Whitehead Tyee Site

Data Summary Report

Prepared for

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List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
AO	Agreed Order
bgs	Below ground surface
City	City of Seattle
COC	Contaminant of concern
cPAH	Carcinogenic polycyclic aromatic hydrocarbon
cVOC	Chlorinated volatile organic compound
Ecology	Washington State Department of Ecology
EDR	Engineering Design Report
GWCC	Great Western International Chemical Company
ISWGP	Industrial Stormwater General Permit
LDW	Lower Duwamish Waterway
µg/L	Micrograms per liter
MTCA	Model Toxics Control Act
PAH	Polycyclic aromatic hydrocarbon
PCB	Polychlorinated biphenyl

Acronym/ Abbreviation	Definition
PCE	Tetrachloroethene
PCHB	Pollution Control Hearings Board
Penta	Pentachlorophenol
PID	Photoionization detector
Reliable	Reliable Transfer & Storage Co.
RI/FS	Remedial Investigation/Feasibility Study
ROW	Right-of-way
SES	SoundEarth Strategies
SIM	Seattle Iron & Metals
Site	Whitehead Tyee Site
SVOC	Semivolatile organic compound
TPH	Total petroleum hydrocarbon
Tyee Lumber	Tyee Lumber and Manufacturing Company
USEPA	U.S. Environmental Protection Agency
UST	Underground storage tank
WAC	Washington Administrative Code
Whitehead	The Whitehead Company, Inc.

1.0 Introduction

This Data Summary Report was prepared by Floyd|Snider at the request of Seattle Iron & Metals (SIM), as required by Agreed Order (AO) No. DE 13458 to describe the historical operations, surrounding area, and current available soil and groundwater data for the former Tyee Lumber and Manufacturing Company (Tyee Lumber) facility located at 730 S. Myrtle Street in Seattle, Washington, referred to as the Whitehead Tyee Site (the Site). The Model Toxics Control Act (MTCA) defines a "Site" as where hazardous substances have come to be located. The Site boundary will be determined as part of the future Remedial Investigation. Refer to Figure 1.1 for the geographic location of the Site and Figure 1.2 for site-specific features.

1.1 SITE DESCRIPTION

The following Site information was compiled based on a review of the SoundEarth Strategies (SES) *Phase I Environmental Site Assessment* (SES 2013) and their subsequent *Summary of Subsurface Investigation Activities* (SES 2014a) and *Whitehead/Reliable Property-Off-Property Subsurface Investigation* (SES 2014b), independent historical research conducted by Floyd|Snider, and various reports associated with the adjacent Fox Avenue Site.

1.1.1 Historical Ownership and Operations

Corson Avenue historically passed from northeast to southwest through the eastern portion of the 730 S. Myrtle Street property (property; Figure 1.3) dividing the property into the larger western portion (western property) and a smaller eastern portion (eastern property).

1.1.1.1 Western Property

The western property was originally developed with a 1918-vintage sawmill that included a 17,010-square-foot mill building, a 13,973-square-foot lumber warehouse, a boiler house, and a lumber shed. The boiler was fueled by a sawdust/refuse burner. According to Sanborn map review, by 1929, the Williams Fir Finish Co. operated at the western property.

By the early 1920s, the sawmill was expanded to include a shop and storage, an office, and a lunch room. A dry kiln was built on the western property in 1928 and a second dry kiln was added in 1947. These kilns were heated by steam from the boiler house. Sometime between 1929 and 1949, Tyee Lumber & Manufacturing, Co. ("Tyee Lumber I") took over operations on the western property. Hart Crowser reported that Tyee Lumber I purchased the eastern property in 1950 and constructed additional warehousing and manufacturing space (Hart Crowser 1992). By the early 1950s, Tyee Lumber I operated on both the western and eastern property. Hart Crowser also reported that the western property was leased from King County until 1953 when the land transferred to Mesher Supply Co., who subsequently sold the western property to Tyee Lumber I in 1955. Tyee Lumber I used the Corson Avenue S. right-of-way (ROW) for material laydown until abandonment of the road by the City of Seattle (City) occurred in 1963. Tyee Lumber I, which subsequently changed its name to Tyee Industries, Inc. ("Tyee Industries"), operated on the property until 1981 when mill operations were taken over by a new Delaware company also called Tyee Lumber & Manufacturing Co. ("Tyee Lumber II"). Tyee Lumber II operated on the property until 1986.

1.1.1.2 Eastern Property

By 1929, the eastern property was developed with residential properties and a garage. This garage was built in 1927 and remained on the eastern property until at least 1949. An automotive and truck repair shop was also located on the eastern property in 1949. The garage and the automotive and truck repair shop were likely removed in the early 1950s when a resaw mill and lunch room were built on the eastern property.

The layout of the facility remained very similar through years of operation. Tyee Lumber I operated a sawmill and finishing operation, which included the treatment of lumber in a pentachlorophenol (penta) top-loading dip tank described further below (refer to Figure 1.3 for the location of the dip tank). Hart Crowser reported that Tyee Lumber I dipped green lumber and moved it to a storage shed in the northwest corner of the property for drying (Hart Crowser 1992). The lumber was then processed and dried in the kiln, as well as being air dried or stored outside the kilns. Tyee Lumber I also had a gluing operation located in the Finger Jointing Mill (Figure 1.3), and associated machines were located in the eastern portion of the building and were used for dying dipped lumber. Hart Crowser reported that interviewees indicated that a whitish liquid would run along the building and pond in the transfer shed along Fox Avenue S. often overflowing onto the former Great Western International Chemical Company (GWCC) property to the north. It is unclear if Tyee Lumber II also used the dip tank and/or gluing facilities when it took over operations of the property in 1981.

1.1.1.3 City of Seattle Right-of-Way and South of S. Myrtle Street

Previous environmental reports and review of aerial photographs indicate that wood treatment and preservation operations occurred south of the property, within the City S. Myrtle Street ROW and not within property boundaries. The dip tank shed was situated within S. Myrtle Street. The dip tank was approximately 10 to 15 feet long, 5 feet wide, and 5 to 6 feet deep. The dip tank was covered by an open shed. SES reported that a 300-gallon penta underground storage tank (UST) was located adjacent to the dip tank. The penta UST was reportedly decommissioned in 1986 when The Whitehead Company, Inc. (Whitehead) and Reliable Transfer & Storage Co. (Reliable) purchased the property from William Paul and Ann Duncan (Paul Duncan purchased the property from Tyee Industries in 1982). The former penta dip tank and UST area is known to be contaminated with total petroleum hydrocarbons (TPH), specifically Stoddard Solvent, penta, and dioxins/furans associated with historical operations of the penta dip tank and UST.

According to Hart Crowser, in the late-1950s Tyee Lumber I expanded south of S. Myrtle Street. This expansion included construction of the main office building located at 701 S. Myrtle Street and additional warehouse space at 765 S. Myrtle Street. These operations south of S. Myrtle Street were limited to warehousing and office space.

Table 1.1 summarizes dates of construction and operations in each building or structure and correlates to the numbers on the buildings shown in Figure 1.3.

1.1.2 Current Ownership and Operations

Whitehead and Reliable acquired the property in 1986. Decommissioning and removal of the penta dip tank and UST, and related equipment and improvements were reportedly a condition of taking ownership.

Since 1999, SIM has leased the property for truck and container storage; SIM purchased the property from Whitehead and Reliable in December 2015. The containers stored on the property are used to collect and store scrap metals, but only empty containers are stored on-property. The property is unpaved and unimproved, with no functional stormwater conveyance system. A small open-air metal shed is located on the east/central portion of the property, and is the only structure present. This shed is used for light maintenance activities on containers, such as spot welding. No metal processing is conducted on this property, and no metal shred, automobile shredder residue, or related materials are stored on-property. The property is considered “Local Trucking with Storage” (SIC Code 4214).

The property is divided into three operational areas by internal fencing running north to south. The western most area is used as an equipment staging yard, typically used for truck or car parking, the center area is the container and equipment storage yard, and the eastern most area as the export yard. Normal operations consist of trucks and trailers entering from S. Myrtle Street through the unfenced equipment staging yard and proceeding into the fenced equipment storage yard. Trucks and trailers can also enter the equipment storage yard from S. Myrtle Street through the entrance gate of the export yard. Trucks typically enter in the central equipment storage yard to drop off or pick up empty collection bins.

The export yard on the far eastern side of site is used for staging loaded shipping containers bound for delivery. Trucks entering the export yard via the S. Myrtle Street gate primarily to drop-off or pick-up loaded shipping containers.

1.1.3 Adjacent Properties Description

The property is located approximately 450 to 500 feet from the Lower Duwamish Waterway (LDW), which is the portion of the Duwamish River that extends from downstream of the upper turning basin at river mile 4.8 to its outlet into Elliott Bay. Additionally, the entire segment of the LDW in the vicinity of the SIM facility is designated as a Superfund Site by the U.S. Environmental Protection Agency (USEPA) due to sediment contamination.

The property is bordered by the Fox Avenue Site to the north, Seattle Boiler Works to the west (across Fox Avenue S.), SIM to the southwest (across S. Myrtle Street), a former nightclub to the east (was historically a former gasoline station), and Commercial Welding, Caffe D’Arte Roasting Plant, Sea Native USA WA (seafood processing), and United Rentals Trench Safety to the south. In the vicinity of the property, there is mixed and industrial use consistent with the area’s zoning;

surrounding properties are shown on Figure 1.2. Additional description of the cleanup sites adjacent to the property is included below.

1.1.3.1 Fox Avenue Site Cleanup

Cascade Columbia Distribution, also known as the Fox Avenue Site MTCA (Washington Administrative Code [WAC] 173-340) cleanup site, is located immediately north and adjacent to the property. The Fox Avenue Site, under AO No. DE 8985, has recently undergone active source removal remedial actions and is currently in a post-remedial polishing stage of remediation (Floyd|Snider 2015). The Fox Avenue Site has documented chlorinated volatile organic compound (cVOC) contamination in both groundwater and soil. A cVOC groundwater plume from the Fox Avenue Site crosses the western third of the property toward the S. Myrtle Street Embayment, where groundwater discharges into the LDW (refer to Figure 1.4 for the approximate extent of the total cVOC plume at concentrations greater than 500 micrograms per liter [µg/L]). All active remediation in known source areas was complete in 2013 and the site is in the post-thermal polishing phase, which includes enhanced reductive dechlorination and long-term groundwater monitoring. Further details regarding the Fox Avenue Site, including a summary of existing data, are presented in Section 2.1.

1.1.3.2 Lower Duwamish Superfund

The *Final Lower Duwamish Waterway Remedial Investigation Report* (Windward 2010) and *Final Lower Duwamish Waterway Feasibility Study* (AECOM 2012), known collectively as the LDW Final Remedial Investigation/Feasibility Study (RI/FS) under Superfund Order with USEPA, identified contaminants of concern (COCs) including: polychlorinated biphenyls (PCBs), carcinogenic polycyclic aromatic hydrocarbons (cPAHs), arsenic, and dioxins/furans as the four main “risk-driver” contaminants in the LDW sediments based on human health plus all chemicals regulated by the benthic Sediment Cleanup Objectives under Washington State’s Sediment Management Standards (WAC 173-204). The Record of Decision for the LDW Superfund Site was issued by USEPA in November 2014 and outlines the final cleanup plan for the LDW (USEPA 2014). This plan requires parties to clean up the LDW and to complete source control actions (primarily stormwater upgrades) to prevent recontamination of the sediments.

The Site is not immediately adjacent to the Duwamish, however, groundwater from the Site has the potential to be transported through the subsurface soil and discharge to the LDW. The water table at the Site is located at depths of approximately 8 to 11 feet below ground surface (bgs). Stormwater runoff from the Site discharges to the Duwamish, as does street and ROW runoff, and adjacent property runoff. Currently the Site discharges to two separate stormwater outfalls, one at the end of S. Myrtle Street and one at the end of S. Brighton Street.

1.2 REGULATORY HISTORY

The Site has a significant regulatory history beginning in 1991 to the present. The timeline of this history is described in the following sections.

1.2.1 Model Toxics Control Act

Contamination at the Site was identified as early as 1991 as part of investigations conducted for the Fox Avenue Site. These investigations identified an area of elevated penta in groundwater in the S. Myrtle Street ROW area. Since then, information regarding known Site contamination has been reported to Washington State Department of Ecology (Ecology) as part of the Fox Avenue Site RI/FS process. As per above, this includes a cVOC plume extending across the western portion of the Site, and ongoing monitoring of this plume as part of the Fox Avenue Site. While this cVOC groundwater plume is part of the Fox Avenue Site, releases associated with the wood treating activities (i.e., former penta dip tank in the ROW) have been considered a separate release relating to Tyee, and not historical operations at the Fox Avenue Site.

On April 24, 2013, the Whitehead's received an Early Notice Letter from Ecology related to the release of solvents. This Letter indicated that Ecology intended to add the Site to the known or suspected contaminated sites list. In response, Whitehead's submitted an application and was enrolled in Ecology's Voluntary Cleanup Plan (VCP) program in October 2013. The Site is now listed on Ecology's Contaminated Sites list with a Facility/Site Identification No. 9809.

In December 2015, SIM purchased the property, and Ecology subsequently issued a Draft AO to SIM and 730 Myrtle LLC in June 2016. The Draft AO includes a requirement for the following submittals for the Site, in addition to this Data Summary Report: Interim Action Work Plan, RI/FS Work Plan, RI/FS, and Draft Cleanup Action Plan. Public comment on the Draft AO was held between July 20 and August 20, 2016. Upon completion of the public comment period, AO No. DE 13458 was finalized and executed on August 25, 2016.

1.2.2 National Pollutant Discharge Elimination System Regulatory History

SIM's operations on the property are covered by an Industrial Stormwater General Permit (ISWGP; WAR-125002), issued to SIM by Ecology on May 31, 2011, and as modified on May 16, 2012. The ISWGP is a National Pollutant Discharge Elimination System and State permit for stormwater discharges associated with industrial activities. Ecology's Water Quality program requested SIM seek coverage based on the potential for pollutant-generating activities to impact stormwater.

SIM has been working cooperatively with Ecology towards a comprehensive stormwater solution for the property. Because the property is unpaved, stormwater runoff is very turbid, and fully addressing stormwater treatment has been complicated by property ownership and an absence of any stormwater conveyance structures. The best stormwater solution for the property involves grading, paving, installation of a stormwater conveyance system, installation of pre-treatment, and installation of an appropriate stormwater treatment system. SIM has been willing to install stormwater improvements, but only with a clear path to property ownership. As of December 1, 2015, SIM is the owner of the property.

On June 19, 2012 Ecology issued a Notice of Penalty Incurred and Due, Docket No. 9180 (Penalty; Ecology 2012) to SIM for alleged violations of ISWGP WAR 125002. On July 20, 2012 SIM filed an appeal to the Pollution Control Hearings Board (PCHB) challenging both the imposition and amount of the Penalty, given the history of cooperation with Ecology. As a result of the appeal the Settlement Agreement (PCHB Case No. 12-076 – Motion and Order to Dismiss with Prejudice, dated February 28, 2013 and incorporated attachment PCHB No. 12-076–Settlement Agreement) was reached reducing the amount of the Penalty, requiring the preparation of an Engineering Design Report (EDR) for proposed conveyance system improvements at the property, approval of a revised Stormwater Pollution Prevention Plan, and additional monitoring in compliance with automobile salvage and scrap metal recycling industrial use. Per the terms of the Settlement Agreement, KPFF Consulting Engineers prepared the EDR and submitted it to Ecology on April 29, 2013 The EDR has been conditionally approved by Ecology as of November 22, 2013 (Ecology 2013). However the EDR specified a project schedule for a summer 2014 installation that has not been met, and the project is significantly behind schedule.

In addition to Level 1 and 2 corrective actions, SIM has installed several rounds of allowable interim measures to mitigate poor quality stormwater runoff, , including:

- Installation of a filtration berm
- Installation of a sediment trap/settling pond with interception swale to direct flow to trap.
- Enlargement of sediment trap
- On-site deployment of two, above-ground 21,000 gallon tanks and pumping necessary to move stormwater from the sediment trap pond to the above-ground tanks
- Surface flow management measures to direct back into City drainage system.

In general, stormwater quality has shown improvement with these measures, but still exceeds the ISWGP numerical criteria.

1.2.2.1 On-Property Stormwater Improvements

Stormwater improvements, as proposed in the EDR, will collect and convey on-site stormwater to a single on-site storm drain and treatment system, with discharge through the S. Myrtle Street outfall. This configuration will provide a single point of compliance for stormwater compliance monitoring, but will require detention to avoid surcharging the existing City storm drain system in S. Myrtle Street. The proposed storm drain system is comprised of catch basins, collection and conveyance piping, manhole structures, detention piping, flow splitter structure, pre-treatment, and stormwater pump station.

The proposed stormwater collection and conveyance system is shown on Figure 1.5. All collection and conveyance piping will be connected directly to detention where the storm event flow can be directed to treatment, and where peak flows from larger storm events can be reduced to avoid surcharge of the S. Myrtle Street storm drain system. Stormwater passing through a riser at the end of the underground detention pipe will discharge to a flow splitter structure. The flow splitter consists of a 4-foot-diameter manhole fitted with a baffle wall. The baffle wall functions to divert stormwater flow to below grade pre-treatment, pump station, and above grade primary treatment.

The project will provide stormwater treatment in two phases. The first phase (Phase 1) will include grading and paving of the property and installation of the stormwater collection and conveyance system, detention, flow control structure, and discharge piping from the property to the City storm drain in S. Myrtle Street, as well as pre-treatment installation and a pump station manhole. After installation of pre-treatment and the rest of Phase 1 improvements, 6 months of data will be collected to target selection of the appropriate primary treatment targeted for property operations. This is in part because existing data (for an unpaved site) does not resemble paved runoff post-pretreatment, even if the property use remains the same. Primary treatment technologies under consideration include sand filtration (un-amended and amended), passive filtration media, as well as electrocoagulation.

Overall, the stormwater conveyance system design has attempted to avoid installation of significant structures in areas known or suspected to be impacted by the penta and TPH release in the adjacent City ROW.

2.0 Summary of Previous Investigations

A number of investigations have been conducted at the Site to date, resulting in the collection of a significant amount of subsurface data. This section provides a summary of the objectives and field activities for each of the investigations. Investigations described below include those associated with the Fox Avenue Site conducted between 1991 and 2015, and Site investigations conducted by SES in December 2013 and January and April 2014, and by Floyd|Snider in March 2013, December 2015, and March 2016. A comprehensive discussion of existing Site data resulting from these investigations is presented in Section 3.0.

Since the investigations discussed in this section were conducted, both boring and monitoring well names have been updated to distinguish borings and wells that were installed for the Site, and those that were installed as part of Fox Avenue Site investigations. Site wells and borings now all have the prefix WT-, as shown on Figure 2.1.

2.1 FOX AVENUE SITE (1991–2015)

The Fox Avenue Site lies immediately north of the Site and is primarily contaminated with cVOCs in both the groundwater and soil.

Since 1991, the Fox Avenue Site has been under investigation and cleanup due to past releases of solvents and other chemicals during the former GWCC operations. Chemicals handled by GWCC include chlorinated solvents, mineral spirits/petroleum solvents, and penta, among others. As a result of GWCC activities, significant contamination was identified in both soil and groundwater at the Fox Avenue Site, and has been well characterized. As part of site characterization, investigations characterizing the nature and extent of contamination associated with adjacent properties were also conducted, and included limited soil and groundwater data collection at the Site. On May 6, 2009, Fox Avenue Building LLC and Ecology entered into AO No. DE 6486. Under the AO, Fox Avenue Building LLC was required to complete an RI/FS, which involved collection and consolidation of all of the information necessary to adequately characterize the Fox Avenue Site and develop and evaluate appropriate cleanup alternatives to address cVOC contamination. The RI/FS also included investigation regarding sources of penta contamination at the Fox Avenue Site and surrounding properties.

2.2 FLOYD|SNIDER INVESTIGATION (2013)

In March 2013, Floyd|Snider completed a subsurface soil investigation in advance of the installation of the planned stormwater conveyance system, including eleven soil borings (WT-GP-1 through WT-GP-11). The primary focus of this investigation was to chemically characterize the soils to be excavated during the installation for disposal characterization. A total of 30 soil samples were collected during this investigation and 22 were analyzed for TPH/Stoddard solvent, metals, semivolatile organic compounds (SVOCs), and/or cVOCs, with both discrete and composite soil samples analyzed. Eight samples were collected but not analyzed because field screening using a photoionization detector (PID) indicated no evidence of volatile constituents such as TPH/Stoddard solvent.

2.3 SOUNDEARTH STRATEGIES INVESTIGATIONS (2013–2014)

In December 2013, January 2014, and April 2014, SES on behalf of Whitehead completed subsurface investigations to assess impacts to soil and groundwater from recognized environmental conditions identified (SES 2013). Data were previously presented in the *Summary of Subsurface Investigation Activities* (SES 2014a) and *Whitehead/Reliable Property-Off-Property Subsurface Investigation* (SES 2014b, report not generated).

In December 2013 and January 2014, 11 soil borings (WT-MW-01 through WT-MW-04 and WT-B05 through WT-B11) were advanced at the Site, each to a depth of 20 feet bgs. Boring locations were selected to assess potential source areas that may have affected soil and groundwater quality at the Site. Borings WT-MW-01 through WT-MW-04 were advanced on the southern portion of the Site, to the north of the former off-site penta dip tank and UST; borings WT-B05 through WT-B08 were advanced in the vicinity of the former on-site automotive repair facilities; WT-B09 was advanced directly west of the eastern boundary of the Site, adjacent to the former off-site gasoline station; and borings WT-B10 and WT-B11 were advanced in the northeast corner of the Site. All soil samples except for those collected from WT-B10 and WT-B11 were analyzed for penta and TPH/Stoddard solvent. Soil samples collected from borings WT-B10 and WT-B11 were not analyzed because there were no field indications of contamination (odor, sheen, PID readings) observed. Additionally, SES collected groundwater samples from newly installed monitoring wells WT-MW-01 through WT-MW-04 and existing Fox Avenue Site monitoring wells MW-07 and B-38.

In April 2014, SES advanced three soil borings (WT-B15 to WT-B17) off-site in the area of the former penta dip tank and UST to the south of the Site, each to a depth of 15 feet bgs. The locations of the borings were selected to assess source soils for penta and Stoddard solvent, and were also analyzed for cVOCs. In addition, boring WT-B17 was analyzed for dioxins/furans. Additionally, three 20-foot-deep monitoring wells (WT-MW-05, WT-MW-06, WT-MW-07) were installed along the south side of S. Myrtle Street to assess off-site groundwater impacts. Soil from the monitoring well installation was analyzed for cVOCs.

2.4 FLOYD|SNIDER INVESTIGATIONS (2015–2016)

In December 2015 and March 2016, Floyd|Snider completed additional subsurface investigations to fill key data gaps related to potential subsurface impacts prior to the execution of the stormwater improvement project described in Section 1.2.2.1. The investigations were intended to delineate the nature and extent of groundwater and soil contamination, primarily focused on penta and Stoddard solvent contamination.

In December 2015, Floyd|Snider collected surface and subsurface soil samples on the Site and downgradient of the Site from 12 boring locations (WT-SB-01, WT-SB-02, WT-SB-04 through

WT-SB-10, WT-SB-12, WT-MW-108, and WT-MW-110) and installed three monitoring wells (WT-MW-108 through WT-MW-110).

Borings WT-SB-01, WT-SB-02, WT-SB-06, and WT-SB-08 were installed in the Site interior to assess general soil quality and potential commingling of soil contamination between the Site and the adjacent Fox Avenue Site and were analyzed for TPH/Stoddard solvent and penta. WT-SB-01 and WT-SB-06 were also advanced within the anticipated trenching and excavation areas for the stormwater system and used to assess general soil quality for disposal purposes. Borings WT-SB-05, WT-SB-07, WT-SB-09, WT-SB-10, and WT-MW-108 were installed upgradient and cross-gradient from the penta dip tank in order to delineate the extents of penta, TPH/Stoddard solvent and dioxins/furans in soil in this area. WT-SB-04 was installed in the SIM administrative parking lot downgradient of the dip tank to assess penta and Stoddard solvent in subsurface soil downgradient of the source area. Borings WT-MW-110 and WT-SB-12 were installed in the vicinity of former auto service operations on the eastern portion of the Site to assess potential soil impacts from these operations and were analyzed for penta, dioxins/furans, TPH/Stoddard solvent, and metals.

Monitoring wells WT-MW-108 through WT-MW-110 were installed to assess upgradient groundwater quality at the Site. The planned downgradient monitoring well intended to be co-located with WT-SB-04 could not be installed due to the presence of extensive subsurface utilities in this area (administrative parking lot).

Groundwater samples were collected from the newly installed wells, existing site wells including WT-MW-01, WT-MW-02, WT-MW-03, WT-MW-05, WT-MW-06, and WT-MW-07, and Fox Avenue Site wells B-36, B-38, B-49, MW-07, and MW-09. Existing site well WT-MW-04 could not be located and was presumed to be destroyed. The samples were analyzed for penta and TPH/Stoddard Solvent. Additionally, samples from three selected wells (WT-MW-01, WT-MW-05, and MW-108) were analyzed for dioxins/furans.

In March 2016, Floyd|Snider advanced eight additional soil borings (WT-SB-13 through WT-SB-20) to further delineate heavy oil-range TPH detected at WT-MW-110, in the vicinity of the former automotive repair shop. These borings were located in and adjacent to planned stormwater system trenching areas and were advanced in order to characterize soil for disposal purposes.

3.0 Summary of Existing Data

Soil and groundwater data from investigations on the Site, as described in Section 2.0 above, are summarized in the following sections.

3.1 SOIL QUALITY

In the vicinity of the former penta dip tank and UST, soil contamination is primarily encountered in the smear zone, immediately above and below the water table, from approximately 5 to 14 feet bgs. Vadose zone soils are generally not impacted. Stoddard solvent is present at concentrations greater than the MTCA Method A cleanup level (4,000 milligrams per kilogram [mg/kg]) at several boring locations within the footprint of the former penta dip tank and UST (source area) as well as in the immediate vicinity to the north and south of the source area. The greatest Stoddard solvent concentration detected at the Site is 25,000 mg/kg in a sample collected from 7.5 feet bgs at WT-B17, within the footprint of the former penta dip tank and UST. Stoddard solvent concentrations exceeding the MTCA Method A cleanup level were also detected at WT-B15, WT-B16, WT-GP-2, WT-SB-07, and WT-SB-10. Penta is also present in several borings in the source area, and was detected at a concentration exceeding the applicable MTCA Method C cleanup level (330 mg/kg) at WT-B17. Dioxins/furans were also detected at concentrations exceeding the applicable MTCA Method C cleanup level (1,680 nanograms per kilogram) at WT-B17, as well as at WT-SB-10 to the east of the penta dip tank and UST. Stoddard solvent and Penta results are shown on Figure 3.1, and dioxin/furan results are shown on Figure 3.2.

In the vicinity of the former automotive repair shop, at borings WT-GP-10, WT-MW-110, and WT-SB-20, heavy oil-range TPH was detected at concentrations exceeding the MTCA Method A cleanup level (2,000 mg/kg) in shallow soils from approximately 4 to 5 feet bgs. Heavy oil-range TPH results are shown on Figure 3.3.

Scattered low-level detections of chromium have been encountered at the Site. Chromium was detected at concentrations slightly exceeding the MTCA Method A cleanup level in surface soils at WT-SB-01 and WT-MW-110. Additionally, tetrachloroethene (PCE) has been detected at concentrations greater than the MTCA Method A cleanup level at depths between 7.5 and 10 feet bgs at WT-B15 and WT-B17 in the footprint of the former penta dip tank and UST, and in shallower soil between 2 and 5 feet bgs north of the former penta dip tank and UST at WT-GP-5, WT-GP-7, and WT-GP-8.

In surface samples (0 to 2 feet bgs) WT-SB-10, WT-SB-05, WT-SB-08, and WT-MW-110, SVOCs; (including polycyclic aromatic hydrocarbons [PAHs]) and PCBs were analyzed. For SVOCs besides PAHs, only bis(2-ethylhexyl)phthalate was detected in WT-SB-01 and WT-MW-110, at concentrations less than the MTCA Method C cleanup level. SVOCs were not detected in soil samples collected from WT-SB-05 and WT-SB-08, located in the source area and to the north, respectively. A number of PAHs were detected in the soil sample collected from WT-MW-110, but only benzo(a)pyrene exceeded the MTCA Method A cleanup level. PCBs were not detected in any of the surface samples.

Comprehensive soil data for all investigations on the Site are presented in Tables 3.1 and 3.2.

3.2 GROUNDWATER QUALITY

Penta and Stoddard solvent are present in groundwater in the southwestern portion of the Site, in the vicinity of the former penta dip tank and UST. Penta has been encountered most recently at concentrations exceeding the MTCA Method C cleanup level (2.2 µg/L) at well B-38, which is immediately downgradient from the former penta dip tank, as well as in the adjacent upgradient 'halo' in groundwater collected from wells WT-MW-01, WT-MW-02, WT-MW-04 (now presumed to be destroyed), and WT-MW-108. Penta also exceeded the MTCA Method C cleanup level in groundwater at well WT-MW-110, which lies approximately 150 feet to the northeast of the former penta dip tank and UST area, in the vicinity of the former wood storage shed. Penta has been detected in groundwater most recently at concentrations less than the MTCA Method C cleanup level downgradient at wells B-36, WT-MW-03, WT-MW-05, WT-MW-06, and WT-MW-07 and further upgradient at MW-07 and MW-09. Stoddard solvent was detected most recently at concentrations exceeding the MTCA Method A cleanup level at wells B-38, WT-MW-01, WT-MW-02, and WT-MW-04 and detected at a concentration less than the cleanup level in WT-MW-05. Dioxins/furans were also detected in groundwater at well WT-MW-01 at concentrations greater than the MTCA Method C cleanup level (6.73 picograms per liter) in the vicinity of the former penta dip tank and downgradient at well WT-MW-05. Dioxins/furans were detected at low concentrations in groundwater collected from upgradient well MW-108.

CVOCs, including PCE, trichloroethene, *cis*-1,2-dichloroethene, and vinyl chloride are present in groundwater on the western portion of the Site at concentrations exceeding their respective cleanup levels, in the presumed downgradient direction from the Fox Avenue Site. Exceedances of some or all cVOCs were observed in B-18, B-38, WT-MW-01, WT-MW-04, WT-MW-06, and WT-MW-07.

Groundwater data are presented in Table 3.3. Penta and Stoddard solvent concentrations in groundwater are shown on Figure 3.4, and the approximate extents of penta and Stoddard solvent in excess of their respective cleanup levels are depicted on Figure 3.5.

3.3 PRELIMINARY CONCEPTUAL SITE MODEL

Historical wood treatment with penta has caused impacts to subsurface soil in the vicinity of the former penta dip tank and UST. The Site, including the S. Myrtle Street ROW where the former dip tank and UST were located, currently has a permeable gravel ground surface, and historically the surface was likely the same. Contamination was likely released at the ground surface in the area surrounding the former penta dip tank and within the vadose zone surrounding the UST, while handling of wet lumber likely contributing to a "halo" of contamination in the interior of the Site upgradient of the former penta dip tank and UST. A commonly used product for wood treatment for the type of finished wood products manufactured by Tyee Lumber consisted of a blend of Stoddard solvent and penta (the exact penta concentration used by Tyee Lumber is unknown) that, when released to the ground surface, would have migrated downward in the vadose zone and dispersed laterally when the product reached the water table at approximately

10 to 11 feet bgs. Stoddard solvent, which is the lightest and most mobile of the wood treatment chemicals and would have likely represented 90 to 95 percent of the wood treatment solution, has been transported the farthest laterally and to the southwest in the downgradient direction. Penta, which would have likely represented 5 to 10 percent of the wood treatment solution (USDA 1948), has been dispersed similarly to Stoddard solvent, though it is slightly less widespread. Both chemicals are present in a roughly 2-to 4-foot-thick layer of soil at the water table interface/smear zone based on field indications of contamination, which is likely representative of seasonal fluctuations in the water table elevation. Dioxins/furans are also present in the vicinity of the former penta dip tank and UST; dioxins/furans are a byproduct of the penta manufacturing process and are often detected in areas with penta contamination. Dixons/furans have low solubility in water and partition strongly to soil particles, and, therefore, appear to be limited to the areas adjacent to the former penta dip tank and UST.

Historical wood treatment operations at the Site have caused Stoddard solvent, penta, and dioxin/furan impacts to groundwater, although the dioxins/furans are likely to be adsorbed to fine particles in the groundwater. Similarly to the soil contamination described above, Stoddard solvent, penta, and dioxins/furans exceeding their respective cleanup levels in the vicinity of the former penta dip tank and UST have likely been transported to the southwest with groundwater flow and via lateral movement on the water table. An isolated area of Stoddard solvent and penta contamination to the east of the former penta dip tank and UST at MW-110 may have been caused by transfer and storage of wet treated lumber on the wood platform that was previously located nearby.

Historical auto repair operations in the south-central portion of the Site appear to have caused localized impacts to shallow soils from heavy oil-range TPH. Heavy oil does not migrate readily, and these impacts appear to be limited to a small area of vadose soil. Surface soils are generally more permeable sand and gravels (fill), with less permeable silty sand and sandy silt below 5 feet. The presence of heavy oil appears to be localized at this transition from fill to native soil and is likely a result of a minor historical surface release.

Groundwater at the Site has been impacted by cVOCs due to contamination at the adjacent Fox Avenue Site to the north. Residual cVOC contamination in groundwater originating from the Fox Avenue Site has migrated from the main source area on the Fox Avenue Site downgradient to the southwest and is present on the western portion of the Site. This contamination attenuates to concentrations less than the cleanup levels to the southwest of the Site, and is expected to further attenuate because source removal of cVOCs occurred in 2013 and enhanced reductive dechlorination injections for downgradient plume remediation are on-going at the Fox Avenue Site.

The extents of the areas of soil and groundwater contamination and the conceptual site model are shown on Figure 3.5.

3.4 PRELIMINARY CONTAMINANTS OF CONCERN

Based on the analytical data collected to date, in conjunction with the preliminary conceptual site model described above, penta and Stoddard Solvent are the primary COCs at the Site. Other TPH (diesel and heavy oil) and dioxins/furans have also been documented at concentrations greater than the preliminary screening levels in this Data Summary Report, and are secondary COCs at the Site. cVOCs are present on the western portion of the Site as a result of documented release(s) from the Fox Avenue Site and are be addressed as part of on-going cleanup actions being conducted at Fox. cVOCs are therefore not COCs associated with the Site.

3.5 POTENTIAL MIGRATION PATHWAYS AND RECEPTORS

Contaminants in soil and groundwater at the Site have the potential to migrate through natural mechanisms that may result in exposure to human and ecological receptors. The primary potential migration pathways include the following:

- **Soil to groundwater.** Releases of contamination to the surface and subsurface that occurred during historical Site operations could result in a continued release, or leaching, of contaminants entrained in soil to groundwater.
- **Groundwater to surface water/sediments.** The Site is located to the east of the LDW, though not directly adjacent to it. Contaminated groundwater beneath the Site has the potential to migrate through groundwater flow to the LDW. Preliminary data suggest that this is not a migration pathway of concern; groundwater has been sampled in monitoring wells located in between the Site and the LDW (WT-MW-06, WT-MW-07, and B-36) and have not shown concentrations of the Site COCs to be greater than relevant MTCA cleanup levels.

The property does not currently have a stormwater conveyance system; therefore, stormwater and surface soil sheet flow off the property before entering the City stormwater system that discharges to the LDW. Preliminary data indicate that surface soil contamination at the Site is very limited (two locations with chromium concentrations slightly exceed the MTCA Method A cleanup level) and, therefore, this migration pathway is not expected to be of concern. Additionally, SIM plans to install a stormwater conveyance and treatment system as described in Section 1.2.2.1 and will pave the property in the future, which will eliminate this migration pathway entirely.

Because contamination is located in the subsurface in smear zone soil and groundwater (at depths ranging from 7.5 to 15 feet bgs), the only current potential exposure receptors are utility or construction workers entering the subsurface and directly contacting contaminated soil and/or groundwater. Ecological receptors are not of concern as the Site is located within a heavily industrialized area.

4.0 Interim Action

As described in Section 1.2.2.1, SIM plans to collect and convey on-site stormwater to a single on-site storm drain and treatment system. The construction of the stormwater treatment system will include trenching for conveyance piping and excavation for manholes and other subsurface treatment structures.

While the planned treatment system has been situated in order to avoid areas of soil contamination to the extent practical, some isolated areas of contamination may be encountered during the trenching and excavation. The soil management and health and safety protocols for ground-disturbing activities in these areas, included recommendations for known localized areas of contaminated soil removal, will be presented in an Interim Action Work Plan, which will be prepared and submitted to Ecology within 30 days of the execution of the AO, and prior to the start of system construction.

5.0 References

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Whitehead Tyee Site

Data Summary Report

Tables

Table 1.1
Historical Site Operations[1]

Building Number (As referenced on Figure 1.3)	Name of Building/Structure	Date Constructed[2]	Tyee Lumber Historical Operations	Other Historical Operations
1	Former Lumber Shed and Material Finishing	1918	Contained a 6,868-square-foot structure and 5,220 square feet of awning roof. The warehouse had a railroad spur under a covered roof area. Lumber was stored in the area and finished.	Formerly Williams Fir Finish Company operations.
2	Former Office	1922	This building consisted of a 400-square-foot area for the mill's Superintendent's office.	Formerly Williams Fir Finish Company operations.
3	Former Finger-Jointing Mill	1950s	The finger-jointing mill was added on in the 1950s between the former lumber shed and former planing and cutting mill. Gluing operations occurred in this building. Finger-joint gluing machines were located in the eastern portion of the building used for drying dipped lumber. The glue was reportedly a polyvinyl acetate glue called "Duro-Lok" manufactured by National Starch and Chemical.	
4	Former Planing and Cutting Mill	1918	Lumber was plane-finished and rough lumber was re-sawed for use in finished millwork.	Formerly Williams Fir Finish Company operations.
5	Former Window Sash Manufacturing and Frame Shop	1918	The structure was originally used as a lumber warehouse in 1918 and then a planing mill from at least 1929 until the 1940s. By 1949, the building had been added on to and was used for window sash manufacturing.	Formerly Williams Fir Finish Company operations.
6	Former Hog Fuel Bin	Pre-1929	The Hog Fuel bin and conveyor appear to have been attached to and located south of the main planing mill.	Formerly Williams Fir Finish Company operations.
7	Former Dip Tank, Former Penta UST, and the Former Shed Over Dip Tank	Pre-1956	The dip tank shed was formerly used for dipping green lumber for treatment in a tank containing Penta. The lumber was then moved to the lumber shed in the northwest corner of the property for drying. The lumber was then processed and dry-kilned. Dipped lumber was also reportedly air dried or stored outside within close proximity to the kilns, along the eastern portion of the abandoned Frontenac Street right of way. Historical records indicated that the condition of the dip tank building appeared to be wet painted and new in 1956.	
8	Former Dry Kilns	1928	This structure consisted of a 3,740-square-foot area, constructed with hollow tile and concrete footings. The structure contained fans, heating equipment, machinery, and tracks. The structure was steam heated from coils in the boiler room as a result of burning hog fuel in the former hog fuel bin.	Formerly Williams Fir Finish Company operations.
9	Former Dry Kilns	1947	This structure consisted of a 2,937-square-foot area with hollow tile construction and concrete footings. The structure contained fans, heating equipment, heating coils from main boiler, machinery, and tracks located in the building. The structure was steam heated from coils in the boiler room as a result of burning hog fuel in the former hog fuel bin.	
10	Former Sawdust Bin	1925	This structure consisted of an approximately 1,170-square-foot area located adjacent to the boiler house. The structure was steam heated from coils in the boiler room as a result of burning hog fuel in the former hog fuel bin.	
11	Former Bunker	Pre-1966	It is unknown what was stored in this building.	
12	Former Boiler House	1918	The boiler house consisted of a two-story building and contained boiler machinery and equipment. The building was steam heated from coils in the boiler room as a result of burning hog fuel in the former hog fuel bin. The boiler house had an associated 60-foot-tall and 32-inch-diameter stack. Two 2,000-gallon tanks were reportedly associated with a former building located proximal to the former refuse burner, which may have been the boiler house building.	Formerly part of Williams Fir Finish Company operations.
13	Former Shop	1918	It is unknown what operations occurred in this building.	
14	Former Refuse Burner	Pre-1929	This building consisted of a 38-foot-high tower used for burning refuse lumber.	Formerly part of Williams Fir Finish Company operations.
15	Former Shop and Storage	1920s	This building was used for general maintenance and storage.	

Table 1.1
Historical Site Operations[1]

Building Number (As referenced on Figure 1.3)	Name of Building/Structure	Date Constructed[2]	Tyee Lumber Historical Operations	Other Historical Operations
16	Former Automotive Repair Facility	Post 1949 Pre-1966	Automotive repair activities are depicted in a small structure on the southern portion of the property east of the boiler house in a 1966 Sanborn Map.	
17	Former Wood Platform	Pre-1929	It is presumed that this structure was used for additional lumber storage.	Formerly Williams Fir Finish Company operations.
18	Former Shed	Unknown	It is unknown what material was stored in this structure.	
19	Former Re-Sawing Mill	1951	This building consisted of a two-story, 504-square-foot structure. The structure contained machinery and equipment. It is assumed that rough lumber was re-sawed for use in finished millwork. This building was attached to a lunch room, which was also connected to the pre-1985 vintage storage shed (#22).	
20	Former Material Storage	Unknown	It is unknown what material was stored in this building.	
21	Former Automotive Repair Facility	Post-1929 Pre-1949	The 1949 Sanborn Map depicts an automotive and truck repair shop that was removed from the property by 1966 when the area was in use as a lumber sorting yard.	
22	Pre-1985 Vintage Storage Shed	1980	A steel framed storage shed used for lumber storage has been located on the property since 1980. It is unknown what other operations occurred in the structure prior to 1980. This shed was attached to a lunch room, which was also connected to the re-sawing mill (#19).	
23	Former Gasoline Station	1918	The former gasoline station was not part of Tyee Lumber property but was located on the east-adjacent property, occupied the property from 1918 until 1964 when it was demolished. Washington State Department of Ecology's UST database indicates that closure was in process for two USTs in December 1999.	Other early development on the property, as shown on the 1929 and 1949 Sanborn Maps, include residential properties, a restaurant, and possibly an automotive-related structure, which were located on the most eastern portion of the property. A blacksmith shop with an earthen floor was also located on the property at the corner of South Myrtle Street and East Marginal Way.
24	Former Tyee Lumber Main Office and Former Tyee Lumber Warehouse Space	1950s	Tyee Lumber expanded in the late 1950s and occupied 701 and 765 South Myrtle Street. This property is located across (south) South Myrtle Street from the 730 South Myrtle Street property. This 701 property was used as the main office for Tyee Lumber and consisted of three general offices, five private offices, and a reception entrance. The building was heated by U.S. Boiler and was oil-fired and also had perimeter baseboard heating. The rear of the main office building included a lumber shelter and there was reportedly a gasoline tank and pump located behind the shelter. The property was paved during this time. The former Tyee Lumber Warehouse Space was located at 765 South Myrtle Street.	A 1929 Sanborn Map shows that Washington Excelsior & Manufacturing Company, Box & Shook Factory, and Fox River Butter Company were located on the property. Operations included a grain warehouses, a feed mill, box nailing shop, and two veneer drying sheds. A 1949 Sanborn Map shows that the Borden Company Chemical Division Powdered Glue Factory was located on the property prior to Tyee Lumber operations. Operations included milling, grinding, and product finishing. It is noted on the main warehouse building that fuel oil was used for electricity.

Notes:
1. The following sources were reviewed in the preparation of this table:
   Hart Crowser. 1992. Technical Memorandum No. 3: Site History and Summary of Site Operations Including Nearby Historical Land Use, Great Western Chemical, Seattle, Washington, J-2489-07. From Michael Baily and Robert Weaver, Hart Crowser, to Ching-Pi Wang, Washington State Department of Ecology. 16 January.
   Tyee Lumber Appraisal Report, 1956.
   Sound Earth Strategies. 2013. Phase I Environmental Site Assessment. Prepared for the Whitehead Company and Reliable Transfer and Storage Company. 12 December.
   1937, 1965, 1969 Aerial photographs and 1929, 1949, and 1966 Sanborn Maps.
2. Unless otherwise stated, all structures were demolished in 1986.

Abbreviations:
Penta Pentachlorophenol
UST Underground storage tank

Table 3.1
Soil Analytical Results for Total Petroleum Hydrocarbons, Pentachlorophenol, and Dioxins/Furans

					Location	WT-GP-2				WT-GP-3				WT-GP-4				WT-GP-5	
					Sample ID	**GP-2 (0-10)**	**GP-2 (7-8)**	**GP-2 (10-13)**	**GP-2 (12-13)**	**GP-3 (0-10)**	**GP-3 (8-9)**	**GP-3 (10-13)**	**GP-3 (12-13)**	**GP-4 (0-10)**	**GP-4 (4-5)**	**GP-4 (10-13)**	**GP-4 (12-13)**	**GP-5 (0-5)**	**GP-5 (2)**
					Sample Date	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013
					Depth (feet bgs)	0–10	7–8	10–13	12–13	0–10	8–9	10–13	12–13	0–10	4–5	10–13	12–13	0–5	2–2
Analytes	**Units**	**MTCA Method A Industrial Cleanup Level**	**MTCA Method A Unrestricted Cleanup Level**	**MTCA Method C Cleanup Level, Cancer**	**MTCA Method C Cleanup Level, Noncancer**														
Total Petroleum Hydrocarbons (TPH)																			
Gasoline-Range TPH	mg/kg	30/100[1]	30/100[1]	--	--	NA	7.01 U	NA	6.31 U	NA	5.58 U	NA	5.82 U	NA	6.67 U	NA	6.31 U	NA	6.61 U
Diesel-Range TPH	mg/kg	2,000	2,000	--	--	22.5 U	NA	304 JM	NA	22.8 U	NA	129 JM	NA	23 U	NA	307 JM	NA	22.5 U	NA
Heavy Oil-Range TPH	mg/kg	2,000	2,000	--	--	145	NA	88.3	NA	57 U	NA	56.9 U	NA	57.6 U	NA	190	NA	56.3 U	NA
Stoddard Solvent[2]	mg/kg	4,000[3]	4,000[3]	--	--	NA	NA	NA	**5,290**	NA	NA	NA	109	NA	NA	NA	3,950	NA	NA
Semivolatile Organic Compounds																			
Pentachlorophenol	mg/kg	--	--	330	17,500	0.109 U	NA	8.95	NA	0.112 U	NA	7.11	NA	0.114 U	NA	9.76	NA	0.109 U	NA
Dioxins/Furans																			
1,2,3,7,8-PeCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total OCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total OCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Summed Dioxin/Furan TEQ with One-Half the Detection Limit[4,5]	ng/kg	--	--	1,680	4,080	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

-- Not applicable.

BOLD Exceeds one or more cleanup level.

1 Benzene present in water/no detectable benzene present in water.

2 Stoddard solvent was quantified using the NWTPH-Dx Method instead of the NWTPH-Gx Method. An estimated value for Stoddard solvent was quantified based on a 3-point calibration performed after the initial analysis under NWTPH-Dx.

3 The MTCA Method A mineral oil criterion was used as a surrogate for Stoddard solvent.

4 World Health Organization 2005 Toxic Equivalency Factors was used for calculation of dioxin/furan TEQ (Van den Berg, et al. 2006).

5 Calculated using detected dioxin/furan concentrations plus one-half the detection limit for dioxins/furans that were not detected.

Abbreviations:

bgs Below ground surface
HpCDD Heptachlorooxanthrene
HpCDF Heptachlorodibenzofuran
HxCDD Hexachlorodibenzo-p-dioxin
HxCDF Hexchlorodibenzofuran
mg/kg Milligram per kilogram
MTCA Model Toxics Control Act
NA Not analyzed
ng/kg Nanogram per kilogram
OCDD Octachlorodibenzodioxin
OCDF Octachlorodibenzofuran
PeCDD Pentachlorodibenzo-p-dioxin
PeCDF Pentachlorodibenzofuran
TCDD Tetrachlorodibenzodioxin
TCDF Tetrachlorodibenzofuran
TEQ Toxicity equivalent

Qualifiers:

J Analyte was detected, concentration is considered an estimate.
JM Analyte was detected, concentration is considered an estimate due to poor chromatographic match to standard.
U Analyte was not detected, concentration given is reporting limit.
UJ Analyte was not detected, concentration given is reporting limit, which is considered an estimate.

Table 3.1
Soil Analytical Results for Total Petroleum Hydrocarbons, Pentachlorophenol, and Dioxins/Furans

					Location	WT-GP-7		WT-GP-8		WT-GP-10		WT-GP-11		WT-MW-01			WT-MW-02		
					Sample ID	GP-7 (0-5)	GP-7 (3)	GP-8 (0-5)	GP-8 (4-5)	GP-10 (0-5)	GP-10 (4-5)	GP-11 (0-5)	GP-11 (4-5)	B01-10	B01-12	B01-15	B02-05	B02-10	B02-15
					Sample Date	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	12/27/2013	12/27/2013	12/27/2013	12/27/2013	12/27/2013	12/27/2013
					Depth (feet bgs)	0–5	3–3	0–5	4–5	0–5	4–5	0–5	4–5	10	12	15	5	10	15
Analytes	**Units**	**MTCA Method A Industrial Cleanup Level**	**MTCA Method A Unrestricted Cleanup Level**	**MTCA Method C Cleanup Level, Cancer**	**MTCA Method C Cleanup Level, Noncancer**														
Total Petroleum Hydrocarbons (TPH)																			
Gasoline-Range TPH	mg/kg	30/100[1]	30/100[1]	--	--	NA	7.03 U	NA	6.08 U	NA	6.34 U	NA	7.21 U	NA	NA	NA	NA	NA	NA
Diesel-Range TPH	mg/kg	2,000	2,000	--	--	25 U	NA	20.2 U	NA	21.7 U	NA	21.1 U	NA	50 U	120	50 U	50 U	50 U	50 U
Heavy Oil-Range TPH	mg/kg	2,000	2,000	--	--	62.6 U	NA	376	NA	**7,850**	NA	52.7 U	NA	250 U	250 U	250 U	250 U	250 U	250 U
Stoddard Solvent[2]	mg/kg	4,000[3]	4,000[3]	--	--	NA	NA	NA	NA	NA	196	NA	NA	50 U	140	50 U	50 U	50 U	50 U
Semivolatile Organic Compounds																			
Pentachlorophenol	mg/kg	--	--	330	17,500	0.115 U	NA	0.101 U	NA	0.189	NA	0.0964 U	NA	0.05 U	0.45	0.05 U	0.05 U	0.05 U	0.05 U
Dioxins/Furans																			
1,2,3,7,8-PeCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total OCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total OCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Summed Dioxin/Furan TEQ with One-Half the Detection Limit[4,5]	ng/kg	--	--	1,680	4,080	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

-- Not applicable.

BOLD Exceeds one or more cleanup level.

1 Benzene present in water/no detectable benzene present in water.

2 Stoddard solvent was quantified using the NWTPH-Dx Method instead of the NWTPH-Gx Method. An estimated value for Stoddard solvent was quantified based on a 3-point calibration performed after the initial analysis under NWTPH-Dx.

3 The MTCA Method A mineral oil criterion was used as a surrogate for Stoddard solvent.

4 World Health Organization 2005 Toxic Equivalency Factors was used for calculation of dioxin/furan TEQ (Van den Berg, et al. 2006).

5 Calculated using detected dioxin/furan concentrations plus one-half the detection limit for dioxins/furans that were not detected.

Abbreviations:

bgs Below ground surface
HpCDD Heptachlorooxanthrene
HpCDF Heptachlorodibenzofuran
HxCDD Hexachlorodibenzo-p-dioxin
HxCDF Hexchlorodibenzofuran
mg/kg Milligram per kilogram
MTCA Model Toxics Control Act
NA Not analyzed
ng/kg Nanogram per kilogram
OCDD Octachlorodibenzodioxin
OCDF Octachlorodibenzofuran
PeCDD Pentachlorodibenzo-p-dioxin
PeCDF Pentachlorodibenzofuran
TCDD Tetrachlorodibenzodioxin
TCDF Tetrachlorodibenzofuran
TEQ Toxicity equivalent

Qualifiers:

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JM Analyte was detected, concentration is considered an estimate due to poor chromatographic match to standard.
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Table 3.1
Soil Analytical Results for Total Petroleum Hydrocarbons, Pentachlorophenol, and Dioxins/Furans

					Location	WT-MW-03		WT-MW-04		WT-B05	WT-B06		WT-B07		WT-B08		WT-B09	
					Sample ID	B03-05	B03-10	B04-05	B04-10	B05-08	B06-05	B06-12	B07-05	B07-11.5	B08-05	B08-11	B09-05	B09-13
					Sample Date	12/27/2013	12/27/2013	12/27/2013	12/27/2013	12/26/2013	12/26/2013	12/26/2013	12/26/2013	12/26/2013	12/26/2013	12/26/2013	12/26/2013	12/26/2013
					Depth (feet bgs)	5	10	5	10	8	5	12	5	11.5	5	11	5	13
Analytes	**Units**	**MTCA Method A Industrial Cleanup Level**	**MTCA Method A Unrestricted Cleanup Level**	**MTCA Method C Cleanup Level, Cancer**	**MTCA Method C Cleanup Level, Noncancer**													
Total Petroleum Hydrocarbons (TPH)																		
Gasoline-Range TPH	mg/kg	30/100[1]	30/100[1]	--	--	NA	NA	NA	NA	NA	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U
Diesel-Range TPH	mg/kg	2,000	2,000	--	--	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Heavy Oil-Range TPH	mg/kg	2,000	2,000	--	--	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Stoddard Solvent[2]	mg/kg	4,000[3]	4,000[3]	--	--	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Semivolatile Organic Compounds																		
Pentachlorophenol	mg/kg	--	--	330	17,500	0.05 U	0.05 U	0.5 U	0.05 U	0.05 U	NA	NA	NA	NA	NA	NA	NA	NA
Dioxins/Furans																		
1,2,3,7,8-PeCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total OCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total OCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Summed Dioxin/Furan TEQ with One-Half the Detection Limit[4,5]	ng/kg	--	--	1,680	4,080	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

-- Not applicable.

BOLD Exceeds one or more cleanup level.

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bgs Below ground surface
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HxCDD Hexachlorodibenzo-p-dioxin
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mg/kg Milligram per kilogram
MTCA Model Toxics Control Act
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ng/kg Nanogram per kilogram
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TCDD Tetrachlorodibenzodioxin
TCDF Tetrachlorodibenzofuran
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Table 3.1
Soil Analytical Results for Total Petroleum Hydrocarbons, Pentachlorophenol, and Dioxins/Furans

Location						WT-MW-05	WT-MW-06	WT-MW-07	WT-B15		WT-B16		WT-B17		WT-SB-01		WT-SB-02	WT-MW-108
Sample ID						B12-10.0	B13-10.0	B14-10.0	B15-05.0	B15-10.0	B16-05.0	B16-10.0	B17-07.5	B17-10.0	SB-01-0-2	SB-01-10	SB-02-0-2	SB-03-10-11
Sample Date						04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	12/07/2015	12/07/2015	12/07/2015	12/07/2015
Depth (feet bgs)						10	10	10	5	10	5	10	7.5	10	0–2	10	0–2	10–11
Analytes	Units	MTCA Method A Industrial Cleanup Level	MTCA Method A Unrestricted Cleanup Level	MTCA Method C Cleanup Level, Cancer	MTCA Method C Cleanup Level, Noncancer													
Total Petroleum Hydrocarbons (TPH)																		
Gasoline-Range TPH	mg/kg	30/100[1]	30/100[1]	--	--	**1,500 JM**	2 U	2 U	2 U	**2,600 JM**	2 U	**4,600 JM**	**10,000 JM**	**160 JM**	NA	NA	NA	NA
Diesel-Range TPH	mg/kg	2,000	2,000	--	--	**2,900 JM**	50 U	50 U	**2,300 JM**	**5,700 JM**	50 U	**6,900 JM**	**23,000 JM**	1,700 JM	23.3 U	19.2 U	21.3 U	23.5 U
Heavy Oil-Range TPH	mg/kg	2,000	2,000	--	--	250 U	250 U	250 U	1,100	460	250 U	250 U	**3,000**	250 U	1,060	48 U	445	58.9 U
Stoddard Solvent[2]	mg/kg	4,000[3]	4,000[3]	--	--	3,300	50 U	50 U	2,000	**6,600**	50 U	**8,200**	**25,000**	1,800	23.3 UJ	19.2 UJ	21.3 UJ	23.5 UJ
Semivolatile Organic Compounds																		
Pentachlorophenol	mg/kg	--	--	330	17,500	0.079	0.05 U	0.05 U	31	140	0.05 U	22	**340**	85	0.13	0.104 U	0.0217 U	0.022 U
Dioxins/Furans																		
1,2,3,7,8-PeCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	50.1	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	3,630	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	21,900	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	1,220	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	368,000 J	NA	NA	NA	NA	NA
Total OCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	1,130,000 J	NA	NA	NA	NA	NA
2,3,7,8-TCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	574	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	1,210	NA	NA	NA	NA	NA
2,3,4,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	1,230	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	5,240 J	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	1,080	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	736	NA	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	696	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	77,300 J	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	4,170 J	NA	NA	NA	NA	NA
Total OCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	436,000 J	NA	NA	NA	NA	NA
Summed Dioxin/Furan TEQ with One-Half the Detection Limit[4,5]	ng/kg	--	--	1,680	4,080	NA	NA	NA	NA	NA	NA	NA	**8,930 J**	NA	NA	NA	NA	NA

Notes:

-- Not applicable.

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Abbreviations:

bgs Below ground surface
HpCDD Heptachlorooxanthrene
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HxCDD Hexachlorodibenzo-p-dioxin
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mg/kg Milligram per kilogram
MTCA Model Toxics Control Act
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ng/kg Nanogram per kilogram
OCDD Octachlorodibenzodioxin
OCDF Octachlorodibenzofuran
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Table 3.1
Soil Analytical Results for Total Petroleum Hydrocarbons, Pentachlorophenol, and Dioxins/Furans

					Location	WT-SB-04	WT-SB-05		WT-SB-06	WT-SB-07		WT-SB-08		WT-SB-09	WT-SB-10	
					Sample ID	SB-04-9-10	SB-05-0-2	SB-05-9-10	SB-06-10-11	SB-07-12-13	SB-07-14-15	SB-08-0-2	SB-08-10-11	SB-09-13-14	SB-10-12.5-13	SB-10-14-15
					Sample Date	12/07/2015	12/09/2015	12/09/2015	12/07/2015	12/09/2015	12/09/2015	12/07/2015	12/07/2015	12/07/2015	12/07/2015	12/07/2015
					Depth (feet bgs)	9–10	0–2	9–10	10–11	12–13	14–15	0–2	10–11	13–14	12.5–13	14–15
Analytes	Units	MTCA Method A Industrial Cleanup Level	MTCA Method A Unrestricted Cleanup Level	MTCA Method C Cleanup Level, Cancer	MTCA Method C Cleanup Level, Noncancer											
Total Petroleum Hydrocarbons (TPH)																
Gasoline-Range TPH	mg/kg	30/100[1]	30/100[1]	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel-Range TPH	mg/kg	2,000	2,000	--	--	22.8 U	NA	22.8 U	22.3 U	111	23 UJ	NA	23.6 U	23.8 U	23.4 U	23.3 UJ
Heavy Oil-Range TPH	mg/kg	2,000	2,000	--	--	57.1 U	NA	56.9 U	55.7 U	177	57.6 UJ	NA	678	59.5 U	393	58.3 UJ
Stoddard Solvent[2]	mg/kg	4,000[3]	4,000[3]	--	--	22.8 UJ	NA	22.8 UJ	22.3 UJ	**6,550 J**	23 UJ	NA	23.6 UJ	2,970 J	**8,500 J**	23.3 UJ
Semivolatile Organic Compounds																
Pentachlorophenol	mg/kg	--	--	330	17,500	0.0222 U	0.112 U	0.328	0.0229 U	11.5	NA	0.102 U	0.0246 U	2.53	14.9	NA
Dioxins/Furans																
1,2,3,7,8-PeCDD	ng/kg	--	--	--	--	NA	NA	0.337 U	NA	3.47 J	NA	NA	NA	NA	9.32	0.417 U
1,2,3,4,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	0.498 U	NA	34.3	NA	NA	NA	NA	87.2	0.465 U
1,2,3,6,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	3.28 J	NA	1,730	NA	NA	NA	NA	5,890	15.2
1,2,3,7,8,9-HxCDD	ng/kg	--	--	--	--	NA	NA	1.12 J	NA	99.3	NA	NA	NA	NA	321	1.17 J
1,2,3,4,6,7,8-HpCDD	ng/kg	--	--	--	--	NA	NA	66.2	NA	34,900	NA	NA	NA	NA	124,000	321
Total OCDD	ng/kg	--	--	--	--	NA	NA	1,510	NA	270,000	NA	NA	NA	NA	744,000	2,370
2,3,7,8-TCDF	ng/kg	--	--	--	--	NA	NA	0.158 U	NA	9.33	NA	NA	NA	NA	1.59 J	0.206 U
1,2,3,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	0.226 U	NA	28.6	NA	NA	NA	NA	11.1	0.391 U
2,3,4,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	0.238 U	NA	31.6	NA	NA	NA	NA	20.5	0.391 U
1,2,3,4,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	0.261 U	NA	212	NA	NA	NA	NA	750	2.45 J
1,2,3,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	0.286 U	NA	133	NA	NA	NA	NA	343	1.16 J
1,2,3,7,8,9-HxCDF	ng/kg	--	--	--	--	NA	NA	0.339 U	NA	75.1	NA	NA	NA	NA	104	0.505 U
2,3,4,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	0.307 U	NA	363	NA	NA	NA	NA	808	2.04 J
1,2,3,4,6,7,8-HpCDF	ng/kg	--	--	--	--	NA	NA	3.89 J	NA	15,500	NA	NA	NA	NA	68,600	166
1,2,3,4,7,8,9-HpCDF	ng/kg	--	--	--	--	NA	NA	0.476 U	NA	834	NA	NA	NA	NA	3,450	8.98
Total OCDF	ng/kg	--	--	--	--	NA	NA	19.4	NA	64,400	NA	NA	NA	NA	329,000	881
Summed Dioxin/Furan TEQ with One-Half the Detection Limit[4,5]	ng/kg	--	--	1,680	4,080	NA	NA	1.98 J	NA	892 J	NA	NA	NA	NA	**3,130 J**	8.59 J

Notes:

-- Not applicable.

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Table 3.1
Soil Analytical Results for Total Petroleum Hydrocarbons, Pentachlorophenol, and Dioxins/Furans

					Location	WT-MW-110				WT-SB-12	WT-SB-13	WT-SB-14	WT-SB-15		WT-SB-16	WT-SB-18	WT-SB-20
					Sample ID	SB-11-0-2	SB-11-4-5	SB-11-6-7	SB-11-10-11	SB-12-10-11	SB-13-4-5	SB-14-4-5	SB-15-4-5	SB-15-4-5-D	SB-16-4-5	SB-18-4-5	SB-20-4-5
					Sample Date	12/07/2015	12/07/2015	12/07/2015	12/07/2015	12/07/2015	03/29/2016	03/29/2016	03/29/2016	03/29/2016	03/29/2016	03/29/2016	03/29/2016
					Depth (feet bgs)	0–2	4–5	6–7	10–11	10–11	4–5	4–5	4–5	4–5	4–5	4–5	4–5
Analytes	Units	MTCA Method A Industrial Cleanup Level	MTCA Method A Unrestricted Cleanup Level	MTCA Method C Cleanup Level, Cancer	MTCA Method C Cleanup Level, Noncancer												
Total Petroleum Hydrocarbons (TPH)																	
Gasoline-Range TPH	mg/kg	30/100[1]	30/100[1]	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel-Range TPH	mg/kg	2,000	2,000	--	--	22.4 UJ	23.5 U	20.9 UJ	21.7 U	20.5 U	20.9 U	24 U	26.3 U	23.9 U	24.9 U	26.9 U	23.1 U
Heavy Oil-Range TPH	mg/kg	2,000	2,000	--	--	295 J	**22,900**	80.2 J	342	106	52.3 U	60 U	65.7 U	59.7 U	62.2 U	67.2 U	**2,960**
Stoddard Solvent[2]	mg/kg	4,000[3]	4,000[3]	--	--	22.4 UJ	23.5 UJ	20.9 UJ	21.7 UJ	20.5 UJ	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds																	
Pentachlorophenol	mg/kg	--	--	330	17,500	0.112 U	NA	NA	NA	0.0203 U	NA	NA	NA	NA	NA	NA	NA
Dioxins/Furans																	
1,2,3,7,8-PeCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total OCDD	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,7,8-TCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,7,8-PeCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Total OCDF	ng/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Summed Dioxin/Furan TEQ with One-Half the Detection Limit[4,5]	ng/kg	--	--	1,680	4,080	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

-- Not applicable.

BOLD Exceeds one or more cleanup level.

1 Benzene present in water/no detectable benzene present in water.

2 Stoddard solvent was quantified using the NWTPH-Dx Method instead of the NWTPH-Gx Method. An estimated value for Stoddard solvent was quantified based on a 3-point calibration performed after the initial analysis under NWTPH-Dx.

3 The MTCA Method A mineral oil criterion was used as a surrogate for Stoddard solvent.

4 World Health Organization 2005 Toxic Equivalency Factors was used for calculation of dioxin/furan TEQ (Van den Berg, et al. 2006).

5 Calculated using detected dioxin/furan concentrations plus one-half the detection limit for dioxins/furans that were not detected.

Abbreviations:

bgs Below ground surface
HpCDD Heptachlorooxanthrene
HpCDF Heptachlorodibenzofuran
HxCDD Hexachlorodibenzo-p-dioxin
HxCDF Hexchlorodibenzofuran
mg/kg Milligram per kilogram
MTCA Model Toxics Control Act
NA Not analyzed
ng/kg Nanogram per kilogram
OCDD Octachlorodibenzodioxin
OCDF Octachlorodibenzofuran
PeCDD Pentachlorodibenzo-p-dioxin
PeCDF Pentachlorodibenzofuran
TCDD Tetrachlorodibenzodioxin
TCDF Tetrachlorodibenzofuran
TEQ Toxicity equivalent

Qualifiers:

J Analyte was detected, concentration is considered an estimate.
JM Analyte was detected, concentration is considered an estimate due to poor chromatographic match to standard.
U Analyte was not detected, concentration given is reporting limit.
UJ Analyte was not detected, concentration given is reporting limit, which is considered an estimate.

Table 3.2
Soil Analytical Results for Metals, Polychlorinated Biphenyls, Semivolatile Organic Compounds, and Volatile Organic Compounds

					Location	WT-GP-2				WT-GP-3				WT-GP-4			
					Sample ID	GP-2 (0-10)	GP-2 (7-8)	GP-2 (10-13)	GP-2 (12-13)	GP-3 (0-10)	GP-3 (8-9)	GP-3 (10-13)	GP-3 (12-13)	GP-4 (0-10)	GP-4 (4-5)	GP-4 (10-13)	GP-4 (12-13)
					Sample Date	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013
					Depth (feet bgs)	0–10	7–8	10–13	12–13	0–10	8–9	10–13	12–13	0–10	4–5	10–13	12–13
Analytes	Units	MTCA Method A Industrial Cleanup Level	MTCA Method A Unrestricted Cleanup Level	MTCA Method C Cleanup Level, Cancer	MTCA Method C Cleanup Level, Noncancer												
Metals																	
Arsenic	mg/kg	20	20	88	1,100	3.08	NA	1.53	NA	3.37	NA	1.68	NA	3.47	NA	1.8	NA
Barium	mg/kg	--	--	--	700,000	26	NA	12.1	NA	42.1	NA	15	NA	26.1	NA	12.8	NA
Cadmium	mg/kg	2	2	--	--	0.199 U	NA	0.2 U	NA	0.201 U	NA	0.193 U	NA	0.183 U	NA	0.189 U	NA
Chromium[1]	mg/kg	19	19	--	11,000	12.1	NA	11.3	NA	13.8	NA	11.8	NA	12.9	NA	12.6	NA
Lead	mg/kg	250	250	--	--	6.06	NA	1.1	NA	10.5	NA	1.33	NA	2.72	NA	2.74	NA
Mercury	mg/kg	2	2	--	--	0.314 U	NA	0.274 U	NA	0.345 U	NA	0.329 U	NA	0.309 U	NA	0.265 U	NA
Selenium	mg/kg	--	--	--	18,000	1.05	NA	0.921	NA	0.917	NA	1.08	NA	1.25	NA	0.846	NA
Silver	mg/kg	--	--	--	18,000	0.128	NA	0.1 U	NA	0.1 U	NA	0.0964 U	NA	0.0913 U	NA	0.0945 U	NA
Polychlorinated Biphenyls (PCBs)																	
PCB Aroclor 1016	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1221	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1232	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1242	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1248	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1254	mg/kg	--	--	66	70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1260	mg/kg	--	--	66	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1262	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1268	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (Total, Aroclors)	mg/kg	1	1	66	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (SVOCs)																	
1,2,4-Trichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	mg/kg	--	--	--	--	0.109 U	NA	0.113 U	NA	0.112 U	NA	0.107 U	NA	0.114 U	NA	0.115 U	NA
1-Methylnaphthalene	mg/kg	--	--	4,500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	mg/kg	--	--	--	--	0.218 U	NA	0.227 U	NA	0.224 U	NA	0.215 U	NA	0.229 U	NA	0.23 U	NA
2,4,6-Trichlorophenol	mg/kg	--	--	12,000	3,500	0.218 U	NA	0.227 U	NA	0.224 U	NA	0.215 U	NA	0.229 U	NA	0.23 U	NA
2,4-Dichlorophenol	mg/kg	--	--	--	10,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	mg/kg	--	--	--	--	0.109 U	NA	0.113 U	NA	0.112 U	NA	0.107 U	NA	0.114 U	NA	0.115 U	NA
2,6-Dinitrotoluene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	mg/kg	--	--	--	17,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	mg/kg	--	--	--	14,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	mg/kg	--	--	--	--	0.109 U	NA	0.113 U	NA	0.112 U	NA	0.107 U	NA	0.114 U	NA	0.115 U	NA
2-Nitroaniline	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-o-cresol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	mg/kg	--	--	--	--	0.109 U	NA	0.113 U	NA	0.112 U	NA	0.107 U	NA	0.114 U	NA	0.115 U	NA
4-Nitrophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	mg/kg	--	--	--	210,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	mg/kg	--	--	--	1,050,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	mg/kg	0.1	0.1	18	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3.2
Soil Analytical Results for Metals, Polychlorinated Biphenyls, Semivolatile Organic Compounds, and Volatile Organic Compounds

					Location	WT-GP-2				WT-GP-3				WT-GP-4			
					Sample ID	GP-2 (0-10)	GP-2 (7-8)	GP-2 (10-13)	GP-2 (12-13)	GP-3 (0-10)	GP-3 (8-9)	GP-3 (10-13)	GP-3 (12-13)	GP-4 (0-10)	GP-4 (4-5)	GP-4 (10-13)	GP-4 (12-13)
					Sample Date	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013
					Depth (feet bgs)	0–10	7–8	10–13	12–13	0–10	8–9	10–13	12–13	0–10	4–5	10–13	12–13
Analytes	Units	MTCA Method A Industrial Cleanup Level	MTCA Method A Unrestricted Cleanup Level	MTCA Method C Cleanup Level, Cancer	MTCA Method C Cleanup Level, Noncancer												
Semivolatile Organic Compounds (SVOCs) (continued)																	
Benzo(g,h,i)perylene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl alcohol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-chloroethoxy)methane	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-chloroethyl)ether	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-ethylhexyl)phthalate	mg/kg	--	--	9,400	70,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di(2-ethylhexyl)adipate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	mg/kg	--	--	--	3,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	mg/kg	--	--	--	350,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	mg/kg	--	--	--	140,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	mg/kg	--	--	--	140,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	mg/kg	--	--	--	--	0.109 U	NA	0.113 U	NA	0.112 U	NA	0.107 U	NA	0.114 U	NA	0.115 U	NA
Hexachlorobutadiene	mg/kg	--	--	--	--	0.109 U	NA	0.113 U	NA	0.112 U	NA	0.107 U	NA	0.114 U	NA	0.115 U	NA
Hexachlorocyclopentadiene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	mg/kg	--	--	--	--	0.109 U	NA	0.113 U	NA	0.112 U	NA	0.107 U	NA	0.114 U	NA	0.115 U	NA
Indeno(1,2,3-cd)pyrene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m-cresol	mg/kg	--	--	--	--	0.109 U	NA	0.113 U	NA	0.112 U	NA	0.107 U	NA	0.114 U	NA	0.115 U	NA
Naphthalene	mg/kg	5	5	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	mg/kg	--	--	--	--	0.218 U	NA	0.227 U	NA	0.224 U	NA	0.215 U	NA	0.229 U	NA	0.23 U	NA
N-Nitroso-di-n-propylamine	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	mg/kg	--	--	--	105,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyridine	mg/kg	--	--	--	--	0.218 U	NA	0.227 U	NA	0.224 U	NA	0.215 U	NA	0.229 U	NA	0.23 U	NA
Volatile Organic Compounds (VOCs)																	
1,1,1-Trichloroethane	mg/kg	2	2	--	7,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	mg/kg	--	--	--	--	NA	0.0701 U	NA	0.0631 U	NA	0.0558 U	NA	0.0582 U	NA	0.0667 U	NA	0.0631 U
1,2-Dichloroethane	mg/kg	--	--	--	--	NA	0.0421 U	NA	0.0379 U	NA	0.0335 U	NA	0.0349 U	NA	0.04 U	NA	0.0378 U
cis -1,2-Dichloroethene	mg/kg	--	--	--	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans -1,2-Dichloroethene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	mg/kg	0.02	0.02	18,000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	mg/kg	0.05	0.05	63,000	21,000	NA	0.0281 U	NA	0.0253 U	NA	0.0223 U	NA	0.0233 U	NA	0.0267 U	NA	0.0252 U
Trichloroethene	mg/kg	0.03	0.03	2,800	1,750	NA	0.0421 U	NA	0.0379 U	NA	0.0335 U	NA	0.0349 U	NA	0.04 U	NA	0.0378 U
Vinyl chloride	mg/kg	--	--	87.5	10,500	NA	0.00281 U	NA	0.00253 U	NA	0.00223 U	NA	0.00233 U	NA	0.00267 U	NA	0.00252 U

Notes:

-- Not applicable.

BOLD Exceeds one or more cleanup level.

1 Cleanup levels are for chromium (VI).

Abbreviations:

bgs Below ground surface

mg/kg Milligram per kilogram

MTCA Model Toxcis Control Act

NA Not analyzed

Qualifiers:

J Analyte was detected, concentration is considered an estimate.

U Analyte was not detected, concentration given is reporting limit.

Table 3.2
Soil Analytical Results for Metals, Polychlorinated Biphenyls, Semivolatile Organic Compounds, and Volatile Organic Compounds

					Location	WT-GP-5		WT-GP-7		WT-GP-8		WT-GP-10		WT-GP-11		WT-MW-05	WT-MW-06
					Sample ID	GP-5 (0-5)	GP-5 (2)	GP-7 (0-5)	GP-7 (3)	GP-8 (0-5)	GP-8 (4-5)	GP-10 (0-5)	GP-10 (4-5)	GP-11 (0-5)	GP-11 (4-5)	B12-10.0	B13-10.0
					Sample Date	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	04/05/2014	04/05/2014
					Depth (feet bgs)	0–5	2–2	0–5	3–3	0–5	4–5	0–5	4–5	0–5	4–5	10	10
Analytes	Units	MTCA Method A Industrial Cleanup Level	MTCA Method A Unrestricted Cleanup Level	MTCA Method C Cleanup Level, Cancer	MTCA Method C Cleanup Level, Noncancer												
Metals																	
Arsenic	mg/kg	20	20	88	1,100	3.24	NA	4.88	NA	3.21	NA	3.33	NA	3.6	NA	NA	NA
Barium	mg/kg	--	--	--	700,000	22.7	NA	30.6	NA	28.7	NA	33.6	NA	57	NA	NA	NA
Cadmium	mg/kg	2	2	--	--	0.175 U	NA	0.208 U	NA	0.166 U	NA	0.179	NA	0.175 U	NA	NA	NA
Chromium[1]	mg/kg	19	19	--	11,000	13.1	NA	15.5	NA	17.8	NA	11.1	NA	15.1	NA	NA	NA
Lead	mg/kg	250	250	--	--	4.01	NA	3.28	NA	10	NA	5.64	NA	15.6	NA	NA	NA
Mercury	mg/kg	2	2	--	--	0.312 U	NA	0.391 U	NA	0.297 U	NA	0.263 U	NA	0.224 U	NA	NA	NA
Selenium	mg/kg	--	--	--	18,000	0.852	NA	1.13	NA	0.995	NA	0.896	NA	0.91	NA	NA	NA
Silver	mg/kg	--	--	--	18,000	0.0875 U	NA	0.104 U	NA	0.083 U	NA	0.0843 U	NA	0.0874 U	NA	NA	NA
Polychlorinated Biphenyls (PCBs)																	
PCB Aroclor 1016	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1221	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1232	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1242	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1248	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1254	mg/kg	--	--	66	70	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1260	mg/kg	--	--	66	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1262	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB Aroclor 1268	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCBs (Total, Aroclors)	mg/kg	1	1	66	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Semivolatile Organic Compounds (SVOCs)																	
1,2,4-Trichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	mg/kg	--	--	--	--	0.109 U	NA	0.115 U	NA	0.101 U	NA	0.101 U	NA	0.0964 U	NA	NA	NA
1-Methylnaphthalene	mg/kg	--	--	4,500	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4,5-Trichlorophenol	mg/kg	--	--	--	--	0.218 U	NA	0.23 U	NA	0.202 U	NA	0.202 U	NA	0.193 U	NA	NA	NA
2,4,6-Trichlorophenol	mg/kg	--	--	12,000	3,500	0.218 U	NA	0.23 U	NA	0.202 U	NA	0.202 U	NA	0.193 U	NA	NA	NA
2,4-Dichlorophenol	mg/kg	--	--	--	10,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dinitrotoluene	mg/kg	--	--	--	--	0.109 U	NA	0.115 U	NA	0.101 U	NA	0.101 U	NA	0.0964 U	NA	NA	NA
2,6-Dinitrotoluene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chloronaphthalene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorophenol	mg/kg	--	--	--	17,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	mg/kg	--	--	--	14,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylphenol	mg/kg	--	--	--	--	0.109 U	NA	0.115 U	NA	0.101 U	NA	0.101 U	NA	0.0964 U	NA	NA	NA
2-Nitroaniline	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Nitrophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,6-Dinitro-o-cresol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Bromophenyl phenyl ether	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloro-3-methylphenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chloroaniline	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorophenyl phenyl ether	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methylphenol	mg/kg	--	--	--	--	0.109 U	NA	0.115 U	NA	0.101 U	NA	0.101 U	NA	0.0964 U	NA	NA	NA
4-Nitrophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	mg/kg	--	--	--	210,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	mg/kg	--	--	--	1,050,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	mg/kg	0.1	0.1	18	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Table 3.2
Soil Analytical Results for Metals, Polychlorinated Biphenyls, Semivolatile Organic Compounds, and Volatile Organic Compounds

					Location	WT-GP-5		WT-GP-7		WT-GP-8		WT-GP-10		WT-GP-11		WT-MW-05	WT-MW-06
					Sample ID	GP-5 (0-5)	GP-5 (2)	GP-7 (0-5)	GP-7 (3)	GP-8 (0-5)	GP-8 (4-5)	GP-10 (0-5)	GP-10 (4-5)	GP-11 (0-5)	GP-11 (4-5)	B12-10.0	B13-10.0
					Sample Date	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	03/26/2013	04/05/2014	04/05/2014
					Depth (feet bgs)	0–5	2–2	0–5	3–3	0–5	4–5	0–5	4–5	0–5	4–5	10	10
Analytes	Units	MTCA Method A Industrial Cleanup Level	MTCA Method A Unrestricted Cleanup Level	MTCA Method C Cleanup Level, Cancer	MTCA Method C Cleanup Level, Noncancer												
Semivolatile Organic Compounds (SVOCs) (continued)																	
Benzo(g,h,i)perylene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzyl alcohol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-chloroethoxy)methane	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-chloroethyl)ether	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-ethylhexyl)phthalate	mg/kg	--	--	9,400	70,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyl benzyl phthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di(2-ethylhexyl)adipate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzo(a,h)anthracene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	mg/kg	--	--	--	3,500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethyl phthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-butyl phthalate	mg/kg	--	--	--	350,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	mg/kg	--	--	--	140,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	mg/kg	--	--	--	140,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobenzene	mg/kg	--	--	--	--	0.109 U	NA	0.115 U	NA	0.101 U	NA	0.101 U	NA	0.0964 U	NA	NA	NA
Hexachlorobutadiene	mg/kg	--	--	--	--	0.109 U	NA	0.115 U	NA	0.101 U	NA	0.101 U	NA	0.0964 U	NA	NA	NA
Hexachlorocyclopentadiene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	mg/kg	--	--	--	--	0.109 U	NA	0.115 U	NA	0.101 U	NA	0.101 U	NA	0.0964 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isophorone	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m-cresol	mg/kg	--	--	--	--	0.109 U	NA	0.115 U	NA	0.101 U	NA	0.101 U	NA	0.0964 U	NA	NA	NA
Naphthalene	mg/kg	5	5	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrobenzene	mg/kg	--	--	--	--	0.218 U	NA	0.23 U	NA	0.202 U	NA	0.202 U	NA	0.193 U	NA	NA	NA
N-Nitroso-di-n-propylamine	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	mg/kg	--	--	--	105,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyridine	mg/kg	--	--	--	--	0.218 U	NA	0.23 U	NA	0.202 U	NA	0.202 U	NA	0.193 U	NA	NA	NA
Volatile Organic Compounds (VOCs)																	
1,1,1-Trichloroethane	mg/kg	2	2	--	7,000,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05 U	0.05 U
1,1-Dichloroethane	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05 U	0.05 U
1,1-Dichloroethene	mg/kg	--	--	--	--	NA	0.0661 U	NA	0.0703 U	NA	0.0608 U	NA	0.0634 U	NA	0.0721 U	0.05 U	0.05 U
1,2-Dichloroethane	mg/kg	--	--	--	--	NA	0.0397 U	NA	0.0422 U	NA	0.0365 U	NA	0.0381 U	NA	0.0433 U	0.05 U	0.05 U
cis -1,2-Dichloroethene	mg/kg	--	--	--	7,000	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05 U	0.05 U
trans -1,2-Dichloroethene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05 U	0.05 U
Chloroethane	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
Methylene chloride	mg/kg	0.02	0.02	18,000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5 U	0.5 U
Tetrachloroethene	mg/kg	0.05	0.05	63,000	21,000	NA	**0.142**	NA	**0.16**	NA	**0.133**	NA	0.0254 U	NA	0.0289 U	0.025 U	0.025 U
Trichloroethene	mg/kg	0.03	0.03	2,800	1,750	NA	0.0397 U	NA	0.0422 U	NA	0.0365 U	NA	0.0381 U	NA	0.0433 U	0.02 U	0.021
Vinyl chloride	mg/kg	--	--	87.5	10,500	NA	0.00265 U	NA	0.00281 U	NA	0.00243 U	NA	0.00254 U	NA	0.00289 U	0.05 U	0.05 U

Notes:

-- Not applicable.

BOLD Exceeds one or more cleanup level.

1 Cleanup levels are for chromium (VI).

Abbreviations:

bgs Below ground surface

mg/kg Milligram per kilogram

MTCA Model Toxcis Control Act

NA Not analyzed

Qualifiers:

J Analyte was detected, concentration is considered an estimate.

U Analyte was not detected, concentration given is reporting limit.

Table 3.2
Soil Analytical Results for Metals, Polychlorinated Biphenyls, Semivolatile Organic Compounds, and Volatile Organic Compounds

					Location	WT-MW-07	WT-B15		WT-B16		WT-B17		WT-SB-01		WT-SB-05	WT-SB-08	WT-MW-110
					Sample ID	B14-10.0	B15-05.0	B15-10.0	B16-05.0	B16-10.0	B17-07.5	B17-10.0	SB-01-0-2	SB-01-10	SB-05-0-2	SB-08-0-2	SB-11-0-2
					Sample Date	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	12/07/2015	12/07/2015	12/09/2015	12/07/2015	12/07/2015
					Depth (feet bgs)	10	5	10	5	10	7.5	10	0–2	10	0–2	0–2	0–2
Analytes	Units	MTCA Method A Industrial Cleanup Level	MTCA Method A Unrestricted Cleanup Level	MTCA Method C Cleanup Level, Cancer	MTCA Method C Cleanup Level, Noncancer												
Metals																	
Arsenic	mg/kg	20	20	88	1,100	NA	NA	NA	NA	NA	NA	NA	5	1.88	3.18	2.87	8.06
Barium	mg/kg	--	--	--	700,000	NA	NA	NA	NA	NA	NA	NA	41.5	12.8	27.8	20	55.7
Cadmium	mg/kg	2	2	--	--	NA	NA	NA	NA	NA	NA	NA	0.293	0.17 U	0.199 U	0.16 U	0.389
Chromium[1]	mg/kg	19	19	--	11,000	NA	NA	NA	NA	NA	NA	NA	**20.4**	10.4	14.2	10.6	**24**
Lead	mg/kg	250	250	--	--	NA	NA	NA	NA	NA	NA	NA	29.9 J	0.979	6.18	11.5	35.9
Mercury	mg/kg	2	2	--	--	NA	NA	NA	NA	NA	NA	NA	0.262 U	0.227 U	0.272 U	0.248 U	0.26 U
Selenium	mg/kg	--	--	--	18,000	NA	NA	NA	NA	NA	NA	NA	1.35	0.818	1.24	0.855	0.844
Silver	mg/kg	--	--	--	18,000	NA	NA	NA	NA	NA	NA	NA	0.0952 U	0.0849 U	0.0994 U	0.0799 U	0.0852 U
Polychlorinated Biphenyls (PCBs)																	
PCB Aroclor 1016	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
PCB Aroclor 1221	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
PCB Aroclor 1232	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
PCB Aroclor 1242	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
PCB Aroclor 1248	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
PCB Aroclor 1254	mg/kg	--	--	66	70	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
PCB Aroclor 1260	mg/kg	--	--	66	--	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
PCB Aroclor 1262	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
PCB Aroclor 1268	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
PCBs (Total, Aroclors)	mg/kg	1	1	66	--	NA	NA	NA	NA	NA	NA	NA	0.117 U	0.099 U	0.117 U	0.11 U	0.1 U
Semivolatile Organic Compounds (SVOCs)																	
1,2,4-Trichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
1,2-Dichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
1,3-Dichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
1,4-Dichlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
1-Methylnaphthalene	mg/kg	--	--	4,500	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.0899 U
2,4,5-Trichlorophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.238 U	0.207 U	0.224 U	0.203 U	0.225 U
2,4,6-Trichlorophenol	mg/kg	--	--	12,000	3,500	NA	NA	NA	NA	NA	NA	NA	0.238 U	0.207 U	0.224 U	0.203 U	0.225 U
2,4-Dichlorophenol	mg/kg	--	--	--	10,500	NA	NA	NA	NA	NA	NA	NA	0.238 U	0.207 U	0.224 U	0.203 U	0.225 U
2,4-Dimethylphenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
2,4-Dinitrophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.238 U	0.207 U	0.224 U	0.203 U	0.225 U
2,4-Dinitrotoluene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
2,6-Dinitrotoluene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
2-Chloronaphthalene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
2-Chlorophenol	mg/kg	--	--	--	17,500	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
2-Methylnaphthalene	mg/kg	--	--	--	14,000	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.0899 U
2-Methylphenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
2-Nitroaniline	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.594 U	0.518 U	0.559 U	0.509 U	0.562 U
2-Nitrophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.238 U	0.207 U	0.224 U	0.203 U	0.225 U
4,6-Dinitro-o-cresol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.238 U	0.207 U	0.224 U	0.203 U	0.225 U
4-Bromophenyl phenyl ether	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
4-Chloro-3-methylphenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.594 U	0.518 U	0.559 U	0.509 U	0.562 U
4-Chloroaniline	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.594 U	0.518 U	0.559 U	0.509 U	0.562 U
4-Chlorophenyl phenyl ether	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
4-Methylphenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
4-Nitrophenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.594 U	0.518 U	0.559 U	0.509 U	0.562 U
Acenaphthene	mg/kg	--	--	--	210,000	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.0899 U
Acenaphthylene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.0899 U
Anthracene	mg/kg	--	--	--	1,050,000	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.0899 U
Benzo(a)anthracene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.463
Benzo(a)pyrene	mg/kg	0.1	0.1	18	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	**0.635**
Benzo(b)fluoranthene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.819

Table 3.2
Soil Analytical Results for Metals, Polychlorinated Biphenyls, Semivolatile Organic Compounds, and Volatile Organic Compounds

					Location	WT-MW-07	WT-B15		WT-B16		WT-B17		WT-SB-01		WT-SB-05	WT-SB-08	WT-MW-110
					Sample ID	B14-10.0	B15-05.0	B15-10.0	B16-05.0	B16-10.0	B17-07.5	B17-10.0	SB-01-0-2	SB-01-10	SB-05-0-2	SB-08-0-2	SB-11-0-2
					Sample Date	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	04/05/2014	12/07/2015	12/07/2015	12/09/2015	12/07/2015	12/07/2015
					Depth (feet bgs)	10	5	10	5	10	7.5	10	0–2	10	0–2	0–2	0–2
Analytes	Units	MTCA Method A Industrial Cleanup Level	MTCA Method A Unrestricted Cleanup Level	MTCA Method C Cleanup Level, Cancer	MTCA Method C Cleanup Level, Noncancer												
Semivolatile Organic Compounds (SVOCs) (continued)																	
Benzo(g,h,i)perylene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.296
Benzo(k)fluoranthene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.298
Benzyl alcohol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
bis(2-chloroethoxy)methane	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
bis(2-chloroethyl)ether	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.238 U	0.207 U	0.224 U	0.203 U	0.225 U
bis(2-ethylhexyl)phthalate	mg/kg	--	--	9,400	70,000	NA	NA	NA	NA	NA	NA	NA	0.142	0.104 U	0.112 U	0.102 U	2.6
Butyl benzyl phthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.859
Carbazole	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.594 U	0.518 U	0.559 U	0.509 U	0.562 U
Chrysene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.415
Di(2-ethylhexyl)adipate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Dibenzo(a,h)anthracene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.0899 U
Dibenzofuran	mg/kg	--	--	--	3,500	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Diethylphthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Dimethyl phthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Di-n-butyl phthalate	mg/kg	--	--	--	350,000	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Di-n-octyl phthalate	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Fluoranthene	mg/kg	--	--	--	140,000	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.967
Fluorene	mg/kg	--	--	--	140,000	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.0899 U
Hexachlorobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Hexachlorobutadiene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Hexachlorocyclopentadiene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Hexachloroethane	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Indeno(1,2,3-cd)pyrene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.426
Isophorone	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
m-cresol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	mg/kg	5	5	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.0899 U
Nitrobenzene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.238 U	0.207 U	0.224 U	0.203 U	0.225 U
N-Nitroso-di-n-propylamine	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.119 U	0.104 U	0.112 U	0.102 U	0.112 U
Phenanthrene	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.382
Phenol	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.238 U	0.207 U	0.224 U	0.203 U	0.225 U
Pyrene	mg/kg	--	--	--	105,000	NA	NA	NA	NA	NA	NA	NA	0.0951 U	0.0828 U	0.0895 U	0.0814 U	0.83
Pyridine	mg/kg	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Volatile Organic Compounds (VOCs)																	
1,1,1-Trichloroethane	mg/kg	2	2	--	7,000,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA	NA	NA	NA
1,1-Dichloroethane	mg/kg	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA	NA	NA	NA
1,1-Dichloroethene	mg/kg	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA	NA	NA	NA
1,2-Dichloroethane	mg/kg	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	mg/kg	--	--	--	7,000	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	mg/kg	--	--	--	--	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA	NA	NA	NA
Chloroethane	mg/kg	--	--	--	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA
Methylene chloride	mg/kg	0.02	0.02	18,000	--	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	0.5 U	NA	NA	NA	NA	NA
Tetrachloroethene	mg/kg	0.05	0.05	63,000	21,000	0.025 U	0.025 U	**0.067**	0.025 U	0.025 U	**0.06**	0.025 U	NA	NA	NA	NA	NA
Trichloroethene	mg/kg	0.03	0.03	2,800	1,750	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	0.02 U	NA	NA	NA	NA	NA
Vinyl chloride	mg/kg	--	--	87.5	10,500	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	0.05 U	NA	NA	NA	NA	NA

Notes:
-- Not applicable.
BOLD Exceeds one or more cleanup level.
1 Cleanup levels are for chromium (VI).

Abbreviations:
bgs Below ground surface
mg/kg Milligram per kilogram
MTCA Model Toxcis Control Act
NA Not analyzed

Qualifiers:
J Analyte was detected, concentration is considered an estimate.
U Analyte was not detected, concentration given is reporting limit.

Table 3.3
Groundwater Analytical Results

				Location	B-18	B-36	B-38				B-49	WT-MW-01				WT-MW-02		
				Sample ID	B18-20140411	B-36-121815	B38-20140114	MW99-20140114	B38-20140415	B-38-122115	B-49-121715	MW01-20140103	MW01-20140415	MW-01-121715	MW-01-010716	MW02-20140103	MW02-20140415	MW-02-121715
				Sample Date	04/11/2014	12/18/2015	01/14/2014	01/14/2014	04/15/2014	12/21/2015	12/17/2015	01/03/2014	04/15/2014	12/17/2015	01/07/2016	01/03/2014	04/15/2014	12/17/2015
Analytes	Units	MTCA Method A, Groundwater	MTCA Method C, Cancer	MTCA Method C, Noncancer														
Total Petroleum Hydrocarbons (TPH)																		
Gasoline-Range TPH	µg/L	800/1,000[1]	--	--	100 U	NA	NA	NA	**7,100 JM**	NA	NA	NA	**3,400 JM**	NA	NA	NA	**9,700 JM**	NA
Diesel-Range TPH	µg/L	500	--	--	260 JM	**530**	**1,300 JM**	**1,600 JM**	**16,000 JM**	49.5 U	49.9 U	**2,000 JM**	**1,800 JM**	50 U	NA	**4,300 JM**	**7,800 JM**	50 U
Heavy Oil-Range TPH	µg/L	500	--	--	250 U	99.4 U	**620 JM**	**840 JM**	**1,100 JM**	198	99.9 U	250 U	250 U	99.9 U	NA	250 U	250 U	99.9 U
Stoddard Solvent	µg/L	500[2]	--	--	50 U	49.7 UJ	**660 J**	**810 J**	**11,000 JM**	**1,980 J**	49.9 UJ	**2,300**	**1,600 JM**	**703 J**	NA	**4,800 JM**	**7,100 JM**	**1,270 J**
Semivolatile Organic Compounds																		
Pentachlorophenol	µg/L	--	2.2	175	0.2 U	1.38	**330**	**450**	**5,300**	**2,160**	0.0999 U	**150**	**190**	**729**	NA	**11**	**35**	**8.77**
Dioxins/Furans																		
2,3,7,8-TCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.445 U	NA	NA	NA
1,2,3,7,8-PeCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.08 U	NA	NA	NA
1,2,3,4,7,8-HxCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.88 J	NA	NA	NA
1,2,3,6,7,8-HxCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73.6	NA	NA	NA
1,2,3,7,8,9-HxCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.29 J	NA	NA	NA
1,2,3,4,6,7,8-HpCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3,940	NA	NA	NA
Total OCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	73,900 J	NA	NA	NA
2,3,7,8-TCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.16 J	NA	NA	NA
1,2,3,7,8-PeCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.48 J	NA	NA	NA
2,3,4,7,8-PeCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.776 U	NA	NA	NA
1,2,3,4,7,8-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	9.41 J	NA	NA	NA
1,2,3,6,7,8-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	40.9	NA	NA	NA
1,2,3,7,8,9-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.58 J	NA	NA	NA
2,3,4,6,7,8-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	19.1 J	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	961	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	71.1	NA	NA	NA
Total OCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	8,280	NA	NA	NA
Summed Dioxin/Furan TEQ with One-Half of the Detection Limit[3,4]	pg/L	--	6.73	24.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**90.4 J**	NA	NA	NA
Volatile Organic Compounds																		
Benzene	µg/L	5	8	--	1.1	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA
Toluene	µg/L	1,000	--	1,400	1.2	NA	NA	NA	5.5	NA	NA	NA	1 U	NA	NA	NA	1.1	NA
Ethylbenzene	µg/L	700	--	1,750	1 U	NA	NA	NA	9.9	NA	NA	NA	3.7	NA	NA	NA	2.5	NA
Xylene (total)	µg/L	1,000	--	3,500	3 U	NA	NA	NA	93	NA	NA	NA	74	NA	NA	NA	14	NA
1,1,1-Trichloroethane	µg/L	200	--	3,500	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethane	µg/L	--	--	3,500	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA
1,1-Dichloroethene	µg/L	--	--	875	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA
1,2-Dichloroethane	µg/L	5	4.8	350	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA
Chloroethane	µg/L	--	--	--	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA
cis -1,2-Dichloroethene	µg/L	--	--	35	**85**	NA	NA	NA	4.7	NA	NA	NA	3.7	NA	NA	NA	1 U	NA
Methylene chloride	µg/L	5	58	1,050	5 U	NA	NA	NA	5 U	NA	NA	NA	5 U	NA	NA	NA	5 U	NA
Tetrachloroethene	µg/L	5	210	105	2.4	NA	NA	NA	1 U	NA	NA	NA	2.3	NA	NA	NA	2	NA
trans -1,2-Dichloroethene	µg/L	--	--	--	1.7	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA
Trichloroethene	µg/L	5	9.4	8.8	4.9	NA	NA	NA	1 U	NA	NA	NA	1 U	NA	NA	NA	1 U	NA
Vinyl chloride	µg/L	0.2	0.29	52.5	**14**	NA	NA	NA	**0.27**	NA	NA	NA	**0.29**	NA	NA	NA	0.2 U	NA

Notes:

-- Not applicable

BOLD Detection exceeds one or more criteria.

1 Benzene present in water/no detectable benzene present in water.

2 The mineral oil criterion is used as a surrogate for Stoddard solvent.

3 World Health Organization 2005 Toxic Equivalency Factors used for calculation of dioxin/furan TEQ (Van den Berg, et al. 2006).

4 Calculated using detected dioxin/furan concentrations plus one-half the detection limit for dioxins/furans that were not detected.

Abbreviations:

HpCDD Heptachlorooxanthrene
HpCDF Heptachlorodibenzofuran
HxCDD Hexachlorodibenzo-p-dioxin
HxCDF Hexchlorodibenzofuran
µg/L Micrograms per liter
MTCA Model Toxics Control Act
NA Not analyzed
OCDD Octachlorodibenzodioxin
OCDF Octachlorodibenzofuran
PeCDD Pentachlorodibenzo-p-dioxin
PeCDF Pentachlorodibenzofuran
pg/L Picogram per liter
TCDD Tetrachlorodibenzodioxin
TCDF Tetrachlorodibenzofuran
TEQ Toxicity equivalent

Qualifiers:

J Analyte was detected, concentration is considered an estimate.
JM Analyte was detected, concentration is considered an estimate due to poor chromatographic match to standard.
U Analyte was not detected, concentration given is the reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered an estimate.

Table 3.3
Groundwater Analytical Results

				Location	WT-MW-03			WT-MW-04		WT-MW-05			WT-MW-06	
				Sample ID	MW03-20140102	MW03-20140411	MW-03-121715	MW04-20140102	MW04-20140411	MW05-20140408	MW-05-121815	MW-05-010716	MW06-20140408	MW-06-122115
				Sample Date	01/02/2014	04/11/2014	12/17/2015	01/02/2014	04/11/2014	04/08/2014	12/18/2015	01/07/2016	04/08/2014	12/21/2015
Analytes	Units	MTCA Method A, Groundwater	MTCA Method C, Cancer	MTCA Method C, Noncancer										
Total Petroleum Hydrocarbons (TPH)														
Gasoline-Range TPH	µg/L	800/1,000[1]	--	--	NA	100 U	NA	NA	170	980	NA	NA	110 JM	NA
Diesel-Range TPH	µg/L	500	--	--	76 JM	63 JM	49.9 U	**520 JM**	**3,000 JM**	**890 JM**	49.8 U	NA	**760 JM**	49.8 U
Heavy Oil-Range TPH	µg/L	500	--	--	250 U	250 U	99.9 U	250 U	**560 JM**	250 U	99.6 U	NA	**1,000 JM**	406
Stoddard Solvent	µg/L	500[2]	--	--	50 U	50 U	49.9 UJ	310 JM	**1,200 JM**	**860**	294 J	NA	230 JM	49.8 UJ
Semivolatile Organic Compounds														
Pentachlorophenol	µg/L	--	2.2	175	1.3	0.72	0.0998 U	**33**	**200**	1	1.31	NA	0.24	1.47
Dioxins/Furans														
2,3,7,8-TCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.387 U	NA	NA
1,2,3,7,8-PeCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.626 U	NA	NA
1,2,3,4,7,8-HxCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	1.46 U	NA	NA
1,2,3,6,7,8-HxCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	38.8	NA	NA
1,2,3,7,8,9-HxCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	3.21 J	NA	NA
1,2,3,4,6,7,8-HpCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	555	NA	NA
Total OCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	3,060	NA	NA
2,3,7,8-TCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	1.34 J	NA	NA
1,2,3,7,8-PeCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	3.66 J	NA	NA
2,3,4,7,8-PeCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	2.96 J	NA	NA
1,2,3,4,7,8-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	5.71 J	NA	NA
1,2,3,6,7,8-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	13.7 J	NA	NA
1,2,3,7,8,9-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	2.03 J	NA	NA
2,3,4,6,7,8-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	9.58 J	NA	NA
1,2,3,4,6,7,8-HpCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	274	NA	NA
1,2,3,4,7,8,9-HpCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	14.9 J	NA	NA
Total OCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	NA	1,090	NA	NA
Summed Dioxin/Furan TEQ with One-Half of the Detection Limit[3,4]	pg/L	--	6.73	24.5	NA	NA	NA	NA	NA	NA	NA	**18.1 J**	NA	NA
Volatile Organic Compounds														
Benzene	µg/L	5	8	--	NA	1 U	NA	NA	**5.3**	1 U	NA	NA	2.1	NA
Toluene	µg/L	1,000	--	1,400	NA	1 U	NA	NA	2.8	1 U	NA	NA	1 U	NA
Ethylbenzene	µg/L	700	--	1,750	NA	1 U	NA	NA	1 U	1.1	NA	NA	1 U	NA
Xylene (total)	µg/L	1,000	--	3,500	NA	3 U	NA	NA	5.2	3.5	NA	NA	3 U	NA
1,1,1-Trichloroethane	µg/L	200	--	3,500	NA	1 U	NA	NA	1 U	1 U	NA	NA	1 U	NA
1,1-Dichloroethane	µg/L	--	--	3,500	NA	1 U	NA	NA	1 U	1 U	NA	NA	1 U	NA
1,1-Dichloroethene	µg/L	--	--	875	NA	1 U	NA	NA	1 U	1 U	NA	NA	1	NA
1,2-Dichloroethane	µg/L	5	4.8	350	NA	1 U	NA	NA	1 U	1 U	NA	NA	1 U	NA
Chloroethane	µg/L	--	--	--	NA	1 U	NA	NA	1 U	1 U	NA	NA	1 U	NA
cis -1,2-Dichloroethene	µg/L	--	--	35	NA	1 U	NA	NA	**460**	1 U	NA	NA	**210**	NA
Methylene chloride	µg/L	5	58	1,050	NA	5 U	NA	NA	5 U	5 U	NA	NA	5 U	NA
Tetrachloroethene	µg/L	5	210	105	NA	2.7	NA	NA	**110**	1 U	NA	NA	**22**	NA
trans -1,2-Dichloroethene	µg/L	--	--	--	NA	1 U	NA	NA	12	1 U	NA	NA	3.3	NA
Trichloroethene	µg/L	5	9.4	8.8	NA	1 U	NA	NA	**47**	1 U	NA	NA	**110**	NA
Vinyl chloride	µg/L	0.2	0.29	52.5	NA	0.2 U	NA	NA	**38**	0.2 U	NA	NA	**9.7**	NA

Notes:

-- Not applicable

BOLD Detection exceeds one or more criteria.

1 Benzene present in water/no detectable benzene present in water.

2 The mineral oil criterion is used as a surrogate for Stoddard solvent.

3 World Health Organization 2005 Toxic Equivalency Factors used for calculation of dioxin/furan TEQ (Van den Berg, et al. 2006).

4 Calculated using detected dioxin/furan concentrations plus one-half the detection limit for dioxins/furans that were not detected.

Abbreviations:

HpCDD Heptachlorooxanthrene
HpCDF Heptachlorodibenzofuran
HxCDD Hexachlorodibenzo-p-dioxin
HxCDF Hexchlorodibenzofuran
µg/L Micrograms per liter
MTCA Model Toxics Control Act
NA Not analyzed
OCDD Octachlorodibenzodioxin
OCDF Octachlorodibenzofuran
PeCDD Pentachlorodibenzo-p-dioxin
PeCDF Pentachlorodibenzofuran
pg/L Picogram per liter
TCDD Tetrachlorodibenzodioxin
TCDF Tetrachlorodibenzofuran
TEQ Toxicity equivalent

Qualifiers:

J Analyte was detected, concentration is considered an estimate.
JM Analyte was detected, concentration is considered an estimate due to poor chromatographic match to standard.
U Analyte was not detected, concentration given is the reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered an estimate.

Table 3.3
Groundwater Analytical Results

				Location	WT-MW-07					WT-MW-108		WT-MW-109	WT-MW-110	MW-07	MW-09
				Sample ID	MW07-20140102	MW07-20140408	MW-07-121715	MW07-20140411	MW-07-121715-D	MW-108-121715	MW-108-010716	MW-109-121815	MW-110-121715	MW-7-121815	MW-9-122115
				Sample Date	01/02/2014	04/08/2014	12/17/2015	04/11/2014	12/17/2015	12/17/2015	01/07/2016	12/18/2015	12/17/2015	12/18/2015	12/21/2015
Analytes	Units	MTCA Method A, Groundwater	MTCA Method C, Cancer	MTCA Method C, Noncancer											
Total Petroleum Hydrocarbons (TPH)															
Gasoline-Range TPH	µg/L	800/1,000[1]	--	--	NA	100 U	NA	500 U	NA	NA	NA	NA	NA	NA	NA
Diesel-Range TPH	µg/L	500	--	--	**19,000 JM**	340 JM	50 U	**3,500 JM**	50.1 U	**789**	NA	50.1 U	49.9 U	55.6	49.9 U
Heavy Oil-Range TPH	µg/L	500	--	--	**3,500 JM**	250 U	100 U	**920 JM**	100 U	99.8 U	NA	100 U	171	100 U	**712**
Stoddard Solvent	µg/L	500[2]	--	--	**16,000 JM**	250	50 UJ	**1,300 JM**	50.1 UJ	49.9 UJ	NA	50.1 UJ	49.9 UJ	50.1 UJ	49.9 UJ
Semivolatile Organic Compounds															
Pentachlorophenol	µg/L	--	2.2	175	**150**	0.2 U	0.0998 U	**6.5**	0.1 U	**7.12**	NA	0.0999 U	**6.56**	1.08	0.975
Dioxins/Furans															
2,3,7,8-TCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	0.5 U	NA	NA	NA	NA
1,2,3,7,8-PeCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	0.545 U	NA	NA	NA	NA
1,2,3,4,7,8-HxCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	1.06 U	NA	NA	NA	NA
1,2,3,6,7,8-HxCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	1.07 U	NA	NA	NA	NA
1,2,3,7,8,9-HxCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	0.971 U	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	11.3 J	NA	NA	NA	NA
Total OCDD	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	123	NA	NA	NA	NA
2,3,7,8-TCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	0.338 U	NA	NA	NA	NA
1,2,3,7,8-PeCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	1.52 J	NA	NA	NA	NA
2,3,4,7,8-PeCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	0.412 U	NA	NA	NA	NA
1,2,3,4,7,8-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	0.502 U	NA	NA	NA	NA
1,2,3,6,7,8-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	2.38 J	NA	NA	NA	NA
1,2,3,7,8,9-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	0.709 U	NA	NA	NA	NA
2,3,4,6,7,8-HxCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	0.56 U	NA	NA	NA	NA
1,2,3,4,6,7,8-HpCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	3.13 J	NA	NA	NA	NA
1,2,3,4,7,8,9-HpCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	0.976 U	NA	NA	NA	NA
Total OCDF	pg/L	--	--	--	NA	NA	NA	NA	NA	NA	11.9 J	NA	NA	NA	NA
Summed Dioxin/Furan TEQ with One-Half of the Detection Limit[3,4]	pg/L	--	6.73	24.5	NA	NA	NA	NA	NA	NA	0.468 J	NA	NA	NA	NA
Volatile Organic Compounds															
Benzene	µg/L	5	8	--	NA	1 U	NA	8	NA	NA	NA	NA	NA	NA	NA
Toluene	µg/L	1,000	--	1,400	NA	1 U	NA	18	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	µg/L	700	--	1,750	NA	1 U	NA	5 U	NA	NA	NA	NA	NA	NA	NA
Xylene (total)	µg/L	1,000	--	3,500	NA	3 U	NA	15 U	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	µg/L	200	--	3,500	NA	1 U	NA	2 U	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	µg/L	--	--	3,500	NA	1 U	NA	2 U	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	µg/L	--	--	875	NA	1 U	NA	2 U	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	µg/L	5	4.8	350	NA	1 U	NA	2 U	NA	NA	NA	NA	NA	NA	NA
Chloroethane	µg/L	--	--	--	NA	1 U	NA	2 U	NA	NA	NA	NA	NA	NA	NA
cis -1,2-Dichloroethene	µg/L	--	--	35	NA	1.6	NA	**500**	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	µg/L	5	58	1,050	NA	5 U	NA	10 U	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	µg/L	5	210	105	NA	1 U	NA	**56**	NA	NA	NA	NA	NA	NA	NA
trans -1,2-Dichloroethene	µg/L	--	--	--	NA	1 U	NA	37	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	µg/L	5	9.4	8.8	NA	1 U	NA	**66**	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	µg/L	0.2	0.29	52.5	NA	**0.98**	NA	**10**	NA	NA	NA	NA	NA	NA	NA

Notes:

-- Not applicable

BOLD Detection exceeds one or more criteria.

1 Benzene present in water/no detectable benzene present in water.

2 The mineral oil criterion is used as a surrogate for Stoddard solvent.

3 World Health Organization 2005 Toxic Equivalency Factors used for calculation of dioxin/furan TEQ (Van den Berg, et al. 2006).

4 Calculated using detected dioxin/furan concentrations plus one-half the detection limit for dioxins/furans that were not detected.

Abbreviations:

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- HpCDF Heptachlorodibenzofuran
- HxCDD Hexachlorodibenzo-p-dioxin
- HxCDF Hexchlorodibenzofuran
- µg/L Micrograms per liter
- MTCA Model Toxics Control Act
- NA Not analyzed
- OCDD Octachlorodibenzodioxin
- OCDF Octachlorodibenzofuran
- PeCDD Pentachlorodibenzo-p-dioxin
- PeCDF Pentachlorodibenzofuran
- pg/L Picogram per liter
- TCDD Tetrachlorodibenzodioxin
- TCDF Tetrachlorodibenzofuran
- TEQ Toxicity equivalent

Qualifiers:

- J Analyte was detected, concentration is considered an estimate.
- JM Analyte was detected, concentration is considered an estimate due to poor chromatographic match to standard.
- U Analyte was not detected, concentration given is the reporting limit.
- UJ Analyte was not detected, concentration given is the reporting limit, which is considered an estimate.

Whitehead Tyee Site

Data Summary Report

Figures

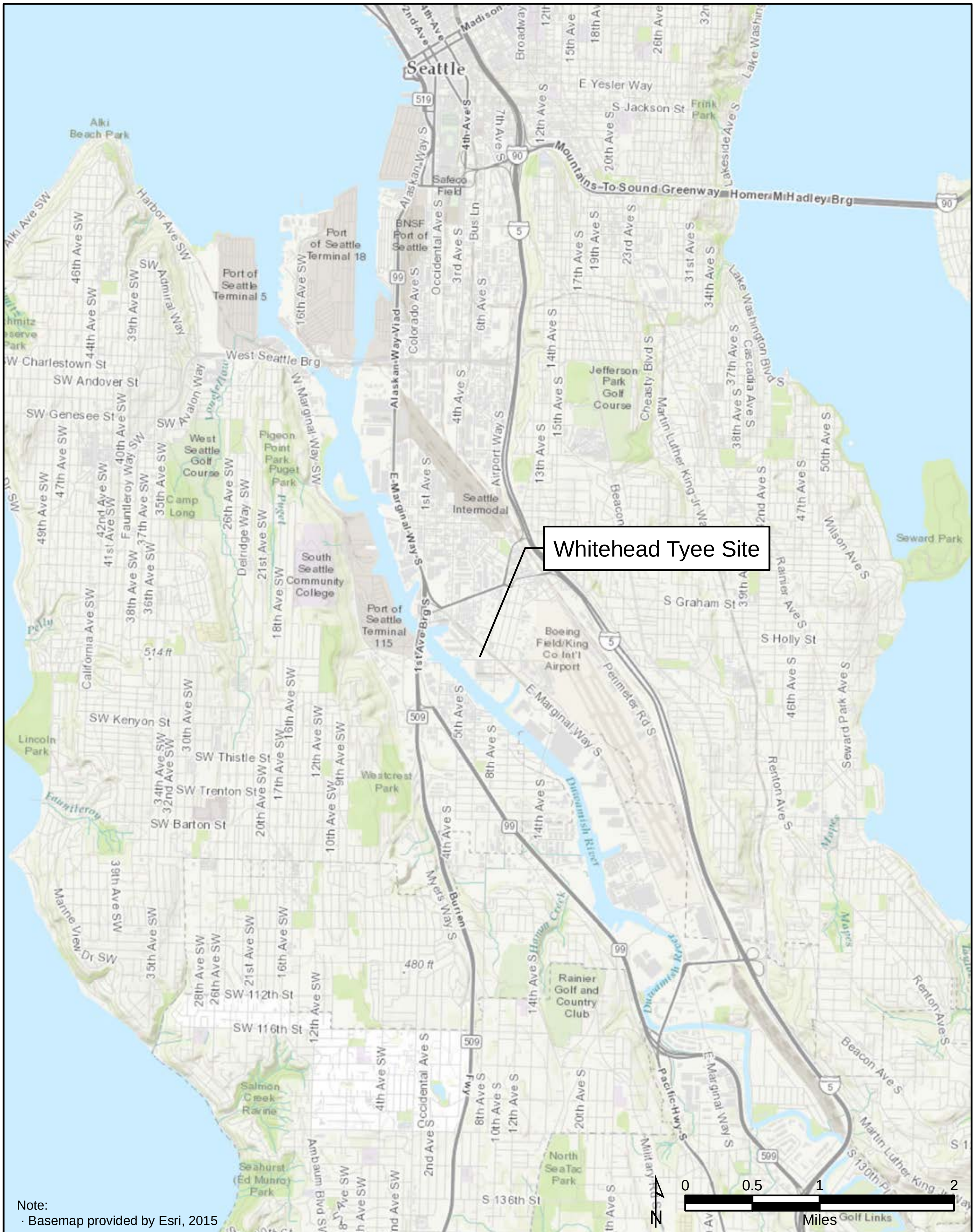

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Figure 1.1
Vicinity Map

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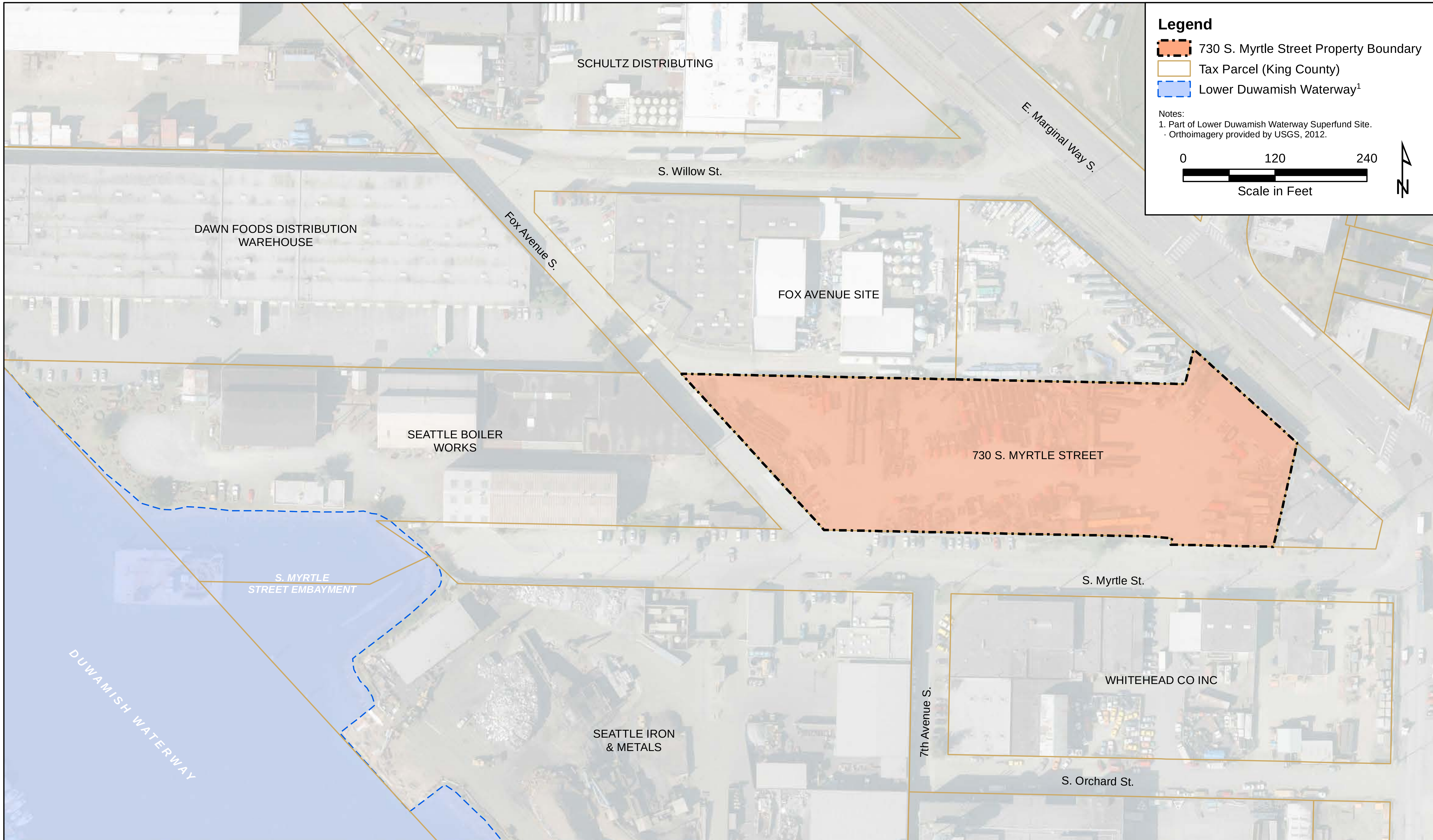

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Figure 1.2
Site Vicinity Map

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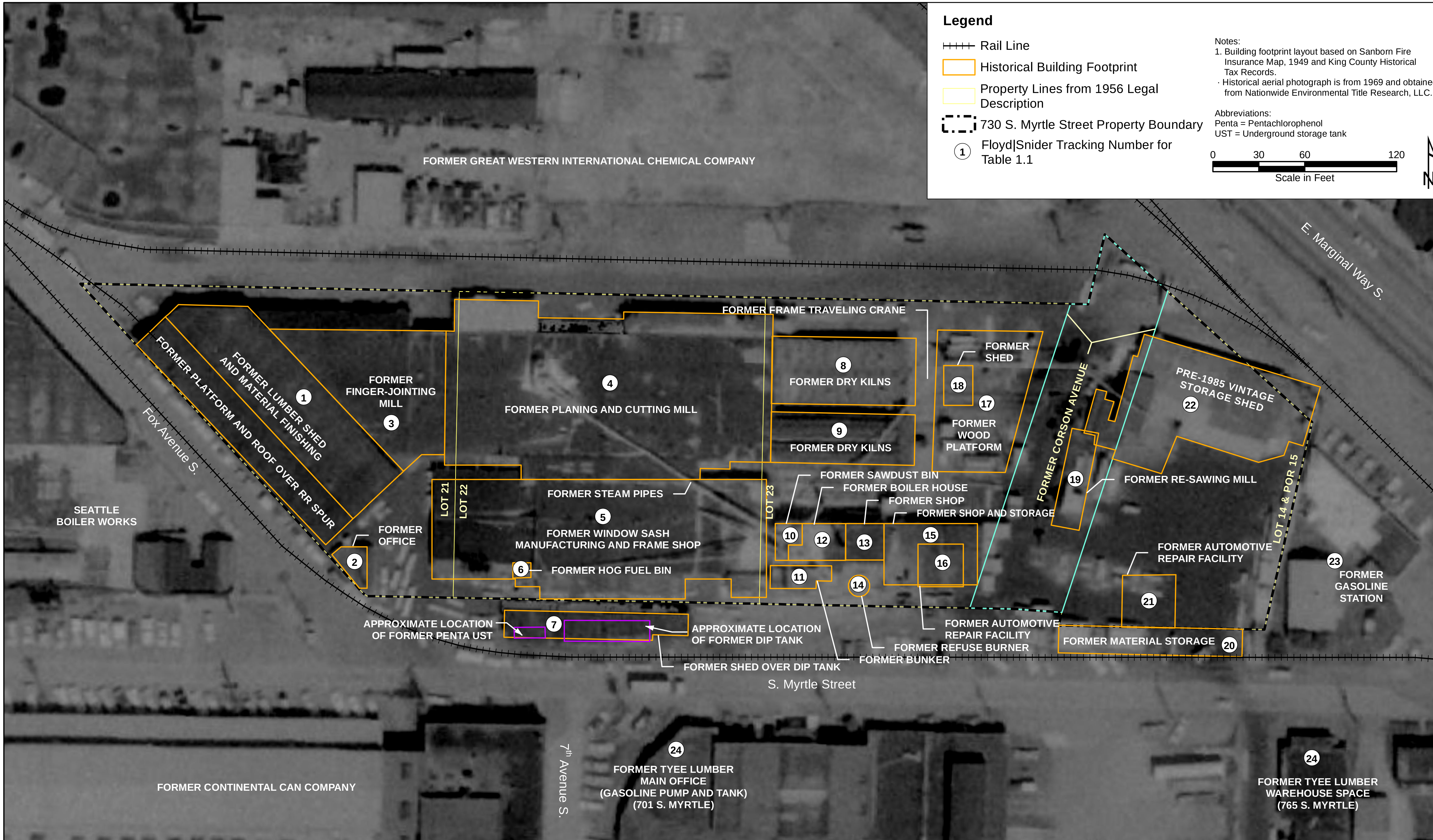

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Figure 1.3
Historical Site Operations

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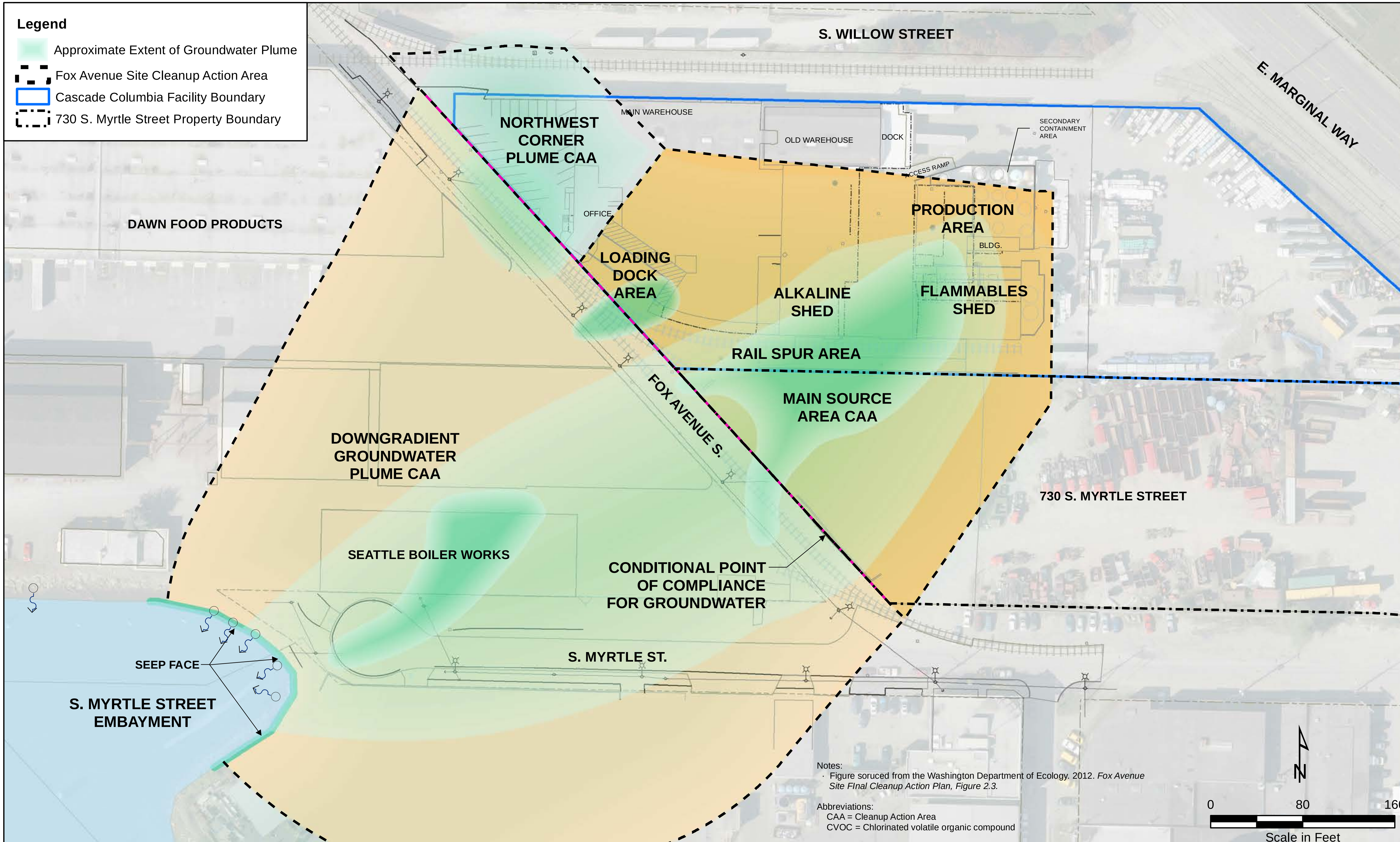

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Figure 1.4
Fox Avenue Site Approximate cVOC Groundwater Plume Extent

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8/31/2016

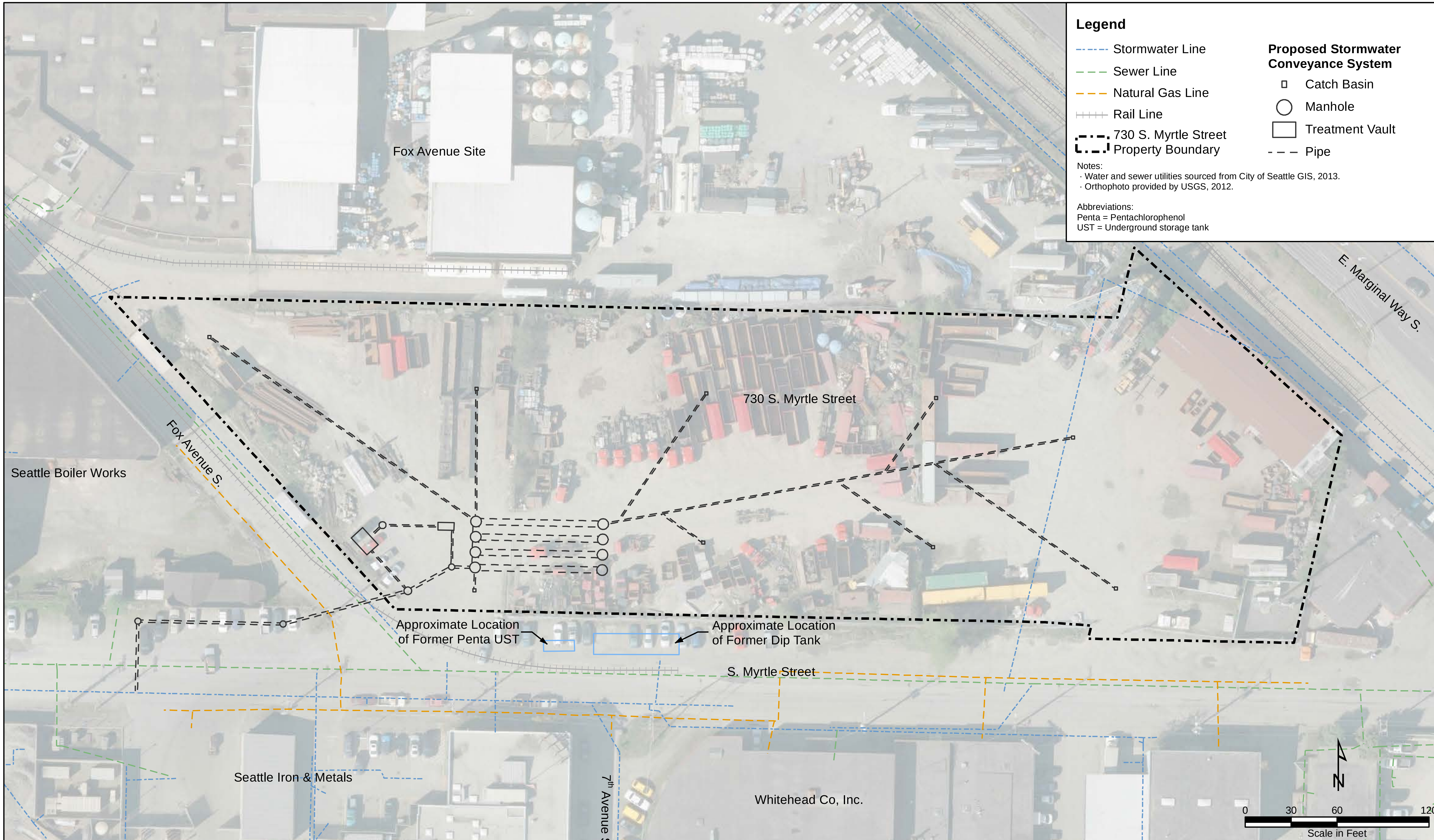

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Figure 1.5
Proposed Stormwater Conveyance System

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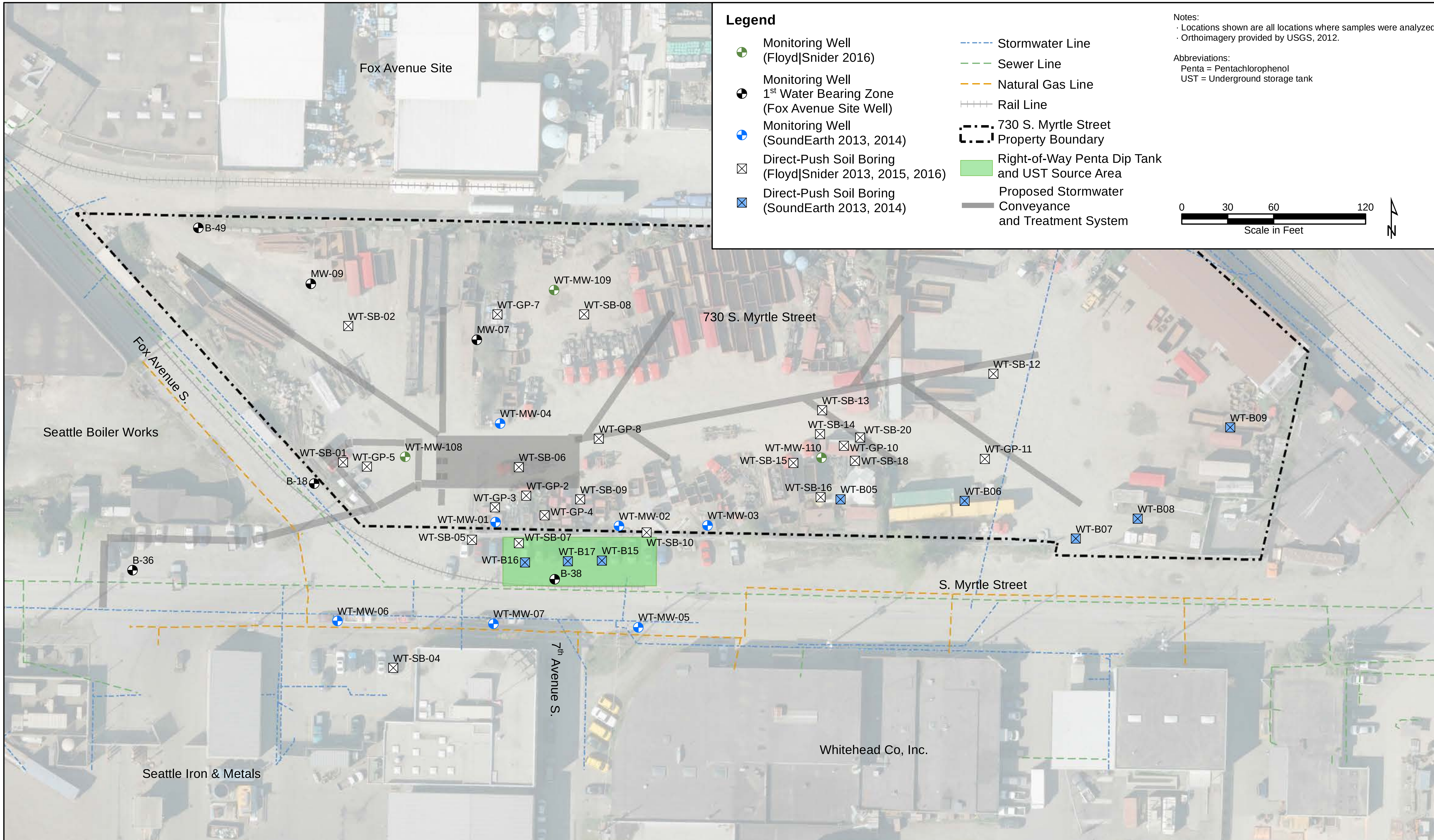

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Figure 2.1
Soil Boring and Monitoring Well Locations

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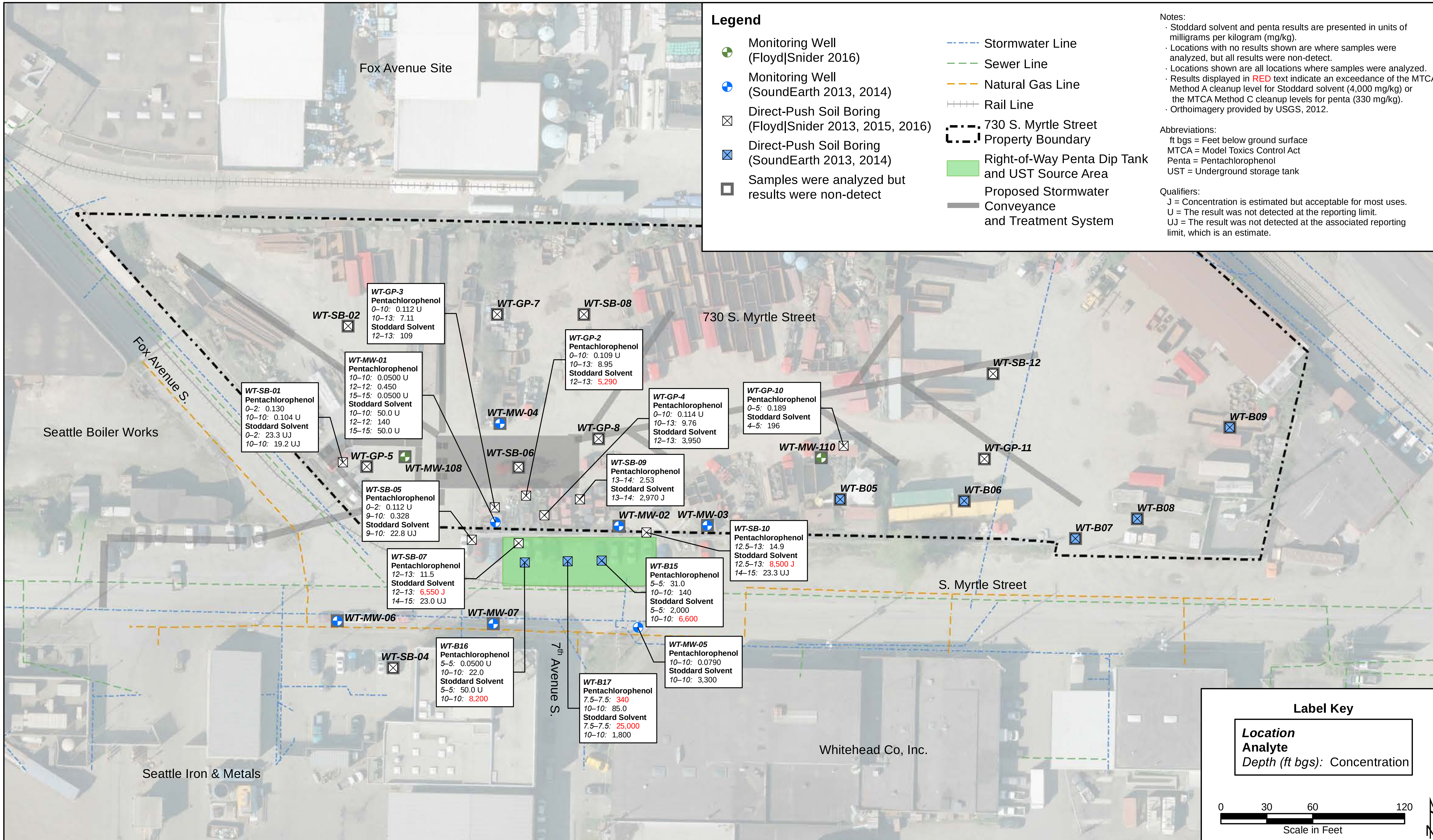

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Figure 3.1
Soil Analytical Results for Pentachlorophenol and Stoddard Solvent

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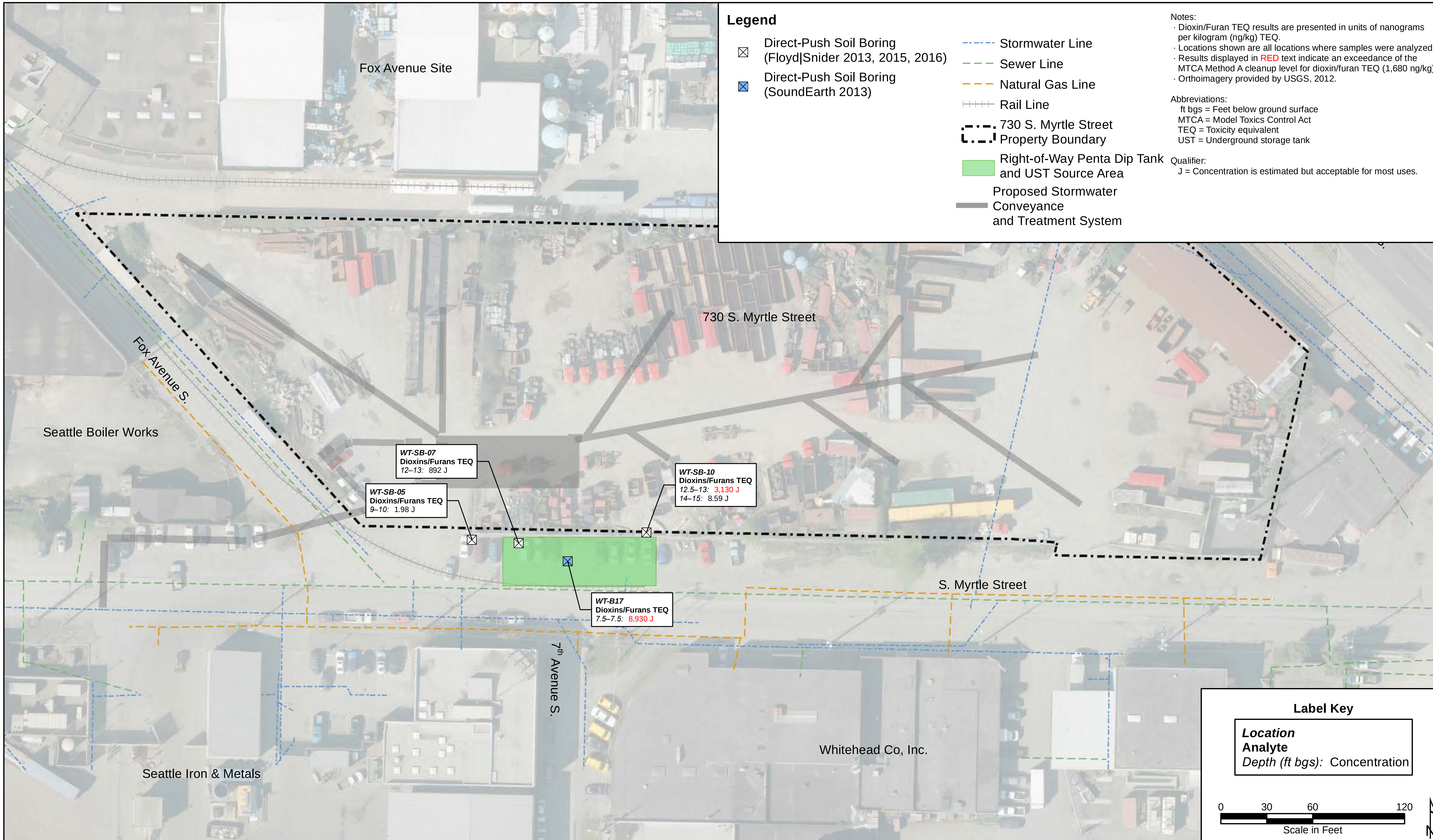

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Figure 3.2
Soil Analytical Results for Dioxins/Furans

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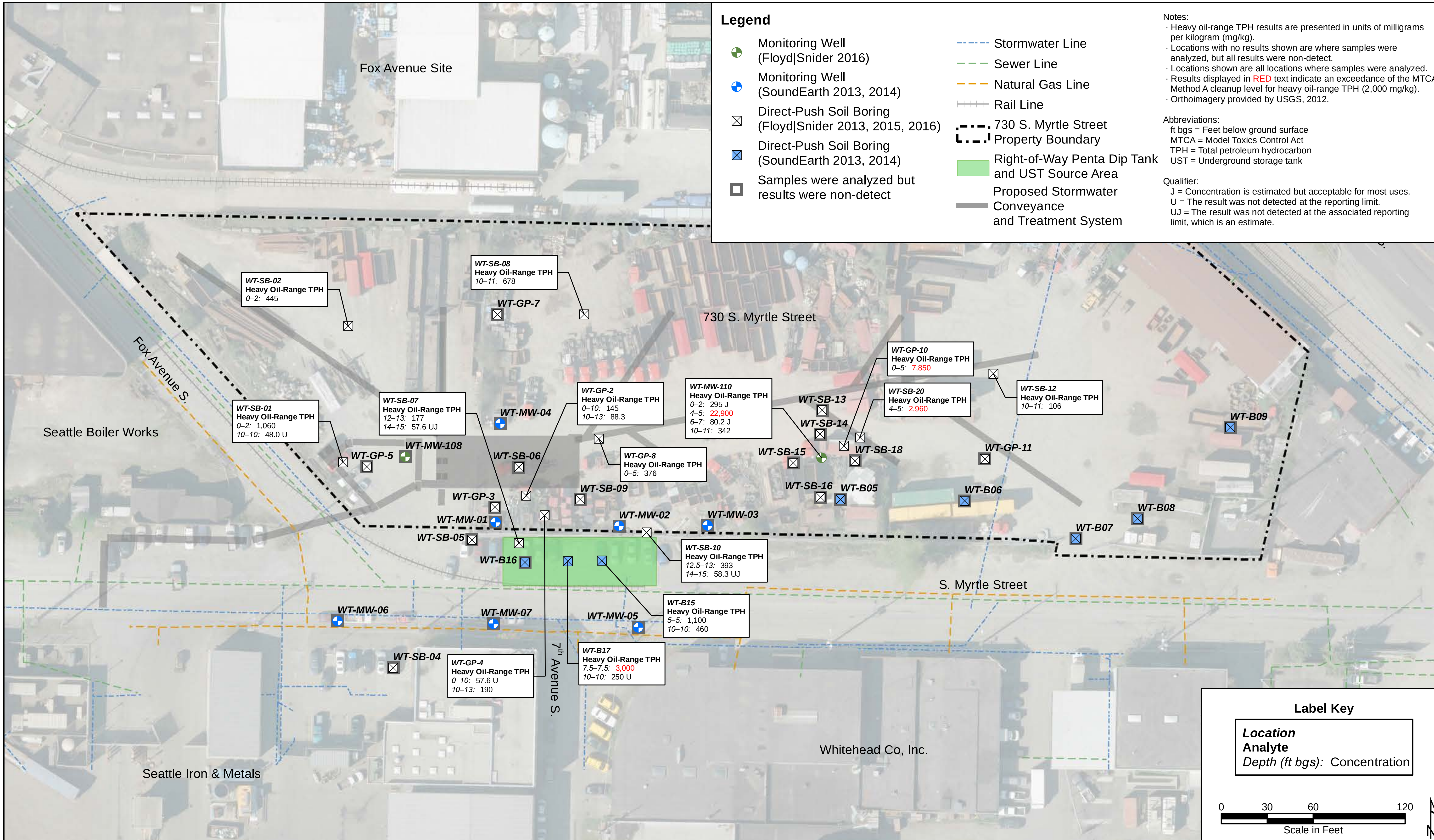

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Figure 3.3
Soil Analytical Results for Heavy Oil-Range TPH

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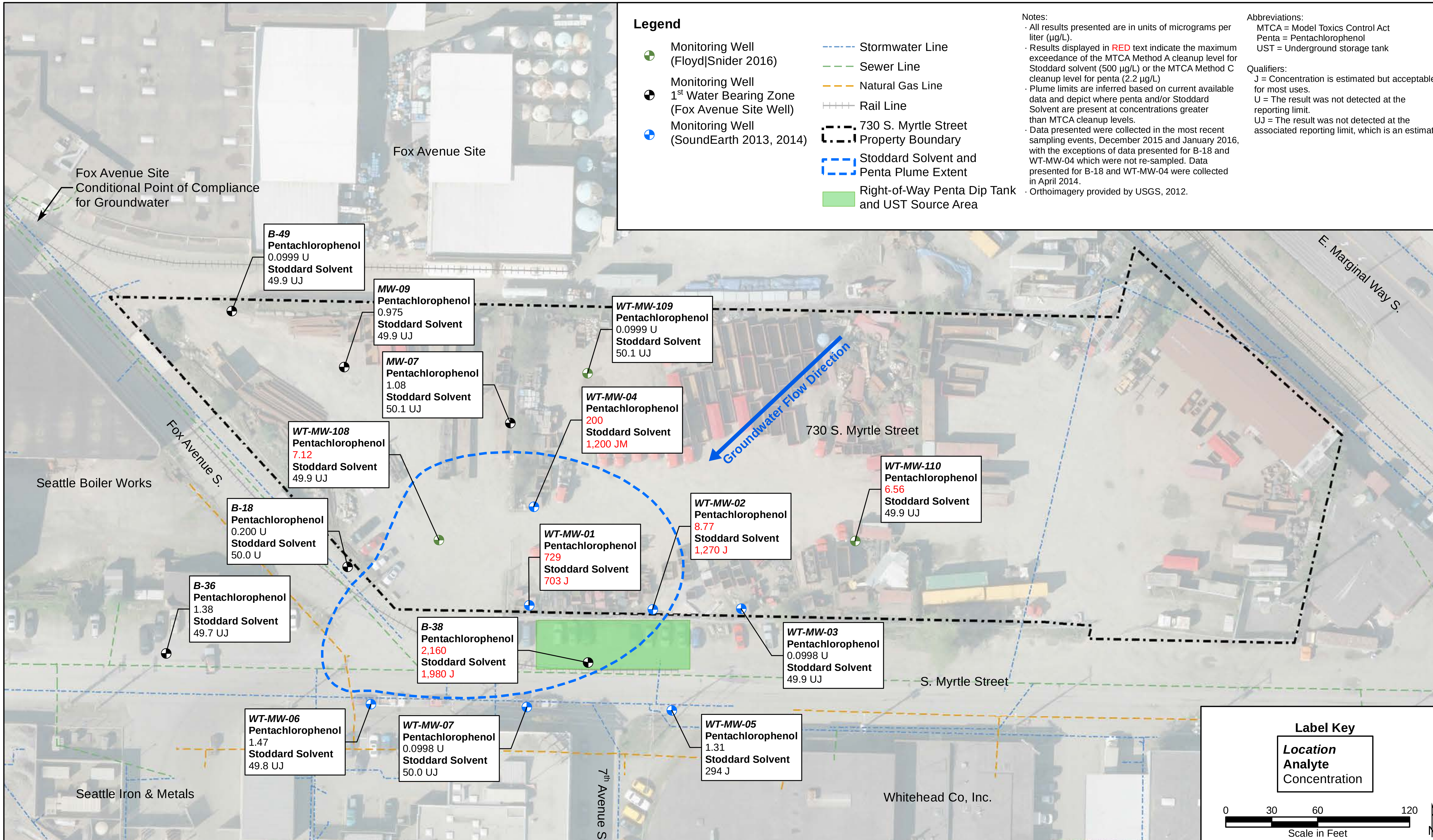

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Figure 3.4
Groundwater Analytical Results for Stoddard Solvent and Pentachlorophenol

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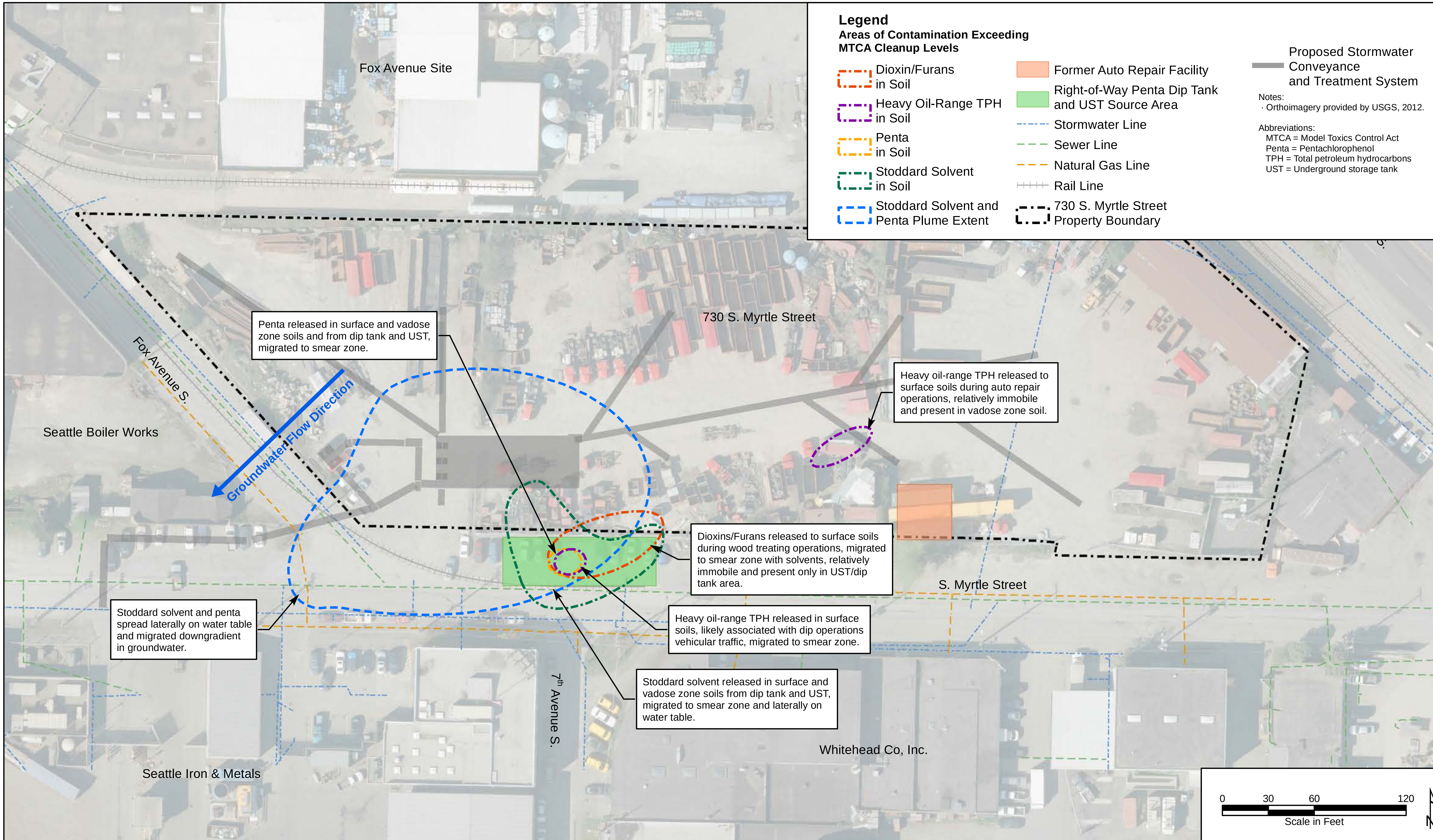

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Figure 3.5
Areas of Contamination and Conceptual Site Model

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