

LOCATION ID	Residential Cleanup	Industrial Cleanup	LF03SB04	LF03SB12	LF03SB22	LF03SB32	LF07SB04	LF07SB12	LF07SB22
DEPTH	Standards	Standards	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	28 - 32 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs
VOCs (µg/kg)									
2-Butanone	6,900,000[d]	27,000,000[d]	28	32	21	26	11 U	12	10 J
Acetone	8,000,000[b]	350,000,000	120	100	150	130	11 U	72 U	64 U
Benzene	500[a]	500[a]	11 U	12 U	18 U	13 U	11 U	11 U	12 U
Chlorobenzene	1,600,000[b]	70,000,000[c]	11 U	12 U	18 U	1 J	11 U	11 U	12 U
Ethylbenzene	20,000[a]	20,000[a]	11 U	12 U	18 U	13 U	11 U	11 U	12 U
Xylene (total)	20,000[a]	20,000[a]	11 U	12 U	18 U	13 U	11 U	11 U	12 U
SVOCs (µg/kg)									
2-Methylnaphthalene	-	-	360 U	380 U	200 J	420 U	720 U	66 J	58 J
Acenaphthene	4,800,000[b]	210,000,000	360 U	380 U	91 J	420 U	720 U	350 U	410 U
Anthracene	24,000,000[b]	100,000,000	360 U	380 U	91 J	420 U	720 U	350 U	410 U
Benzo(a)pyrene	137[b]	18,000[c]	360 U	380 U	420 UJ	420 U	720 U	350 U	410 U
Benzo(b)fluoranthene	137[b]	18,000[c]	360 U	380 U	420 UJ	420 U	720 U	54 J	410 U
Benzo(k)fluoranthene	137[b]	18,000[c]	360 U	380 U	420 UJ	420 U	720 U	350 U	410 U
Bis(2-ethylhexyl)phthalate	71,400[b]	9,370,000[c]	620	380 U	4,900 J	140 J	720 U	330 J	270 J
Butylbenzylphthalate	16,000,000[b]	700,000,000	360 U	380 U	1,600 J	420 U	320 J	350 U	410 U
Carbazole	50,000[b]	6,560,000[c]	360 U	380 U	190 J	420 U	720 UJ	350 U	410 U
Chrysene	137[b]	18,000[c]	360 U	57 J	120 J	420 U	720 U	350 U	410 U
Di-n-butylphthalate	8,000,000[b]	350,000,000	360 U	380 U	150 J	420 U	720 U	350 U	410 U
Dimethylphthalate	80,000,000[b]	350,000,000	360 U	380 U	420 UJ	420 U	720 U	350 U	410 U
Fluoranthene	3,200,000[b]	140,000,000	360 U	380 U	210 J	420 U	120 J	350 U	410 U
Fluorene	3,200,000[b]	140,000,000	360 U	380 U	130 J	420 U	720 U	350 U	410 U
Naphthalene	3,200,000[b]	140,000,000	360 U	380 U	160 J	420 U	720 U	54 J	410 U
Phenanthrene	-	-	360 U	380 U	610 J	420 U	720 U	38 J	66 J
Pyrene	2,400,000[b]	105,000,000	360 U	39 J	230 J	420 U	210 J	79 J	410 U

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial							
LOCATION ID	Cleanup	Cleanup	LF03SB04	LF03SB12	LF03SB22	LF03SB32	LF07SB04	LF07SB12	LF07SB22
DEPTH	Standards	Standards	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	28 - 32 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs
Pesticides/PCBs (µg/kg)									
4,4'-DDD	4,170[b]	547,000[c]	38	120	660	0.51 J	13	51	110
4,4'-DDE	2,940[b]	386,000[c]	97	210	95 J	0.63 J	92	19	33
4,4'-DDT	1,000[a]	5,000[a]	8.5	8.7	9.3 J	5.7	7.3 J	7.7	5.9 J
Aldrin	58.8[b]	7,720[c]	1.8 U	4.0 U	2.2 U	2.2 U	1.8 U	1.8 U	2.1 U
Alpha-BHC	159[b]	20,800[c]	1.8 U	4.0 U	22 J	0.22 U	1.8 U	1.8 U	4.2
Alpha-chlordane	769[b]	101,000[c]	1.8 U	4.0 U	9.6 J	2.2 U	1.8 U	1.8 U	2.1 U
Aroclor1242	1,000[a]	10,000[a]	36 U	77 U	42 U	42 U	36 U	35 U	41 U
Aroclor1254	1,000[a]	10,000[a]	36 U	77 U	470	42 U	36 U	35 U	40 J
Beta-BHC	556[b]	72,900[c]	1.8 U	4.0 U	16 J	2.2 U	1.8 U	3.4 J	10 J
Delta-BHC	-	-	1.8 U	4.0 U	2.2 U	2.2 U	1.8 U	1.8 U	2.1 U
Dieldrin	62.5[b]	8,200[c]	6.1	7.5 J	10 J	4.2 U	5.5	3.5 U	4.1 U
Endosulfan I	480,000[b]	21,000,000[c]	1.8 U	4.0 U	2.2 U	2.2 U	1.8 U	1.8 U	2.1 U
Endosulfan sulfate	-	-	3.6 U	7.7 U	11 J	4.2 U	3.7 J	3.5 U	4.1 U
Endrin	24,000[b]	1,050,000[c]	3.6 U	7.7 U	4.2 U	0.97 J	3.6 U	3.5 U	4.1 U
Endrin aldehyde	-	-	3.6 U	7.7 U	4.2 U	4.2 U	5.4 J	3.5 U	4.1 U
Endrin ketone	-	-	3.6 J	7.7 U	4.2 U	4.2 U	8.1 J	3.5 U	4.1 U
Gamma chlordane	-	-	1.8 U	2.2 J	18 J	2.2 U	1.8 U	1.8 U	2.1 U
Inorganics (µg/kg)									
Antimony	30[d]	750[d]	R	R	2.5 J	R	R	1.7 J	2.9 J
Arsenic	20[a]	200.0[a]	20.7 J	43.9 J	9.3 J	1.6 J	28.9 J	12.1 J	13.4 J
Barium	5,600[b]	245,000[c]	89.6	126	182	137	94.2	99.5	284
Beryllium	0.233[b]	30.5[c]	0.23 J	0.36 J	0.16 J	0.32 J	0.30 J	0.28 J	0.33 J
Cadmium	2[a]	10.0[a]	0.11 J	0.44 J	0.24 J	0.13 U	0.11 U	0.11 U	1.2
Chromium	100[a]	500.0[a]	17.4	17.5	28.8	19.1	17.3	19.4	28.2
Cobalt	3,300[d]	29,000[d]	6.6 J	6.6 J	8.8 J	11.0 J	6.8 J	6.7 J	8.7 J

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial							
LOCATION ID	Cleanup	Cleanup	LF03SB04	LF03SB12	LF03SB22	LF03SB32	LF07SB04	LF07SB12	LF07SB22
DEPTH	Standards	Standards	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	28 - 32 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs
Inorganics (mg/kg)									
Copper	2,960[b]	130,000[c]	15.1	15.3	35.8	18.3	13.0	17.1	85.7
Lead	250[a]	1,000.0[a]	88.8 J	385 J	165 J	13.2 J	132	35.6	437
Manganese	11,200[b]	490,000[c]	395	420	377	547	352	325	477
Mercury	1.0[a]	1.0[a]	0.05 U	0.05 U	0.06 U	0.06 U	0.05 U	0.05 U	0.08 J
Nickel	1,600[b]	70,000[c]	13.0	12.8	23.3	26.4	26.8 J	22.6 J	30.5 J
Selenium	400[b]	17,500[c]	1.5 U	1.7 U	2.6 U	1.8 U	1.5	1.1	2.2
Silver	400[b]	17,500[c]	0.79 J	0.71 J	1.3 J	0.93 J	0.69 J	0.84 J	1.6 J
Thallium	5.6[b]	245[c]	0.71 U	1.2 J	2.2 J	1.4 J	0.70 U	0.71 U	1.0 J
Vanadium	560[b]	24,500[c]	35.6	36.4	37.4	60.6	33.4	34.8	43.8
Zinc	24,000[b]	1,050,000[c]	57.1 J	227 J	248 J	69.0 J	78.3	160	505
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8-HpCDD	-	-	25.827	8.306	NA	1.091	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	-	-	5.727	3.609	NA	0.090 U	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	-	-	0.940 U	0.370 U	NA	0.127 U	NA	NA	NA
1,2,3,4,7,8-HxCDD	-	-	0.414 U	0.259 U	NA	0.145 U	NA	NA	NA
1,2,3,4,7,8-HxCDF	-	-	3.382 J	1.630 J	NA	0.096 U	NA	NA	NA
1,2,3,6,7,8-HxCDD	-	-	0.279 U	0.174 U	NA	0.098 U	NA	NA	NA
1,2,3,6,7,8-HxCDF	-	-	0.190 U	0.133 U	NA	0.072 U	NA	NA	NA
1,2,3,7,8,9-HxCDD	-	-	0.320 U	0.200 U	NA	0.112 U	NA	NA	NA
1,2,3,7,8-PeCDD	-	-	0.384 U	0.280 U	NA	0.102 U	NA	NA	NA
2,3,4,6,7,8-HxCDF	-	-	0.222 U	0.156 U	NA	0.084 U	NA	NA	NA
2,3,4,7,8-PeCDF	-	-	0.265 U	0.123 U	NA	0.077 U	NA	NA	NA
2,3,7,8-TCDD	-	-	0.175 U	0.183 U	NA	0.091 U	NA	NA	NA
2,3,7,8-TCDF	-	-	0.200 U	0.173 U	NA	0.417	NA	NA	NA
OCDD	-	-	356.889 J	67.347	NA	7.548 U	NA	NA	NA
OCDF	-	-	15.725	7.591	NA	0.168 U	NA	NA	NA
Total toxicity equivalency	6.67[b]	875[c]	1.02	0.357	NA	0.001	NA	NA	NA

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

LOCATION ID	Residential Cleanup	Industrial Cleanup	LF08SB04	LF08SB12	LF11SS00	LF11SB12	LF11SB22	LF12SB04	LF12SB12
DEPTH	Standards	Standards	0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs
VOCs (µg/kg)									
2-Butanone	6,900,000[d]	27,000,000[d]	11 U	3 J	21 U	1 J	11 U	11 UJ	9 J
Acetone	8,000,000[b]	350,000,000	11 U	19 U	100 U	15 U	43	49 U	37 U
Benzene	500[a]	500[a]	11 U	12 U	11 U	11 U	11 U	11 U	2 J
Chlorobenzene	1,600,000[b]	70,000,000[c]	11 U	12 U	11 U	11 U	11 U	11 U	12 U
Ethylbenzene	20,000[a]	20,000[a]	11 U	12 U	17	11 U	11 U	11 U	24
Xylene (total)	20,000[a]	20,000[a]	11 U	12 U	46	11 U	11 U	11 U	90
SVOCs (µg/kg)									
2-Methylnaphthalene	-	-	350 U	410 U	290 J	94 J	350 U	360 U	120 J
Acenaphthene	4,800,000[b]	210,000,000	350 U	410 U	350 U	380 U	350 U	360 U	400 U
Anthracene	24,000,000[b]	100,000,000	350 U	410 U	350 U	380 U	350 U	360 U	400 U
Benzo(a)pyrene	137[b]	18,000[c]	350 U	410 U	350 U	380 U	350 U	360 U	400 U
Benzo(b)fluoranthene	137[b]	18,000[c]	350 U	410 U	350 U	52 J	350 U	360 U	100 J
Benzo(k)fluoranthene	137[b]	18,000[c]	350 U	410 U	350 U	380 U	350 U	360 U	87 J
Bis(2-ethylhexyl)phthalate	71,400[b]	9,370,000[c]	86 J	68 J	72 J	300 J	230 J	64 J	820
Butylbenzylphthalate	16,000,000[b]	700,000,000	350 U	410 U	350 U	380 U	350 U	360 U	92 J
Carbazole	50,000[b]	6,560,000[c]	350 U	410 U	350 U	380 U	350 U	360 U	400 U
Chrysene	137[b]	18,000[c]	350 U	410 U	350 U	71 J	350 U	360 U	130 J
Di-n-butylphthalate	8,000,000[b]	350,000,000	350 U	410 U	350 U	380 U	350 U	360 U	50 J
Dimethylphthalate	80,000,000[b]	350,000,000	350 U	410 U	350 U	380 U	350 U	360 U	400 U
Fluoranthene	3,200,000[b]	140,000,000	350 U	410 U	350 U	120 J	350 U	360 U	75 J
Fluorene	3,200,000[b]	140,000,000	350 U	410 U	140 J	380 U	350 U	360 U	400 U
Naphthalene	3,200,000[b]	140,000,000	350 U	410 U	48 J	150 J	350 U	360 U	170 J
Phenanthrene	-	-	350 U	410 U	250 U	92 J	350 U	360 U	85 J
Pyrene	2,400,000[b]	105,000,000	350 U	410 U	36 J	120 J	350 U	360 U	90 J

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial							
LOCATION ID	Cleanup	Cleanup	LF08SB04	LF08SB12	LF11SS00	LF11SB12	LF11SB22	LF12SB04	LF12SB12
DEPTH	Standards	Standards	0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs.
Pesticides/PCBs (ug/kg)									
4,4'-DDD	4,170[b]	547,000[c]	29	100	37	31	3.5 U	57	46
4,4'-DDE	2,940[b]	386,000[c]	52	24	17	17	2.6 J	54	36
4,4'-DDT	1,000[a]	5,000[a]	3.5 U	7.2 J	3.5 U	2.1 J	3 J	2.2 J	4.1 J
Aldrin	58.8[b]	7,720[c]	1.8 U	2.1 U	1.8 U	2.0 U	1.8 U	1.9 U	2.1 U
Alpha-BHC	159[b]	20,800[c]	1.8 U	2.1 U	1.8 U	2.0 U	1.8 U	1.9 U	2.1 U
Alpha-chlordane	769[b]	101,000[c]	2.0	26 J	5.5 J	2.0 U	1.8 U	1.9 UJ	3.4 J
Aroclor1242	1,000[a]	10,000[a]	35 U	41 U	35 U	38 U	35 U	36 U	150 J
Aroclor1254	1,000[a]	10,000[a]	35 U	41 U	35 U	38 U	35 U	36 U	40 U
Beta-BHC	556[b]	72,900[c]	1.8 U	3.3 J	1.9 U	4.1 J	1.8 U	1.9 U	2.1 U
Delta-BHC	-	-	1.8 U	2.1 U	1.8 U	2.0 U	1.8 U	1.9 U	2.1 U
Dieldrin	62.5[b]	8,200[c]	1.6 J	5.8 J	2.7 J	1.1 J	3.5 U	3.6 U	4.2
Endosulfan I	480,000[b]	21,000,000[c]	1.8 U	2.1 U	1.8 U	2.0 J	1.8 U	1.9 U	2.1 U
Endosulfan sulfate	-	-	3.5 U	4.1 U	3.5 U	3.8 U	3.5 U	3.6 U	4.0 U
Endrin	24,000[b]	1,050,000[c]	3.5 U	4.1 U	3.5 U	3.8 U	0.95 J	3.6 U	4.0 U
Endrin aldehyde	-	-	3.5 U	4.1 U	3.5 U	3.8 U	3.5 U	3.6 U	4.0 U
Endrin ketone	-	-	3.5 U	4.1 U	3.5 U	3.8 U	3.5 U	3.6 U	4.0 U
Gamma chlordane	-	-	2.6 J	28	6.2 J	2.6	1.8 U	1.9 U	4.6
Inorganics (ug/kg)									
Antimony	30[d]	750[d]	R	R	R	1.0 J	1.5 J	R	R
Arsenic	20[a]	200.0[a]	7.1 J	7.4 J	6.5 J	7.1 J	4.6 J	9.3 J	13.6 J
Barium	5,600[b]	245,000[c]	93.5	394	102	120	96.1	92.8	107
Beryllium	0.233[b]	30.5[c]	0.32 J	0.48 J	0.25 J	0.23 J	0.21 J	0.36 J	0.46 J
Cadmium	2[a]	10.0[a]	0.11 U	0.11 U	0.11 U	0.24 J	0.11 U	0.11 U	0.12 U
Chromium	100[a]	500.0[a]	21.6	34.9	21.6 J	21.4 J	18.3 J	18.7 J	18.2 J
Cobalt	3,300[d]	29,000[d]	6.8 J	8.6 J	6.8 J	6.6 J	6.7 J	6.7 J	7.1 J

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial							
LOCATION ID	Cleanup	Cleanup	LF08SB04	LF08SB12	LF11SS00	LF11SB12	LF11SB22	LF12SB04	LF12SB12
DEPTH	Standards	Standards	0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs
Inorganics (µg/kg)									
Copper	2,960[b]	130,000[c]	16.1	42.7	26.3	42.9	23.2	15.5	22.9
Lead	250[a]	1,000.0[a]	92.3	164	230 J	104 J	20.2 J	35.5 J	121 J
Manganese	11,200[b]	490,000[c]	313	353	310	299	201	260	284
Mercury	1.0[a]	1.0[a]	0.05 U	0.05 U	0.05 U	0.90	0.05 U	0.05 U	0.06 U
Nickel	1,600[b]	70,000[c]	14.5 J	26.2 J	18.2	27.6	19.8	14.3	15.4
Selenium	400[b]	17,500[c]	1.6	1.9	1.6	1.7	1.4	1.5	1.7
Silver	400[b]	17,500[c]	0.87 J	1.1 J	0.76 J	1.3 J	0.77 J	0.75 J	1.0 J
Thallium	5.6[b]	245[c]	0.98 J	1.6 J	1.1 J	1.0 J	0.7 U	0.99 J	0.77 U
Vanadium	560[b]	24,500[c]	32.7	41.2	31.8	37.4	34.1	34.1	32.8
Zinc	24,000[b]	1,050,000[c]	59.4	151	96.8 J	269 J	80.7 J	50.5 J	134 J
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8-HpCDD	-	-	NA	NA	51.369	106.124 J	1.333 J	44.210 J	55.006
1,2,3,4,6,7,8-HpCDF	-	-	NA	NA	11.381	23.511	0.553	0.857 U	7.549
1,2,3,4,7,8,9-HpCDF	-	-	NA	NA	2.036 U	1.656 U	0.225 U	1.207 U	0.904 U
1,2,3,4,7,8-HxCDD	-	-	NA	NA	0.602 U	1.205 U	0.413 U	1.097 U	1.120 U
1,2,3,4,7,8-HxCDF	-	-	NA	NA	25.284 J	4.127 J	1.521 J	0.571 U	1.706 J
1,2,3,6,7,8-HxCDD	-	-	NA	NA	1.712 J	2.254 J	0.278 U	0.739 U	0.754 U
1,2,3,6,7,8-HxCDF	-	-	NA	NA	1.173	1.144 U	0.185 U	0.428 U	0.766 U
1,2,3,7,8,9-HxCDD	-	-	NA	NA	1.744 J	0.930 U	0.319 U	0.847 U	0.864 U
1,2,3,7,8-PeCDD	-	-	NA	NA	0.998 U	0.694 U	0.340 U	0.660 U	0.930 U
2,3,4,6,7,8-HxCDF	-	-	NA	NA	3.079	1.337 U	0.217 U	0.500 U	0.895 U
2,3,4,7,8-PeCDF	-	-	NA	NA	0.543 U	0.530 U	0.257 U	0.663 U	0.428 U
2,3,7,8-TCDD	-	-	NA	NA	0.331 U	0.553 U	0.308 U	0.369 U	0.413 U
2,3,7,8-TCDF	-	-	NA	NA	3.6197	0.341 U	0.148 U	0.288 U	0.328 UJ
OCDD	-	-	NA	NA	386.564 J	1,255.142 J	8.960	373.338 J	649.029
OCDF	-	-	NA	NA	19.036 J	35.485 J	0.423 U	8.921 J	28.63
Total toxicity equivalency	6.67[b]	875[c]	NA	NA	4.332	3.225	0.180	0.824	1.474

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

LOCATION ID	Residential Cleanup Standards	Industrial Cleanup Standards	LF12SB22	LF12SB29	LF13SB04	LF13SB12	LF13SB22	LF13SB32	LF09SB04
DEPTH			18 - 22 ft bgs	25 - 29 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	24 - 25 ft bgs	0 - 3 ft bgs
VOCs (µg/kg)									
2-Butanone	6,900,000[d]	27,000,000[d]	10 U	12 U	11 U	15 U	11 U	12 UJ	40 J
Acetone	8,000,000[b]	350,000,000	13 U	14 U	11 U	15 U	29 U	12 UJ	170
Benzene	500[a]	500[a]	10 U	12 U	11 U	15 U	11 U	12 U	11 U
Chlorobenzene	1,600,000[b]	70,000,000[c]	10 U	12 U	11 U	15 U	11 U	12 U	11 U
Ethylbenzene	20,000[a]	20,000[a]	10 U	12 U	11 U	15 U	11 U	12 U	11 U
Xylene (total)	20,000[a]	20,000[a]	1 J	12 U	11 U	15 U	11 U	12 U	11 U
SVOCs (µg/kg)									
2-Methylnaphthalene	-	-	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Acenaphthene	4,800,000[b]	210,000,000	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Anthracene	24,000,000[b]	100,000,000	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Benzo(a)pyrene	137[b]	18,000[c]	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Benzo(b)fluoranthene	137[b]	18,000[c]	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Benzo(k)fluoranthene	137[b]	18,000[c]	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Bis(2-ethylhexyl)phthalate	71,400[b]	9,370,000[c]	50 J	44 J	41 J	89 J	49 J	43 J	64 J
Butylbenzylphthalate	16,000,000[b]	700,000,000	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Carbazole	50,000[b]	6,560,000[c]	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Chrysene	137[b]	18,000[c]	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Di-n-butylphthalate	8,000,000[b]	350,000,000	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Dimethylphthalate	80,000,000[b]	350,000,000	350 U	390 U	350 U	500 U	370 U	80 J	350 U
Fluoranthene	3,200,000[b]	140,000,000	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Fluorene	3,200,000[b]	140,000,000	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Naphthalene	3,200,000[b]	140,000,000	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Phenanthrene	-	-	350 U	390 U	350 U	500 U	370 U	380 U	350 U
Pyrene	2,400,000[b]	105,000,000	350 U	390 U	350 U	500 U	370 U	380 U	350 U

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial							
LOCATION ID	Cleanup	Cleanup	LF12SB22	LF12SB29	LF13SB04	LF13SB12	LF13SB22	LF13SB32	LF09SB04
DEPTH	Standards	Standards	18 - 22 ft bgs	25 - 29 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	24 - 25 ft bgs	0 - 3 ft bgs
Pesticides/PCBs (µg/kg)									
4,4'-DDD	4,170[b]	547,000[c]	11	3.9 U	14	5.0 U	3.2 J	NA	2.7 J
4,4'-DDE	2,940[b]	386,000[c]	18	3.9 U	28	2.2 J	4.8	NA	6.9
4,4'-DDT	1,000[a]	5,000[a]	7.4	2.1 J	3.5 U	5.0 U	0.89 J	NA	2.6 J
Aldrin	58.8[b]	7,720[c]	1.8 U	2.0 U	1.8 U	2.6 U	1.9 U	NA	1.8 U
Alpha-BHC	159[b]	20,800[c]	1.8 U	2.0 U	1.8 U	2.6 U	1.9 U	NA	1.8 U
Alpha-chlordane	769[b]	101,000[c]	1.8 U	2.0 U	1.8 U	2.6 U	1.9 U	NA	1.8 U
Aroclor1242	1,000[a]	10,000[a]	35 U	39 U	35 U	50 U	37 U	NA	35 U
Aroclor1254	1,000[a]	10,000[a]	35 U	39 U	35 U	50 U	37 U	NA	35 U
Beta-BHC	556[b]	72,900[c]	1.8 U	2.0 U	1.8 U	2.6 U	1.9 U	NA	2.3 J
Delta-BHC	-	-	1.8 U	2.0 U	1.8 U	2.6 U	1.9 U	NA	1.8 U
Dieldrin	62.5[b]	8,200[c]	3.5 U	3.9 U	3.5 U	5.0 U	3.7 U	NA	3.5 U
Endosulfan I	480,000[b]	21,000,000[c]	1.8 U	2.0 U	1.8 U	2.6 U	1.9 U	NA	1.8 U
Endosulfan sulfate	-	-	3.5 U	3.9 U	3.5 U	5.0 U	3.7 U	NA	3.5 U
Endrin	24,000[b]	1,050,000[c]	5.5	0.80 J	3.5 U	5.0 U	3.7 U	NA	3.5 U
Endrin aldehyde	-	-	3.5 U	3.9 U	3.5 U	5.0 U	3.7 U	NA	3.5 U
Endrin ketone	-	-	0.65 J	3.9 U	3.5 U	5.0 U	3.7 U	NA	3.5 U
Gamma chlordane	-	-	1.8 U	2.0 U	1.8 U	2.6 U	1.9 U	NA	1.8 U
Inorganics (µg/kg)									
Antimony	30[d]	750[d]	R	R	1.8 J	R	1.3 J	R	R
Arsenic	20[a]	200.0[a]	3.2 J	0.68 U	41.4 J	6.1 J	7.0 J	0.69 UJ	2.7 J
Barium	5,600[b]	245,000[c]	70.4	52.8	194	130	93.0	80.6	106
Beryllium	0.233[b]	30.5[c]	0.20 J	0.22 J	0.68 J	0.53 J	0.43 J	0.30 J	0.31 J
Cadmium	2[a]	10.0[a]	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.12 U	0.11 U
Chromium	100[a]	500.0[a]	8.8 J	16.8 J	45.8	31.6	24.8	30.2	17.0
Cobalt	3,300[d]	29,000[d]	4.5 J	6.6 J	7.5 J	8.3 J	7.5 J	6.5 J	6.6 J

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial							
LOCATION ID	Cleanup	Cleanup	LF12SB22	LF12SB29	LF13SB04	LF13SB12	LF13SB22	LF13SB32	LF09SB04
DEPTH	Standards	Standards	18 - 22 ft bgs	25 - 29 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	18 - 22 ft bgs	24 - 25 ft bgs	0 - 3 ft bgs
Inorganics (µg/kg)									
Copper	2,960[b]	130,000[c]	10.0	22.7	21.4	15.8	16.5	9.4	15.1
Lead	250[a]	1,000.0[a]	18.3 J	4.5 J	39.6	8.7	18.7	3.5	23.4
Manganese	11,200[b]	490,000[c]	220	217	401	251	283	242	284
Mercury	1.0[a]	1.0[a]	0.06 U	0.06 U	0.05 U	0.06 U	0.06 U	0.06 U	0.05 U
Nickel	1,600[b]	70,000[c]	11.4	11.3	26.2 J	18.1 J	26.6 J	17.1 J	23.5 J
Selenium	400[b]	17,500[c]	0.90 J	1.3	2.0	1.9	1.5	1.5	1.1
Silver	400[b]	17,500[c]	0.43 J	0.72 J	0.99 J	0.81 J	0.71 J	0.71 J	0.60 J
Thallium	5.6[b]	245[c]	0.69 U	0.74 U	1.5 J	1.2 J	1.0 J	1.0 J	0.70 U
Vanadium	560[b]	24,500[c]	23.8	34.1	60.0	46.3	33.5	40	24.7
Zinc	24,000[b]	1,050,000[c]	43.3 J	44 J	72.7	53.6	77.2	39.7	50.8
Dioxins/Furans (ng/kg)									
1,2,3,4,6,7,8-HpCDD	-	-	2.489 J	NA	0.511 U	3.448	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	-	-	0.591	NA	0.505 U	0.405 J	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	-	-	0.354 U	NA	0.712 U	0.130 U	NA	NA	NA
1,2,3,4,7,8-HxCDD	-	-	0.457 U	NA	0.617 U	0.249 U	NA	NA	NA
1,2,3,4,7,8-HxCDF	-	-	0.348 U	NA	1.012 J	0.168 U	NA	NA	NA
1,2,3,6,7,8-HxCDD	-	-	0.308 U	NA	0.415 U	0.295	NA	NA	NA
1,2,3,6,7,8-HxCDF	-	-	0.261 U	NA	0.340 U	0.126 U	NA	NA	NA
1,2,3,7,8,9-HxCDD	-	-	0.353 U	NA	0.476 U	0.192 U	NA	NA	NA
1,2,3,7,8-PeCDD	-	-	0.303 U	NA	0.578 U	0.221 U	NA	NA	NA
2,3,4,6,7,8-HxCDF	-	-	0.305 U	NA	0.398 U	0.147 U	NA	NA	NA
2,3,4,7,8-PeCDF	-	-	0.210 U	NA	0.235 U	0.165 U	NA	NA	NA
2,3,7,8-TCDD	-	-	0.370 U	NA	0.408 U	0.164 U	NA	NA	NA
2,3,7,8-TCDF	-	-	0.421 UJ	NA	0.305 U	0.146 U	NA	NA	NA
OCDD	-	-	34.759	NA	12.649	37.974	NA	NA	NA
OCDF	-	-	1.357 J	NA	0.634 U	1.157	NA	NA	NA
Total toxicity equivalency	6.67[b]	875[c]	0.067	NA	0.114	0.107	NA	NA	NA

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

LOCATION ID	Residential Cleanup	Industrial Cleanup	LF09SB12	LF09SB22	LF10SB04	LF10SB12
DEPTH	Standards	Standards	8 - 12 ft bgs	18 - 21 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs
VOCs (µg/kg)						
2-Butanone	6,900,000[d]	27,000,000[d]	11 UJ	12 UJ	11 UJ	13 UJ
Acetone	8,000,000[b]	350,000,000	62 U	37 U	78 U	13 U
Benzene	500[a]	500[a]	11 U	12 U	11 U	13 U
Chlorobenzene	1,600,000[b]	70,000,000[c]	11 U	12 U	11 U	13 U
Ethylbenzene	20,000[a]	20,000[a]	11 U	12 U	11 U	13 U
Xylene (total)	20,000[a]	20,000[a]	11 U	12 U	11 U	13 U
SVOCs (µg/kg)						
2-Methylnaphthalene	-	-	360 U	390 U	**750 J**	**160 J**
Acenaphthene	4,800,000[b]	210,000,000	360 U	390 U	350 UJ	420 U
Anthracene	24,000,000[b]	100,000,000	360 U	390 U	350 UJ	420 U
Benzo(a)pyrene	137[b]	18,000[c]	360 U	390 U	350 UJ	**70 J**
Benzo(b)fluoranthene	137[b]	18,000[c]	360 U	390 U	350 UJ	420 U
Benzo(k)fluoranthene	137[b]	18,000[c]	360 U	390 U	350 UJ	420 U
Bis(2-ethylhexyl)phthalate	71,400[b]	9,370,000[c]	360 U	**2,400**	350 UJ	420 U
Butylbenzylphthalate	16,000,000[b]	700,000,000	360 U	390 U	350 UJ	420 U
Carbazole	50,000[b]	6,560,000[c]	360 U	390 U	350 UJ	420 U
Chrysene	137[b]	18,000[c]	360 U	390 U	350 UJ	540
Di-n-butylphthalate	8,000,000[b]	350,000,000	360 U	390 U	350 UJ	420 U
Dimethylphthalate	80,000,000[b]	350,000,000	360 U	390 U	350 UJ	420 U
Fluoranthene	3,200,000[b]	140,000,000	360 U	390 U	350 UJ	420 U
Fluorene	3,200,000[b]	140,000,000	360 U	390 U	350 UJ	420 U
Naphthalene	3,200,000[b]	140,000,000	360 U	390 U	**180 J**	**120 J**
Phenanthrene	-	-	360 U	390 U	350 UJ	420 U
Pyrene	2,400,000[b]	105,000,000	360 U	390 U	**49 J**	**97 J**

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial				
LOCATION ID	Cleanup	Cleanup	LF09SB12	LF09SB22	LF10SB04	LF10SB12
DEPTH	Standards	Standards	8 - 12 ft bgs	18 - 21 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs
Pesticides/PCBs (µg/kg)						
4,4'-DDD	4,170[b]	547,000[c]	90	3.9 U	16	44
4,4'-DDE	2,940[b]	386,000[c]	24	3.9 U	12	25
4,4'-DDT	1,000[a]	5,000[a]	7.2 U	3.9 U	3.5 U	4.3 U
Aldrin	58.8[b]	7,720[c]	3.7 U	2.0 U	1.8 U	2.2 U
Alpha-BHC	159[b]	20,800[c]	3.7 U	2 U	1.8 U	2.2 U
Alpha-chlordane	769[b]	101,000[c]	3.7 U	2.0 UJ	1.8 U	3.9 U
Aroclor1242	1,000[a]	10,000[a]	72 U	39 U	35 U	43 U
Aroclor1254	1,000[a]	10,000[a]	72 U	39 U	35 U	43 U
Beta-BHC	556[b]	72,900[c]	3.7 U	2.0 U	1.8 U	2.2 U
Delta-BHC	-	-	3.7 U	2.0 U	1.8 U	2.2 U
Dieldrin	62.5[b]	8,200[c]	7.2 U	3.9 U	3.5 U	4.3 U
Endosulfan I	480,000[b]	21,000,000[c]	3.7 U	2.0 U	1.8 U	2.2 U
Endosulfan sulfate	-	-	7.2 U	3.9 U	3.5 U	4.3 U
Endrin	24,000[b]	1,050,000[c]	7.2 U	3.9 U	3.5 U	4.3 U
Endrin aldehyde	-	-	7.2 U	3.9 U	3.5 U	4.3 U
Endrin ketone	-	-	7.2 U	3.9 U	3.5 U	4.3 U
Gamma chlordane	-	-	2.4 J	2.0 U	0.60 J	4.6 J
Inorganics (µg/kg)						
Antimony	30[d]	750[d]	0.88 J	R	R	4.3 J
Arsenic	20[a]	200.0[a]	8.0 J	1.9 J	5.3	9.1
Barium	5,600[b]	245,000[c]	141	152	94.5	106
Beryllium	0.233[b]	30.5[c]	0.41 J	0.35 J	0.19 J	0.30 J
Cadmium	2[a]	10.0[a]	0.11 U	0.11 U	0.11 U	0.11 U
Chromium	100[a]	500.0[a]	28.9	40.5	24.6 J	22.4 J
Cobalt	3,300[d]	29,000[d]	8.2 J	6.4 J	7.5 J	7.0 J

Key is at the end of the table.

Table 3-2 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY
WENATCHEE, WASHINGTON

CLP INORGANIC NUMBER	Residential	Industrial				
LOCATION ID	Cleanup	Cleanup	LF09SB12	LF09SB22	LF10SB04	LF10SB12
DEPTH	Standards	Standards	8 - 12 ft bgs	18 - 21 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs
Inorganics (ug/kg)						
Copper	2,960[b]	130,000[c]	34.4	15.3	16.5	19.1
Lead	250[a]	1,000.0[a]	81.5	5.3	33.8 J	97.6 J
Manganese	11,200[b]	490,000[c]	315	306	320 J	388 J
Mercury	1.0[a]	1.0[a]	0.08 J	0.05 U	0.05 U	0.05 U
Nickel	1,600[b]	70,000[c]	25.2 J	34.8 J	19.2	17.6
Selenium	400[b]	17,500[c]	1.7	1.7	1.9 UJ	1.6 UJ
Silver	400[b]	17,500[c]	1.1 J	0.89 J	0.72 J	1.3 J
Thallium	5.6[b]	245[c]	1.3 J	0.89 J	0.90 J	0.99 J
Vanadium	560[b]	24,500[c]	43.7	43.8	38.2	38.7
Zinc	24,000[b]	1,050,000[c]	163	41.5	48.6 J	68.7 J
Dioxins/Furans (ng/kg)						
1,2,3,4,6,7,8-HpCDD	-	-	NA	0.315 U	4.648	45.687
1,2,3,4,6,7,8-HpCDF	-	-	NA	0.211 U	1.951	10.253
1,2,3,4,7,8,9-HpCDF	-	-	NA	0.297 U	0.897 U	1.729 U
1,2,3,4,7,8-HxCDD	-	-	NA	0.325 U	0.687 U	2.461 J
1,2,3,4,7,8-HxCDF	-	-	NA	0.232 U	0.636 U	3.476 J
1,2,3,6,7,8-HxCDD	-	-	NA	0.219 U	0.463 U	0.521 U
1,2,3,6,7,8-HxCDF	-	-	NA	0.174 U	0.477 U	0.622 U
1,2,3,7,8,9-HxCDD	-	-	NA	0.251 U	0.530 U	0.597 U
1,2,3,7,8-PeCDD	-	-	NA	0.367 U	0.414 U	0.696 U
2,3,4,6,7,8-HxCDF	-	-	NA	0.203 U	0.558 U	0.727 U
2,3,4,7,8-PeCDF	-	-	NA	0.182 U	0.485 U	0.463 U
2,3,7,8-TCDD	-	-	NA	0.293 U	0.355 U	0.405 U
2,3,7,8-TCDF	-	-	NA	0.181 U	0.258 U	0.383 U
OCDD	-	-	NA	4.186	39.274	698.404
OCDF	-	-	NA	0.377 U	5.248	34.709
Total toxicity equivalency	6.67[b]	875[c]	NA	0.004	0.111	1.886

Key is at the end of the table.

[a] WDOE Method A cleanup level.

[b] WDOE Method B cleanup level.

[c] WDOE Method C cleanup level.

[d] EPA, Region 9, PRG.

Note: Bold type indicates concentrations above sample quantitation limits or detection limits.
Underline indicates concentrations above one or more comparison standards.

Key:

bgs = Below ground surface.
CLP = Contract Laboratory Program.
EPA = United States Environmental Protection Agency.
ft = Feet.
ID = Identification.
J = The analyte was positively identified. The associated numerical value is an estimate.
µg/kg = Micrograms per kilogram.
NA = Not analyzed.
ng/kg = Nanograms per kilogram.
PCBs = Polychlorinated biphenyls.
PRG = Preliminary remediation goal.
R = Rejected.
SVOCs = Semivolatile organic compounds.
U = Not detected.
UJ = The associated numerical value is an estimate of the quantitation limit of the analyte in this sample.
VOCs = Volatile organic compounds.
WDOE = Washington Department of Ecology.

Table 3-3

LANDFILL SUBSURFACE SOIL SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations*	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Residential Cleanup Standards	Industrial Cleanup Standards
VOCs (µg/kg)							
2-Butanone	10 - 21	1 - 40	16 / 32	0 / 32	EPA Region 9 PRG	6,900,000[d]	27,000,000[d]
Acetone	10 - 150	43 - 170	7 / 32	0 / 32	MTCA Method B	8,000,000[b]	350,000,000[c]
Benzene	10 - 18	2	1 / 32	0 / 32	MTCA Method A	500[a]	500[a]
Chlorobenzene	10 - 18	1 - 4	2 / 32	0 / 32	MTCA Method B	1,600,000[b]	70,000,000[c]
Ethylbenzene	10 - 18	2 - 24	4 / 32	0 / 32	MTCA Method A	20,000[a]	20,000[a]
Xylene (total)	10 - 18	2 - 90	8 / 32	0 / 32	MTCA Method A	20,000[a]	20,000[a]
SVOCs (µg/kg)							
2-Methylnaphthalene	350 - 720	58 - 750	9 / 32	NA	NA	NA	NA
Acenaphthene	350 - 720	91	1 / 32	0 / 32	MTCA Method B	4,800,000[b]	210,000,000[c]
Anthracene	350 - 720	91	1 / 32	0 / 32	MTCA Method B	24,000,000[b]	100,000,000[c]
Benzo(a)pyrene	350 - 720	44 - 70	3 / 32	0 / 32	MTCA Method B	137[b]	18,000[c]
Benzo(b)fluoranthene	350 - 720	48 - 100	4 / 32	0 / 32	MTCA Method B	137[b]	18,000[c]
Benzo(k)fluoranthene	350 - 720	48 - 87	2 / 32	0 / 32	MTCA Method B	137[b]	18,000[c]
Bis(2-ethylhexyl)phthalate	350 - 720	41 - 4900	23 / 32	0 / 32	MTCA Method B	71,400[b]	9,370,000[c]
Butylbenzylphthalate	350 - 720	92 - 1600	3 / 32	0 / 32	MTCA Method B	16,000,000[b]	700,000,000[c]
Carbazole	350 - 720	190	1 / 32	0 / 32	MTCA Method B	50,000[b]	6,560,000[c]
Chrysene	350 - 720	57 - 540	6 / 32	1 / 32	MTCA Method B	137[b]	18,000[c]
Di-n-butylphthalate	350 - 720	50 - 150	2 / 32	0 / 32	MTCA Method B	8,000,000[b]	350,000,000[c]
Dimethylphthalate	350 - 720	80	1 / 32	0 / 32	MTCA Method B	80,000,000[b]	350,000,000[c]
Fluoranthene	350 - 720	48 - 210	6 / 32	0 / 32	MTCA Method B	3,200,000[b]	140,000,000[c]
Fluorene	350 - 720	50 - 140	3 / 32	0 / 32	MTCA Method B	3,200,000[b]	140,000,000[c]
Naphthalene	350 - 720	48 - 180	8 / 32	0 / 32	MTCA Method B	3,200,000[b]	140,000,000[c]
Phenanthrene	350 - 720	38 - 610	7 / 32	0 / 32	NA	NA	NA
Pyrene	350 - 720	36 - 230	13 / 32	0 / 32	MTCA Method B	2,400,000[b]	105,000,000[c]

Key at end of the table.

Table 3-3 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations*	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Residential Cleanup Standards	Industrial Cleanup Standards
Pesticides/PCBs (ug/kg)							
4,4'-DDD	1.8 - 9.6	0.51 - 660	27 / 32	0 / 32	MTCA Method B	4,170[b]	547,000[c]
4,4'-DDE	1.8 - 9.6	0.63 - 210	29 / 32	0 / 32	MTCA Method B	2,940[b]	386,000[c]
4,4'-DDT	1.8 - 9.6	0.67 - 52	22 / 32	0 / 32	MTCA Method A	1,000[a]	5,000[a]
Aldrin	1.8 - 9.6	2.1 - 8.2	2 / 32	0 / 32	MTCA Method B	58.8[b]	7,720[c]
Alpha-BHC	1.8 - 9.6	4.2 - 22	2 / 32	0 / 32	MTCA Method B	159[b]	20,800[c]
Alpha-chlordane	1.8 - 9.6	1.1 - 26	9 / 32	0 / 32	MTCA Method B	769[b]	101,000[c]
Aroclor1242	35 - 190	150	1 / 32	0 / 32	MTCA Method A	1,000[a]	10,000[a]
Aroclor1254	35 - 190	40 - 470	2 / 32	0 / 32	MTCA Method A	1,000[a]	10,000[a]
Beta-BHC	1.8 - 9.6	2.2 - 16	8 / 32	0 / 32	MTCA Method B	556[b]	72,900[c]
Delta-BHC	1.8 - 9.6	5	1 / 32	NA	NA	NA	NA
Dieldrin	3.5 - 19	1.1 - 21	13 / 32	0 / 32	MTCA Method B	62.5[b]	8,200[c]
Endosulfan I	1.8 - 9.6	2.0 - 51	3 / 32	0 / 32	MTCA Method B	480,000[b]	21,000,000[c]
Endosulfan sulfate	3.5 - 19	3.7 - 11	3 / 32	NA	NA	NA	NA
Endrin	3.5 - 19	0.80 - 9.0	5 / 32	0 / 32	MTCA Method B	24,000[b]	1,050,000[c]
Endrin aldehyde	3.5 - 19	4.6 - 5.4	2 / 32	NA	NA	NA	NA
Endrin ketone	3.5 - 19	0.65 - 11	4 / 32	NA	NA	NA	NA
Gamma chlordane	1.8 - 9.6	0.60 - 28	16 / 32	NA	NA	NA	NA
Inorganics (mg/kg)							
Antimony	0.60 - 0.88	0.88 - 4.3	9 / 32	0 / 32	EPA Region 9 PRG	30[d]	750[d]
Arsenic	0.66 - 0.89	1.6 - 43.9	30 / 32	4 / 32	MTCA Method A	20[a]	200.0[a]
Barium	0.14 - 0.21	52.8 - 394	33 / 32	0 / 32	MTCA Method B	5,600[b]	245,000[c]
Beryllium	0.08 - 0.21	0.16 - 0.68	33 / 32	24 / 32	MTCA Method B	0.233[b]	30.5[c]
Cadmium	0.10 - 0.11	0.24 - 1.2	5 / 32	0 / 32	MTCA Method A	2[a]	10.0[a]
Chromium	0.20 - 0.30	8.8 - 62.5	32 / 32	0 / 32	MTCA Method A	100[a]	500.0[a]
Cobalt	0.44 - 0.67	4.5 - 14.7	32 / 32	0 / 32	EPA Region 9 PRG	3,300[d]	29,000[d]

Key at end of the table.

Table 3-3 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations*	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Residential Cleanup Standards	Industrial Cleanup Standards
Inorganics (mg/kg)							
Copper	0.50 - 0.76	9.4 - 85.7	32 / 32	0 / 32	MTCA Method B	2,960[b]	130,000[c]
Lead	0.34 - 0.52	3.5 - 437	32 / 32	2 / 32	MTCA Method A	250[a]	1,000.0[a]
Manganese	0.12 - 0.18	201 - 1780	32 / 32	0 / 32	MTCA Method B	11,200[b]	490,000[c]
Mercury	0.05 - 0.06	0.08 - 0.90	4 / 32	0 / 32	MTCA Method A	1.0[a]	1.0[a]
Nickel	0.50 - 0.76	11.3 - 61.9	32 / 32	0 / 32	MTCA Method B	1,600[b]	70,000[c]
Selenium	1.1 - 2.7	0.90 - 2.3	21 / 32	0 / 32	MTCA Method B	400[b]	17,500[c]
Silver	0.28 - 0.42	0.43 - 1.6	32 / 32	0 / 32	MTCA Method B	400[b]	17,500[c]
Thallium	0.65 - 0.88	0.87 - 2.2	24 / 32	0 / 32	MTCA Method B	5.6[b]	245[c]
Vanadium	0.28 - 0.42	23.8 - 74.1	32 / 32	0 / 32	MTCA Method B	560[b]	24,500[c]
Zinc	0.48 - 0.73	39.7 - 505	32 / 32	0 / 32	MTCA Method B	24,000[b]	1,050,000[c]
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HpCDD	0.32 - 0.51	0.374 - 106.124	19 / 21	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	0.09 - 2.4	0.405 - 23.511	16 / 21	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	0.13 - 2.0	1.393 - 1.629	2 / 21	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	0.14 - 1.2	2.461 - 3.754	2 / 21	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	0.09 - 0.64	1.012 - 25.284	14 / 21	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	0.09 - 0.8	0.295 - 2.254	5 / 21	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	0.07 - 1.1	1.055 - 1.173	2 / 21	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	0.1 - 2.2	0.870 - 1.744	2 / 21	NA	NA	NA	NA
1,2,3,7,8-PeCDD	0.1 - 2.0	1.027	1 / 21	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	0.08 - 0.9	1.044 - 3.079	3 / 21	NA	NA	NA	NA
2,3,4,7,8-PeCDF	0.08 - 4.8	0.301 - 1.851	3 / 21	NA	NA	NA	NA
2,3,7,8-TCDD	0.09 - 0.55	0.388 - 1.119	2 / 21	NA	NA	NA	NA

Key at end of the table.

Table 3-3 (CONTINUED)

LANDFILL SUBSURFACE SOIL SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations*	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Residential Cleanup Standards	Industrial Cleanup Standards
Dioxins/Furans (ng/kg)							
2,3,7,8-TCDF	0.12 - 0.42	0.3798 - 3.6197	8 / 21	NA	NA	NA	NA
OCDD	3.7 - 15.9	4.186 - 1255.142	19 / 21	NA	NA	NA	NA
OCDF	0.16 - 12.0	1.157 - 53.484	16 / 21	NA	NA	NA	NA
Total toxicity equivalency	-	0.001 - 4.332	21 / 21	0 / 21	MTCA Method B	6.67[b]	875[c]

* Detected concentrations less than the associated detection limits are considered estimated quantities

[a] WDOE Method A cleanup level.

[b] WDOE Method B cleanup level.

[c] WDOE Method C cleanup level.

[d] EPA, Region 9, PRG.

Key:

EPA = United States Environmental Protection Agency.
µg/kg = Micrograms per kilogram.
mg/kg = Milligrams per kilogram.
MTCA = Model Toxics Control Act.
NA = Not analyzed.
ng/kg = Nanograms per kilogram.
PCBs = Polychlorinated biphenyls.
PRG = Preliminary remediation goal.
SVOCs = Semivolatile organic compounds.
VOCs = Volatile organic compounds.
WDOE = Washington Department of Ecology.

Table 3-4

LANDFILL GROUNDWATER SAMPLE ANALYTICAL RESULTS SUMMARY WENATCHEE, WASHINGTON

LOCATION ID	Groundwater Cleanup Standards	LF02GW32	LF03GW32	LF11GW24
DEPTH		32 ft bgs	32 ft bgs	24 ft bgs
VOCs (µg/L)				
1,2-Dichloroethane	0.481[b]	10 U	100 U	21
Acetone	800[b]	2 J	130	10 U
Benzene	5[a]	2 J	100 U	10 U
Carbon Disulfide	800[b]	2 J	100 U	10 U
Chlorobenzene	160[b]	5 J	100 U	10 U
Methylene Chloride	5[a]	10 U	420	10 U
Tetrachloroethene	5[a]	10 U	100 U	1 J
Xylene (total)	20[a]	2 J	100 U	10 U
SVOCs (µg/L)				
2-Methylnaphthalene	-	10 U	2 J	10 U
2-Methylphenol	800[b]	5 J	10 U	10 U
4-Methylphenol	80[b]	3 J	1 J	10 U
Bis(2-ethylhexyl)phthalate	6.25[b]	10 U	6 J	10 U
Diethylphthalate	12,800[b]	10 U	2 J	3 J
Naphthalene	320[b]	1 J	3 J	10 U
Phenol	9,600[b]	3 J	10 U	10 U
Pesticides/PCBs (µg/L)				
4,4'-DDD	0.365[b]	0.10 U	1.3 J	0.041 J
4,4'-DDE	0.257[b]	0.10	0.61 J	0.10 U
Aroclor1260	0.1[a]	1.0 U	1.0 U	0.41 J
Inorganics (µg/L)				
Antimony	15[c]	6.8 J	3 UJ	3.0 UJ
Arsenic	5[a]	27.5	45.6	7.1 J
Barium	1,120[b]	1,330 J	1,930 J	621 J
Beryllium	0.0203[b]	0.40 U	2 J	0.82 J
Cadmium	5[a]	2.4 J	5.2	1.1 J
Chromium	50[a]	74.9	370	541
Cobalt	2,200[c]	38.9 J	64.8	30.8 J
Copper	592[b]	69.1	200	92.1
Lead	5[a]	130 J	487 J	16.5 J
Manganese	2,240[b]	1,880 J	2,430 J	2,470 J
Mercury	2[a]	0.16 J	0.45	0.10 UJ
Nickel	320[b]	73.3	306	363
Selenium	80[b]	5.8 J	19.7 J	5.8 J
Silver	80[b]	1.4 UJ	4.2 J	1.4 UJ

Key is at the end of the table.

Table 3-4 (CONTINUED)

LANDFILL GROUNDWATER SAMPLE ANALYTICAL RESULTS SUMMARY WENATCHEE, WASHINGTON

	Groundwater			
LOCATION ID	**Cleanup**	**LF02GW32**	**LF03GW32**	**LF11GW24**
DEPTH	**Standards**	**32 ft bgs**	**32 ft bgs**	**24 ft bgs**
Inorganics (ug/L)				
Vanadium	112[b]	66.2	192	96.9
Zinc	4,800[b]	**551 J**	**2,600 J**	**140 J**
Dioxins/Furans (pg/L)				
1,2,3,4,6,7,8-HpCDF	-	6.746 UJ	32.134 J	4.390 U
1,2,3,4,7,8-HxCDF	-	6.531 UJ	11.583 J	2.998 U
OCDD	-	433.420 UJ	1,037.870	13.882 U
OCDF	-	11.998 UJ	122.027	3.598 U
Total Toxicity Equivalency	0.583[b]	0.000	1.6	0.000

Note: Bold type indicates concentrations above sample quantitation limits or detection limits.
Underline indicates concentrations above one or more comparison standards.

Key:

a = WDOE Method A cleanup level.
b = WDOE Method B cleanup level.
c = EPA, Region 9, PRG (Tap Water).
bgs = Below ground surface.
CLP = Contract Laboratory Program.
EPA = United States Environmental Protection Agency.
ft = Feet.
ID = Identification.
J = The analyte was positively identified. The associated numerical value is an estimate.
mg/L = Micrograms per liter.
NA = Not analyzed.
pg/L = Picograms per liter.
PCBs = Polychlorinated biphenyls.
PRG = Preliminary remediation goal.
SVOC = Semivolatile organic compounds.
U = Not detected.
UJ = The associated numerical value is an estimate of the quantitation limit of the analyte in this sample.
VOCs = Volatile organic compounds.
WDO = Washington Department of Ecology.

Table 3-5

LANDFILL GROUNDWATER SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations*	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Groundwater Cleanup Standards
VOCs (µg/L)						
1,2-Dichloroethane	10 - 100	21	1 / 3	1 / 3	MTCA Method B	0.481[b]
Acetone	10 - 100	2 - 130	2 / 3	0 / 3	MTCA Method B	800[b]
Benzene	10 - 100	2	1 / 3	0 / 3	MTCA Method A	5[a]
Carbon Disulfide	10 - 100	2	1 / 3	0 / 3	MTCA Method B	800[b]
Chlorobenzene	10 - 100	5	1 / 3	0 / 3	MTCA Method B	160[b]
Methylene Chloride	10 - 100	420	1 / 3	1 / 3	MTCA Method A	5[a]
Tetrachloroethene	10 - 100	1	1 / 3	0 / 3	MTCA Method A	5[a]
Xylene (total)	10 - 100	2	1 / 3	0 / 3	MTCA Method A	20[a]
SVOCs (µg/L)						
2-Methylnaphthalene	10	2	1 / 3	-	NA	NA
2-Methylphenol	10	5	1 / 3	0 / 3	MTCA Method B	800[b]
4-Methylphenol	10	1 - 3	2 / 3	0 / 3	MTCA Method B	80[b]
Bis(2-ethylhexyl)phthalate	10	6	1 / 3	0 / 3	MTCA Method B	6.25[b]
Diethylphthalate	10	2 - 3	2 / 3	0 / 3	MTCA Method B	12,800[b]
Naphthalene	10	1 - 3	2 / 3	0 / 3	MTCA Method B	320[b]
Phenol	10	3	1 / 3	0 / 3	MTCA Method B	9,600[b]
Pesticides/PCBs (µg/L)						
4,4'-DDD	0.098 - 0.11	0.041 - 1.3	2 / 3	1 / 3	MTCA Method B	0.365[b]
4,4'-DDE	0.098 - 0.11	0.10 - 0.61	2 / 3	1 / 3	MTCA Method B	0.257[b]
Aroclor1260	0.98 - 1.1	0.41	1 / 3	1 / 3	MTCA Method A	0.1[a]
Inorganics (µg/L)						
Antimony	3	6.8	1 / 3	0 / 3	EPA Region 9 PRG	15[c]
Arsenic	3	7.1 - 45.6	3 / 3	3 / 3	MTCA Method A	5[a]
Barium	0.7	621 - 1930	3 / 3	2 / 3	MTCA Method B	1,120[b]
Beryllium	0.4	0.82 - 2	2 / 3	2 / 3	MTCA Method B	0.0203[b]
Cadmium	12.6	1.1 - 5.2	3 / 3	1 / 3	MTCA Method A	5[a]
Chromium	1	74.9 - 541	3 / 3	3 / 3	MTCA Method A	50[a]
Cobalt	2.2	30.8 - 64.8	3 / 3	0 / 3	EPA Region 9 PRG	2,200[c]
Copper	2.5	69.1 - 200	3 / 3	0 / 3	MTCA Method B	592[b]
Lead	1.7	16.5 - 487	3 / 3	3 / 3	MTCA Method A	5[a]
Manganese	0.6	1880 - 2470	3 / 3	2 / 3	MTCA Method B	2,240[b]
Mercury	0.1	0.16 - 0.45	2 / 3	0 / 3	MTCA Method A	2[a]
Nickel	2.5	73.3 - 363	3 / 3	1 / 3	MTCA Method B	320[b]
Selenium	2.3	5.8 - 19.7	3 / 3	0 / 3	MTCA Method B	80[b]
Silver	1.4	1.4 - 4.2	2 / 3	0 / 3	MTCA Method B	80[b]
Vanadium	1.4	66.2 - 192	3 / 3	1 / 3	MTCA Method B	112[b]
Zinc	2.4	140 - 2600	3 / 3	0 / 3	MTCA Method B	4,800[b]

Key at end of the table.

Table 3-5 (CONTINUED)

LANDFILL GROUNDWATER SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations*	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Groundwater Cleanup Standards
Dioxins/Furans (pg/L)						
1,2,3,4,6,7,8-HpCDF	1.7 - 8.4	32.134	1 / 3	NA	NA	NA
1,2,3,4,7,8-HxCDF	2.1 - 6.5	11.583	1 / 3	NA	NA	NA
OCDD	9.7 - 516	1037.870	1 / 3	NA	NA	NA
OCDF	3.4 - 12	122.027	1 / 3	NA	NA	NA
Total toxicity equivalency	-	1.6	1 / 1	1 / 1	MTCA Method B	0.583[b]

* Detected concentrations less than the associated detection limits are considered estimated quantities.

[a] WDOE Method A cleanup level.

[b] WDOE Method B cleanup level.

[c] EPA, Region 9, PRG.

Key:

EPA = United States Environmental Protection Agency.
MTCA = Model Toxics Control Act.
µg/L = Micrograms per liter.
pg/L = Picograms per liter.
PRG = Preliminary remediation goal.

Table 3-6

PUBLIC WORKS DEPARTMENT PROPERTY SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY WENATCHEE, WASHINGTON

LOCATION ID	Residential Cleanup Standards	Industrial Cleanup Standards	LF04SB04	LF04SB12	LF05SB04	LF05SB12	LF06SB04	LF06SB12	LF14SS00	LF14SB08	LF06SB04B
DEPTH			0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs
VOCs (µg/kg)											
2-Butanone	6,900,000[d]	27,000,000[d]	11 U	11 U	2 J	11 U	11 U	9 J	11 U	10 U	NA
Acetone	8,000,000[b]	350,000,000[c]	11 U	11 U	11 U	11 U	34	51	11 U	10 U	NA
SVOCs (µg/kg)											
2-Methylnaphthalene	-	-	380 U	360 U	350 UJ	350 UJ	350 U	55 J	350 U	54 J	NA
4-Nitroaniline	-	-	950 U	900 U	890 UJ	880 UJ	890 U	940	890 U	860 U	NA
Acenaphthene	4,800,000[b]	210,000,000[b]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	350 U	410	NA
Anthracene	24,000,000[b]	105,000,000[b]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	350 U	1,500	NA
Benzo(a)anthracene	137[b]	18,000[b]	380 U	360 U	350 UJ	350 UJ	350 U	42 J	51 J	3,200	NA
Benzo(a)pyrene	137[b]	18,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	93 J	2,200	NA
Benzo(b)fluoranthene	137[b]	18,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	95 J	1,100	NA
Benzo(g,h,i)perylene	-	-	380 U	360 U	350 UJ	350 UJ	350 U	380 U	120 J	480	NA
Benzo(k)fluoranthene	137[b]	18,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	350 U	1,200	NA
Bis(2-ethylhexyl)phthalate	71,400[b]	9,370,000[c]	380 U	360 U	5,200 J	320 J	54 J	380 U	580	39 J	NA
Carbazole	16,000,000[b]	7,000,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	350 U	1,200	NA
Chrysene	137[b]	18,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	61 J	59 J	3,200	NA
Di-n-butylphthalate	8,000,000[b]	350,000,000[c]	380 U	360 U	350 UJ	350 UJ	170 J	52 J	350 U	340 U	NA
Dibenzofuran	1,100,000[d]	10,000,000[d]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	350 U	210 J	NA
Dibenz(a,h)anthracene	137[b]	18,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	350 U	420	NA
Fluoranthene	3,200,000[b]	140,000,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	68 J	140 J	6,400	NA
Fluorene	3,200,000[b]	140,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	350 U	360	NA
Indeno(1,2,3-cd)pyrene	137[b]	18,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	380 U	67 J	1,200	NA
Phenanthrene	-	-	380 U	360 U	350 UJ	350 UJ	350 U	60 J	68 J	5,600	NA
Pyrene	2,400,000[b]	105,000,000[c]	380 U	360 U	350 UJ	350 UJ	350 U	110 J	190 J	6,200	NA
Pesticides/PCBs (µg/kg)											
4,4'-DDD	4,170[b]	547,000[c]	26	17	6.7	3.5 U	210	230	5.6	4.6	NA
4,4'-DDE	2,940[b]	386,000[c]	60	15	6.0	1.9 J	73	62	31	3.4 U	NA
4,4'-DDT	1,000[a]	5,000[a]	7.2	2.6 J	4.5	3.5 U	3.9 J	5.8 J	19	2.0 J	NA

Key is at the end of the table.

Table 3-6 (CONTINUED)

PUBLIC WORKS DEPARTMENT PROPERTY SUBSURFACE SOIL SAMPLE ANALYTICAL RESULTS SUMMARY WENATCHEE, WASHINGTON

LOCATION ID	Residential Cleanup Standards	Industrial Cleanup Standards	LF04SB04	LF04SB12	LF05SB04	LF05SB12	LF06SB04	LF06SB12	LF14SS00	LF14SB08	LF06SB04B
DEPTH			0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs	8 - 12 ft bgs	0 - 4 ft bgs
Inorganics (ug/kg)											
Antimony	30,000[d]	750,000[d]	R	R	R	R	R	R	R	R	NA
Arsenic	20[a]	200.0[a]	28.7 J	5.0 J	3.4 J	2.9 J	15.9 J	18.8 J	17.4 J	4.2 J	NA
Barium	5,600[b]	245,000[c]	85.5	82.2	105	119	99.7	92.9	149	78.5	NA
Beryllium	0.233[b]	30.5[c]	0.34 J	0.27 J	0.29 J	0.25 J	0.25 J	0.36 J	0.36 J	0.35 J	NA
Chromium	100[a]	500.0[a]	15.2	17.2	31.6	28.5	19.8	19.5	25.3 J	20.7 J	NA
Cobalt	3,300[d]	29,000[d]	6.8 J	6.5 J	9.2 J	8.1 J	8.1 J	6.6 J	8.9 J	6.2 J	NA
Copper	2,960[b]	130,000[c]	14.7	17.0	20.8	19.7	30.2	17.0	18.1	13.8	NA
Lead	250[a]	1,000.0[a]	134 J	23.0 J	10.2 J	8.9 J	130 J	162 J	71.2 J	17.0 J	NA
Manganese	11,200[b]	490,000[c]	337	345	360	340	348	333	410	343	NA
Mercury	1.0[a]	1.0[a]	0.05 U	0.16	0.05 J	0.05 U	0.05 U	0.06 U	0.05 U	0.43	NA
Nickel	1,600[b]	70,000[c]	11.7	12.7	23.3	23.3	19.7	14.1	15.6	13.7	NA
Selenium	400[b]	17,500[c]	1.5 U	1.5 U	2.0 U	1.9 U	1.6 U	1.5 U	1.5	1.9	NA
Silver	400[b]	17,500[c]	0.73 J	0.74 J	0.77 J	0.70 J	0.70 J	0.78 J	0.86 J	0.77 J	NA
Thallium	5.6[b]	245[c]	1.1 J	1.2 J	1.1 J	1.1 J	0.72 J	1.4 J	0.98 J	1.3 J	NA
Vanadium	560[b]	24,500[c]	37.0	36.2	45.6	40.7	39.4	36.5	47.7	33.7	NA
Zinc	24,000[b]	1,050,000[c]	58.6 J	79.0 J	59.5 J	53.1 J	76.9 J	84.0 J	63.7 J	90.3 J	NA
Dioxins/Furans (ng/kg)											
1,2,3,4,6,7,8-HpCDD	-	-	1.833	1.014	NA	NA	NA	NA	5.513	0.400 U	2.931
1,2,3,4,6,7,8-HpCDF	-	-	0.627 J	2.034	NA	NA	NA	NA	1.834	0.218 U	1.364
1,2,3,4,7,8-HxCDD	-	-	0.154 U	0.135 U	NA	NA	NA	NA	0.567	0.357 U	0.466 U
1,2,3,4,7,8-HxCDF	-	-	1.022 J	1.282 J	NA	NA	NA	NA	13.630 J	0.233 U	0.997 J
1,2,3,6,7,8-HxCDF	-	-	0.196 U	0.140 U	NA	NA	NA	NA	0.902 J	0.174 U	0.273 U
2,3,4,7,8-PeCDF	-	-	0.113 U	0.114 U	NA	NA	NA	NA	0.359 J	0.233 U	0.217 U
OCDD	-	-	15.904 U	9.754 U	NA	NA	NA	NA	49.865	1.293	18.653
OCDF	-	-	1.129	0.925 J	NA	NA	NA	NA	4.353	0.351 U	1.488
Total Toxicity Equivalency	6.67[b]	875[c]	0.128	0.159	NA	NA	NA	NA	1.756	0.001	0.163

Key is at the end of the table.

[a] WDOE Method A cleanup level.

[b] WDOE Method B cleanup level.

[c] WDOE Method C cleanup level.

[d] EPA, Region 9, PRG.

Note: Bold type indicates concentrations above sample quantitation limits or detection limits.
Underline indicates concentrations above one or more comparison standards.

Key:

bgs	= Below ground surface.
CLP	= Contract Laboratory Program.
EPA	= United States Environmental Protection Agency.
ft	= Feet.
ID	= Identification.
J	= The analyte was positively identified. The associated numerical value is an estimate.
µg/kg	= Micrograms per kilogram.
NA	= Not analyzed.
ng/kg	= Nanograms per kilogram.
PCBs	= Polychlorinated biphenyls.
PRG	= Preliminary remediation goal.
R	= Rejected.
SVOCs	= Semivolatile organic compounds.
U	= Not detected.
UJ	= The associated numerical value is an estimate of the quantitation limit of the analyte in this sample.
VOCs	= Volatile organic compounds.
WDOE	= Washington Department of Ecology.

Table 3-7

PUBLIC WORKS DEPARTMENT PROPERTY
SUBSURFACE SOIL SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations*	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Residential Cleanup Standards	Industrial Cleanup Standards
VOCs (µg/kg)							
2-Butanone	10 - 21	2-9	2 / 8	0 / 8	EPA Region 9 PRG	6,900,000[d]	27,000,000[d]
Acetone	10 - 150	34 - 51	2 / 8	0 / 8	MTCA Method B	8,000,000[b]	350,000,000[c]
SVOCs (µg/kg)							
2-Methylnaphthalene	350 - 720	54 - 55	2 / 8	NA	NA	NA	NA
4-Nitroaniline	350 - 720	940	1 / 8	NA	NA	NA	NA
Acenaphthene	350 - 720	410	1 / 8	0 / 8	MTCA Method B	4,800,000[b]	210,000,000[b]
Anthracene	350 - 720	1500	1 / 8	0 / 8	MTCA Method B	24,000,000[b]	105,000,000[b]
Benzo(a)anthracene	350 - 720	42 - 3200	3 / 8	1 / 8	MTCA Method B	137[b]	18,000[b]
Benzo(a)pyrene	350 - 720	93 - 2200	2 / 8	1 / 8	MTCA Method B	137[b]	18,000[c]
Benzo(b)fluoranthene	350 - 720	95 - 1100	2 / 8	1 / 8	MTCA Method B	137[b]	18,000[c]
Benzo(g,h,i)perylene	350 - 720	120 - 480	2 / 8	NA	NA	NA	NA
Benzo(k)fluoranthene	350 - 720	1200	1 / 8	0 / 8	MTCA Method B	137[b]	18,000[c]
Bis(2-ethylhexyl)phthalate	350 - 720	54 - 5200	5 / 8	0 / 8	MTCA Method B	71,400[b]	9,370,000[c]
Carbazole	350 - 720	1200	1 / 8	0 / 8	MTCA Method B	16,000,000[b]	7,000,000[c]
Chrysene	350 - 720	59 - 3200	3 / 8	1 / 8	MTCA Method B	137[b]	18,000[c]
Di-n-butylphthalate	350 - 720	52 - 170	2 / 8	0 / 8	MTCA Method B	8,000,000[b]	350,000,000[c]
Dibenzofuran	350 - 720	210	1 / 8	0 / 8	EPA Region 9 PRG	1,100,000[d]	10,000,000[d]
Dibenz(a,h)anthracene	350 - 720	420	1 / 8	1 / 8	MTCA Method B	137[b]	18,000[c]
Fluoranthene	350 - 720	68 - 6400	3 / 8	0 / 8	MTCA Method B	3,200,000[b]	140,000,000[c]
Fluorene	350 - 720	360	1 / 8	0 / 8	MTCA Method B	3,200,000[b]	140,000[c]
Indeno(1,2,3-cd)pyrene	350 - 720	67 - 1200	2 / 8	1 / 8	MTCA Method B	137[b]	18,000[c]
Phenanthrene	350 - 720	60 - 5600	3 / 8	NA	NA	NA	NA
Pyrene	350 - 720	110 - 6200	3 / 8	0 / 8	MTCA Method B	2,400,000[b]	105,000,000[c]

Key at end of table.

Table 3-7 (CONTINUED)

PUBLIC WORKS DEPARTMENT PROPERTY
SUBSURFACE SOIL SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations*	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Residential Cleanup Standards	Industrial Cleanup Standards
Pesticides/PCBs (µg/kg)							
4,4'-DDD	1.8 - 9.6	4.6 - 230	7 / 8	0 / 8	MTCA Method B	4,170[b]	547,000[c]
4,4'-DDE	1.8 - 9.6	1.9 - 73	7 / 8	0 / 8	MTCA Method B	2,940[b]	386,000[c]
4,4'-DDT	1.8 - 9.6	2.0 - 19	7 / 8	0 / 8	MTCA Method A	1,000[a]	5,000[a]
Inorganics (mg/kg)							
Antimony	0.60 - 0.88	-	-	-	EPA Region 9 PRG	30,000[d]	750,000[d]
Arsenic	0.66 - 0.89	2.9 - 28.7	8 / 8	0 / 8	MTCA Method A	20[a]	200.0[a]
Barium	0.14 - 0.21	78.5 - 149	8 / 8	0 / 8	MTCA Method B	5,600[b]	245,000[c]
Beryllium	0.08 - 0.21	0.25 - 0.36	8 / 8	8 / 8	MTCA Method B	0.233[b]	30.5[c]
Chromium	0.20 - 0.30	15.2 - 31.6	8 / 8	0 / 8	MTCA Method A	100[a]	500.0[a]
Cobalt	0.44 - 0.67	6.2 - 9.2	8 / 8	0 / 8	EPA Region 9 PRG	3,300[d]	29,000[d]
Copper	0.50 - 0.76	13.8 - 30.2	8 / 8	0 / 8	MTCA Method B	2,960[b]	130,000[c]
Lead	0.34 - 0.52	8.9 - 162	8 / 8	0 / 8	MTCA Method A	250[a]	1,000.0[a]
Manganese	0.12 - 0.18	333 - 410	8 / 8	0 / 8	MTCA Method B	11,200[b]	490,000[c]
Mercury	0.05 - 0.06	0.05 - 0.43	3 / 8	0 / 8	MTCA Method A	1.0[a]	1.0[a]
Nickel	0.50 - 0.76	11.7 - 23.3	8 / 8	0 / 8	MTCA Method B	1,600[b]	70,000[c]
Selenium	1.1 - 2.7	1.5 - 1.9	2 / 8	0 / 8	MTCA Method B	400[b]	17,500[c]
Silver	0.28 - 0.42	0.70 - 0.86	8 / 8	0 / 8	MTCA Method B	400[b]	17,500[c]
Thallium	0.65 - 0.88	0.72 - 1.4	8 / 8	0 / 8	MTCA Method B	5.6[b]	245[c]
Vanadium	0.28 - 0.42	33.7 - 47.7	8 / 8	0 / 8	MTCA Method B	560[b]	24,500[c]
Zinc	0.48 - 0.73	53.1 - 90.3	8 / 8	0 / 8	MTCA Method B	24,000[b]	1,050,000[c]

Key at end of table.

Table 3-7 (CONTINUED)

PUBLIC WORKS DEPARTMENT PROPERTY
SUBSURFACE SOIL SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations*	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Residential Cleanup Standards	Industrial Cleanup Standards
Dioxins/Furans (ng/kg)							
1,2,3,4,6,7,8-HpCDD	0.32 - 0.51	1.014 - 5.513	4 / 5	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	0.09 - 2.4	0.627 - 2.034	4 / 5	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	0.14 - 1.2	0.567	1 / 5	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	0.09 - 0.64	0.997 - 13.630	4 / 5	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	0.07 - 1.1	0.902	1 / 5	NA	NA	NA	NA
2,3,4,7,8-PeCDF	0.08 - 4.8	0.359	1 / 5	NA	NA	NA	NA
OCDD	3.7 - 15.9	1.293 - 49.865	3 / 5	NA	NA	NA	NA
OCDF	0.16 - 12.0	0.925 - 4.353	4 / 5	NA	NA	NA	NA

* Detected concentrations less than the associated detection limits are considered estimated quantities

[a] WDOE Method A cleanup level.

[b] WDOE Method B cleanup level.

[c] WDOE Method C cleanup level.

[d] EPA, Region 9, PRG.

Key:

EPA = United States Environmental Protection Agency.
µg/kg = Micrograms per kilogram.
mg/kg = Milligrams per kilogram.
MTCA = Model Toxics Control Act.
NA = Not analyzed.
ng/kg = Nanograms per kilogram.
PCBs = Polychlorinated biphenyls.
PRG = Preliminary remediation goal.
SVOCs = Semivolatile organic compounds.
VOCs = Volatile organic compounds.
WDOE = Washington Department of Ecology.

TABLE 3-8

PUBLIC WORKS DEPARTMENT PROPERTY GROUNDWATER SAMPLE ANALYTICAL RESULTS SUMMARY WENATCHEE, WASHINGTON

	Groundwate		
LOCATION ID	**Cleanup**	**LF04GW24**	**LF14GW24**
DEPTH	**Standards**	**24 ft bgs**	**24 ft bgs**
VOCs(µg/L)			
2-Butanone	4,800[b]	3 J	10 U
Acetone	800[b]	18	10 U
Benzene	5[a]	1 J	10 U
Methylene Chloride	5[a]	23	10 U
Toluene	40[a]	2 J	10 U
Pesticides/PCBs(µg/L)			
4,4'-DDD	0.365[b]	0.040 J	0.11 U
4,4'-DDE	0.257[b]	0.036 J	0.11 U
Aroclor1260	0.1[a]	1.0 U	0.37 J
Inorganics(µg/L)			
Arsenic	5[a]	28.4	18.3
Barium	1,120[b]	1,390 J	1,930 J
Beryllium	0.0203[b]	2.8 J	2.8 J
Cadmium	5[a]	2.1 J	2.0 J
Chromium	50[a]	762	234
Cobalt	2,200[c]	83.7	90.0
Copper	592[b]	324	238
Lead	5[a]	86.3 J	45.1 J
Manganese	2,240[b]	5,190 J	6,240 J
Mercury	2[a]	0.24	0.16
Nickel	320[b]	565	283
Selenium	80[b]	16.6 J	7.5 J
Silver	80[b]	4.6 J	3.3 J
Vanadium	112[b]	222	155
Zinc	4,800[b]	1,160 J	333 J
Dioxins/Furans(pg/L)			
1,2,3,4,6,7,8-HpCDF	-	4.542 J	2.912 U
OCDF	-	16.634	3.355 U
Total Toxicity Equivalen	0.583[b]	0.0062	0.000

Key at end of table.

[a] WDOE Method A cleanup level.

[b] WDOE Method B cleanup level.

Note: Bold type indicates concentrations above sample quantitation limits or detection limits.
Underline indicates concentrations above one or more comparison standards.

Key:

CLP	EPA, Region 9, PRG (Tap Water).
bgs	Below ground surface.
CLP	Contract Laboratory Program.
EPA	United States Environmental Protection Agency.
ft	Feet.
ID	Identification.
J	The analyte was positively identified. The associated numerical value is an estimate.
NA	Not analyzed.
pg/L	Picograms per liter.
PCBs	Polychlorinated biphenyls.
PRG	Preliminary remediation goal.
SVOCs	Semivolatile organic compounds.
µg/L	Micrograms per liter.
U	Not detected.
VOCs	Volatile organic compounds.
WDOE	Washington Department of Ecology.

Table 3-9

PUBLIC WORKS DEPARTMENT PROPERTY
GROUNDWATER SAMPLE SCREENING LEVEL SUMMARY
WENATCHEE, WASHINGTON

Analyte	Range of Detection Limits	Range of Detected Concentrations	Frequency of Detection	Frequency of Exceedence of Screening Level	Screening Level Source	Groundwater Cleanup Standards
VOCs (µg/L)						
2-Butanone	10 - 100	3	1 / 2	0 / 2	MTCA Method B	4,800[b]
Acetone	10 - 100	18	1 / 2	0 / 2	MTCA Method B	800[b]
Benzene	10 - 100	1	1 / 2	0 / 2	MTCA Method A	5[a]
Methylene Chloride	10 - 100	23	1 / 2	1 / 2	MTCA Method A	5[a]
Toluene	10 - 100	2	1 / 2	0 / 2	MTCA Method A	40[a]
Pesticides/PCBs (µg/L)						
4,4'-DDD	0.098 - 0.11	0.040	1 / 2	0 / 2	MTCA Method B	0.365[b]
4,4'-DDE	0.098 - 0.11	0.036	1 / 2	0 / 2	MTCA Method B	0.257[b]
Aroclor1260	0.98 - 1.1	0.37	1 / 2	1 / 2	MTCA Method A	0.1[a]
Inorganics (µg/L)						
Arsenic	3	18.3 - 28.4	2 / 2	2 / 2	MTCA Method A	5[a]
Barium	0.7	1390 - 1930	2 / 2	2 / 2	MTCA Method B	1,120[b]
Beryllium	0.4	2.8	2 / 2	2 / 2	MTCA Method B	0.0203[b]
Cadmium	12.6	2.0 - 2.1	2 / 2	0 / 2	MTCA Method A	5[a]
Chromium	1	234 - 762	2 / 2	2 / 2	MTCA Method A	50[a]
Cobalt	2.2	83.7 - 90.0	2 / 2	0 / 2	EPA Region 9 PRG	2,200[c]
Copper	2.5	238 - 324	2 / 2	0 / 2	MTCA Method B	592[b]
Lead	1.7	45.1 - 86.3	2 / 2	2 / 2	MTCA Method A	5[a]
Manganese	0.6	5190 - 6240	2 / 2	2 / 2	MTCA Method B	2,240[b]
Mercury	0.1	0.16 - 0.24	2 / 2	0 / 2	MTCA Method A	2[a]
Nickel	2.5	283 - 565	2 / 2	1 / 2	MTCA Method B	320[b]
Selenium	2.3	7.5 - 16.6	2 / 2	0 / 2	MTCA Method B	80[b]
Silver	1.4	3.3 - 4.6	2 / 2	0 / 2	MTCA Method B	80[b]
Vanadium	1.4	155 - 222	2 / 2	2 / 2	MTCA Method B	112[b]
Zinc	2.4	333 - 1160	2 / 2	0 / 2	MTCA Method B	4,800[b]
Dioxins/Furans (pg/L)						
1,2,3,4,6,7,8-HpCDF	1.7 - 8.4	4.542	1 / 2	NA	NA	NA
OCDF	3.4 - 12	16.634	1 / 2	NA	NA	NA

* Detected concentrations less than the associated detection limits are considered estimated quantities

[a] WDOE Method A cleanup level.

[b] WDOE Method B cleanup level.

[c] EPA, Region 9, PRG.

Key:

EPA = United States Environmental Protection Agency.
MTCA = Model Toxics Control Act.
µg/L = Micrograms per liter.
pg/L = Picograms per liter.
PCBs = Polychlorinated biphenyls.
PRG = Preliminary remediation goal.
VOCs = Volatile organic compounds.

PHASE I ENVIRONMENTAL SITE ASSESSMENT
SUBSURFACE EVALUATION ANALYTICAL RESULTS
(MFA, 2011A)

to the existing former maintenance building (see Figure 1). These soil boring locations were also used for the combustible gas monitoring, which is described below.

Piezometer well design and construction methods conformed to requirements and specifications outlined in Washington Administrative Code (WAC) 173-160 for "resource protection wells" in the State of Washington. The wells were installed to depths ranging from approximately 28 feet to 35 feet below ground surface (bgs). As-built schematics and descriptions of subsurface conditions encountered during soil boring activities are presented in Attachment A. Water levels were measured in October and November 2010 to aid in the creation of a potentiometric surface map for the shallow subsurface groundwater conditions at the Property. The October and November 2010 potentiometric surface maps are presented in Figures 2 and 3, respectively. The potentiometric surfaces indicate that groundwater flow is to the south-southwest, away from the Columbia River.

COMBUSTIBLE GAS ASSESSMENT

Four soil borings (SG1 through SG4) advanced at the Property were used to field screen for the presence of combustible soil gas in the subsurface. Locations of SG1 through SG3 coincided with piezometers PZ1 through PZ3, while SG4 was advanced in the south-central portion of the Property near the approximate location of the former public works fueling site (refer to Figure 1). Locations SG1 and SG4 were outside the area of the landfill, and locations SG2 and SG3 were within the area of the landfill.

Soil gas was screened using a combustible gas indicator and a photoionization detector (PID). Field parameters measured include carbon dioxide (CO_2) measured in volumetric parts per million (Vppm); the lower explosivity limit (LEL) of the soil gas as a percent (%); oxygen (O_2) as a percent; and hydrogen sulfide (H_2S) measured as Vppm. PID readings are also measured as Vppm. The table below shows the results of the soil gas screening at each sample point:

Table
Soil Gas Measurements

Location	CO_2 (Vppm)	LEL (%)	O_2 (%)	H_2S (Vppm)	PID (Vppm)
SG1	155	8	7.3	0.0	5.3
SG2	385	49-100	2.7	0.0	34.3
SG3	509	>100	8.2	0.0	5.5
SG4	46	1.0	5.8	0.0	2.8
NOTE: >100 = greater than the LEL.					

Specialty Analytical

11711 SE Capps Road
Clackamas, OR 97015
(503) 607-1331
Fax (503) 607-1336

October 13, 2010

Alan Hughes
Maul, Foster & Alongi
7223 NE Hazel Dell Avenue
Suite B
Vancouver, WA 98665

TEL: (360) 694-2691
FAX: (360) 906-1958

RE: City of Wenatchee / 0380.02.01

Dear Alan Hughes: Order No.: 1010052

Specialty Analytical received 1 sample on 10/7/2010 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Cindy Hillyard
Project Manager

Technical Review

Specialty Analytical

Date: *13-Oct-10*

CLIENT: Maul, Foster & Alongi
Project: City of Wenatchee / 0380.02.01
Lab Order: 1010052

Lab ID: 1010052-01
Client Sample ID: GP1-S-3.0
Collection Date: 10/5/2010 3:00:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		**NWTPH-DX**				Analyst: **jrp**
Diesel	45.5	17.2		mg/Kg-dry	1	10/8/2010
Lube Oil	115	57.3		mg/Kg-dry	1	10/8/2010
Surr: o-Terphenyl	123	50-150		%REC	1	10/8/2010
PAH'S BY GC/MS-OARSIM (8270C)		**8270SIM**				Analyst: **bda**
Acenaphthene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Acenaphthylene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Anthracene	22.1	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benz(a)anthracene	14.5	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benzo(a)pyrene	11.5	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benzo(b)fluoranthene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benzo(g,h,i)perylene	13.0	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Benzo(k)fluoranthene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Chrysene	18.3	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Dibenz(a,h)anthracene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Fluoranthene	9.93	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Fluorene	8.40	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Indeno(1,2,3-cd)pyrene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Naphthalene	ND	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Phenanthrene	77.9	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Pyrene	59.6	7.64		µg/Kg-dry	1	10/13/2010 9:40:00 AM
Surr: 2-Fluorobiphenyl	56.9	42.6-128		%REC	1	10/13/2010 9:40:00 AM
Surr: Nitrobenzene-d5	39.4	21.7-155		%REC	1	10/13/2010 9:40:00 AM
Surr: p-Terphenyl-d14	84.3	44.9-155		%REC	1	10/13/2010 9:40:00 AM
PCB'S IN SOIL		**SW8082**				Analyst: **jrp**
Aroclor 1016	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1221	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1232	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1242	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1248	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1254	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1260	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1262	ND	1.53		µg/Kg-dry	1	10/11/2010
Aroclor 1268	ND	1.53		µg/Kg-dry	1	10/11/2010
Surr: Decachlorobiphenyl	103	56.5-130		%REC	1	10/11/2010

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082LL_S

Sample ID: **MB-26765**	SampType: **MBLK**	TestCode: **8082LL_S**	Units: **µg/Kg**	Prep Date: **10/8/2010**	Run ID: **GCK_101011A**
Client ID: **ZZZZZ**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702141**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016	ND	1.33									
Aroclor 1221	ND	1.33									
Aroclor 1232	ND	1.33									
Aroclor 1242	ND	1.33									
Aroclor 1248	ND	1.33									
Aroclor 1254	ND	1.33									
Aroclor 1260	ND	1.33									
Aroclor 1262	ND	1.33									
Aroclor 1268	ND	1.33									
Surr: Decachlorobiphenyl	12510	0	13330	0	93.8	56.5	130	0	0		

Sample ID: **LCS-26765**	SampType: **LCS**	TestCode: **8082LL_S**	Units: **µg/Kg**	Prep Date: **10/8/2010**	Run ID: **GCK_101011A**
Client ID: **ZZZZZ**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702142**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	116	1.33	133.3	0	87	44.3	137	0	0		

Sample ID: **1010052-01AMS**	SampType: **MS**	TestCode: **8082LL_S**	Units: **µg/Kg-dry**	Prep Date: **10/8/2010**	Run ID: **GCK_101011A**
Client ID: **GP1-S-3.0**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702143**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	149.7	1.53	152.7	0	98	56.6	123	0	0		

Sample ID: **1010052-01AMSD**	SampType: **MSD**	TestCode: **8082LL_S**	Units: **µg/Kg-dry**	Prep Date: **10/8/2010**	Run ID: **GCK_101011A**
Client ID: **GP1-S-3.0**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702144**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	152.7	1.53	152.7	0	100	56.6	123	149.7	2.02	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: 8082LL_S

Sample ID: **CCV**	SampType: **CCV**	TestCode: **8082LL_S**	Units: **µg/Kg**	Prep Date:	Run ID: **GCK_101011A**
Client ID: **ZZZZZ**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702140**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	124	1.33	133.3	0	93	85	115	0	0		

Sample ID: **CCV**	SampType: **CCV**	TestCode: **8082LL_S**	Units: **µg/Kg**	Prep Date:	Run ID: **GCK_101011A**
Client ID: **ZZZZZ**	Batch ID: **26765**	TestNo: **SW8082**		Analysis Date: **10/11/2010**	SeqNo: **702146**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aroclor 1016/1260	125.3	1.33	133.3	0	94	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID: MB-26762	SampType: MBLK	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 10/8/2010	Run ID: GC-M_101008A
Client ID: ZZZZZ	Batch ID: 26762	TestNo: NWTPH-Dx		Analysis Date: 10/8/2010	SeqNo: 701939

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	ND	15.0									
Lube Oil	ND	50.0									
Surr: o-Terphenyl	37.12	0	33.33	0	111	50	150	0	0		

Sample ID: LCS-26762	SampType: LCS	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date: 10/8/2010	Run ID: GC-M_101008A
Client ID: ZZZZZ	Batch ID: 26762	TestNo: NWTPH-Dx		Analysis Date: 10/8/2010	SeqNo: 701940

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	181.9	15.0	166.6	0	109	76.3	125	0	0		
Lube Oil	160.2	50.0	166.6	0	96.1	69.9	127	0	0		

Sample ID: 1010050-02ADUP	SampType: DUP	TestCode: NWTPHDX_S	Units: mg/Kg-dry	Prep Date: 10/8/2010	Run ID: GC-M_101008A
Client ID: ZZZZZ	Batch ID: 26762	TestNo: NWTPH-Dx		Analysis Date: 10/8/2010	SeqNo: 701942

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	101.9	27.8	0	0	0	0	0	105.1	3.11	20	A1
Lube Oil	444.3	92.8	0	0	0	0	0	457.8	3.00	20	A2

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_101008A
Client ID: ZZZZZ	Batch ID: 26762	TestNo: NWTPH-Dx		Analysis Date: 10/8/2010	SeqNo: 701938

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1127	15.0	1019	0	111	85	115	0	0		
Lube Oil	491.7	50.0	514.9	0	95.5	85	115	0	0		

Sample ID: CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:	Run ID: GC-M_101008A
Client ID: ZZZZZ	Batch ID: 26762	TestNo: NWTPH-Dx		Analysis Date: 10/8/2010	SeqNo: 701944

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel	1500	15.0	1359	0	110	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID: **CCV**	SampType: **CCV**	TestCode: **NWTPHDX_S**	Units: **mg/Kg**	Prep Date:	Run ID: **GC-M_101008A**
Client ID: **ZZZZZ**	Batch ID: **26762**	TestNo: **NWTPH-Dx**		Analysis Date: **10/8/2010**	SeqNo: **701944**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Lube Oil	657.6	50.0	686.6	0	95.8	85	115	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID: **MB-26766**	SampType: **MBLK**	TestCode: **PAHLL_S**	Units: **µg/Kg**	Prep Date: **10/8/2010**	Run ID: **5973G_101013A**
Client ID: **ZZZZZ**	Batch ID: **26766**	TestNo: **8270SIM**		Analysis Date: **10/13/2010**	SeqNo: **702496**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	ND	6.67									
Acenaphthylene	ND	6.67									
Anthracene	0.6667	6.67									J
Benz(a)anthracene	1.333	6.67									J
Benzo(a)pyrene	0.6667	6.67									J
Benzo(b)fluoranthene	0.6667	6.67									J
Benzo(g,h,i)perylene	2.667	6.67									J
Benzo(k)fluoranthene	0.6667	6.67									J
Chrysene	0.6667	6.67									J
Dibenz(a,h)anthracene	2	6.67									J
Fluoranthene	0.6667	6.67									J
Fluorene	ND	6.67									
Indeno(1,2,3-cd)pyrene	2	6.67									J
Naphthalene	2	6.67									J
Phenanthrene	1.333	6.67									J
Pyrene	0.6667	6.67									J
Surr: 2-Fluorobiphenyl	3553	0	6667	0	53.3	42.6	128	0	0		
Surr: Nitrobenzene-d5	3094	0	6667	0	46.4	21.7	155	0	0		
Surr: p-Terphenyl-d14	5837	0	6667	0	87.6	44.9	155	0	0		

Sample ID: **LCS-26766**	SampType: **LCS**	TestCode: **PAHLL_S**	Units: **µg/Kg**	Prep Date: **10/8/2010**	Run ID: **5973G_101013A**
Client ID: **ZZZZZ**	Batch ID: **26766**	TestNo: **8270SIM**		Analysis Date: **10/13/2010**	SeqNo: **702498**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	214.7	6.67	333.3	0	64.4	39.6	107	0	0		
Benzo(g,h,i)perylene	218.7	6.67	333.3	0	65.6	49.7	135	0	0		
Chrysene	278	6.67	333.3	0	83.4	57.1	130	0	0		
Naphthalene	222.7	6.67	333.3	0	66.8	29.1	109	0	0		
Phenanthrene	218.7	6.67	333.3	0	65.6	48.4	115	0	0		
Pyrene	278	6.67	333.3	0	83.4	47.2	134	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID: 1010052-01AMS	SampType: MS	TestCode: PAHLL_S	Units: µg/Kg-dry	Prep Date: 10/8/2010	Run ID: 5973G_101013A
Client ID: GP1-S-3.0	Batch ID: 26766	TestNo: 8270SIM		Analysis Date: 10/13/2010	SeqNo: 702500

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	337.5	7.64	381.8	5.346	87	33.7	111	0	0		
Benzo(g,h,i)perylene	290.2	7.64	381.8	12.98	72.6	15	128	0	0		
Chrysene	342.9	7.64	381.8	18.33	85	37.5	125	0	0		
Naphthalene	272.6	7.64	381.8	0	71.4	27.7	108	0	0		
Phenanthrene	399.4	7.64	381.8	77.89	84.2	20.2	139	0	0		
Pyrene	414.7	7.64	381.8	59.56	93	26.8	142	0	0		

Sample ID: 1010052-01AMSD	SampType: MSD	TestCode: PAHLL_S	Units: µg/Kg-dry	Prep Date: 10/8/2010	Run ID: 5973G_101013A
Client ID: GP1-S-3.0	Batch ID: 26766	TestNo: 8270SIM		Analysis Date: 10/13/2010	SeqNo: 702499

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	287.9	7.64	381.8	5.346	74	33.7	111	337.5	15.9	20	
Benzo(g,h,i)perylene	264.2	7.64	381.8	12.98	65.8	15	128	290.2	9.37	20	
Chrysene	294.8	7.64	381.8	18.33	72.4	37.5	125	342.9	15.1	20	
Naphthalene	225.3	7.64	381.8	0	59	27.7	108	272.6	19.0	20	
Phenanthrene	377.2	7.64	381.8	77.89	78.4	20.2	139	399.4	5.70	20	
Pyrene	398.6	7.64	381.8	59.56	88.8	26.8	142	414.7	3.94	20	

Sample ID: CCV-26766	SampType: CCV	TestCode: PAHLL_S	Units: µg/Kg	Prep Date:	Run ID: 5973G_101013A
Client ID: ZZZZZ	Batch ID: 26766	TestNo: 8270SIM		Analysis Date: 10/13/2010	SeqNo: 702495

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Acenaphthene	69.33	6.67	66.67	0	104	70	130	0	0		
Acenaphthylene	76	6.67	66.67	0	114	70	130	0	0		
Anthracene	74	6.67	66.67	0	111	70	130	0	0		
Benz(a)anthracene	54.67	6.67	66.67	0	82	70	130	0	0		
Benzo(a)pyrene	57.33	6.67	66.67	0	86	70	130	0	0		
Benzo(b)fluoranthene	53.33	6.67	66.67	0	80	70	130	0	0		
Benzo(g,h,i)perylene	57.33	6.67	66.67	0	86	70	130	0	0		
Benzo(k)fluoranthene	70	6.67	66.67	0	105	70	130	0	0		
Chrysene	64	6.67	66.67	0	96	70	130	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: Maul, Foster & Alongi
Work Order: 1010052
Project: City of Wenatchee / 0380.02.01

ANALYTICAL QC SUMMARY REPORT

TestCode: PAHLL_S

Sample ID: **CCV-26766**	SampType: **CCV**	TestCode: **PAHLL_S**	Units: **µg/Kg**	Prep Date:	Run ID: **5973G_101013A**
Client ID: **ZZZZZ**	Batch ID: **26766**	TestNo: **8270SIM**		Analysis Date: **10/13/2010**	SeqNo: **702495**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	58.67	6.67	66.67	0	88	70	130	0	0		
Fluoranthene	66	6.67	66.67	0	99	70	130	0	0		
Fluorene	67.33	6.67	66.67	0	101	70	130	0	0		
Indeno(1,2,3-cd)pyrene	56	6.67	66.67	0	84	70	130	0	0		
Naphthalene	67.33	6.67	66.67	0	101	70	130	0	0		
Phenanthrene	64.67	6.67	66.67	0	97	70	130	0	0		
Pyrene	69.33	6.67	66.67	0	104	70	130	0	0		

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

KEY TO FLAGS

Rev. May 12, 2010

A	This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
A1	This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
A2	This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
A3	The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
A4	The product appears to be aged or degraded diesel.
B	The blank exhibited a positive result great than the reporting limit for this compound.
CN	See Case Narrative.
D	Result is based from a dilution.
E	Result exceeds the calibration range for this compound. The result should be considered as estimate.
F	The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
G	Result may be biased high due to biogenic interferences. Clean up is recommended.
H	Sample was analyzed outside recommended holding time.
HT	At clients request, samples was analyzed outside of recommended holding time.
J	The result for this analyte is between the MDL and the PQL and should be considered as estimated concentration.
K	Diesel result is biased high due to amount of Oil contained in the sample.
L	Diesel result is biased high due to amount of Gasoline contained in the sample.
M	Oil result is biased high due to amount of Diesel contained in the sample.
MC	Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
MI	Result is outside control limits due to matrix interference.
MSA	Value determined by Method of Standard Addition.
O	Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
Q	Detection levels elevated due to sample matrix.
R	RPD control limits were exceeded.
RF	Duplicate failed due to result being at or near the method-reporting limit.
RP	Matrix spike values exceed established QC limits; post digestion spike is in control.
S	Recovery is outside control limits.
SC	Closing CCV or LCS exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
*	The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.

CHAIN OF CUSTODY RECORD

Specialty Analytical

11711 SE Capps Road
Clackamas, OR 97015
Phone: 503-607-1331
Fax: 503-607-1336

Contact Person/Project Manager: Alan Hughes
Company: MFA
Address: 2001 NW 19th Ave
Portland OR
Phone: _____ Fax: _____
Project No. 0350.02.01 Project Name: City of Woodburn
Project Site Location OR: _____ WA: X Other: _____
Invoice To: MFA P.O. No.: _____

Collected By:
Signature: [signature]
Printed: Justin Pounds

Signature: _____
Printed: _____

Turn Around Time
☑ Normal 5-7 Business Days
☐ Rush _____
Specify
Rush Analyses Must Be Scheduled With The Lab In Advance

For Laboratory Use
Lab Job No. 1010052
Shipped Via: Specialty
Air Bill No. _____
Temperature On Receipt 0 °C
Specialty Analytical Containers? Y / N
Specialty Analytical Trip Blanks? Y / N

Date	Time	Sample I.D.	Matrix	No. of Containers	Analyses: NWTPH-Dx	Analyses: PAHs by 8270SIM	Analyses: PCBs 8082A	Comments	Lab I.D.
10/5/10	1500	GP1-S-3.0	S	3	X	X	X	hold extra soil	
								for additional analysis	
								- pending results	

Relinquished By:	Date	Time	Received By:	Relinquished By:	Date	Time
Company: MFA	10/7/10	1300	Company: Specialty	Company:	10/7/10	1510

Unless Reclaimed, Samples Will Be Disposed of 60 Days After Receipt.
Samples held beyond 60 days subject to storage fee(s)

Received For Lab By: Nikki Bappes Date: 10/7/10 Time: 1510

Copies: White-Original Yellow-Project File Pink-Customer Copy

FOCUSED SITE CHARACTERIZATION ANALYTICAL RESULTS (MFA, 2011B)

Table 1
Carcinogenic Polycyclic Aromatic Hydrocarbons in Soil (µg/kg)
25 North Worthen Street
Wenatchee, Washington

Location	Sample Name	Date Collected	Depth (ft bgs)	1-Methyl-naphthalene	2-Methyl-naphthalene	Acenaph-thene	Acenaph-thylene	Anthracene	Benzo(a) anthracene	Benzo(a) pyrene	Benzo(b) fluoranthene	Benzo(ghi) perylene
MTCA Method A CUL (Unrestricted Land Use)				NV	NV	NV	NV	NV	NV	100	NV	NV
MTCA Method A CUL (Industrial Land Use)				NV	NV	NV	NV	NV	NV	2000	NV	NV
2011 Focused Site Characterization												
GP2	GP2-S-10.0	09/13/2011	10.0	10.5	11.9	6.99 U	6.99 U	6.99 U	21	25.8	29.3	16.8
GP3	GP3-S-11.0	09/13/2011	11.0	7.03 U	8.43	41.4	7.03 U	202	445	**493**	571	274
	GP3-S-14.0	09/13/2011	14.0	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U
GP4	GP4-S-10.0	09/13/2011	10.0	7.21 U	7.21 U	7.21 U	7.21 U	18.7	65.6	**102**	109	74.9
GP5	GP5-S-11.0	09/13/2011	11.0	13	12.3	15.9	7.96	83.9	246	**278**	310	154
GP7	GP7-S-10.0	09/13/2011	10.0	7.18 U	7.18 U	7.18 U	7.18 U	7.18 U	7.18 U	7.18 U	10.8	8.61
GP8	GP8-S-9.0	09/13/2011	9.0	72.2	102	15.9	83	147	320	**438**	475	456
GP9	GP9-S-9.5	09/13/2011	9.5	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U
2000 Targeted Brownfields Assessment												
LF14	LF14SS00	1999	0 to 4	*	350 U	350 U	*	350 U	51 J	97 J	95 J	21 J
	LF14SB08	1999	8 to 12	*	54 J	410	*	1500	3200	**2200**	1100	480

Table 1
Carcinogenic Polycyclic Aromatic Hydrocarbons in Soil (µg/kg)
25 North Worthen Street
Wenatchee, Washington

Location	Sample Name	Date Collected	Depth (ft bgs)	Benzo(k) fluoranthene	Chrysene	Dibenzo(a,h) anthracene	Fluoranthene	Fluorene	Indeno (1,2,3- cd) pyrene	Naph-thalene	Phen-anthrene	Pyrene	cPAH TEC
MTCA Method A CUL (Unrestricted Land Use)				NV	NV	NV	NV	NV	NV	5000	NV	NV	100
MTCA Method A CUL (Industrial Land Use)				NV	NV	NV	NV	NV	NV	5000	NV	NV	2000
2011 Focused Site Characterization													
GP2	GP2-S-10.0	09/13/2011	10.0	10.5	25.1	11.2	18.2	6.99 U	14.7	6.99 U	20.3	21	34.72
GP3	GP3-S-11.0	09/13/2011	11.0	218	479	107	949	34.4	273	8.43	775	730	**659**
	GP3-S-14.0	09/13/2011	14.0	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U	7.21 U	5.44 U
GP4	GP4-S-10.0	09/13/2011	10.0	49	68.4	32.4	56.9	7.21 U	64.1	7.21 U	32.4	56.2	**135**
GP5	GP5-S-11.0	09/13/2011	11.0	113	253	64.4	487	15.9	150	7.24 U	320	385	**369**
GP7	GP7-S-10.0	09/13/2011	10.0	10.8	7.18 U	7.18 U	7.18 U	7.18 U	7.18 U	9.33	7.18 U	7.18 U	6.86
GP8	GP8-S-9.0	09/13/2011	9.0	195	392	104	729	39.7	343	85.1	712	636	**586**
GP9	GP9-S-9.5	09/13/2011	9.5	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	7.3 U	5.51 U
2000 Targeted Brownfields Assessment													
LF14	LF14SS00	1999	0 to 4	350 U	59 J	350 U	140 J	350 U	67 J	*	68 J	190 J	**154**
	LF14SB08	1999	8 to 12	1200	3200	420	6400	360	1200	*	5600	6200	**2944**

NOTES:

Bold number indicates a detected concentration that exceeds MTCA Method A CUL.

cPAH = carcinogenic polycyclic aromatic hydrocarbon.

CUL = cleanup level.

ft bgs = feet below ground surface.

MTCA = Washington State Model Toxics Control Act.

µg/kg = micrograms per kilogram (parts per billion).

NV = no value.

TEC = toxicity equivalent concentration, calculated using toxicity equivalent factors in Washington Administrative Code 173-340-900 and half of the method reporting limits for nondetect congeners.

U = not detected at or above method reporting limit.

J = estimated concentration

* = Analyte not reported.

DATA GAP INVESTIGATION ANALYTICAL RESULTS (MFA, 2013)

Table 1
Soil Analytical Results
25 North Worthen Street Property
Wenatchee, Washington

Location:		GP11			GP12		GP13		GP14		
Sample Name:		GP11-COMP	GP11-S-13	GP11-S-17.5	GP12-S-7	GP12-S-11	GP13-S-10	GP13-S-13	GP14-COMP	GP14-S-7.5	GP14-S-11.5
Collection Date:		11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013
Collection Depth (ft bgs):			13	17.5	7	11	10	13		7.5	11.5
	MTCA A										
Total Metals (mg/kg)											
Arsenic	20	10.2	--	--	--	--	--	--	**30.3**	--	--
Lead	250	38.1	--	--	--	--	--	--	190	--	--
Volatile Organic Compounds (mg/kg)											
Benzene	0.03	--	**0.064**	0.025 UJ	0.029	0.022 UJ	0.018 U	0.021 UJ	0.0279 U	0.019 U	0.022 UJ
Ethylbenzene	6	--	0.17 U	0.25 UJ	0.2 U	0.22 UJ	0.18 U	0.21 UJ	0.112 U	0.19 U	0.22 UJ
m,p-Xylene	9	--	0.51 U	0.75 UJ	0.59 U	0.66 UJ	0.53 U	0.64 UJ	0.335 U	0.57 U	0.65 UJ
Toluene	7	--	0.17 U	0.25 UJ	0.2 U	0.22 UJ	0.18 U	0.21 UJ	0.112 UJ	0.19 U	0.22 UJ
Polychlorinated Biphenyls (mg/kg)											
Aroclor 1016	NV	0.000372 U	0.000379 U	--	0.000387 U	--	0.000393 U	--	--	0.00039 U	--
Aroclor 1221	NV	0.000372 U	0.000379 U	--	0.000387 U	--	0.000393 U	--	--	0.00039 U	--
Aroclor 1232	NV	0.000372 U	0.000379 U	--	0.000387 U	--	0.000393 U	--	--	0.00039 U	--
Aroclor 1242	NV	0.000372 U	0.000379 U	--	0.000387 U	--	0.000393 U	--	--	0.00039 U	--
Aroclor 1248	NV	0.000372 U	0.000379 U	--	0.000387 U	--	0.000393 U	--	--	0.00039 U	--
Aroclor 1254	NV	0.000372 U	0.000379 U	--	0.000387 U	--	0.000393 U	--	--	0.00039 U	--
Aroclor 1260	NV	0.000372 U	0.000379 U	--	0.000387 U	--	0.000393 U	--	--	0.00039 U	--
Aroclor 1262	NV	0.000372 U	0.000379 U	--	0.000387 U	--	0.000393 U	--	--	0.00039 U	--
Aroclor 1268	NV	0.000372 U	0.000379 U	--	0.000387 U	--	0.000393 U	--	--	0.00039 U	--
Total PCBs	1	ND	ND	--	ND	--	ND	--	--	ND	--
cPAHs (mg/kg)											
Benzo(a)anthracene	NV	0.00744 U	0.00759 U	--	0.507	0.00758 U	0.0109	--	0.00745 U	0.00781 U	--
Benzo(a)pyrene	0.1	0.00744 U	0.00759 U	--	**0.668**	0.00895	0.0141	--	0.00883	0.00781 U	--
Benzo(b)fluoranthene	NV	0.00988	0.00759 U	--	0.611	0.00919	0.0158	--	0.00891	0.00781 U	--
Benzo(k)fluoranthene	NV	0.00744 U	0.00759 U	--	0.164	0.00758 U	0.00788 U	--	0.00745 U	0.00781 U	--
Chrysene	NV	0.0115	0.00874	--	0.584	0.0104	0.0162	--	0.00745 U	0.00781 U	--
Dibenzo(a,h)anthracene	NV	0.00744 U	0.00759 U	--	0.101	0.00758 U	0.00788 U	--	0.00745 U	0.00781 U	--
Indeno(1,2,3-cd)pyrene	NV	0.00744 U	0.00759 U	--	0.372	0.00758 U	0.00788 U	--	0.00745 U	0.00781 U	--
cPAH TEQ	0.1	0.0063	0.0058	--	**0.85**	0.011	0.018	--	0.011	ND	--
ncPAHs (mg/kg)											
1-Methylnaphthalene	NV	0.0188	0.00759 U	--	0.0212	0.0138	0.155	--	0.00989	0.0274	--
2-Methylnaphthalene	NV	0.0174	0.00759 U	--	0.0159	0.0157	0.216	--	0.00921	0.0285	--
Acenaphthene	NV	0.00744 U	0.00759 U	--	0.024	0.0112	0.0161	--	0.00745 U	0.00781 U	--
Acenaphthylene	NV	0.00744 U	0.00759 U	--	0.151	0.00758 U	0.00788 U	--	0.00745 U	0.00781 U	--
Anthracene	NV	0.00744 U	0.00759 U	--	0.235	0.00758 U	0.0121	--	0.00745 U	0.00781 U	--
Benzo(ghi)perylene	NV	0.00919	0.00906	--	0.504	0.0122	0.0157	--	0.0206	0.00781 U	--
Fluoranthene	NV	0.0107	0.0101	--	0.86	0.0126	0.027	--	0.0108	0.00872	--

Table 1
Soil Analytical Results
25 North Worthen Street Property
Wenatchee, Washington

Location:		GP11			GP12		GP13		GP14		
Sample Name:		GP11-COMP	GP11-S-13	GP11-S-17.5	GP12-S-7	GP12-S-11	GP13-S-10	GP13-S-13	GP14-COMP	GP14-S-7.5	GP14-S-11.5
Collection Date:		11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013	11/05/2013
Collection Depth (ft bgs):			13	17.5	7	11	10	13		7.5	11.5
	MTCA A										
Fluorene	NV	0.01	0.00759 U	--	0.0456	0.017	0.024	--	0.00745 U	0.00937	--
Naphthalene	5	0.0101	0.00759 U	--	0.0132	0.00758 U	0.0532	--	0.00906	0.0148	--
Phenanthrene	NV	0.0301	0.0192	--	0.298	0.0411	0.0646	--	0.0133	0.0166	--
Pyrene	NV	0.0285	0.0183	--	1.29	0.0343	0.0466	--	0.0208	0.0152	--
NWTPH-HCID											
Diesel	NV	ND	DETECT	--	DETECT	--	DETECT	--	DETECT	DETECT	--
Gasoline	NV	ND	ND	--	ND	--	ND	--	ND	ND	--
Kerosene	NV	ND	ND	--	ND	--	ND	--	ND	ND	--
Lube Oil	NV	DETECT	DETECT	--	DETECT	--	DETECT	--	DETECT	DETECT	--
Mineral Spirits	NV	ND	ND	--	ND	--	ND	--	ND	ND	--
NWTPH-Dx (mg/kg)											
Diesel	2000	46.5 J	137 J	87.1 J	162 J	463 J	114 J	149 J	51.9 J	116 J	53.1 J
Lube Oil	2000	137	277	254	342	567 J	192	276	216	211	132
TPH	2000	183.5 J	414 J	341.1 J	504 J	1030 J	306 J	425 J	267.9 J	327 J	185.1 J

Table 1
Soil Analytical Results
25 North Worthen Street Property
Wenatchee, Washington

Location:		GP15		GP16	GP17			GP19	GP20		GP21	GP22
Sample Name:		GP15-COMP	GP15-S-14	GP16-S-14	GP17-COMP	GP17-S-12.5	GP17-S-16	GP19-S-16	GP20-COMP	GP20-S-16	GP21-S-16	GP22-S-16
Collection Date:		11/05/2013	11/05/2013	11/05/2013	11/06/2013	11/06/2013	11/06/2013	11/05/2013	11/06/2013	11/06/2013	11/05/2013	11/06/2013
Collection Depth (ft bgs):			14	14		12.5	16	16		16	16	16
	MTCA A											
Total Metals (mg/kg)												
Arsenic	20	**68.4**	--	--	2.08 U	--	--	--	16	--	--	--
Lead	250	**313**	--	--	23.2	--	2.14 U	2.24	68	3.21	2 U	10.1
Volatile Organic Compounds (mg/kg)												
Benzene	0.03	--	--	--	--	--	--	--	--	--	--	--
Ethylbenzene	6	--	--	--	--	--	--	--	--	--	--	--
m,p-Xylene	9	--	--	--	--	--	--	--	--	--	--	--
Toluene	7	--	--	--	--	--	--	--	--	--	--	--
Polychlorinated Biphenyls (mg/kg)												
Aroclor 1016	NV	0.00037 U	--	--	0.000346 U	--	--	--	--	--	--	--
Aroclor 1221	NV	0.00037 U	--	--	0.000346 U	--	--	--	--	--	--	--
Aroclor 1232	NV	0.00037 U	--	--	0.000346 U	--	--	--	--	--	--	--
Aroclor 1242	NV	0.00037 U	--	--	0.000346 U	--	--	--	--	--	--	--
Aroclor 1248	NV	0.00037 U	--	--	0.000346 U	--	--	--	--	--	--	--
Aroclor 1254	NV	0.00037 U	--	--	0.000346 U	--	--	--	--	--	--	--
Aroclor 1260	NV	0.00037 U	--	--	0.000346 U	--	--	--	--	--	--	--
Aroclor 1262	NV	0.00037 U	--	--	0.000346 U	--	--	--	--	--	--	--
Aroclor 1268	NV	0.00037 U	--	--	0.000346 U	--	--	--	--	--	--	--
Total PCBs	1	ND	--	--	ND	--	--	--	--	--	--	--
cPAHs (mg/kg)												
Benzo(a)anthracene	NV	0.00741 U	--	0.00719 U	0.0451	0.00767 U	--	--	0.00729 U	--	--	--
Benzo(a)pyrene	0.1	0.00741 U	--	0.00719 U	0.062	0.00767 U	--	--	0.00967	--	--	--
Benzo(b)fluoranthene	NV	0.00741 U	--	0.00719 U	0.0707	0.00767 U	--	--	0.0106	--	--	--
Benzo(k)fluoranthene	NV	0.00741 U	--	0.00719 U	0.0215	0.00767 U	--	--	0.00729 U	--	--	--
Chrysene	NV	0.00741 U	--	0.00719 U	0.0587	0.00767 U	--	--	0.00729 U	--	--	--
Dibenzo(a,h)anthracene	NV	0.00741 U	--	0.00719 U	0.0161	0.00767 U	--	--	0.00729 U	--	--	--
Indeno(1,2,3-cd)pyrene	NV	0.00741 U	--	0.00719 U	0.0415	0.00767 U	--	--	0.00729 U	--	--	--
cPAH TEQ	0.1	ND	--	ND	0.082	ND	--	--	0.012	--	--	--
ncPAHs (mg/kg)												
1-Methylnaphthalene	NV	0.00741 U	--	0.00719 U	0.00694 U	0.00767 U	--	--	0.00729 U	--	--	--
2-Methylnaphthalene	NV	0.00859	--	0.00719 U	0.00915	0.00767 U	--	--	0.00729 U	--	--	--
Acenaphthene	NV	0.00741 U	--	0.00719 U	0.00694 U	0.00767 U	--	--	0.00729 U	--	--	--
Acenaphthylene	NV	0.00741 U	--	0.00719 U	0.0169	0.00767 U	--	--	0.00729 U	--	--	--
Anthracene	NV	0.00741 U	--	0.00719 U	0.0222	0.00767 U	--	--	0.00729 U	--	--	--
Benzo(ghi)perylene	NV	0.00741 U	--	0.00731	0.061	0.00767 U	--	--	0.0139	--	--	--
Fluoranthene	NV	0.00988	--	0.00719 U	0.0937	0.00767 U	--	--	0.00729 U	--	--	--

Table 1
Soil Analytical Results
25 North Worthen Street Property
Wenatchee, Washington

Location:		GP15		GP16	GP17			GP19	GP20		GP21	GP22
Sample Name:		GP15-COMP	GP15-S-14	GP16-S-14	GP17-COMP	GP17-S-12.5	GP17-S-16	GP19-S-16	GP20-COMP	GP20-S-16	GP21-S-16	GP22-S-16
Collection Date:		11/05/2013	11/05/2013	11/05/2013	11/06/2013	11/06/2013	11/06/2013	11/05/2013	11/06/2013	11/06/2013	11/05/2013	11/06/2013
Collection Depth (ft bgs):			14	14		12.5	16	16		16	16	16
	MTCA A											
Fluorene	NV	0.00741 U	--	0.00719 U	0.00797	0.00767 U	--	--	0.00729 U	--	--	--
Naphthalene	5	0.0232	--	0.00719 U	0.0127	0.00767 U	--	--	0.00729 U	--	--	--
Phenanthrene	NV	0.0205	--	0.00719 U	0.0873	0.00767 U	--	--	0.0108	--	--	--
Pyrene	NV	0.0122	--	0.00719 U	0.142	0.00767 U	--	--	0.0136	--	--	--
NWTPH-HCID												
Diesel	NV	ND	--	--	ND	--	--	--	DETECT	--	--	--
Gasoline	NV	ND	--	--	ND	--	--	--	ND	--	--	--
Kerosene	NV	ND	--	--	ND	--	--	--	ND	--	--	--
Lube Oil	NV	ND	--	--	ND	--	--	--	DETECT	--	--	--
Mineral Spirits	NV	ND	--	--	ND	--	--	--	ND	--	--	--
NWTPH-Dx (mg/kg)												
Diesel	2000	--	16.6 U	--	--	17.2 U	--	--	27.7 J	--	--	--
Lube Oil	2000	--	55.3 U	--	--	57.5 U	--	--	127 J	--	--	--
TPH	2000	--	ND	--	--	ND	--	--	154.7 J	--	--	--

NOTES:
Detections that exceed MTCA screening level values are in **bold** font. Non-detect results are not evaluated against MTCA screening level values.
-- = not analyzed.
cPAH = carcinogenic polycyclic aromatic hydrocarbon.
cPAH TEQ = cPAH toxic equivalency quotient.
ft bgs = feet below ground surface.
J = Result is an estimated value.
mg/kg = milligrams per kilogram.
MTCA = Model Toxics Control Act.
MTCA A = MTCA Method A unrestricted land use screening values.
ncPAH = noncarcinogenic polycyclic aromatic hydrocarbon.
ND = not detected.
NV = no value.
NWTPH Dx = Northwest Total Petroleum Hydrocarbons—diesel.
NWTPH-HCID = Northwest Total Petroleum Hydrocarbon Identification.
Total PCBs = sum of polychlorinated biphenyls Aroclors. Non-detect results are not summed.
TPH = Total petroleum hydrocarbons calculated using both diesel and lube oil range.
U = Result is non-detect at or above method reporting limit.
UJ = Result is non-detect at or above method reporting limit. Reported value is estimated.

Table 2
Groundwater Analytical Results
25 North Worthen Street Property
Wenatchee, Washington

	Location:	GP18	PZ1	PZ2	PZ3
	Sample Name:	GP18-W	PZ1-W	PZ2-W	PZ3-W
	Collection Date:	11/06/2013	11/05/2013	11/07/2013	11/06/2013
	MTCA A				
NWTPH-HCID					
Diesel	NV	ND	ND	DETECT	DETECT
Gasoline	NV	ND	ND	ND	ND
Kerosene	NV	ND	ND	ND	ND
Lube Oil	NV	ND	ND	DETECT	DETECT
Mineral Spirits	NV	ND	ND	ND	ND
NWTPH-Dx (µg/L)					
Diesel	500	--	--	**4110** J	**1950** J
Lube Oil	500	--	--	**3490** J	**1740** J
TPH	500	--	--	**7600** J	**3690** J

NOTES:

Detections that exceed MTCA screening level values are in **bold** font.

-- = not analyzed.

J = Result is an estimated value.

MTCA = Model Toxics Control Act.

MTCA A = MTCA Method A unrestricted land use screening values.

ND = the result is non-detect.

NWTPH-Dx = total petroleum hydrocarbons—diesel and lube oil.

NWTPH-HCID = Hydrocarbon Identification.

µg/L = micrograms per liter (parts per billion).

TPH = Total petroleum hydrocarbons calculated using both diesel and lube oil range.