



REMEDIAL INVESTIGATION WORK PLAN

SOLIDARITY HOUSE AFFORDABLE HOUSING DEVELOPMENT

2901 17th Avenue South
Seattle, Washington

Prepared for

Estelita's Library

Project Number

25009-01

Date

January 16, 2026 | FINAL

Black River
Environmental, LLC
26311 NE Valley St. #141
Duvall, Washington
425-725-3832
[www.blackriver
environmental.com](http://www.blackriverenvironmental.com)

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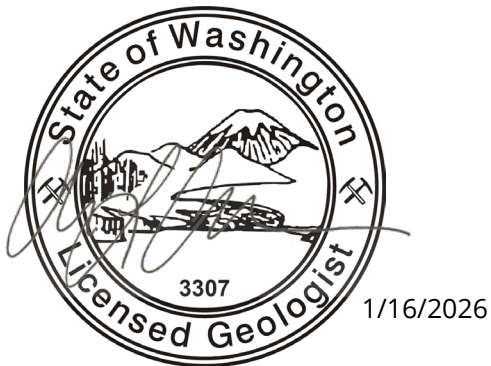
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Alexandria Lynn Cochrane

Ali Cochrane, LG
Associate Geologist
ali@blackriverenv.com



Jessica Smith, LG
Principal Geologist
jessica@blackriverenv.com

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Acronyms & Abbreviations

ASTM	ASTM International, Inc.
bgs	below ground surface
Black River	Black River Environmental, LLC
BTEX	benzene, toluene, ethylbenzene, total xylenes
CSM	Conceptual Site Model
COPCs	contaminants of potential concern
Ecology	Washington State Department of Ecology
EIM	Environmental Information Management
EPH	extractable petroleum hydrocarbons
FS	Feasibility Study
HASP	Health and Safety Plan
IDP	Inadvertent Discovery Plan
LNAPL	light non-aqueous phase liquid
MTCA	Model Toxics Control Act
mg/kg	milligrams per kilogram
NTU	Nephelometric Turbidity Units
PAHs	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
PCE	tetrachloroethene
PID	photoionization detector
PPCD	Prospective Purchaser Consent Decree
PQL	practical quantitation limit
QAPP	Quality Assurance Project Plan
RCW	Revised Code of Washington
RI	Remedial Investigation
RIWP	Remedial Investigation Work Plan
ROWs	rights-of-way

SAP	Sampling and Analysis Plan
TEE	Terrestrial Ecological Evaluation
TPH	total petroleum hydrocarbons
USCS	United Soil Classification System
VOCs	volatile organic compounds
VPH	volatile petroleum hydrocarbons
WAC	Washington Administrative Code

1 Introduction

Black River Environmental, LLC (Black River), on behalf of Estelita's Library, prepared this Remedial Investigation Work Plan (RIWP) for the Solidarity House Affordable Housing Development project located at 2901 17th Avenue South in Seattle, Washington in Seattle's Beacon Hill neighborhood (Subject Property; Figure 1). The Subject Property comprises two parcels totaling 120,000 square feet in size, according to tax assessor records (King County parcel nos. 308600-3356 and 308600-3355), as follows:

- Parcel 308600-3356 with address 2901 17th Avenue South is referred to herein as the C L Auto Parcel. This parcel was historically used as two generations of gasoline service stations between 1939 and 1990, and then as an auto body service and repair shop from 1990 to 2022. Those businesses are now closed, and the existing former auto repair building is in use by Estelita's Library as a community gathering space.
- Parcel 308600-3355 with address 1615 South Forest Street is referred to herein as the 1615 Residence Parcel. This parcel is residential with the existing residence and detached garage constructed in 1909. The existing residence is a multi-unit rental, and is currently unoccupied.

The Subject Property layout and existing features are shown on Figure 2. Estelita's Library purchased the C L Auto Parcel under Prospective Purchaser Consent Decree (PPCD) no. 25-2-17319-4 dated June 11, 2025, and is in the process of modifying the PPCD to include the 1615 Residence Parcel. Estelita's Library's planned development, Solidarity House, spans both parcels of the Subject Property and will consist of an affordable housing apartment building with community center.

The prior operations at the C L Auto Parcel have resulted in areas of petroleum contamination to soil and groundwater, which extend beyond the Subject Property boundaries to below Forest Street to the north, 17th Avenue South to the east, Beacon Avenue South to the northeast, and may extend beyond these rights-of-way (ROWs) to adjoining properties in these directions. These areas are included within the Site, as generally defined by the Model Toxics Control Act (MTCA) as anywhere hazardous substances or contamination has come to be located.

The RIWP is presented in six sections following this Introduction (Section 1):

- Section 2 describes the development plan, presents the Subject Property history, and discusses previous investigations and existing data.
- Section 3 describes the preliminary conceptual site model, including the environmental setting, sources of contaminants of potential concern, and potential exposure pathways and receptors.
- Section 4 presents the proposed RI screening levels and basis.
- Section 5 describes nature and extent of contaminants at the Site that exceed the proposed RI screening levels.

- Section 6 describes the data gaps and investigation scope of work to address those data gaps, including the anticipated investigation schedule.

The RIWP presented in the following sections has been prepared to meet the requirements of the MTCA Regulation, Washington Administrative Code (WAC) Chapter 173-340 and Revised Code of Washington (RCW) 70A.305.010, and the requirements of PPCD No. 25-2-17319-4 between Estelita's Library and the Washington State Department of Ecology (Ecology). Preparation of the RIWP was completed using grant funding awarded by Ecology, in accordance with Grant Agreement no. TCPAHC-2527-EstLib-00010 effective June 11, 2025.

2 Background

This section describes the project location, a summary of ownership and operational history, and summarizes previous environmental investigations and existing data. The information presented in this section is summarized from *Remedial Investigation and Data Gaps Report (Part 1)* dated March 15, 2025 (RI Part 1; Aspect, 2025), which should be referred to for more detailed information.

2.1 Current Land Use

The Subject Property is developed with a 2,254-square foot commercial building on the C L Auto Parcel and a 920-square foot residence with detached garage on the 1615 Residence Parcel. The 1615 Residence Parcel building has been used as a multi-tenant residential rental since the early 2000s, but is currently unoccupied. The commercial building on the C L Auto Parcel is currently used by Estelita's Library as a community gathering space. Other areas of the Subject Property are asphalt or concrete paved or lawn/landscaped (Figure 2).

The Subject Property is surrounded primarily by residential properties, with the exception of the Seattle Public Library Beacon Hill Branch to the north across S Forest Street. Adjacent to the west across the alley ROW are single-family residences. Adjoining on the south is a multi-family retirement facility, referred to herein as the 2911 Rooming Housing (Figure 2). To the east, across Beacon Avenue S is a mixed use apartment building with ground-floor retail, referred to herein as the 2901 Apartments (Figure 2). Also to the east across 17th Avenue S is Stevens Place Park (Figure 2).

2.2 Future Land Use & Development Plan

Estelita's Library plans to redevelop the Subject Property with Solidarity House, a cultural hub and community-informed affordable housing development with community gathering spaces. The new development is likely to consist of a new mixed-use building with street-level commercial space to be occupied by Estelita's Library, and four to eight stories of multi-family housing which could allow for up to 40 affordable housing units.

At the time of this report, additional details regarding the future development, including the need for underground levels, foundation type, etc., as well as the timeline for redevelopment, are still being determined.

2.3 Historical Operations

The 1615 Residence Parcel has been developed with the existing residence and detached garage since their construction in 1909, based on tax assessor records and discussions with the former owner. This is the only identified use and development of the 1615 Residence Parcel.

The C L Auto Parcel was historically used as two generations of gasoline service stations from 1939 to 1990, and subsequently as an auto body service and repair shop from 1990 until 2022. The first generation of gasoline station was Gilmore-branded and operated out of a former structure situated on the northwestern portion of the C L Auto Parcel from 1939 to 1956. The second generation gasoline station was Mobil-branded, which operated out of the existing building from 1956 to 1990. The existing building was also utilized by the subsequent auto body service and repair operation from 1990 to 2022. Historical records indicate that three refueling USTs, one for leaded gasoline and two for unleaded gasoline) and two pump islands were previously situated on the north-northeast portion of the C L Auto Parcel, and were removed in August 1990. Records also show that one 285-gallon capacity waste oil UST is decommissioned-in-place beneath the western wing of the existing building in 2001. All known gasoline refueling infrastructure has been removed. Additional detail regarding the historical operations and ownership of the C L Auto Parcel is documented in the RI Part 1 (Aspect, 2025). Historical features are shown on Figure 2.

2.4 Previous Investigations & Existing Data

There are no known previous investigations at the 1615 Residence Parcel. Previous investigations were conducted at the C L Auto Parcel between 1990 and 2023, as described below. Exploration locations are shown on Figures 2 through 4 and data is included on Tables 1 through 4.

- **1990 Fuel USTs Removal.** During removal of the three former refueling USTs in August 1990, three soil samples were collected and analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX), according to UST removal documents that included a laboratory report. The laboratory report indicates that BTEX were either not detected, or in the case of xylenes, were detected below the state screening levels (Orion Environmental Services, 2001; Adapt, 2013). The specific locations of the soil samples collected during UST removal are not documented.
- **2001 Waste Oil UST Site Closure Assessment.** During the March 2001 closure-in-place of the waste oil UST, one soil sample was collected 9 feet north of the UST, just north of the former auto repair building at the shared parcel boundary between the C L Auto Parcel and the 1615 Residence Parcel, at 4 feet below ground surface (bgs) and analyzed for total petroleum hydrocarbons (TPH). Records indicate that TPH were detected at a concentration of 789 milligrams per kilogram (mg/kg)(Orion Environmental Services, 2001). The analysis was performed using an outdated analysis method that did not specify the petroleum ranges detected, and the results are not comparable to current state screening levels; however, the results indicate evidence of release, likely from the former waste oil UST.

- **2013 and 2020 Phase II Soil and Groundwater Investigations.** The 2013 and 2020 investigations focused on the refueling UST area in the northern portion of the C L Auto Parcel, with soil and reconnaissance groundwater sampling at seven borings advanced to maximum depths of 36.5 feet bgs (B-1 to B-7; Adapt, 2020). Soil and groundwater samples were analyzed for gasoline-range TPH and BTEX. At least one soil sample from each boring location showed gasoline-range TPH and BTEX at concentrations above the MTCA Method A values for unrestricted use, between 15 and 36.5 feet bgs. All five reconnaissance groundwater samples collected showed gasoline-range TPH and BTEX at concentrations well above the MTCA Method A values for groundwater (Adapt, 2020).
- **2022 to 2024 Remedial Investigation.** Remedial investigation work began at the Subject Property in 2022 and has progressed as a series of investigation phases based on state grant cycles. Between 2022 and 2024, a total of 21 soil borings (11 completed as groundwater monitoring wells) were completed at the C L Auto Parcel and in adjoining ROWs (AB-01 through AB-12 and AMW-01 through AMW-11), and soil gas sampling occurred at five locations at the C L Auto Parcel (SS-01 to SS-03 and SG-01 to SG-02)(Aspect, 2025). Results are as follows:
 - Soil samples were analyzed for gasoline-, diesel-, and oil-range TPH, volatile organic compounds (VOCs), lead, polycyclic aromatic hydrocarbons (PAHs), and/or polychlorinated biphenyls (PCBs). Soil results showed gasoline-range TPH, BTEX, and naphthalene at concentrations above the MTCA Method A values to depths of 45 feet bgs near the refueling USTs area and extending off the Subject Property to the north, northeast, and east. In other areas of the C L Auto Parcel, contaminants were not detected in soil except in near the waste oil UST (where TPH and benzene were detected above the MTCA values between 5.5 and 25 feet bgs).
 - Groundwater wells were observed to contain light non-aqueous phase liquid (LNAPL) at AMW-1, AMW-2, AMW-5, AMW-6, AMW-7, and AMW-11. Groundwater samples from remaining wells (AMW-3, AMW-4, AMW-8, AMW-9, and AMW-10) were analyzed for gasoline-, diesel-, and oil-range TPH and VOCs. Results showed MTCA value exceedances in AMW-09. Static groundwater was measured at 14 to 28 feet bgs flowing to the northeast.
 - Soil gas samples were collected from three subslab locations in the C L Auto Parcel building (SS-01 to SS-03) and two temporary probe locations north and south of the building (SG-01 and SG-02), and analyzed for volatile petroleum constituents and halogenated VOCs. Results showed TPH and benzene above the MTCA Method B values.

The nature and extent of contaminants at the Site are discussed further in Section 5. Data gaps based on existing data are discussed in Section 6.1.

3 Preliminary Conceptual Site Model

A preliminary conceptual site model (CSM) for the Site is presented in this section, based on the previous investigations data described in Section 2.4. The CSM was originally developed and presented in the *Environmental Investigation Work Plan* dated March 10, 2023 (Aspect, 2023), and has been refined and updated as additional data were collected. The results of the investigation outlined in this RIWP will be used to further refine the CSM in the forthcoming RI Report. The CSM will be used as a basis for developing cleanup levels for the confirmed contaminants of concern and developing remedial alternatives for the Site during the future Feasibility Study (FS).

3.1 Geologic Setting

The Subject Property is in the Puget Lowland region, characterized by heterogeneous, glacially deposited sediments within a large topographic basin. Geologic maps identify the surface unit at the Subject Property as Quaternary Vashon till (Qvt) deposited during the Vashon Stade of the Fraser Glaciation between 25,000 to 10,000 years ago (Troost, 2008), which formed a glacial feature known as a drumlin that makes up the north-south linear ridge known as the Beacon Hill neighborhood. Vashon till is characterized by very dense silt, sand, and gravel; however, the upper 3 feet of the unit is generally weathered and exhibits medium density.

Soil observed in previous investigation at the Subject Property consisted of shallow fill overlying a thick sequence of Vashon till to the maximum depths explored (60 feet bgs). Fill soil generally consists of brown to gray silty sand with occasional gravel from the ground surface to approximately 5 feet bgs, except in the UST refueling area of the norther portion of the C L Auto Parcel and at AMW-3, where fill was observed to approximately 10 feet bgs. Glacial deposits consist of dense to very dense gray sand with varying amounts of silt and gravel to 35 feet bgs, very hard dark gray silt with low to medium plasticity to approximately 45 feet bgs, overlying a poorly graded dense sand with varying silt content to the maximum depths drilled of 60 feet bgs, with the exception of AMW-09 which encountered silt from 50 to 60 feet bgs (Aspect, 2025).

Regional groundwater is anticipated to be present at depths greater than 200 feet bgs in this area; however, perched groundwater is present at shallower depths. At the Subject Property, saturated or wet soils were observed in layers with higher sand content as shallow as 12 feet bgs, alternating with dry to moist layers with higher silt content. Soils were generally saturated at depths below 25 feet bgs. Collectively, groundwater encountered between 12 and 25 feet bgs is interpreted to represent perched groundwater at the Subject Property. The static potentiometric surface elevation of perched groundwater was measured in Site wells between 13 and 29 feet bgs (equivalent to elevations 266 feet and 282 feet), flowing to the northeast to east-northeast (Aspect, 2025). Groundwater elevation contours are shown on Figure 4.

The Subject Property is situated at the top of Beacon Hill and the immediate area has relatively flat topography at approximately elevation 295 feet. Within several blocks to the east and west, topography transitions to steep slopes downward to the Duwamish Waterway (approximately 1.5 miles to the west) and Lake Washington (approximately 1.3 miles east). These are the nearest surface water bodies to the Subject Property.

3.2 Contaminants and Sources

Site contamination is the result of the historical use of the C L Auto Parcel as gasoline service stations and auto body service and repair shop from 1939 to 2022. The contamination was caused by releases of petroleum products from the refueling USTs and refueling infrastructure (pump islands and/or piping) that were present during the parcel's time as a gasoline service station, from the waste oil UST present in the western auto repair bay, and also likely from other auto repair features (the in-ground hoists and/or floor drains and oil/water separator in auto repair areas).

The preliminary contaminants of potential concern (COPCs) for the Site based on data collected to date are the constituents that were detected in Site soil, groundwater, and/or soil gas during previous investigations, as shown on Tables 2 through 4. The preliminary COPCs are:

- Gasoline-, diesel- and oil-range TPH
- Petroleum-related VOCs, including BTEX
- PAHs
- Lead
- Chromium
- Other VOCs, including tetrachloroethene (PCE) in one sample

The COPCs are attributable to the waste oil UST and/or auto repair source (beneath the existing C L Auto building) and to the gas station refueling infrastructure source (in the northeast corner of the C L Auto Parcel and extending northeast). The nature and extent of preliminary COPCs in soil, groundwater, and soil gas are described further in Section 5.

3.3 Fate and Transport

This section describes the fate and transport of preliminary COPCs at the Site. Contaminants derived from the sources described in Section 3.2 were released to soil and/or groundwater at the source areas and then migrated from one location to another, or from one medium to another, resulting in the extent of the Site described in Section 5.

At the Site, migration of contaminants from the former gas station facilities appears to have occurred via advection or diffusion, and transfer of contaminants from one media to another appears to have occurred via partitioning mechanisms like volatilization, leaching/dissolution, and sorption. Examples of the potential contaminant migration pathways and mechanisms include:

- Migration of contaminants from shallower soil to soil at deeper depths (such as, leaching or product migration)
- Contaminant leaching or LNAPL migration from soil/LNAPL to groundwater
- Groundwater/LNAPL transport within the saturated zone
- Migration/diffusion of volatile contaminants to vapor/air

As described in this section, releases from the gasoline station operations impact a significantly larger area than the releases from the auto repair operations/waste oil UST, including impacts in areas off the Subject Property, and impacts to soil, groundwater, and soil gas. While releases from the auto repair operations, likely primarily related to the waste oil UST, have impacted soil and possibly soil gas, impacts to groundwater were not identified, although impacts likely extend to groundwater based on the maximum depth of soil impacts observed in AB-12 and static groundwater elevations in the nearest well (AMW-03). These impacts have a smaller footprint and are present only on the Subject Property, mostly beneath the existing C L Auto building.

In the vicinity of the former gasoline station operations (northwestern portion of the Subject Property), gasoline release(s) from refueling infrastructure and refueling USTs affected soils as shallow as 2.5 feet bgs (AB-09) directly by near-surface releases or spills, or one or more releases from product piping and pump islands. Deeper soils near the base of the former UST nest (10-15 feet bgs) were affected directly by release(s) from one or more of the former refueling USTs.

Releases migrated via gravity through the vadose zone along sandier stringers in the glacially consolidated soils as paths of least resistance and preferential pathways. This preferential pathway migration pattern appears to have continued to affect the downward migration at depths below the static water table measured in Site wells (approximately 25 to 29 feet bgs), because high concentrations of Site COPCs are present sporadically alternating with zones of low concentrations at depths below the static water table. This is consistent with lithologic observations during drilling, during which the perched groundwater was observed to be situated in sandier stringers and interbeds within the glacial deposits between approximately 20 and 40 feet bgs, with consistently saturated units encountered at deeper depths than 40 feet bgs in most explorations—the more transmissible sandier stringers that showed higher groundwater content generally show higher concentrations of preliminary COPCs in soil.

Lateral spread of release(s) appears to have primarily occurred at depths consistent with the static groundwater table depth measured in Site wells, where soil impacts form a “smear zone” of higher preliminary COPCs concentrations in soil starting just above the shallowest occurrence of groundwater in explorations. In these areas, there are 18 to 25 feet of overburden soil with no detectable concentrations of preliminary COPCs, further suggesting that the source mechanism of exceedances in these areas is groundwater transport both in the smear zone and below the water table. Site data indicate that lateral spread occurs primarily and to the farthest distances in the downgradient direction (northeast, beyond AMW-10 about 140 feet from the source area, but not to AMW-08 at 150 feet away), but also to notable distances in cross-gradient directions (north beyond AMW-07 and southeast beyond AMW-11, at 60 feet away each), and also slightly in the upgradient direction (west, beyond AMW-01).

These data suggest that during certain times of the year the hydraulic gradient may become shallow to flat and that the groundwater flow direction may rotate slightly, possibly related to seasonal changes, variable rates of precipitation, and possibly by the deep stormwater and sewer utility lines in Beacon Avenue South.

In the vicinity of the auto repair operations, waste oil release(s) from the waste oil UST and/or the adjacent oil/water separator impact soil as shallow as just below the floor slab, likely the result of a combination of overfills, leaks, and/or spills. Soil impacts migrated vertically via gravity through fill soil into underlying glacial deposits. Although soil impacts extend to 30 feet bgs at AB-12, the soil at that depth did not appear saturated at the time of drilling. Additionally, some lateral migration appears to have occurred where the release(s) encountered the dense glacially consolidated deposits beneath the fill—with soil impacts identified in explorations AB-01 and AB-02 located 10 feet west and east, but not in explorations AB-06, AB-05, or AB-03 located about 25 feet west, south, and east.

3.4 Potential Receptors and Exposure Pathways

3.4.1 Protection of Human Health

The nature and extent of preliminary COPCs in Site media determine the potential exposure pathways and receptors at the Site. The following section provides a description of the potential exposure pathways and receptors for the Site based on the existing Site data.

- **Direct contact pathway.** The direct contact pathway considers both dermal contact and ingestion of soil beneath the Site. The area of contaminated soil is currently capped and covered with pavement and/or asphalt, which effectively prevents exposure, as long as these surfaces are maintained. Under future uses, there is potential for workers to be exposed to soil contamination when development activities for the Solidarity House project commences and the paved surfaces on the Subject Property are removed. Therefore, the direct contact pathway is considered potentially complete.
- **Soil leaching-to-groundwater pathway.** Contaminated soil and LNAPL in contact with groundwater are a source of COPCs leaching to groundwater. Site data indicates that both contaminated soil and LNAPL are in contact with groundwater, and that groundwater has been impacted by Site COPCs. Therefore, the soil leaching-to-groundwater pathway is considered complete.
- **Groundwater-ingestion pathway.** This groundwater exposure pathway considers direct contact and ingestion of groundwater at the Site. Under current Site use, human receptors are unlikely to ingest groundwater because groundwater is not used for drinking water; however, MTCA defines the highest beneficial use of groundwater as drinking water and under future use there is potential for workers to be exposed to groundwater contamination during development activities. Therefore, the groundwater ingestion pathway is considered potentially complete.
- **Soil gas to indoor air pathway.** The vapor intrusion pathway includes exposure to volatile petroleum constituents in soil gas from volatile contaminants dissolved in groundwater, from LNAPL, and from volatile contaminants in soil. As discussed in Section 5, Site data indicates that one or more of these sources of volatile petroleum constituents in soil gas are present below or in close lateral and vertical distance to the existing residential building at the Subject Property, the north-adjacent Seattle Public Library, and the south-

adjoining residential building. Therefore, there is potential for the soil gas to indoor air pathway to be complete for each of these structures under current and future uses, as well as the future Subject Property building (after development).

3.4.2 Protection of Terrestrial Ecological Receptors

The purpose of a Terrestrial Ecological Evaluation (TEE) is to assess the potential risk to terrestrial plants and/or animals that live entirely or primarily on affected land. This Site qualifies for a TEE exclusion under WAC 173-340-7491(1)(c) because there is less than 1.5 acres of contiguous undeveloped land on or within 500 feet of any area of the Site.

4 Proposed RI Screening Levels

The proposed RI screening levels are developed based on the potentially complete exposure pathways (Section 3.4), and are as follows:

- **Soil.** For vadose zone and saturated soil, the proposed RI screening levels are the lowest of the MTCA Method B values for protection of potable groundwater for the soil leaching to groundwater pathway. Soil screening levels are adjusted upward for natural background (in the case of metals) and the practical quantitation limit (PQL), where applicable, as shown on Table 5a.
- **Groundwater.** For groundwater, the proposed RI screening levels are the lowest of the MTCA Method B values for protection of potable groundwater and vapor intrusion, adjusted upward for the PQL, where applicable (Table 5b).
- **Soil Gas and Air.** For soil gas and indoor air, the proposed RI screening levels are the lowest of the MTCA Method B values for soil gas and indoor air, for either the residential use scenario or the commercial use scenario (assuming a 45-hour workweek), dependent on the current use and anticipated future use(s) of the buildings being evaluated (Table 5c).

Tables 5a through 5c present proposed RI screening levels for the preliminary COPCs, which are the analytes that have been detected at the Site in previous investigations (see Section 3.2).

Note that development of soil and groundwater Method B values for TPH requires volatile petroleum hydrocarbons (VPH) and extractable petroleum hydrocarbons (EPH) data, which will be collected during the investigation described in Section 6; therefore, RI screening levels for TPH are not included in Tables 5a and 5b and will be presented in the forthcoming RI report.

5 Nature and Extent of Known Contamination

This section discusses the nature and extent of contamination at the Site, based on the existing Site characterization data from previous investigations (Section 2.4), evaluated against the proposed RI screening levels presented in Section 4 and Tables 5a to 5c. Information in this section will be refined and updated as additional data is collected, and will be presented in the upcoming RI report.

5.1 Soil Quality

The distribution of preliminary COPCs in soil at the Site is shown on Figure 3. The nature of contamination to soil at the Site is petroleum product release(s) from (1) the former gasoline refueling operation and (2) the former auto repair operation, including the waste oil UST:

- **Gasoline Refueling Release(s):** Data indicate that gasoline release(s) from the former refueling infrastructure (refueling USTs, pump islands, and/or piping) at the northeastern portion of the Subject Property have resulted in primarily gasoline-range TPH (with one sample also showing diesel-range TPH), BTEX, naphthalenes, and petroleum-associated VOCs above the RI screening levels. In this area, petroleum-contaminated soil is present as shallow as 2.5 feet bgs in boring AB-09, advanced near the former pump islands, and extends vertically to a maximum depth of 45 feet bgs in on-property boring AB-10, and to 50 to 54 feet bgs in off-property wells AMW-09 and AMW-11 to the east and southeast.
- **Auto Repair Operation Release(s):** The release area related to the auto repair operations is beneath the existing C L Auto building, with the most significant impacts located immediately adjacent to the former waste oil UST and oil/water separator in the east wing. In this area, data indicate that waste oil release(s) from the former waste oil UST, and/or the oil/water separator located adjacent to the former waste oil UST, have resulted in primarily oil-range TPH (as well as lower concentrations of gasoline- and diesel-range TPH), benzene, naphthalenes, petroleum-associated VOCs, and chromium above RI screening levels in soil. While waste oil releases can also contain concentrations of chlorinated solvents, only one soil sample from this area (collected from AB-01 at 1 foot bgs) identified one chlorinated solvent, PCE, at a concentration below the RI screening level. Therefore, chlorinated solvents do not appear to be a COPC for the release from the waste oil/auto repair source. Petroleum-contaminated soil in this area is present as shallow as 2 feet below the floor slab (HA-1/AB-12) and extends vertically to a maximum depth of 25 feet bgs in AB-12, advanced adjacent to the former waste oil UST and oil/water separator (through the building floor).

Collectively, the lateral extent of all petroleum-contaminated soil at the Site is bound in the upgradient directions, but not in the down- and cross-gradient directions:

- **Upgradient (south and west):** lateral extent of soil contamination is bound by AMW-03 to the south (near the southern Subject Property boundary) and AMW-04 to the west (west of the western Subject Property boundary).
- **Downgradient (northeast to east):** lateral extent of petroleum-contaminated soil is bounded to the northeast by AMW-08, but is **not** bound to the northeast where soil contamination is present in AMW-10, and is also **not** bound to the east where soil contamination is present in AMW-09.
- **Crossgradient (north and southeast):** lateral extents are **not** bounded to the north or southeast, where petroleum-contaminated soil extends northward to beyond AMW-07 to the southeast beyond AMW-11.

At downgradient wells AMW-10 and AMW-09, soil exceedances are primarily benzene in saturated soil below the groundwater table, which is interpreted to indicate that these wells are situated near the downgradient toe end of the plume where more mobile VOCs are migrating in preferential pathways through the glacial till (sandy stringers, etc.). At downgradient well AMW-10, benzene and 1-methylnaphthalene exceed the RI screening levels in saturated soil while groundwater at AMW-10 shows no RI screening level exceedances, indicating that the petroleum-contaminated soil at AMW-10 is not resulting COPC exceedances in groundwater at this downgradient location.

5.2 Groundwater Quality

The distribution of preliminary COPCs in groundwater, and measurable LNAPL thickness in Site wells, is shown on Figure 4. The nature of contamination to groundwater at the Site is related to the gasoline release(s) from the gasoline station operations. Impacts by contaminants specifically associated with the auto repair and waste oil UST related release(s) have not been identified in groundwater at the Site.

In groundwater, contaminants present above the RI screening levels are primarily gasoline-range TPH (with lower concentrations of diesel-range TPH in some wells), BTEX, 1,2,4- and 1,3,5-trimethylbenzene, and naphthalenes. Additionally, LNAPL is present in all wells that are immediately adjacent to or within the refueling infrastructure and refueling USTs area (AMW-01, AMW-02, AMW-05, AMW-06) and in crossgradient wells (AMW-07 and AMW-11).

The lateral extent of all petroleum-contaminated groundwater at the Site is bounded in the upgradient direction, but not in the down- or crossgradient directions:

- **Upgradient (south and west):** Petroleum-contaminated groundwater is bounded in the upgradient directions where no LNAPL or petroleum-impacts were identified in wells AMW-03 to the south and AMW-04 to the west.
- **Downgradient directions (northeast to east):** the lateral extent of petroleum-contaminated groundwater is bounded by AMW-10 and AMW-08 to the northeast. The lateral extent of petroleum-impacted groundwater is **not** bounded to the east, where petroleum-impacted groundwater was identified in AMW-09. However, no LNAPL was encountered in any of these downgradient wells, indicating that the downgradient bound of the LNAPL plume is located beneath Beacon Avenue South.
- **Crossgradient directions (north and southeast):** petroleum-contaminated groundwater is not bounded to the north or southwest, where LNAPL is present in both AMW-07 to the north and AMW-11 to the southwest. The thickness of product in AMW-07 (9.57 feet) and in AMW-11 (1.42 feet) indicates that the LNAPL plume extends further to the north and southeast beyond these wells, and has not been fully delineated in these directions.

5.3 Soil Gas Quality

The distribution of preliminary COPCs in soil at the Site is shown on Figure 5. Soil gas samples collected from the former C L Auto and gasoline station portions of the Subject Property show

exceedances of both the residential and commercial scenario screening levels for the sum of these volatile petroleum constituents at the shared boundary with the adjoining residential property to the south and with the 1615 Residence Parcel of the Subject Property.

In other areas of the Site (at the 1615 Residence and off the Subject Property), soil gas sampling to assess the nature and extent of impacts to soil gas has not yet occurred.

Assessment of vapor intrusion risk is warranted at the 1615 Residence building, the Seattle Public Library Beacon Hill Branch building, and the 2911 Rooming House building where the LNAPL plume and/or the dissolved phase of petroleum-contaminated groundwater plume extend off the Subject Property to the north, northeast, east, and southeast. In these directions, the plumes are present within approximately 30 lateral feet and 15 vertical feet of the 1615 Residence building (west of AMW-01, where LNAPL is present), the Seattle Public Library Beacon Hill Branch building (north of AMW-07, where LNAPL is present), and the 2911 Rooming House building (south of SG-01, where TPH and benzene exceedances are present in soil gas).

Although the dissolved-phase of the petroleum-contaminated groundwater plume is also present within 30 lateral feet of the 2901 Apartments building (east of AMW-09), assessment of vapor intrusion risk at this building is not warranted due to the approximately 18 feet of vertical separation between the static groundwater level at AMW-09 (elevation 266 feet; 27.54 feet bgs) and the 2901 Apartments building garage floorslab (elevation 284 feet).

6 Investigation Approach

6.1 Site Characterization Data Gaps

As discussed in Section 5, the results of the Site characterization work completed to date and presented in the RI Part 1 (Aspect, 2025) addressed all data gaps regarding the nature and extent of contamination within the footprint of Estelita's Library's proposed affordable housing development project, Solidarity House. However, additional investigation is needed for full Site-wide characterization and delineation in off-Subject Property areas of the Site to address the following data gaps:

- Lateral extent of LNAPL plume and dissolved-phase plume to the north beyond AMW-07, northeast beyond AMW-09, and southeast and east beyond AMW-11.
- Vapor intrusion risk to structures situated within close lateral and vertical proximity to LNAPL and/or contaminated groundwater, including the 1615 Residence (northwest corner of the Subject Property), the 2911 Rooming House (south-adjointing), and the Seattle Public Library Beacon Hill Branch to the north.

It should be noted that the RI Part 1 report also lists "long-term transmissivity/recoverability of LNAPL at the Site" as an additional data gap. The scope of work to address this data gap will be presented in the forthcoming Interim Action Work Plan.

The investigation scope of work to address the Site characterization data gaps listed above is presented in the following sections.

6.2 Investigation Scope of Work

This section presents the general approach for the investigation program. Additionally, Appendix A presents the Sampling and Analysis Plan (SAP) and the Quality Assurance Project Plan (QAPP), Appendix B includes a copy of the Inadvertent Discovery Plan (IDP) for the project, and Appendix C includes a copy of the Health and Safety Plan (HASP). Proposed exploration locations are shown on Figure 6.

6.2.1 Soil Investigation

The soil investigation will consist of five borings (MW-12 through MW-16) advanced in off-property locations to the north, northeast, and east of the Subject Property, and three borings (B-13, B-14, and MW-17) advanced on the 1615 Residence Parcel portion of the Subject Property, for the purposes of assessing the lateral extent of impacts to Site soil. Additionally, three shallow borings (B-15 through B-17) will be advanced on the C L Auto Parcel at gas station source area for the purposes of obtaining soil samples for EPH and VPH analysis for development of TPH screening levels for the Site. The preliminary boring locations, subject to adjustment based on utilities and other access constraints, and shown on Figure 6.

Soil borings will be advanced using either sonic drilling or direct push methods to maximum depths of 20 to 40 feet bgs (see Table A-1 in Appendix A). Soil will be logged and field screened continuously and samples will be obtained at 2.5- to 5-foot intervals for potential chemical analysis. A Black River field representative will log soils in general accordance with the ASTM International (ASTM) standard D2488 for visual classification of soils using the Unified Soil Classification System (USCS). Field screening will include measuring headspace volatiles using a photoionization detector (PID), water sheen testing, and recording observations related to staining, and odor, and sample core temperature for sonic borings. Up to 5 soil samples from each boring (40 total) will be analyzed for the COPCs using the analysis methods presented in Appendix A. Additionally, up to 5 samples that exhibit the highest evidence of contamination based on field screening will be analyzed for VPH and EPH analysis to support development of Method B screening levels for TPH¹.

6.2.2 Groundwater Evaluation

The five off-property borings and one of the borings on the 1615 Residence portion of the Subject Property (MW-12 through MW-17) will be completed as new groundwater monitoring wells (Figure 6).

After drilling, a permanent monitoring well will be constructed in each borehole of 2-inch-diameter Schedule 40 PVC with 10 to 15 feet of 0.010-inch (10-slot) screen set across the water table, and completed with a flush-mount, traffic-rated monument set in concrete. Based on past

¹ Quantity of soil samples for EPH/VPH analysis was developed based on Table 8.5 of the *Guidance for Remediation of Petroleum Contaminated Sites*, Ecology Publication No. 10-09-057, dated June 2016

investigations and our current hydrogeologic understanding, we anticipate perched groundwater will be encountered between 15 and 30 feet bgs. Precise screen intervals will be determined at the time of drilling and will depend on lithology and the depth of groundwater encountered during drilling at each location. Following installation, the new monitoring wells will be gauged for the presence of LNAPL, and for wells where no LNAPL is present, wells will be developed to remove fine-grained material from inside the well and filter pack, and to improve hydraulic communication between the well and the surrounding water-bearing formation. Development will be completed using a combination of surging along the length of the well screen combined with purging and monitoring of field parameters. The monitoring well will be developed until turbidity falls below 25 Nephelometric Turbidity Units (NTU) and field parameters have stabilized, or when 10 well casing volumes of water have been removed. Newly installed wells will be surveyed by a licensed surveyor for evaluation of groundwater flow direction and gradient.

No sooner than 48 hours after development, a Site-wide groundwater monitoring event will occur, including sampling of all previously completed monitoring wells and the six newly installed groundwater wells discussed in this section. Groundwater monitoring will consist of measuring depth to LNAPL (where present) and depth to groundwater using an electronic interface tape relative to the north side top of well casing. At wells where LNAPL is not present, groundwater samples will be collected using low-flow sampling methods following stabilization of field parameters (temperature, dissolved oxygen, pH, conductivity, and oxidation reduction potential). Groundwater samples will be analyzed for the COPCs using the analysis methods presented in Appendix A. Additionally, in accordance with Ecology's *Guidance for Remediation of Petroleum Contaminated Sites* (Ecology, 2016) four samples will be collected from the wells with the highest TPH concentrations, and analyzed for diesel- and oil-range TPH with and without silica gel cleanup, EPH, and VPH to support development of Method B screening levels for TPH.

6.2.3 Vapor Intrusion Evaluation for Adjacent Properties

As discussed in Section 5.3, three structures (1615 Residence, 2915 Rooming House, and Seattle Public Library Beacon Hill Branch) have been identified for vapor intrusion evaluation, based on their proximity to petroleum contamination. Per Ecology guidance², a Tier I and/or II assessment approach to further assess the potential for vapor intrusion is warranted. Work described in this section is dependent on arranging access agreements with each property owner, and coordination with structure occupants.

6.2.3.1 Tier I Vapor Assessment

At each structure, the vapor intrusion evaluation will include a building inspection prior to any sampling activities. The purpose of the building inspection is to identify building construction characteristics that may affect vapor intrusion, heating and ventilation, and possible background sources of chemical contaminants that may influence air or soil gas sampling.

² Guidance for Evaluating Vapor Intrusion in Washington State: Investigation and Remedial Action, Publication No. 09-09-047, dated March 2022.

Soil gas samples will be collected through the floor of each structure following the building inspection. Preliminary sampling locations described below were selected based on publicly available building plans, floor plans, and information on how the structures are used/occupied and may be adjusted based on observations during the building inspection.

- **1615 Residence (Subject Property).** The 1615 Residence includes a partially underground basement level that is a residential rental unit. The unit includes a living room and kitchen on the eastern half of the basement, and two bedrooms and a bathroom on the western half of the unit. One soil gas sample will be collected in each of the living room, kitchen, and one bedroom, for a total of three soil gas samples.
- **2911 Rooming House (south-adjointing property).** The 2911 Rooming House is constructed from a main 1900s-era house with an addition to the west constructed in 2007. The 1900s-era house includes a crawlspace below the main level, and the 2007-era addition includes an unfinished basement with furnace area and utility room. Upper levels include lounge space, living areas, bedrooms, kitchens, and bathrooms. Two soil gas samples will be collected through the 2007-era addition basement floor and two crawlspace air samples will be collected from beneath the 1900s-era house, for a total of four samples.
- **SPL Beacon Hill Branch (north-adjointing property).** The SPL Beacon Hill Branch building is single-story slab-on-grade construction. Areas closest to AMW-07 (the nearest well with contaminated groundwater) are areas where staff and the public can access, including the neighborhood services center, the building foyer, the main meeting hall, the book drop room, storage closet, and bathrooms. Of these, the neighborhood services center and book drop room are the closest areas to AMW-07 and may offer lower impact to library operations for soil gas sampling, therefore one soil gas sample is proposed for each room. Two additional rooms located to the north and west were selected for step-out locations (janitor closet and meeting room storage); one soil gas sample is proposed for each of the step-out locations. In total, four soil gas samples are proposed for the SPL Beacon Hill Branch building.

Soil gas samples will be obtained by installing vapor extraction points³ through the building floor slab using a rotary hammer drill. Soil gas samples will be collected into laboratory supplied and certified evacuated 1-liter canisters fitted with 150 milliliter-per-minute (mL/min) flow controls and dedicated sampling trains. Potential leakage of the sampling train will be evaluated by performing a shut-in test prior to sampling, and leakage at the sample point will be evaluated utilizing a tracer gas shroud containing helium gas during sample collection.

Crawlspace air samples will be obtained directly from crawlspace air and collected into evacuated canisters.

Samples will be analyzed for volatile COPCs and helium using the analysis methods in Appendix A.

³ Vapor extraction points may be temporary or permanent depending on the potential need for repeated sampling events, access constraints, and discussions with the property owners.

6.2.3.2 Tier II Assessment

For any structure where the soil gas sample results and evaluation indicate that volatiles in soil gas may be present at unacceptable concentrations indoor air, a Tier II assessment will be completed, likely consisting of indoor and ambient air sampling. Air sample locations will be chosen based on the building inspection findings. Air samples will be collected using laboratory-supplied and certified evacuated canisters fitted with 8- to 24-hour flow controls during periods of highest occupancy for each structure. Samples will be analyzed for the COPCs detected in soil gas at concentrations above the RI Screening Levels.

6.3 Cultural Resources and Archaeological Significance Assessment

Ecology previously identified that the Site is located within an area that may hold cultural significance to the following Tribal Nations:

- Muckleshoot Indian Tribe
- Tulalip Tribes of Washington
- Stillaguamish Tribe of Indians
- Suquamish Tribe
- Snoqualmie Indian Tribe
- Squaxin Island Tribe

In accordance with Executive Order 21-02, Ecology facilitated a Cultural Resources Consultation with the Department of Archaeology and Historic Preservations and the Tribal Nations listed above, pertaining to RI work at the Site. All work performed at the Site during implementation of the RIWP will be under the project IDP, outlining the plan and procedures for the discovery of cultural resources and human skeletal remains. A copy of the Ecology-approved IDP is included as Appendix B.

6.4 Schedule and Reporting

The investigation field program outlined in Section 6 will begin within 30 days of Ecology's approval of this RIWP, with an anticipated duration of approximately 6 to 8 weeks. The schedule for implementation is dependent on obtaining access agreements with property owners and Street Use Permit(s) with the City of Seattle.

The investigation activities and results will be summarized in an Interim RI Data Memorandum, submitted to Ecology within 60 days of receipt of the validated data from the investigation program. Validated data will be uploaded to Ecology's Environmental Information Management (EIM) system in accordance with the grant agreement and PPCD requirements. The RI report will be published in combination with the future Feasibility Study report.

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- Aspect Consulting, LLC (Aspect), 2023, Environmental Investigation Report, Estelita's Library Beacon Hill Affordable Housing Development Project, June 5, 2023
- Aspect Consulting, LLC (Aspect), 2025, Remedial Investigation and Data Gaps Report (Part 1), Estelita's Library Beacon Hill Affordable Housing Development Project, 2901 17th Avenue South, Seattle, Washington, March 15, 2025.
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- Washington Department of Ecology (Ecology). 2016. Guidance for Remediation of Petroleum Contaminated Sites, Toxics Cleanup Program, Publication No. 10-09-057, Revised June 2016.

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TABLES

Table 1 - Groundwater Levels and LNAPL Measurements

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Well ID	Latitude	Longitude	Total Depth (ft bgs)	Filter Pack Interval		Screen Interval		TOC Elevation (ft NAVD88)	Date	Time	Depth to Groundwater (ft bTOC)	LNAPL/Groundwater Interface Elevation (ft NAVD88)	LNAPL			Potentiometric Surface Elevation of Groundwater (ft NAVD88)
				Top (ft bgs)	Bottom (ft bgs)	Top (ft bgs)	Bottom (ft bgs)						Depth to LNAPL (ft bTOC)	Thickness (ft)	Elevation (ft NAVD88)	
AMW-01	47.57757	122.3111	43	26	43	28	43	294.77	3/22/2023	9:17	25.26	269.51	19.48	5.78	275.29	273.90
									4/12/2023	11:02	25.40	269.37	19.63	5.77	275.14	273.75
									4/29/2024	9:08	21.52	273.25	21.30	0.22	273.47	273.41
AMW-02	47.577614	122.31097	40	23	40	25	40	294.69	3/22/2023	9:12	27.34	267.35	27.31	0.03	266.61	267.37
									4/12/2023	10:56	27.40	267.29	27.36	0.04	266.56	267.32
									4/29/2024	9:12	26.22	268.47	26.15	0.07	267.77	268.52
AMW-03	47.57738	122.31112	30	18	30	20	30	295.36	3/22/2023	9:01	15.26	--	--	0.00	--	280.10
									4/12/2023	10:37	15.58	--	--	0.00	--	279.78
									4/29/2024	9:40	16.49	--	--	0.00	--	278.87
AMW-04	47.577571	122.31144	35	13	35	15	35	294.87	3/22/2023	8:58	12.64	--	--	0.00	--	282.23
									4/12/2023	10:30	12.45	--	--	0.00	--	282.42
									4/29/2024	9:30	13.55	--	--	0.00	--	281.32
AMW-05	47.577694	122.31101	40	18	40	20	40	294.01	3/22/2023	9:05	25.44	268.57	25.43	0.01	268.76	268.58
									4/12/2023	10:44	25.70	268.31	25.69	0.01	268.50	268.32
									4/29/2024	9:24	24.81	269.20	--	0.00	--	269.20
AMW-06	47.577552	122.31088	40	18	40	20	40	294.70	3/22/2023	9:09	28.32	266.38	27.90	0.42	267.17	266.70
									4/12/2023	10:48	28.59	266.11	27.87	0.72	267.20	266.66
									4/29/2024	9:19	27.05	267.65	26.50	0.55	268.57	268.07
AMW-07	47.577804	-122.3111	35	17	35	20	35	293.92	4/29/2024	9:24	28.08	265.84	18.51	9.57	275.41	273.11
AMW-08	47.577885	-122.3106	33	15	33	18	33	293.11	4/29/2024	9:17	26.49	--	--	0.00	--	266.62
AMW-09	47.577578	-122.3105	32	14	32	17	32	294.36	4/29/2024	9:19	27.54	--	--	0.00	--	266.82
AMW-10	47.577971	-122.3108	32	14	32	17	32	294.19	4/29/2024	9:14	26.55	--	--	0.00	--	267.64
AMW-11	47.577424	-122.3109	35	17	35	20	35	295.07	4/29/2024	9:16	27.63	267.44	26.21	1.42	268.86	268.52

Notes:

ft = feet

bgs = below ground surface

NAVD88 = North American Vertical Datum of 1988

bTOC = below top of casing, north side

LNAPL = light non-aqueous phase liquid

-- = not applicable

An assumed relative density of 0.76 grams per cubic centimeter (g/cm³) was used as an LNAPL correction to calculate potentiometric surface elevations.

Table 2 - Soil Analytical Results (Detections Only)

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Location	Date	Sample ID	Matrix Description	Depth (ft bgs)	Total Petroleum Hydrocarbons (TPH)				Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)				Volatile Organic Compounds (VOCs)											
					Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Sum of Diesel and Oil Range Organics	Benzene	Toluene	Ethylbenzene	Xylenes, Total	1,2-Dichlorobenzene	1,2-Dichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Chlorobenzene	Chloroform	Hexane	Isopropylbenzene (Cumene)	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	Tetrachloroethene (PCE)
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Vadose Zone Soil Screening Level					30	2,000	2,000	2,000	0.027	4.5	5.9	14	7	0.05	1.3	1.3	0.86	0.074	72	15	16	0.86	25	0.05
Saturated Zone Soil Screening Level					30	2,000	2,000	2,000	0.02	0.27	0.34	0.83	0.4	0.05	0.072	0.071	0.051	0.05	1.8	0.79	0.88	0.05	1.3	0.025
AB-01	03/16/23	AB-01-1.0	Vadose	1	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	0.012
	03/16/23	AB-01-5.0	Vadose	5	700	380 X	1,700	2,080 X	<0.001 U	0.0011	0.014	0.5049	<0.05 U	<0.05 U	5.2	<0.05 U	0.091	<0.05 U	<0.25 U	0.12	0.58	0.34	0.37	<0.001 U
AB-02	03/16/23	AB-02-0.5	Vadose	0.5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
	03/16/23	AB-02-7.5	Vadose	7.5	120 J	350 X	3,000	3,350 X	0.034	<0.001 U	0.077	0.05	0.063	<0.05 U	1.3	1.3	<0.05 U	<0.05 U	<0.25 U	0.22	0.71	0.12	0.2	<0.001 U
AB-03	03/16/23	AB-03-0.5	Vadose	0.5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
	03/16/23	AB-03-6.0	Vadose	6	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
AB-04	03/16/23	AB-04-5.0	Vadose	5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
	03/16/23	AB-04-9.0	Vadose	9	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
AB-05	03/16/23	AB-05-5.0	Vadose	5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
	03/16/23	AB-05-8.5	Vadose	8.5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
AB-06	03/16/23	AB-06-1	Vadose	1	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
	03/16/23	AB-06-5	Vadose	5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
	03/16/23	AB-06-12	Vadose	12	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
AB-07	03/16/23	AB-07-5.0	Vadose	5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
	03/16/23	AB-07-9.5	Vadose	9.5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
AB-08	03/16/23	AB-08-1.0	Vadose	1	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
	03/16/23	AB-08-10.5	Vadose	10.5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U
AB-09	03/18/24	AB-09-2.5	Vadose	2.5	460	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	0.2	0.0512	<0.05 U	<0.05 U	0.69	0.27	<0.05 U	<0.05 U	<0.25 U	0.18	0.62	0.3	0.22	<0.002 U
	03/25/24	AB-09-8	Vadose	8	30	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	0.12	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	0.59	0.06	0.13	0.094	0.052	<0.002 U	
	03/25/24	AB-09-11	Vadose	11	52	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	0.1	0.0224	<0.05 U	<0.05 U	0.055	<0.05 U	<0.05 U	0.71	<0.05 U	0.084	0.053	<0.05 U	<0.002 U	
	03/25/24	AB-09-18	Saturated	18	380	<50 U	<250 U	<250 U	0.03	0.26	3.8	14.4	<0.05 U	<0.05 U	12	2.5	<0.05 U	<0.05 U	4.4	0.48	1.6	0.19	0.21	<0.002 U
	03/25/24	AB-09-34	Saturated	34	<5 U	<50 U	<250 U	<250 U	0.0089	0.0076	0.044	0.162	<0.05 U	<0.05 U	0.077	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/25/24	AB-09-42	Saturated	42	8.4	<50 U	<250 U	<250 U	0.43	0.18	0.29	1.08	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/25/24	AB-09-55	Saturated	55	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
AB-10	03/20/24	AB-10-5	Vadose	5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/20/24	AB-10-13	Vadose	13	110	<50 U	<250 U	<250 U	0.091	1.3	0.54	3.11	<0.05 U	<0.05 U	2	0.6	<0.05 U	<0.05 U	0.53	0.075	0.33	<0.05 U	0.059	<0.002 U
	03/20/24	AB-10-22	Saturated	22	<5 U	<50 U	<250 U	<250 U	0.16	0.3	0.1	0.55	<0.05 U	<0.05 U	0.21	0.071	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/20/24	AB-10-45	Saturated	45	45	<50 U	<250 U	<250 U	0.099	0.54	0.32	1.48	<0.05 U	<0.05 U	0.71	0.23	<0.05 U	<0.05 U	0.45	<0.05 U	0.15	<0.05 U	<0.05 U	<0.002 U

Table 2 - Soil Analytical Results (Detections Only)

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Location	Date	Sample ID	Matrix Description	Depth (ft bgs)	Total Petroleum Hydrocarbons (TPH)				Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)				Volatile Organic Compounds (VOCs)											
					Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Sum of Diesel and Oil Range Organics	Benzene	Toluene	Ethylbenzene	Xylenes, Total	1,2-Dichlorobenzene	1,2-Dichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Chlorobenzene	Chloroform	Hexane	Isopropylbenzene (Cumene)	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	Tetrachloroethene (PCE)
Vadose Zone Soil Screening Level					30	2,000	2,000	2,000	0.027	4.5	5.9	14	7	0.05	1.3	1.3	0.86	0.074	72	15	16	0.86	25	0.05
Saturated Zone Soil Screening Level					30	2,000	2,000	2,000	0.02	0.27	0.34	0.83	0.4	0.05	0.072	0.071	0.051	0.05	1.8	0.79	0.88	0.05	1.3	0.025
	03/20/24	AB-10-55	Saturated	55	<5 U	<50 U	<250 U	<250 U	<0.001 U	0.0015	<0.001 U	0.0024	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U	
AB-11	03/26/24	AB-11-14	Vadose	14	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	0.0016	0.0068	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U	
	03/26/24	AB-11-21	Saturated	21	410	<50 U	<250 U	<250 U	0.0045	0.37	1.9	10.3	<0.05 U	<0.05 U	6.6	2.1	<0.05 U	<0.05 U	2.1	0.31	1.3	0.099	0.18	<0.002 U
	03/26/24	AB-11-32	Saturated	32	650	<50 U	<250 U	<250 U	0.25	16	62	300	<0.05 U	<0.05 U	170	53	<0.05 U	<0.05 U	33	8.7	34	2.2	4	<0.002 U
	03/26/24	AB-11-44	Saturated	44	<5 U	<50 U	<250 U	<250 U	0.028	0.0018	0.0048	0.0113	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U	
	03/26/24	AB-11-55	Saturated	55	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U	
AB-12	03/27/24	AB-12-05.5	Vadose	5.5	300	720 X	3,100	3,820 X	0.097	0.4	0.78	5	0.11	<0.05 U	5	1.4	<0.05 U	<0.05 U	<0.25 U	0.13	0.59	0.13	0.17	<0.002 U
	03/27/24	AB-12-10	Vadose	10	180	140 X	560	700 X	0.021	0.021	0.21	0.71	<0.05 U	<0.05 U	1.8	0.54	<0.05 U	<0.05 U	<0.25 U	0.051	0.22	0.075	0.096	<0.002 U
	03/27/24	AB-12-15	Vadose	15	16	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U	
	03/27/24	AB-12-20	Vadose	20	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U	
	03/24/24	AB-201	Saturated	25	52	<50 U	<250 U	<250 U	0.0018	0.0084	0.018	0.101	<0.05 U	<0.05 U	0.16	<0.05 U	<0.05 U	<0.25 U	<0.05 U	0.052	<0.05 U	0.06	<0.002 U	
	03/27/24	AB-12-25	Saturated	25	33 J	<50 U	<250 U	<250 U	0.0013	0.0088	0.019	0.104	<0.05 U	<0.05 U	0.16	0.05	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
03/27/24	AB-12-30	Saturated	30	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U	
AMW-01	06/06/22	AMW-01-10	Vadose	10	<5 U	<50 U	<250 U	--	<0.03 U	<0.05 U	<0.05 U	<0.1 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.025 U	
	06/06/22	AMW-01-20	Saturated	20	320	160 X	<250 U	--	<0.03 U	0.56	0.65	4.9	<0.05 U	<0.05 U	17	4.8	<0.05 U	<0.05 U	<0.25 U	0.26	1.6	0.36	0.55	<0.025 U
	06/06/22	AMW-01-40	Saturated	40	<5 U	<50 U	<250 U	--	0.066	<0.05 U	<0.05 U	0.37	<0.05 U	<0.05 U	0.27	<0.05 U	<0.05 U	<0.25 U	<0.05 U	0.094	<0.05 U	<0.05 U	<0.025 U	
AMW-02	06/07/22	AMW-02-21	Vadose	21	570	69 X	<250 U	--	<0.03 U	0.085	8.9	7.23	<0.05 U	<0.05 U	11	1.4	<0.05 U	0.2	14 E	1.6	4.9	1.4	1.1	<0.025 U
	06/07/22	AMW-02-41.5	Saturated	41.5	13	<50 U	<250 U	--	1.2	0.18	0.36	1.16	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.025 U	
AMW-03	06/08/22	AMW-03-05	Vadose	5	<5 U	<50 U	<250 U	--	<0.03 U	<0.05 U	<0.05 U	<0.1 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.025 U	
	06/08/22	AMW-03-20	Saturated	20	<5 U	<50 U	<250 U	--	<0.03 U	<0.05 U	<0.05 U	<0.1 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.025 U	
	06/08/22	AMW-03-35	Saturated	35	<5 U	<50 U	<250 U	--	<0.03 U	<0.05 U	<0.05 U	<0.1 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.025 U	
AMW-04	03/15/23	AMW-04-22.5	Saturated	22.5	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U	
	03/15/23	AMW-04-40	Saturated	40	<5 U	<50 U	<250 U	<250 U	<0.001 U	0.0014	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U	
AMW-05	03/13/23	AMW-05-22.5	Vadose	22.5	100	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	0.0085	0.0072	<0.05 U	<0.05 U	2.4	1	<0.05 U	<0.05 U	1.3	0.12	0.87	0.12	0.23	<0.001 U
	03/13/23	AMW-05-50	Saturated	50	6.5	<50 U	<250 U	<250 U	0.0049	0.0031	0.055	0.257	<0.05 U	<0.05 U	0.21	0.066	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U	
AMW-06	03/14/23	AMW-06-27.5	Vadose	27.5	24,000	3,400 X	<250 U	3,400 X	<30 U	470	310	1,610	<50 U	<50 U	430	130	<50 U	<50 U	<250 U	<50 U	92	<50 U	<50 U	<25 U
	03/14/23	AMW-06-55	Saturated	55	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.001 U	
	03/19/24	AMW-07-19	Vadose	19	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U	

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Location	Date	Sample ID	Matrix Description	Depth (ft bgs)	Total Petroleum Hydrocarbons (TPH)				Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)				Volatile Organic Compounds (VOCs)											
					Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Sum of Diesel and Oil Range Organics	Benzene	Toluene	Ethylbenzene	Xylenes, Total	1,2-Dichlorobenzene	1,2-Dichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Chlorobenzene	Chloroform	Hexane	Isopropylbenzene (Cumene)	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	Tetrachloroethene (PCE)
Vadose Zone Soil Screening Level					30	2,000	2,000	2,000	0.027	4.5	5.9	14	7	0.05	1.3	1.3	0.86	0.074	72	15	16	0.86	25	0.05
Saturated Zone Soil Screening Level					30	2,000	2,000	2,000	0.02	0.27	0.34	0.83	0.4	0.05	0.072	0.071	0.051	0.05	1.8	0.79	0.88	0.05	1.3	0.025
AMW-07	03/19/24	AMW-07-22	Saturated	22	390	72 X	<250 U	72 X	0.014	1.2	2.4	12.6	<0.05 U	<0.05 U	8.4	2.6	<0.05 U	<0.05 U	3.6	0.37	1.5	0.11	0.19	<0.002 U
	03/19/24	AMW-07-31	Saturated	31	<5 U	<50 U	<250 U	<250 U	0.016	<0.001 U	0.011	0.004	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	0.058	<0.05 U	<0.05 U	<0.002 U
	03/19/24	AMW-07-41	Saturated	41	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/19/24	AMW-07-46	Saturated	46	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
AMW-08	03/22/24	AMW-08-18	Vadose	18	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/22/24	AMW-08-26	Vadose	26	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/22/24	AMW-08-35	Saturated	35	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/22/24	AMW-08-55	Saturated	55	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
AMW-09	03/21/24	AMW-09-19	Vadose	19	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/21/24	AMW-09-23	Vadose	23	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/21/24	AMW-09-28	Saturated	28	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/21/24	AMW-09-39.5	Saturated	39.5	<5 U	<50 U	<250 U	<250 U	0.0073	<0.001 U	0.013	0.031	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/21/24	AMW-09-50	Saturated	50	<5 U	<50 U	<250 U	<250 U	0.33	0.019	0.1	0.0399	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/21/24	AMW-09-60	Saturated	60	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	03/21/24	AMW-101-60	Saturated	60	<5 U	<50 U	<250 U	<250 U	<0.001 U	<0.001 U	<0.001 U	<0.002 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
AMW-10	04/23/24	AMW-10-14.5	Vadose	14.5	<5 U	<50 U	<250 U	<250 U	<0.002 U	<0.002 U	<0.002 U	<0.004 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	04/23/24	AMW-10-19	Vadose	19	<5 U	<50 U	<250 U	<250 U	<0.002 U	<0.002 U	<0.002 U	<0.004 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	04/23/24	AMW-10-35	Saturated	35	<5 U	<50 U	<250 U	<250 U	0.031	<0.002 U	0.067	0.0602	<0.05 U	<0.05 U	0.054	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	04/23/24	AMW-10-39	Saturated	39	<5 U	<50 U	<250 U	<250 U	0.46	0.014	0.19	0.66	<0.05 U	<0.05 U	0.069	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	04/23/24	AMW-10-52	Saturated	52	<5 U	<50 U	<250 U	<250 U	0.1	<0.002 U	0.041	0.031	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	04/23/24	AMW-10-60	Saturated	60	<5 U	<50 U	<250 U	<250 U	<0.002 U	<0.002 U	<0.002 U	<0.004 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
AMW-11	04/24/24	AMW-11-10	Vadose	10	<5 U	<50 U	<250 U	<250 U	<0.002 U	<0.002 U	<0.002 U	<0.004 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	04/24/24	AMW-11-18	Vadose	18	<5 U	<50 U	<250 U	<250 U	<0.002 U	<0.002 U	<0.002 U	<0.004 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U
	04/24/24	AMW-11-23	Vadose	23	160	<50 U	<250 U	<250 U	<0.004 U	0.33	2.1	8.8	<0.1 U	<0.1 U	12	3.8	<0.1 U	<0.1 U	2.6	0.72	2.7	0.21	0.37	<0.004 U
	04/24/24	AMW-11-30	Saturated	30	430	770 X	<250 U	770 X	<0.02 U	0.12	2.1	9.5	<0.5 U	<0.5 U	16	6.2	<0.5 U	<0.5 U	19	0.99	4.3	<0.5 U	0.75	<0.02 U
	04/24/24	AMW-11-40	Saturated	40	29	<50 U	<250 U	<250 U	<0.002 U	0.019	0.073	0.368	<0.05 U	<0.05 U	0.7	0.27	<0.05 U	<0.05 U	0.56	<0.05 U	0.19	<0.05 U	<0.05 U	<0.002 U
	04/24/24	AMW-11-54	Saturated	54	100	<50 U	<250 U	<250 U	<0.002 U	0.018	0.044	0.214	<0.05 U	<0.05 U	0.3	0.12	<0.05 U	<0.05 U	0.34	<0.05 U	0.078	<0.05 U	<0.05 U	<0.002 U
	04/24/24	AMW-11-60	Saturated	60	<5 U	--	--	--	<0.002 U	<0.002 U	<0.002 U	<0.004 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.25 U	<0.05 U	<0.05 U	<0.05 U	<0.05 U	<0.002 U

Table 2 - Soil Analytical Results (Detections Only)

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Location	Date	Sample ID	Matrix Description	Depth (ft bgs)	Total Petroleum Hydrocarbons (TPH)				Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)				Volatile Organic Compounds (VOCs)											
					Gasoline Range Organics	Diesel Range Organics	Oil Range Organics	Sum of Diesel and Oil Range Organics	Benzene	Toluene	Ethylbenzene	Xylenes, Total	1,2-Dichlorobenzene	1,2-Dichloropropane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Chlorobenzene	Chloroform	Hexane	Isopropylbenzene (Cumene)	n-Propylbenzene	p-Isopropyltoluene	sec-Butylbenzene	Tetrachloroethene (PCE)
Vadose Zone Soil Screening Level					30	2,000	2,000	2,000	0.027	4.5	5.9	14	7	0.05	1.3	1.3	0.86	0.074	72	15	16	0.86	25	0.05
Saturated Zone Soil Screening Level					30	2,000	2,000	2,000	0.02	0.27	0.34	0.83	0.4	0.05	0.072	0.071	0.051	0.05	1.8	0.79	0.88	0.05	1.3	0.025
HA-1	03/27/13	--	Vadose	2	400	3300	15000	18300	0.35	4.9	3.2	23	--	--	--	--	--	--	--	--	--	--	--	
B-1	03/27/13	--	Vadose	10	40	--	--	--	< 0.2 U	0.065	0.41	0.18	--	--	--	--	--	--	--	--	--	--	--	
B-2	03/27/13	--	Vadose	15	29	--	--	--	< 0.2 U	0.084	0.41	1.2	--	--	--	--	--	--	--	--	--	--	--	
B-3	03/27/13	--	Vadose	15	1100	--	--	--	< 0.2 U	2.1	14	65	--	--	--	--	--	--	--	--	--	--	--	
B-4	08/19/20	B-4:15'	Vadose	15	<5 U	--	--	--	<0.02 U	<0.02 U	<0.02 U	<0.06 U	--	--	--	--	--	--	--	--	--	--	--	
	08/19/20	B-4:25'	Saturated	25	64	--	--	--	0.04	0.73	0.88	5.1	--	--	--	--	--	--	--	--	--	--	--	
	08/19/20	B-4:36'	Saturated	36	19	--	--	--	0.31	0.25	0.58	3.1	--	--	--	--	--	--	--	--	--	--	--	
B-5	08/19/20	B-5:15'	Vadose	15	980	--	--	--	<0.4 U	1.4	20	71	--	--	--	--	--	--	--	--	--	--	--	
	08/19/20	B-5:25'	Saturated	25	14	--	--	--	<0.02 U	0.042	0.057	0.15	--	--	--	--	--	--	--	--	--	--	--	
	08/19/20	B-5:35'	Saturated	25	<5 U	--	--	--	0.062	<0.02 U	0.093	0.34	--	--	--	--	--	--	--	--	--	--	--	
B-6	08/20/20	B-6:15'	Vadose	15	<5 U	--	--	--	<0.02 U	<0.02 U	<0.02 U	<0.06 U	--	--	--	--	--	--	--	--	--	--	--	
	08/20/20	B-6:20'	Vadose	20	15	--	--	--	0.34	1.4	0.22	1.3	--	--	--	--	--	--	--	--	--	--	--	
	08/20/20	B-6:35.5'	Saturated	35.5	<5 U	--	--	--	<0.02 U	0.055	0.039	0.21	--	--	--	--	--	--	--	--	--	--	--	
B-7	08/20/20	B-7:5'	Vadose	5	<5 U	--	--	--	<0.02 U	<0.02 U	<0.02 U	<0.06 U	--	--	--	--	--	--	--	--	--	--	--	
	08/20/20	B-7:15'	Vadose	15	1,300	--	--	--	<0.4 U	36	20	120	--	--	--	--	--	--	--	--	--	--	--	
	08/20/20	B-7:30'	Saturated	30	<5 U	--	--	--	<0.02 U	0.074	<0.02 U	0.12	--	--	--	--	--	--	--	--	--	--	--	

Notes

cPAHs = carcinogenic polycyclic aromatic hydrocarbons
 TEQ = toxic equivalency
 (ND = 1/2) = calculated using one-half the reporting limit for non-detected analytes
 mg/kg = milligrams per kilogram
 ft bgs = feet below ground surface
 U = analyte not detected at or above the reporting limit shown
Bold = detected
 X = chromatographic pattern does not match fuel standard used for quantitation
 J = Result value estimated
Light Green Shaded = Detected concentration exceeds the Screening Level



Table 2 - Soil Analytical Results (Detections Only)

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Location	Date	Sample ID	Matrix Description	Depth (ft bgs)	Metals			Polycyclic Aromatic Hydrocarbons (PAHs)															
					Chromium (hexavalent) mg/kg	Chromium mg/kg	Lead mg/kg	1-Methylnaphthalene mg/kg	2-methylnaphthalene mg/kg	Acenaphthene mg/kg	Acenaphthylene mg/kg	Anthracene mg/kg	Benz(a)anthracene mg/kg	Benzo(a) pyrene mg/kg	Benzo(b)fluoranthene mg/kg	Benzo(g,h,i)perylene mg/kg	Chrysene mg/kg	Fluoranthene mg/kg	Fluorene mg/kg	Naphthalene mg/kg	Phenanthrene mg/kg	Pyrene mg/kg	Total cPAHs TEQ (ND = 1/2) mg/kg
Vadose Zone Soil Screening Level					0.54	2,000	3,000	0.047	1.7	49	NE	1,100	NE	0.19	NE	NE	NE	630	51	4.5	NE	330	0.19
Saturated Zone Soil Screening Level					0.5	100	150	0.005	0.088	2.5	NE	57	NE	0.19	NE	NE	NE	32	2.6	0.24	NE	16	0.19
AB-01	03/16/23	AB-01-1.0	Vadose	1	--	--	92.4 J	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
	03/16/23	AB-01-5.0	Vadose	5	--	--	7.12	0.81	1.4	<0.01 U	0.018	0.02	0.022	<0.01 U	<0.01 U	0.011	0.026	0.048	0.041	0.036	0.14	0.11	0.00946
AB-02	03/16/23	AB-02-0.5	Vadose	0.5	--	--	12.7	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
	03/16/23	AB-02-7.5	Vadose	7.5	--	--	12	1.9	3.3	0.023	0.04	0.057	0.065	0.022	0.045	0.036	0.066	0.16	0.14	1.1	0.48	0.42	0.03516
AB-03	03/16/23	AB-03-0.5	Vadose	0.5	--	--	2.97	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
	03/16/23	AB-03-6.0	Vadose	6	--	--	2.24	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
AB-04	03/16/23	AB-04-5.0	Vadose	5	--	--	1.83	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
	03/16/23	AB-04-9.0	Vadose	9	--	--	1.56	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
AB-05	03/16/23	AB-05-5.0	Vadose	5	--	--	1.69	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
	03/16/23	AB-05-8.5	Vadose	8.5	--	--	1.4	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
AB-06	03/16/23	AB-06-1	Vadose	1	--	--	4.93	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
	03/16/23	AB-06-5	Vadose	5	--	--	1.27	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
	03/16/23	AB-06-12	Vadose	12	--	--	<1 U	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
AB-07	03/16/23	AB-07-5.0	Vadose	5	--	--	2.1	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
	03/16/23	AB-07-9.5	Vadose	9.5	--	--	<1 U	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
AB-08	03/16/23	AB-08-1.0	Vadose	1	--	--	5.51	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
	03/16/23	AB-08-10.5	Vadose	10.5	--	--	1.08	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--	
AB-09	03/18/24	AB-09-2.5	Vadose	2.5	--	--	--	0.093	0.24	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	1.4	<0.01 U	<0.01 U	<0.01 U	
	03/25/24	AB-09-8	Vadose	8	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.014	<0.01 U	<0.01 U	<0.01 U	
	03/25/24	AB-09-11	Vadose	11	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.04	<0.01 U	<0.01 U	<0.01 U	
	03/25/24	AB-09-18	Saturated	18	--	--	--	0.45	0.82	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	1.6	<0.01 U	<0.01 U	<0.01 U	
	03/25/24	AB-09-34	Saturated	34	--	--	--	0.048	0.098	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.06	<0.01 U	<0.01 U	<0.01 U	
	03/25/24	AB-09-42	Saturated	42	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.025	<0.01 U	<0.01 U	<0.01 U	
	03/25/24	AB-09-55	Saturated	55	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	
AB-10	03/20/24	AB-10-5	Vadose	5	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	
	03/20/24	AB-10-13	Vadose	13	--	--	--	0.19	0.36	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.92	<0.01 U	<0.01 U	<0.01 U	
	03/20/24	AB-10-22	Saturated	22	--	--	--	0.019	0.041	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.06	<0.01 U	<0.01 U	<0.01 U	
	03/20/24	AB-10-45	Saturated	45	--	--	--	0.041	0.088	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.13	<0.01 U	<0.01 U	<0.01 U	

Table 2 - Soil Analytical Results (Detections Only)

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Location	Date	Sample ID	Matrix Description	Depth (ft bgs)	Metals			Polycyclic Aromatic Hydrocarbons (PAHs)															
					Chromium (hexavalent) mg/kg	Chromium mg/kg	Lead mg/kg	1-Methylnaphthalene mg/kg	2-methylnaphthalene mg/kg	Acenaphthene mg/kg	Acenaphthylene mg/kg	Anthracene mg/kg	Benz(a)anthracene mg/kg	Benzo(a) pyrene mg/kg	Benzo(b)fluoranthene mg/kg	Benzo(g,h,i)perylene mg/kg	Chrysene mg/kg	Fluoranthene mg/kg	Fluorene mg/kg	Naphthalene mg/kg	Phenanthrene mg/kg	Pyrene mg/kg	Total cPAHs TEQ (ND = 1/2) mg/kg
Vadose Zone Soil Screening Level					0.54	2,000	3,000	0.047	1.7	49	NE	1,100	NE	0.19	NE	NE	NE	630	51	4.5	NE	330	0.19
Saturated Zone Soil Screening Level					0.5	100	150	0.005	0.088	2.5	NE	57	NE	0.19	NE	NE	NE	32	2.6	0.24	NE	16	0.19
	03/20/24	AB-10-55	Saturated	55	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
AB-11	03/26/24	AB-11-14	Vadose	14	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/26/24	AB-11-21	Saturated	21	--	--	--	0.55	1.1	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	1.2	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/26/24	AB-11-32	Saturated	32	--	--	--	3.4	5.5	0.016	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.011	31	0.023	<0.01 U	<0.01 U	<0.01 U
	03/26/24	AB-11-44	Saturated	44	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/26/24	AB-11-55	Saturated	55	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
AB-12	03/27/24	AB-12-05.5	Vadose	5.5	1.91	21	77	1.8	3.1	0.013	0.045	0.068	0.056	0.023 J	0.03 J	0.04 J	0.06	0.14	0.12	1.5	0.41	0.44	0.0337 J
	03/27/24	AB-12-10	Vadose	10	--	--	--	0.37	0.29	<0.01 U	0.013	0.02	0.014	<0.01 U	<0.01 U	<0.01 U	0.016	0.044	0.034	0.62	0.12	0.086	0.00856
	03/27/24	AB-12-15	Vadose	15	--	12	1.1	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/27/24	AB-12-20	Vadose	20	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/24/24	AB-201	Saturated	25	--	--	--	0.056	0.1	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.047	0.016	0.012	<0.01 U
	03/27/24	AB-12-25	Saturated	25	--	--	--	0.22 J	0.43 J	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.02	0.012	0.21 J	0.054	0.043	<0.01 U
03/27/24	AB-12-30	Saturated	30	0.797	27	2.9	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
AMW-01	06/06/22	AMW-01-10	Vadose	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.05 U	--	--	--
	06/06/22	AMW-01-20	Saturated	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	13	--	--	--
	06/06/22	AMW-01-40	Saturated	40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.15	--	--	--
AMW-02	06/07/22	AMW-02-21	Vadose	21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	3.6	--	--	--
	06/07/22	AMW-02-41.5	Saturated	41.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.05 U	--	--	--
AMW-03	06/08/22	AMW-03-05	Vadose	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.05 U	--	--	--
	06/08/22	AMW-03-20	Saturated	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.05 U	--	--	--
	06/08/22	AMW-03-35	Saturated	35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	<0.05 U	--	--	--
AMW-04	03/15/23	AMW-04-22.5	Saturated	22.5	--	--	3.03	--	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--
	03/15/23	AMW-04-40	Saturated	40	--	--	4.83	--	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--
AMW-05	03/13/23	AMW-05-22.5	Vadose	22.5	--	--	1.06	--	--	--	--	--	<0.01 U	<0.01 U	<0.01 U	--	<0.01 U	--	--	0.037	--	--	<0.00755 U
	03/13/23	AMW-05-50	Saturated	50	--	--	1.24	--	--	--	--	--	<0.01 U	<0.01 U	<0.01 U	--	<0.01 U	--	--	0.047	--	--	<0.00755 U
AMW-06	03/14/23	AMW-06-27.5	Vadose	27.5	--	--	4.89	--	--	--	--	--	--	--	--	--	--	--	--	110	--	--	--
	03/14/23	AMW-06-55	Saturated	55	--	--	1.16	--	--	--	--	--	--	--	--	--	--	--	--	<0.005 U	--	--	--
	03/19/24	AMW-07-19	Vadose	19	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U

Table 2 - Soil Analytical Results (Detections Only)

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Location	Date	Sample ID	Matrix Description	Depth (ft bgs)	Metals			Polycyclic Aromatic Hydrocarbons (PAHs)															
					Chromium (hexavalent) mg/kg	Chromium mg/kg	Lead mg/kg	1-Methylnaphthalene mg/kg	2-methylnaphthalene mg/kg	Acenaphthene mg/kg	Acenaphthylene mg/kg	Anthracene mg/kg	Benz(a)anthracene mg/kg	Benzo(a) pyrene mg/kg	Benzo(b)fluoranthene mg/kg	Benzo(g,h,i)perylene mg/kg	Chrysene mg/kg	Fluoranthene mg/kg	Fluorene mg/kg	Naphthalene mg/kg	Phenanthrene mg/kg	Pyrene mg/kg	Total cPAHs TEQ (ND = 1/2) mg/kg
Vadose Zone Soil Screening Level					0.54	2,000	3,000	0.047	1.7	49	NE	1,100	NE	0.19	NE	NE	NE	630	51	4.5	NE	330	0.19
Saturated Zone Soil Screening Level					0.5	100	150	0.005	0.088	2.5	NE	57	NE	0.19	NE	NE	NE	32	2.6	0.24	NE	16	0.19
AMW-07	03/19/24	AMW-07-22	Saturated	22	--	--	--	1.6	3.1	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	2.2	<0.01 U	<0.01 U	<0.01 U	
	03/19/24	AMW-07-31	Saturated	31	--	--	--	0.13	0.22	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.2	<0.01 U	<0.01 U	<0.01 U
	03/19/24	AMW-07-41	Saturated	41	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/19/24	AMW-07-46	Saturated	46	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
AMW-08	03/22/24	AMW-08-18	Vadose	18	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/22/24	AMW-08-26	Vadose	26	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/22/24	AMW-08-35	Saturated	35	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/22/24	AMW-08-55	Saturated	55	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
AMW-09	03/21/24	AMW-09-19	Vadose	19	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/21/24	AMW-09-23	Vadose	23	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/21/24	AMW-09-28	Saturated	28	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/21/24	AMW-09-39.5	Saturated	39.5	--	--	--	<0.01 U	0.016	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.026	<0.01 U	<0.01 U	<0.01 U
	03/21/24	AMW-09-50	Saturated	50	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/21/24	AMW-09-60	Saturated	60	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	03/21/24	AMW-101-60	Saturated	60	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
AMW-10	04/23/24	AMW-10-14.5	Vadose	14.5	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	04/23/24	AMW-10-19	Vadose	19	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	04/23/24	AMW-10-35	Saturated	35	--	--	--	0.024	0.035	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.06	<0.01 U	<0.01 U	<0.01 U
	04/23/24	AMW-10-39	Saturated	39	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.028	<0.01 U	<0.01 U	<0.01 U
	04/23/24	AMW-10-52	Saturated	52	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	04/23/24	AMW-10-60	Saturated	60	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
AMW-11	04/24/24	AMW-11-10	Vadose	10	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	04/24/24	AMW-11-18	Vadose	18	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U
	04/24/24	AMW-11-23	Vadose	23	--	11	1.2	0.26	0.47	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	1.2	<0.01 U	<0.01 U	<0.01 U
	04/24/24	AMW-11-30	Saturated	30	--	--	--	13	27	0.064	<0.01 U	0.026	0.021	0.012	0.014	<0.01 U	0.013	0.029	0.051	3.5	0.07	0.03	0.0171
	04/24/24	AMW-11-40	Saturated	40	--	--	--	<0.1 U	<0.2 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.05	<0.01 U	<0.01 U	<0.01 U
	04/24/24	AMW-11-54	Saturated	54	--	--	--	0.19	0.39	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.061	<0.01 U	<0.01 U	<0.01 U
	04/24/24	AMW-11-60	Saturated	60	--	--	--	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U

Table 2 - Soil Analytical Results (Detections Only)

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Location	Date	Sample ID	Matrix Description	Depth (ft bgs)	Metals			Polycyclic Aromatic Hydrocarbons (PAHs)															
					Chromium (hexavalent) mg/kg	Chromium mg/kg	Lead mg/kg	1-Methylnaphthalene mg/kg	2-methylnaphthalene mg/kg	Acenaphthene mg/kg	Acenaphthylene mg/kg	Anthracene mg/kg	Benz(a)anthracene mg/kg	Benzo(a) pyrene mg/kg	Benzo(b)fluoranthene mg/kg	Benzo(g,h,i)perylene mg/kg	Chrysene mg/kg	Fluoranthene mg/kg	Fluorene mg/kg	Naphthalene mg/kg	Phenanthrene mg/kg	Pyrene mg/kg	Total cPAHs TEQ (ND = 1/2) mg/kg
Vadose Zone Soil Screening Level					0.54	2,000	3,000	0.047	1.7	49	NE	1,100	NE	0.19	NE	NE	NE	630	51	4.5	NE	330	0.19
Saturated Zone Soil Screening Level					0.5	100	150	0.005	0.088	2.5	NE	57	NE	0.19	NE	NE	NE	32	2.6	0.24	NE	16	0.19
HA-1	03/27/13	--	Vadose	2	--	--	1000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-1	03/27/13	--	Vadose	10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-2	03/27/13	--	Vadose	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-3	03/27/13	--	Vadose	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-4	08/19/20	B-4:15'	Vadose	15	--	--	<1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/19/20	B-4:25'	Saturated	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/19/20	B-4:36'	Saturated	36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5	08/19/20	B-5:15'	Vadose	15	--	--	1.17	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/19/20	B-5:25'	Saturated	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/19/20	B-5:35'	Saturated	25	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	08/20/20	B-6:15'	Vadose	15	--	--	<1 U	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/20/20	B-6:20'	Vadose	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/20/20	B-6:35.5'	Saturated	35.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7	08/20/20	B-7:5'	Vadose	5	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/20/20	B-7:15'	Vadose	15	--	--	1.12	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/20/20	B-7:30'	Saturated	30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes

cPAHs = carcinogenic polycyclic aromatic hydrocarbons
 TEQ = toxic equivalency
 (ND = 1/2) = calculated using one-half the reporting limit for non-detected analytes
 mg/kg = milligrams per kilogram
 ft bgs = feet below ground surface
 U = analyte not detected at or above the reporting limit shown
Bold = detected
 X = chromatographic pattern does not match fuel standard used for quantitation
 J = Result value estimated
Light Green Shaded = Detected concentration exceeds the Screening Level

Table 3 - Groundwater Analytical Results

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Location	Date	Sample Code	Field Parameters						Total Petroleum Hydrocarbons (TPH)				Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)				Volatile Organic Compounds (VOCs)							Polycyclic Aromatic Hydrocarbons (PAHs)						
			Temperature °C	Specific Conductivity µS/cm	pH	Dissolved Oxygen mg/L	Oxidation Reduction Potential (ORP) mV	Turbidity NTU	Gasoline Range Organics µg/L	Diesel Range Organics µg/L	Oil Range Organics µg/L	Sum of Diesel and Oil Range Organics µg/L	Benzene µg/L	Toluene µg/L	Ethylbenzene µg/L	Xylenes, Total µg/L	1,2,4-Trimethylbenzene µg/L	1,3,5-Trimethylbenzene µg/L	Isopropylbenzene (Cumene) µg/L	n-Propylbenzene µg/L	sec-Butylbenzene µg/L	Styrene µg/L	Trichloroethene (TCE) µg/L	1-Methylnaphthalene µg/L	2-methylnaphthalene µg/L	Acenaphthene µg/L	Fluorene µg/L	Naphthalene µg/L	Phenanthrene µg/L	Total cPAHs TEQ (ND = 1/2) µg/L
Groundwater Screening Level			NE	NE	NE	NE	NE	NE	800	500	500	500	2.4	640	700	320	80	80	800	800	800	100	1.4	0.2	32	480	320	8.8	NE	NE
Groundwater Monitoring Well Samples																														
AMW-01	06/13/22	AMW-01-061322	14.6	285.4	6.9	0.98	64.6	15.6	27,000	2,200 X	<250 U	2,200 X	2,600	960	520	1,960	1,100	330	<100 U	260	<100 U	<100 U	<50 U	--	--	--	--	140	--	--
AMW-02	06/13/22	AMW-02-061322	16.9	386.4	6.98	0.68	43.2	16.6	34,000	2,600 X	<250 U	2,600 X	330	970	2,000	5,900	1,100	200	<100 U	220	<100 U	<100 U	<50 U	--	--	--	--	460	--	--
AMW-03	06/13/22	AMW-03-061322	13.5	237.9	7.15	0.39	59.6	5.44	<100 U	69 X	<250 U	69 X	<0.35 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<0.5 U	--	--	--	--	<1 U	--	--
	03/22/23	AMW-03-032223	13.23	240.72	6.73	0.74	135.1	2.68	<100 U	67 X	<250 U	67 X	<0.35 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<0.5 U	--	--	--	--	<1 U	--	--
	04/30/24	AMW-03-043024	13.15	275.45	0.29	7.16	91.6	0.70	<100 U	180 X	<250 U	180 X	<0.35 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<0.5 U	<0.2 U	<0.2 U	<0.02 U	<0.02 U	<0.2 U	<0.02 U	<0.02 U
AMW-04	03/22/23	AMW-04-032223	13.17	216.56	6.7	1.98	124.5	1.67	<100 U	<50 U	<250 U	<250 U	<0.35 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<0.5 U	--	--	--	--	<1 U	--	--
	04/30/24	AMW-04-043024	12.96	210.82	6.66	3.19	209.2	0.85	<100 U	<50 U	<250 U	<250 U	<0.35 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	0.54	<0.2 U	<0.2 U	<0.02 U	<0.02 U	<0.2 U	<0.02 U	<0.02 U
AMW-05	04/30/24	AMW-05-043024	14.82	471.71	7.13	0.28	-80.4	0.32	25,000	2,100 X	<250 U	2,100 X	230	270	1,300	4,050	1,200	300	83	230	11	20	<5 U	92	170	0.12	0.077	430	0.079	<0.02 U
AMW-08	04/29/24	AMW-08-042924	15.44	56.83	6.71	8.18	135.4	2.64	<100 U	57 X	<250 U	57 X	<0.35 U	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<0.5 U	<0.2 U	<0.2 U	<0.02 U	<0.02 U	<0.2 U	<0.02 U	<0.02 U
AMW-09	04/29/24	AMW-09-042924	15.23	39.95	7.08	7.88	134.8	3.00	1,300	160 X	<250 U	160 X	36	21	100	245	50	6.7	4.9	10	<1 U	<1 U	<0.5 U	3.8	3.3	<0.02 U	<0.02 U	18	<0.02 U	<0.02 U
AMW-10	04/29/24	AMW-10-042924	15.81	285.63	5.7	7.85	184.1	4.56	<100 U	53 X	<250 U	53 X	0.58	<1 U	<1 U	<2 U	<1 U	<1 U	<1 U	<1 U	<1 U	<1 U	<0.5 U	<0.2 U	<0.2 U	<0.02 U	<0.02 U	<0.2 U	<0.02 U	<0.02 U
Grab Groundwater Samples																														
B-4	08/19/20	B-4:GW	--	--	--	--	--	--	99,000	--	--	--	3,500	4,200	4,200	18,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-5	08/19/20	B-5:GW	--	--	--	--	--	--	130,000	--	--	--	1,200	2,000	4,000	16,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-6	08/20/20	B-6:GW	--	--	--	--	--	--	140,000	--	--	--	4,500	5,000	3,500	18,000	--	--	--	--	--	--	--	--	--	--	--	--	--	--
B-7	08/20/20	B-7:GW	--	--	--	--	--	--	69,000	--	--	--	1,300	7,100	1,800	9,200	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:

- cPAHs = carcinogenic polycyclic aromatic hydrocabons
- TEQ = toxic equivalency
- (ND = 1/2) = calculated using one-half the reporting limit for non-detected analytes
- µg/L = micrograms per liter
- NE = No screening level established
- Bold = detected**
- Light Green Shaded = Detected concentration exceeds the Groundwater Screening Level**
- U = analyte not detected at or above the reporting limit shown
- X = chromatographic pattern does not match fuel standard used for quantitation
- = not analyzed



Table 4 - Soil Gas Analytical Results

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Location	Date	Sample ID	Volatile Organic Compounds (VOCs)							Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)				Total Petroleum Hydrocarbons (TPH)				
			1,2-Dichloroethane (EDC) µg/m ³	Acetone µg/m ³	Butane µg/m ³	Cyclohexane µg/m ³	Heptane µg/m ³	Hexane µg/m ³	Pentane µg/m ³	Tetrachloroethene (PCE) µg/m ³	Benzene µg/m ³	Toluene µg/m ³	Ethylbenzene µg/m ³	Xylenes, Total µg/m ³	TPH C5 - C8 Aliphatic µg/m ³	TPH C9 - C10 Aromatic µg/m ³	TPH C9 - C12 Aliphatic µg/m ³	Total Petroleum Hydrocarbons µg/m ³
MTCA Method B Unrestricted Use SL			3.2	NE	NE	91,000	6,100	11,000	NE	320	11	76,000	15,000	1,500	NE	NE	NE	1,500
MTCA Method B Commercial Use SL			15	NE	NE	780,000	52,000	91,000	NE	1,500	50	650,000	130,000	13,000	NE	NE	NE	13,000
SG-01	03/27/24	SG-01-032724	<0.23 U	55 J	1,100 J	<39 U	<23 U	69	300 J	<39 U	19	<43 U	5.4	19.7	3,200	<140 U	200	3,536
SG-02	03/27/24	SG-02-032724	<0.89 U	<100 U	18,000 J	780	91	420	7,800 J	<150 U	830	2,300 J	300	1,110	60,000	780	2,100	67,440 J
SS-01	06/21/22	SS-01-062122	<0.19 U	--	--	--	--	19	--	50	5.6	<87 U	7.3	35.9	660	<110 U	<110 U	880
SS-02	06/21/22	SS-02-062122	<0.2 U	--	--	--	--	<17 U	--	190	4.0	<92 U	7.3	40.0	800	<120 U	2,500	3,476
SS-03	06/21/22	SS-03-062122	0.84	--	--	--	--	<16 U	--	<31 U	4.3	<85 U	6.3	31.2	<340 U	<110 U	<110 U	382

Notes:

MTCA = Model Toxics Control Act

SL = screening level

µg/m³ = micrograms per cubic meter

NE = No screening level established

-- Not analyzed

U = Analyte not detected at or above the reporting limit shown

J = Result value estimated

Bold = Detected

Light Green Shaded = Detected concentration exceeds the MTCA Method B Unrestricted Use Screening Level

Light Blue Shaded = Detected concentration exceeds the MTCA Method B Residential and the Commercial Use Screening Level



Table 5a. Proposed RI Screening Levels - Soil

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Detected Analyte	APPLICABLE CRITERIA ^a					Metals Natural Background Level ^b (back)	Practical Quantitation Limit ^c (PQL) (pql)	PROPOSED SCREENING LEVEL AND BASIS			
	Protection of Direct Contact			Protection of GW				Vadose Soil	Saturated Soil		
	Method A Unrestricted (mA)	Method B noncancer (mB-nc)	Method B cancer (mB-c)	Method B Vadose (mB-v)	Method B Saturated (mB-s)						
Petroleum Hydrocarbons (TPH)											
Gasoline-range ^d	30						5	30	(mA)	30	(mA)
Diesel-range ^d	2,000						250	2,000	(mA)	2,000	(mA)
Oil-range ^d	2,000						250	2,000	(mA)	2,000	(mA)
Sum of Diesel- and oil-range ^d	2,000						250	2,000	(mA)	2,000	(mA)
Volatile Organic Compounds (VOCs)											
1,2,4-Trimethylbenzene		800		1.3	0.072		0.05	1.3	(mB-v)	0.072	(mB-s)
1,2-Dichlorobenzene		7,200		7	0.4		0.05	7	(mB-v)	0.4	(mB-s)
1,2-Dichloropropane		3,200	27	0.025	0.0017		0.05	0.05	(pql)	0.05	(pql)
1,3,5-Trimethylbenzene		800		1.3	0.071		0.05	1.3	(mB-v)	0.071	(mB-s)
Chlorobenzene		1,600		0.86	0.051		0.05	0.86	(mB-v)	0.051	(mB-s)
Chloroform		800	32	0.074	0.0048		0.05	0.074	(mB-v)	0.05	(pql)
Benzene	0.03	320	18	0.027	0.0017		0.02	0.027	(mB-v)	0.02	(pql)
Ethylbenzene	6	8,000		5.9	0.34		0.02	5.9	(mB-v)	0.34	(mB-s)
Isopropylbenzene		8,000		15	0.79		0.05	15	(mB-v)	0.79	(mB-s)
m-Xylenes		16,000		13	0.77		0.14	13	(mB-v)	0.77	(mB-s)
p-Xylenes		16,000		17	0.96		0.14	17	(mB-v)	0.96	(mB-s)
n-Hexane		4,800		72	1.8		0.25	72	(mB-v)	1.8	(mB-s)
n-Propylbenzene		8,000		16	0.88		0.05	16	(mB-v)	0.88	(mB-s)
Naphthalene	5	1,600		4.5	0.24		0.005	4.5	(mB-v)	0.24	(mB-s)
o-Xylene		16,000		14	0.84		0.05	14	(mB-v)	0.84	(mB-s)
p-Isopropyltoluene		320		0.86	0.045		0.05	0.86	(mB-v)	0.05	(pql)
sec-Butylbenzene		8,000		25	1.3		0.05	25	(mB-v)	1.3	(mB-s)
Tetrachloroethene (PCE)	0.05	480	480	0.05	0.0028		0.025	0.05	(mB-v)	0.025	(pql)
Toluene	7	6,400		4.5	0.27		0.02	4.5	(mB-v)	0.27	(mB-s)
Total xylenes	9	16,000		14	0.83		0.06	14	(mB-v)	0.83	(mB-s)
Metals											
Chromium (total)				2,000	100	48	1	2,000	(mB-v)	100	(mB-s)
Chromium III	2,000	120,000					1	120,000	(mB-nc)	1	(pql)
Chromium VI	19	72	1.2	0.54	0.027		0.5	0.54	(mB-v)	0.5	(pql)
Lead	250			3,000	150	24	1	3,000	(mB-v)	150	(mB-s)
Polycyclic Aromatic Hydrocarbons (PAHs)											
1-Methylnaphthalene		5,600	20	0.047	0.0024		0.005	0.047	(mB-v)	0.005	(pql)
2-Methylnaphthalene		320		1.7	0.088		0.005	1.7	(mB-v)	0.088	(mB-s)
Acenaphthene		4,800		49	2.5		0.005	49	(mB-v)	2.5	(mB-s)
Acenaphthylene							0.005	NE		NE	
Anthracene		24,000		1,100	57		0.005	1,100	(mB-v)	57	(mB-s)
Benzo(g,h,i)perylene							0.005	NE		NE	
Fluoranthene		3,200		630	32		0.005	630	(mB-v)	32	(mB-s)
Fluorene		3,200		51	2.6		0.005	51	(mB-v)	2.6	(mB-s)
Phenanthrene							0.005	NE		NE	
Pyrene		2,400		330	16		0.005	330	(mB-v)	16	(mB-s)
Benz(a)anthracene							0.005	NE		NE	
Benzo(a)pyrene	0.1	24	0.19	3.9	0.19		0.005	0.19	(mB-c)	0.19	(mB-s)
Benzo(b)fluoranthene							0.005	NE		NE	
Chrysene							0.005	NE		NE	
Total cPAHs TEQ	0.1	24	0.19	3.9	0.19		0.005	0.19	(mB-c)	0.19	(mB-s)

Notes

All concentrations in milligrams per kilogram (mg/kg)

NE = not established

^a Criteria values from Washington State Department of Ecology (Ecology) Cleanup Levels and Risk Calculation (CLARC) database dated February 2025.

^b Natural background values for metals from Natural Background Soil Metals Concentrations in Washington State (Ecology, 1994).

^c Analytical PQLs provided by Friedman & Bruya, Inc., for 2025-2026 analysis.

^d For the purposes of the RIWP, TPH are screened against the Method A values because Method B values cannot be calculated from the existing dataset.

Table 5b. Proposed RI Screening Levels - Groundwater

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Detected Analyte	APPLICABLE CRITERIA ^a						Practical Quantitation Limit ^b (PQL)	PROPOSED SCREENING LEVEL AND BASIS Groundwater	
	Protection of Potable Groundwater			Vapor Intrusion					
	Method A	Method B noncancer	Method B cancer	WA State MCL	Method B noncancer	Method B cancer			
	(mA)	(mB-nc)	(mB-c)	(mB-v)	(VI-nc)	(VI-c)			
Petroleum Hydrocarbons (TPH)									
Gasoline-range ^d	800						100	800	(mA)
Diesel-range ^d	500						250	500	(mA)
Oil-range ^d	500						250	500	(mA)
Sum of Diesel- and Oil-range ^d	500						250	500	(mA)
Volatile Organic Compounds (VOCs)									
1,2,4-Trimethylbenzene		80			240		1	80	(mB-nc)
1,3,5-Trimethylbenzene		80			170		1	80	(mB-nc)
Benzene	5	32	0.80	5	100	2.4	1	5 2.4 ^e	(mB-v) (VI-c)
Ethylbenzene	700	800		700	2,800		0.35	700	(mB-v)
Isopropylbenzene		800			910		1	800	(mB-nc)
m-Xylenes		1,600					2	1600	(mB-nc)
n-Hexane		480			7.2		5	7.2	(VI-nc)
n-Propylbenzene		800			2,300		1	800	(mB-nc)
Naphthalene	160	160			160	8.8	0.2	8.8	(VI-c)
o-Xylene		1,600					1	1600	(mB-nc)
p-Xylenes		1,600					2	1600	(mB-nc)
sec-Butylbenzene		800					1	800	(mB-nc)
Styrene		1,600		100	8,500		1	100	(mB-v)
Trichloroethene (TCE)	5	4	0.54	5	3.9	1.4	0.5	4 1.4 ^e	(mB-nc) (VI-c)
Toluene	1,000	640		1,000	15,000		1	640	(mB-nc)
Total xylenes	1,000	1,600		10,000	320		3	320	(VI-nc)
Polycyclic Aromatic Hydrocarbons (PAHs)									
1-Methylnaphthalene		560	0.86		0.17		0.2	0.2	(pql)
2-Methylnaphthalene		32					0.2	32	(mB-nc)
Acenaphthene		480					0.02	480	(mB-nc)
Fluorene		320					0.02	320	(mB-nc)
Phenanthrene							0.02	NE	

Notes

All concentrations in micrograms per liter (ug/L).

NE = not established

^a Criteria values from Washington State Department of Ecology (Ecology) Cleanup Levels and Risk Calculation (CLARC) database dated February 2025.

^b Analytical PQLs provided by Friedman & Bruya, Inc., for 2025-2026 analysis.

^dFor the purposes of the RIWP, TPH are screened against the Method A values because Method B values cannot be calculated from the existing dataset. The value would apply to results by

^eThe applicable value is based on the specific pathway being evaluated.

Table 5c. Proposed RI Screening Levels - Soil Gas

Remedial Investigation Work Plan | Estelita's Library Solidarity House Project

Detected Analyte	SOIL GAS APPLICABLE CRITERIA ^a				INDOOR AIR APPLICABLE CRITERIA ^a				Practical Quantitation Limit ^b (PQL)	PROPOSED SCREENING LEVEL AND BASIS							
	Residential		Commercial		Residential		Commercial			Soil Gas				Indoor Air			
	Method B noncancer	Method B cancer	Method B noncancer	Method B cancer	Method B noncancer	Method B cancer	Method B noncancer	Method B cancer		Residential Use		Commercial Use		Residential Use		Commercial Use	
	(SG-RmB-nc)	(SG-RmB-c)	(SG-CmB-nc)	(SG-CmB-c)	(IA-RmB-nc)	(IA-RmB-c)	(IA-CmB-nc)	(IA-CmB-c)									
Volatile Organic Compounds (VOCs)																	
1,2-Dichloroethane (EDC)	110	3.20	910	15.0	3.20	0.0962	27.3	0.449	0.04	3.20	(SG-RmB-c)	15.0	(SG-CmB-c)	0.0962	(IA-RmB-c)	0.449	(IA-CmB-c)
1-Propene									1.2	NE		NE		NE		NE	
Acetone									4.8	NE		NE		NE		NE	
Benzene	460	11.0	3,900	50.0	13.7	0.321	117	1.50	0.32	11	(SG-RmB-c)	50.0	(SG-CmB-c)	0.321	(IA-RmB-c)	1.50	(IA-CmB-c)
Butane									4.8	NE		NE		NE		NE	
Cyclohexane	91,000		780,000		2,743		23,360		6.9	91,000	(SG-RmB-nc)	780,000	(SG-CmB-nc)	2,743	(IA-RmB-nc)	23,360	(IA-CmB-nc)
Ethylbenzene	15,000		130,000		457		3,893		0.43	15,000	(SG-RmB-nc)	130,000	(SG-CmB-nc)	457	(IA-RmB-nc)	3,893	(IA-CmB-nc)
m-Xylene									0.87	NE		NE		NE		NE	
p-Xylene									0.87	NE		NE		NE		NE	
n-Hexane	11,000		91,000		320		2,725		3.5	11,000	(SG-RmB-nc)	91,000	(SG-CmB-nc)	320	(IA-RmB-nc)	2,725	(IA-CmB-nc)
o-Xylene									0.43	NE		NE		NE		NE	
Pentane									5.9	NE		NE		NE		NE	
Tetrachloroethene (PCE)	610	320	5,200	1,500	18.3	9.62	156	44.9	6.8	320	(SG-RmB-c)	1500	(SG-CmB-c)	9.62	(IA-RmB-c)	45	(IA-CmB-c)
Toluene	76,000		650,000		2,286		19,467		7.5	76,000	(SG-RmB-nc)	650,000	(SG-CmB-nc)	2,286	(IA-RmB-nc)	19,467	(IA-CmB-nc)
Total Xylenes	1,500		13,000		45.7		389		0.87	1,500	(SG-RmB-nc)	13,000	(SG-CmB-nc)	45.7	(IA-RmB-nc)	389	(IA-CmB-nc)
2,2,4-Trimethylpentane									4.7	NE		NE		NE		NE	
Heptane	6,100		52,000		183		1,557		4.1	6,100	(SG-RmB-nc)	52,000	(SG-CmB-nc)	183	(IA-RmB-nc)	1,557	(IA-CmB-nc)
Petroleum Hydrocarbons																	
Total petroleum hydrocarbons	1,500		13,000		46.0		390		125	1,500	(SG-RmB-nc)	13,000	(SG-CmB-nc)	125	(pql)	390	(IA-CmB-nc)

Notes

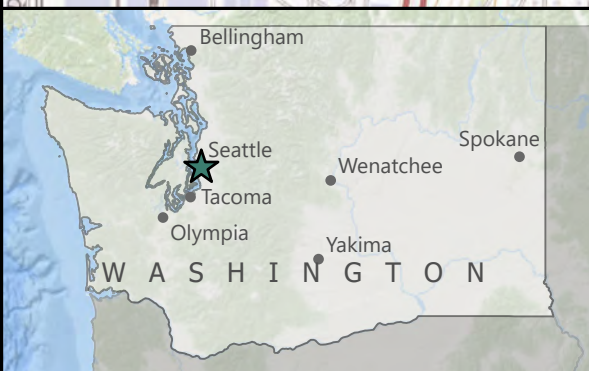
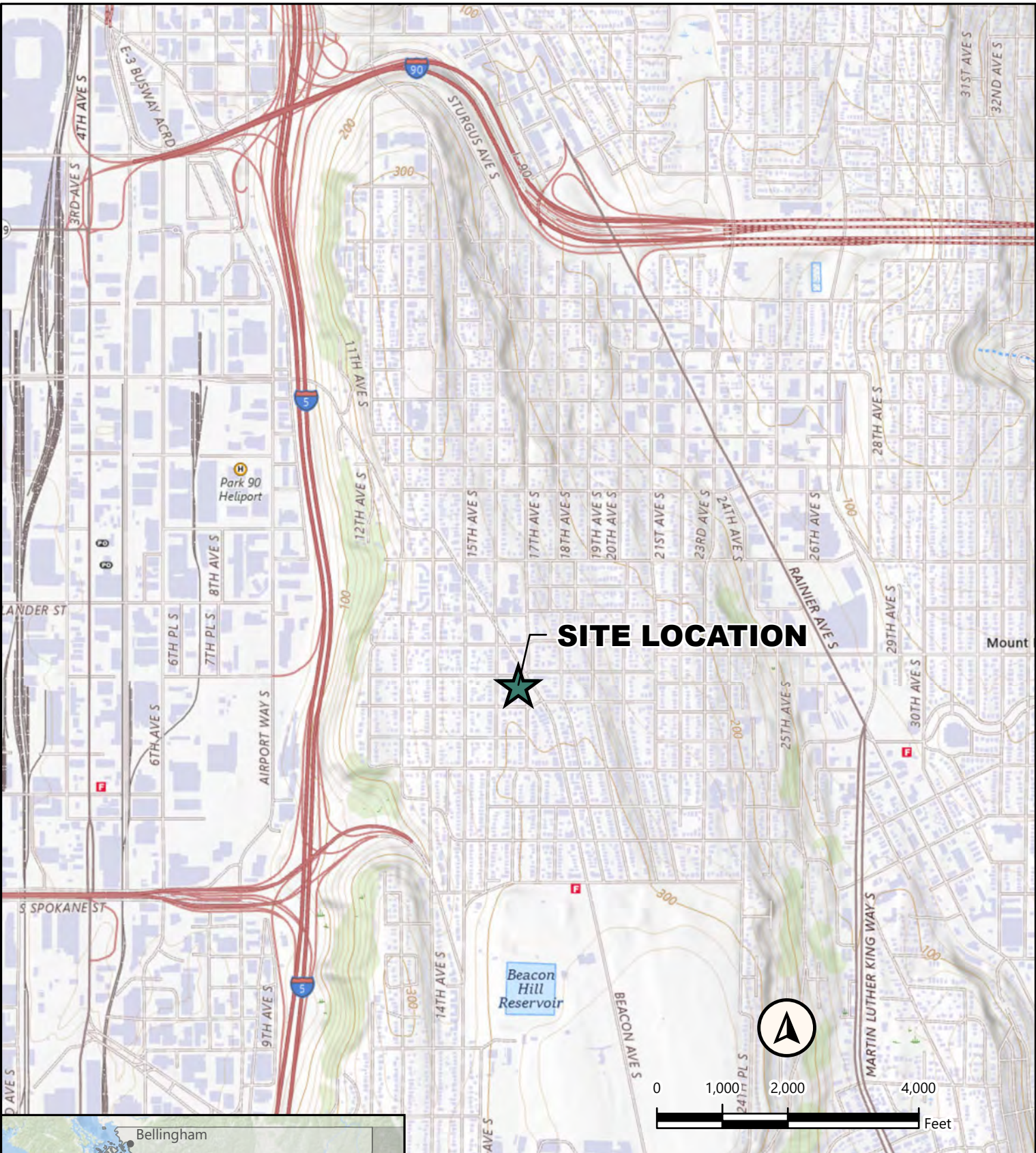
All concentrations in micrograms per cubic meter (ug/m³).

NE = not established


^a Criteria values from Washington State Department of Ecology (Ecology) Cleanup Levels and Risk Calculation (CLARC) database dated February 2025.

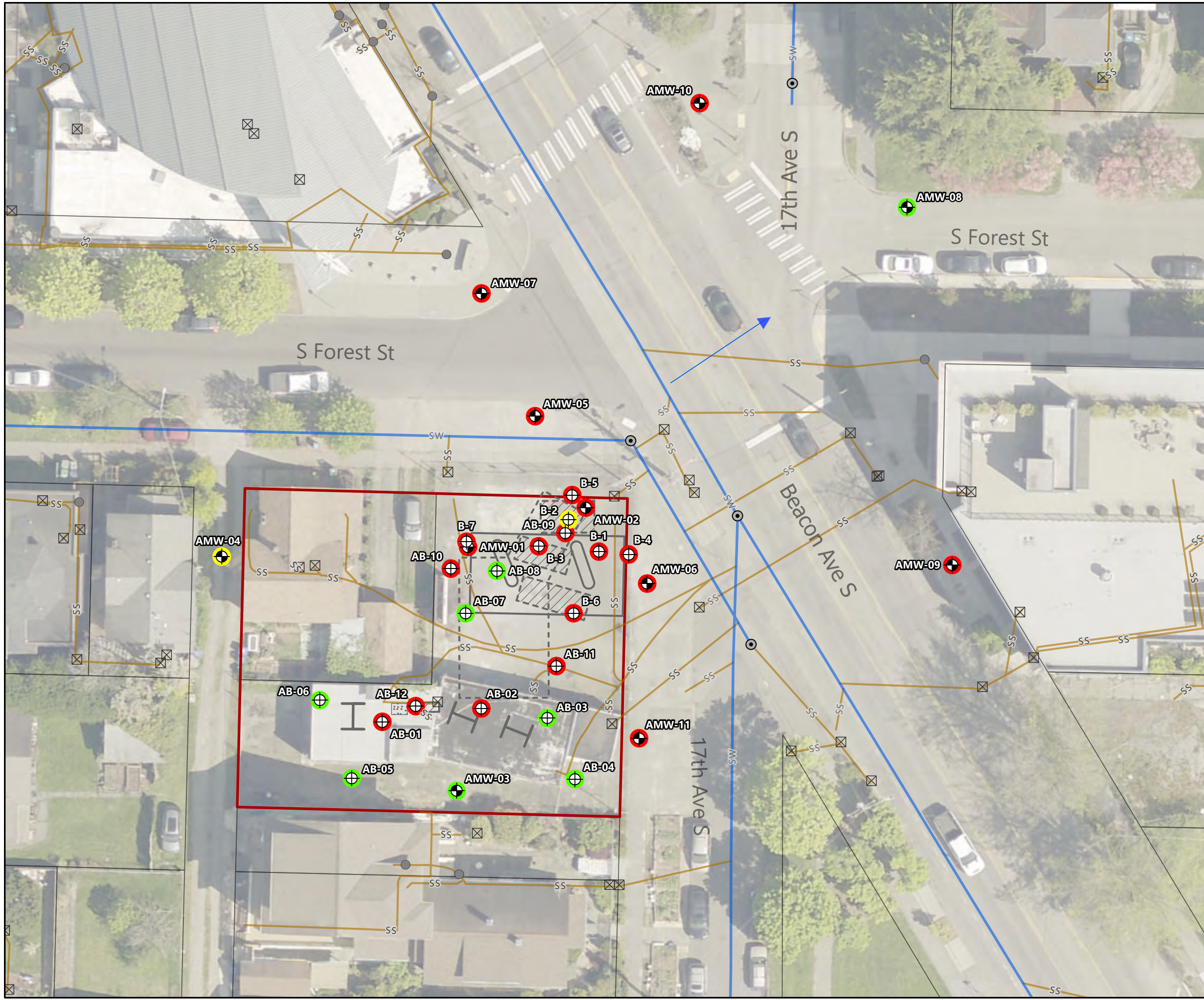
^b Analytical PQLs provided by Friedman & Bruya, Inc., for 2025-2026 analysis.

FIGURES



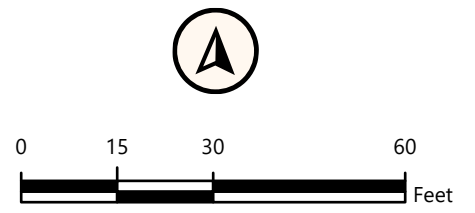
Site Location Map
 Remedial Investigation Work Plan
 Estelita's Library Beacon Hill
 2901 17th Avenue S
 Seattle, Washington

	Nov-2025	BY: ALC/ PM	FIGURE NO. 1
	PROJECT NO. 25009-001-01	REVISED BY: ALC	



- ### Explorations
- Groundwater Monitoring Well
 - Shallow Boring Location
 - Combined Stormwater/Sanitary Line
 - Sanitary Sewer Line
 - Maintenance Hole
 - Clean Out
 - Catch Basin
 - Closed-In-Place Waste Oil UST
 - Removed Former Refueling UST
 - Gilmore Gasoline Service Station Footprint (1939 to 1956)
 - Mobil Gasoline Service Station and Pump Islands (1956 to 1990)
 - Oil/Water Separator
 - Subject Property
 - King County Parcels
 - Groundwater Flow Direction
 - Hoist

- ### Soil Results
- (refer to Table 2)
- Analyte(s) detected greater than the screening level in one or more samples
 - Analyte(s) detected below the screening level in one or more samples
 - Analyte(s) not detected, and/or lead detected at or below background level

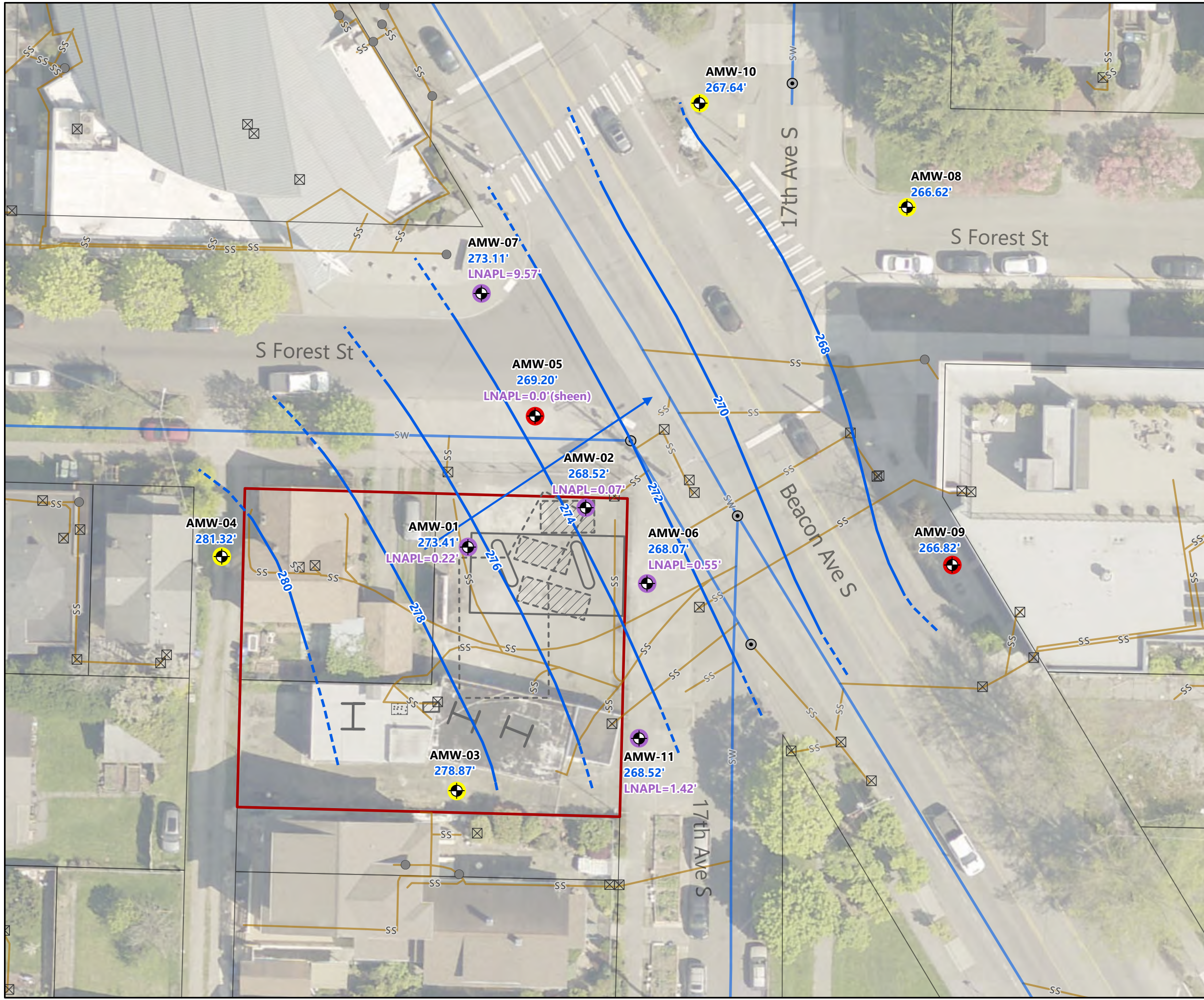


Soil Data

Remedial Investigation Work Plan
Estelita's Library Beacon Hill
2901 17th Avenue S
Seattle, Washington

	Nov-2025	BY: ALC / PM	FIGURE NO. 3
	PROJECT NO. 25009-001-01	REVISED BY: ALC	

GIS Path: X:\BlackRiver\Environmental\Washington\Seattle\EstelitaBeaconHill\West\EstelitaBeaconHill.aprx; Name: EstelitaBeaconHill_F3_RL_SoilData.mxd; Date Exported: 11/25/2025

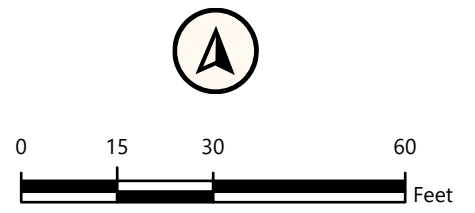


- ### Explorations
- Groundwater Monitoring Well
 - Groundwater Contour (April 20, 2024)
(dashed where inferred)
 - Groundwater Flow Direction
 - Sanitary Sewer Line
 - Combined Stormwater/Sanitary Line
 - Maintenance Hole
 - Clean Out
 - Catch Basin
 - Closed-In-Place Waste Oil UST
 - Removed Former Refueling UST
 - Gilmore Gasoline Service Station Footprint (1939 to 1956)
 - Mobil Gasoline Service Station and Pump Islands (1956 to 1990)
 - Oil/Water Separator
 - Subject Property
 - King County Parcels
 - Hoist

- ### Groundwater Results
- (refer to Table 3)
- Analyte(s) detected greater than the screening level
 - Analyte(s) detected below the screening level
 - Analyte(s) not detected
 - Well not sampled due to presence of LNAPL

Notes:

- Wells AMW-01 and AMW-02 were last sampled in 2022 all other wells were sampled in 2023 and 2024.
- *Wells with LNAPL not included in contouring
- UST = Underground Storage Tank
- Water level measurements in blue
- LNAPL = light non-aqueous phase liquid

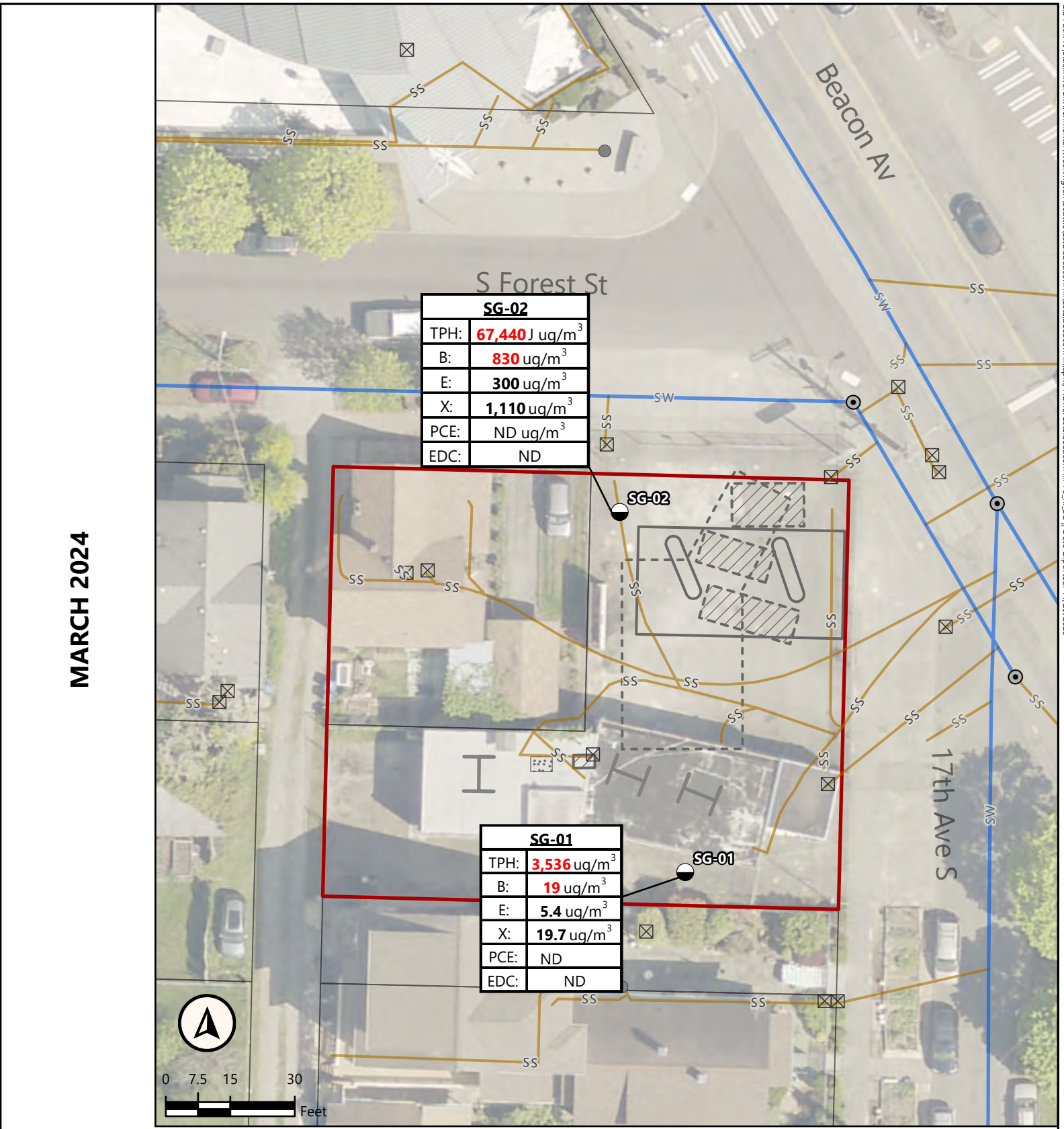
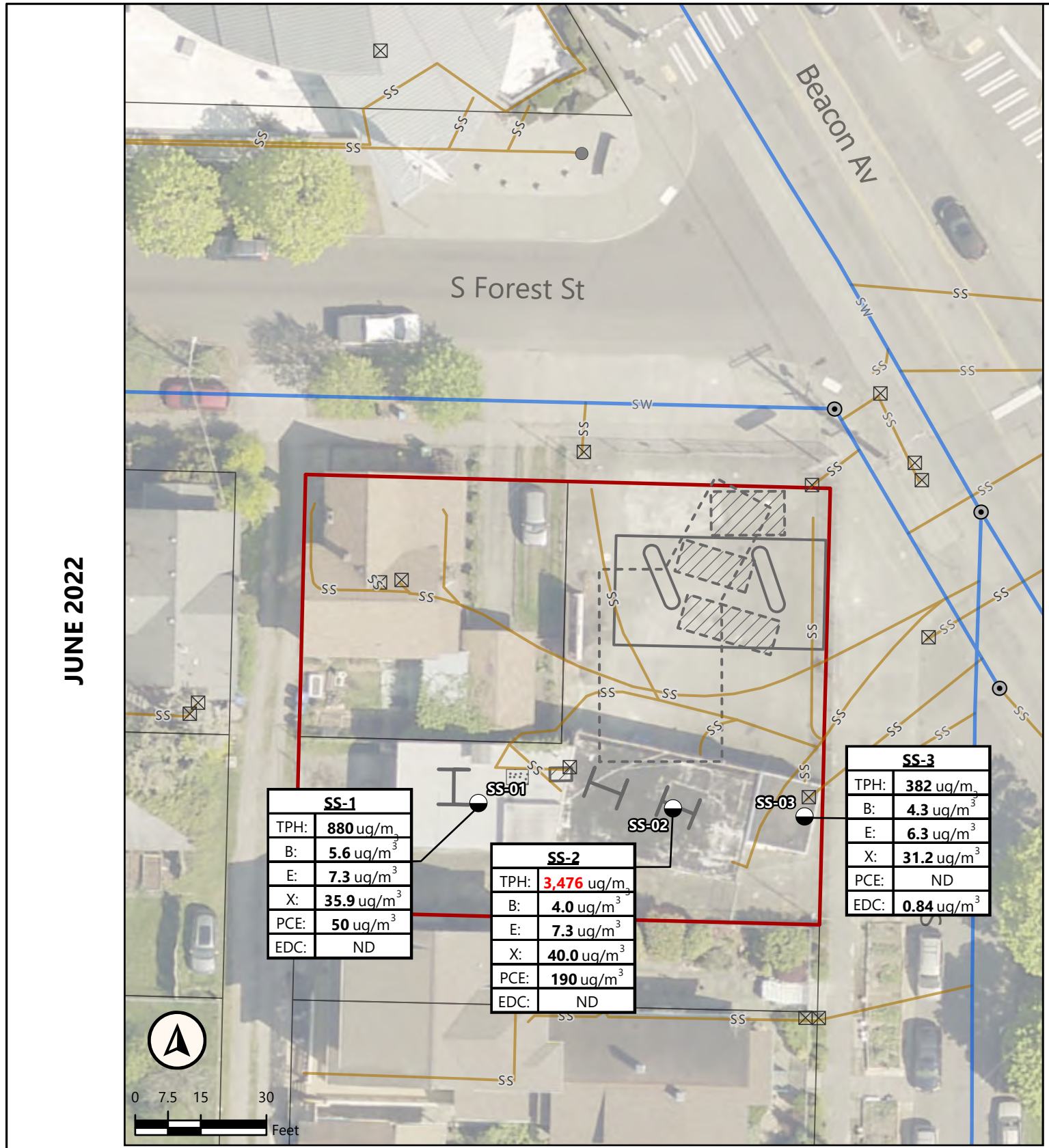


Groundwater Data

Remedial Investigation Work Plan
Estelita's Library Beacon Hill
2901 17th Avenue S
Seattle, Washington

	Nov-2025	BY: ALC / PM	FIGURE NO. 4
	PROJECT NO. 25009-001-01	REVISED BY: ALC	

GIS Path: X:\BlackRiver\Environmental\Washington\Seattle\Estelita\Beacon Hill\Well\Beacon Hill.aprx; Name: EstelitaBeacon Hill_F4_RL_GWC; Date Exported: 11/25/2025



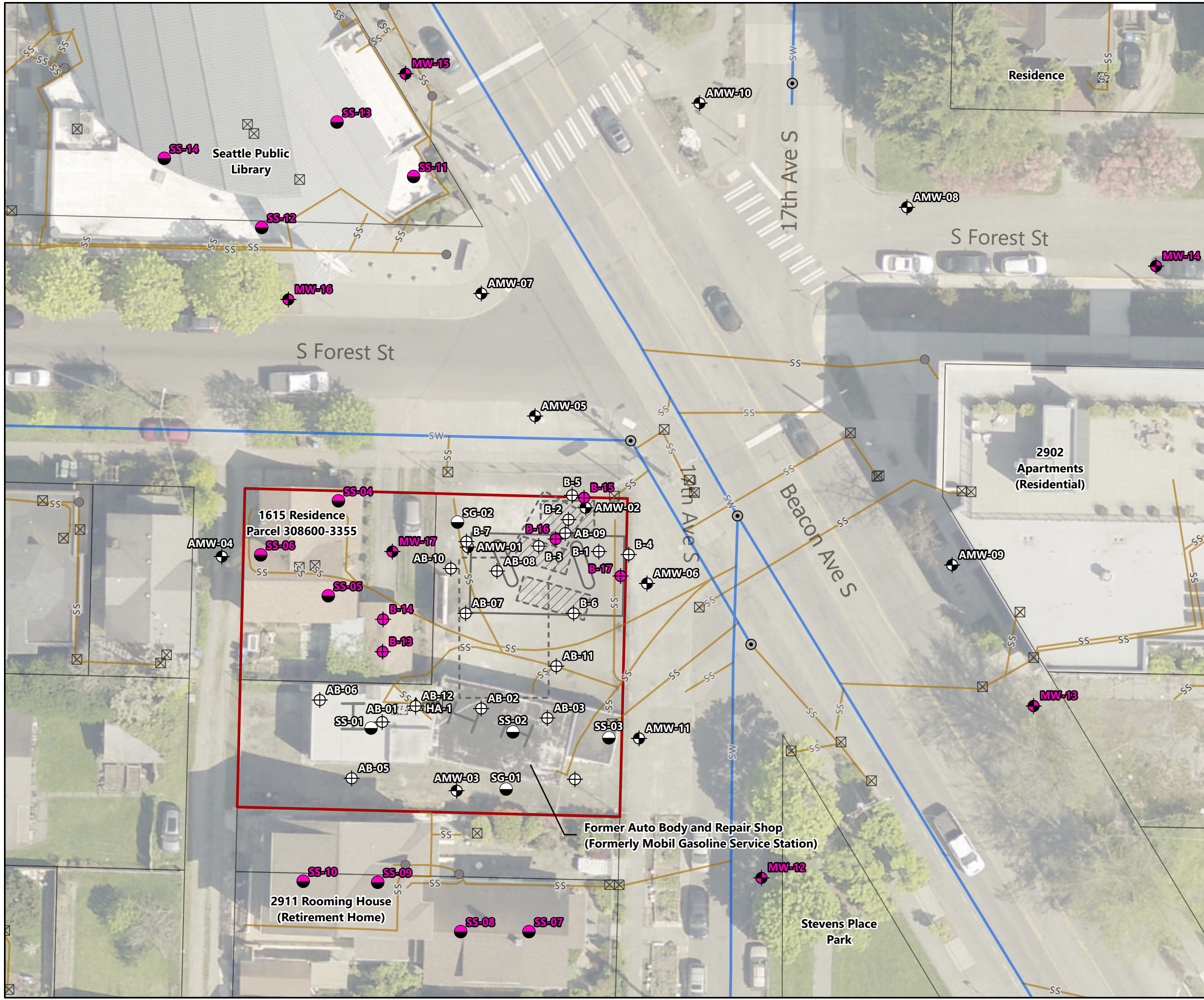
- Explorations**
- Soil Gas Sample
 - ⊙ Maintenance Hole
 - ⊠ Catch Basin
 - SW— Combined Stormwater/Sanitary Line
 - SS— Non-SPU Owned Non-Mainlines
 - ⊠ Hoist
 - ▨ Closed-In-Place Waste Oil UST
 - ▨ Removed Former Refueling UST
 - - - Gilmore Gasoline Service Station Footprint (1939 to 1956)
 - ▭ Mobil Gasoline Service Station and Pump Islands (1956 to 1990)
 - ▨ Oil/Water Separator
 - ▭ Subject Property
 - ▭ King County Parcels

Notes:
 EDC = 1,2-Dichloroethane, Screening Level (SL) is 3.2 ug/m³
 TPH = Total Hydrocarbons, SL is 1,500 ug/m³
 PCE = Tetrachloroethene, SL is 320 ug/m³
 B = Benzene, SL is 11 ug/m³
 E = Ethylbenzene, SL is 15,000 ug/m³
 X = Total Xylenes, SL is 1,500 ug/m³
 UST = Underground Storage Tank
 ug/m³ = micrograms per cubic meter
 BOLD indicates detection
 RED indicates SL exceedance
 ND = not detected

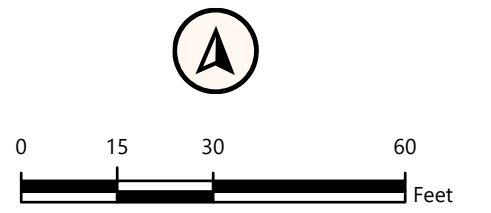
Soil Gas Data

Remedial Investigation Work Plan
 Estelita's Library Beacon Hill
 2901 17th Avenue S
 Seattle, Washington

	Nov-2025	BY: ALC / PM	FIGURE NO. 5
	PROJECT NO. 25009-001-01	REVISED BY: ALC	



- ### Explorations
- Groundwater Monitoring Well
 - Hand Auger
 - Soil Boring
 - Soil Gas Sample
 - Combined Stormwater/Sanitary Line
 - Sanitary Sewer Line
 - Maintenance Hole
 - Clean Out
 - Catch Basin
 - Closed-In-Place Waste Oil UST
 - Removed Former Refueling UST
 - Gilmore Gasoline Service Station Footprint (1939 to 1956)
 - Mobil Gasoline Service Station and Pump Islands (1956 to 1990)
 - Oil/Water Separator
 - Subject Property
 - King County Parcels
 - Hoist
- ### Proposed Explorations
- Proposed Groundwater Monitoring Well
 - Proposed Soil Boring
 - Proposed Soil Gas Sample



Proposed Explorations

Remedial Investigation Work Plan
Estelita's Library Beacon Hill
2901 17th Avenue S
Seattle, Washington

	Nov-2025	BY: ALC / PM	<small>FIGURE NO.</small> 6
	<small>PROJECT NO.</small> 25009-001-01	<small>REVISED BY:</small> ALC	

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APPENDIX A

SAMPLING AND ANALYSIS PLAN & QUALITY ASSURANCE PROJECT PLAN



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Acronyms & Abbreviations

%R	percent recovery
Black River	Black River Environmental, LLC
COC	chain-of-custody
DQO	data quality objective
Ecology	Washington State Department of Ecology
EDD	electronic data deliverable
EIS	extracted internal standard
EPA	United States Environmental Protection Agency
GC/MS	gas chromatography/mass spectrometry
HRGC/HRMS	high-resolution GC/MS
ICP/MS	inductively coupled plasma / mass spectrometry
IDW	investigation-derived waste
ITRC	Interstate Technology and Regulatory Council
LCS/LCSD	laboratory control samples/laboratory control sample duplicate
MDL	method detection limit
MQI	measurement quality indicator
MQO	measurement quality objective
MRL	method reporting limit
MS/MSD	matrix spike/matrix spike duplicate
MTCA	Model Toxics Control Act
PARCCS	precision, accuracy, representativeness, comparability, completeness, and sensitivity
PQL	practical quantitation limit
RL	reporting limit
SDG	sample delivery group
QA	quality assurance
QC	quality control
RPD	relative percent difference
SAP/QAPP	Sampling and Analysis Plan / Quality Assurance Project Plan

SOP	standard operating procedure
SVOCs	semivolatile organic compounds
WAC	Washington Administrative Code

Introduction

This Sampling and Analysis Plan (SAP) and Quality Assurance Project Plan (QAPP) has been prepared for the Estelita's Library Solidarity House Affordable Housing Development Project (the Site) as Appendix A of the Remedial Investigation Work Plan (RIWP). This document meets the requirements of Prospective Purchaser Consent Decree (PPCD) No. 25-2-17319-4 and Grant Agreement No. TCPACG-2527-EstLib-0010 between the Washington State Department of Ecology (Ecology) and Estelita's Library.

The purpose of this SAP/QAPP is to ensure that field sample collection, handling, and laboratory analysis conducted during the implementation of the RIWP will generate data to meet project-specific data needs, in accordance with the Model Toxics Control Act (MTCA) requirements (Washington Administrative Code [WAC] 173-340-820). The SAP identifies the proposed number and location of environmental samples and defines field protocols for sample collection. The QAPP defines analytical laboratory methods and field and laboratory quality assurance (QA) protocols for the samples' chemical analysis. It is the responsibility of Black River Environmental, LLC (Black River) personnel and subcontracted analytical laboratory and data validation personnel performing the sampling and analysis activities to adhere to the requirements of the SAP/QAPP.

A.1 Sampling and Analysis Plan

The RIWP sampling program consists of collection of soil samples, groundwater samples, soil gas samples, and air samples. A summary of exploration locations, sample media, sample depths, analyses, and brief description of the rationale for each location is included in Table A-1.

A.1.1 Sampling Procedures

Field investigation and sampling procedures to be followed during data collection are described in the following sections. Prior to sample collection, the following field-related activities must be accomplished:

- Field locating exploration locations with a hand-held GPS unit.
- Public and private utility locating in the vicinity of each exploration location.
- Use of a vector truck with airknife and/or hand tools to clear any drilling locations that are within 5 feet of utilities identified by the private and/or public utility locates and/or are located in rights-of-way.

Pre-sampling activities will be documented in field notes and photographs.

Soil, groundwater, soil gas, air and quality control samples will be collected from soil borings, monitoring wells, or temporary soil gas points during the work outlined in the RIWP. All soil samples will be placed in laboratory-provided sampleware, consisting of 4- to 8-ounce glass jars and/or volatile organic analysis (VOA) containers (filled in accordance with Environmental Protection Agency [EPA] Method 5035A). All groundwater samples will be placed in laboratory-

provided sampleware, consisting of 1-liter amber glass bottles, 750-milliliter polyurethane bottles, and VOA containers filled to limit headspace. All soil gas and air samples will be collected in individually-certified laboratory supplied evacuated cannisters with dedicated sampling trains and fitted with dedicated flow controllers set to 150 milliliters per minute for soil gas and 8- to 24-hour intervals for air.

Filled soil and groundwater sample jars will be placed on ice in coolers with internal temperatures maintained at 4 degrees Celsius (°C). Sample coolers containing soil and groundwater samples and the soil gas and air sample cannisters will be transported by field personnel or courier to the laboratory under standard chain-of-custody procedures.

All reusable sampling equipment will be decontaminated between samples using an Alconox wash and clean water rinse.

A.1.2 Sample Identification & Custody

Each sample container will be labeled with the following using permanent, nonvolatile ink: unique sample identification, date, time, and project number.

- **Soil sample nomenclature.** The unique sample identification format is “B-YY-ZZ” for which B represents the exploration type (B for soil borings and MW for monitoring wells), Y is a sequential two-digit ID number starting with B-09 for soil borings and MW-07 for monitoring wells, and ZZ is the depth in feet below ground surface (bgs).
- **Groundwater sample nomenclature.** Each groundwater sample will be assigned a unique sample identification number that includes the well number and the six-digit date on which the sample was collected. For example, a groundwater sample collected from monitoring well MW-12 on October 5, 2021, would be identified as MW-12-211005.
- **Soil gas sample nomenclature.** Each soil gas sample will be assigned a unique sample identification number that includes the exploration number and the six-digit date on which the sample was collected. For example, a soil gas sample collected from soil vapor pin SS-01 on September 30, 2022, would be identified as SS-01-220930.
- **Air sample nomenclature.** Each air sample will be assigned a unique sample identification number that includes the location number and the six-digit date on which the sample was collected. Indoor locations will be designed with “I” and outdoor/ambient air locations will be designed with “A”. For example, an outdoor/ambient air sample collected at location A-01 on November 6, 2025 would be identified as A-01-251106.

After collection, samples will be maintained in Black River’s custody until formally transferred to the analytical laboratory. A chain of custody record provided by the laboratory will be initiated at the time of sampling for all samples collected and signed by the field representative and all others who subsequently take custody of the samples, including the laboratory representative who receives the sample cooler.

A.1.3 Field Documentation

While conducting field work, the field representative will document pertinent observations and events specific to each activity on field forms and/or in a field notebook, and, when warranted, provide photographic documentation of specific sampling efforts. Field notes will include a description of the field activity, sample descriptions, and associated details such as the date, time, and field conditions.

A.1.4 IDW Management

Investigation derived waste (IDW) generated during the field program will be placed in labeled United States Department of Transportation-approved drums pending the analytical results to determine appropriate disposal. The drums will be temporarily consolidated onsite, profiled based on available analytical data, and disposed appropriately at a permitted off-site disposal facility.

A.2 Quality Assurance Project Plan

This QAPP identifies QC procedures and criteria required to ensure that data collected during the field program are of known quality and acceptable to achieve project objectives. Specific protocols and criteria are also set forth in this QAPP for a data quality evaluation, upon the completion of data collection, to determine the level of completeness and usability of the data. It is the responsibility of the project personnel performing or overseeing the sampling and analysis activities to adhere to the requirements of the SAP and this QAPP.

A.2.1 Purpose of the QAPP

As stated in Ecology's *Guidelines for Preparation of Quality Assurance Project Plans for Environmental Studies* (Ecology Publication No. 04-03-030, revised December 2016), the specific goals of this QAPP are as follows:

- Focus the project coordinator and project team to factors affecting data quality during the planning stage of the project.
- Facilitate communication among field, laboratory, and management staff as the project progresses.
- Document the planning, implementation, and assessment procedures for QA/QC activities for the investigation.
- Ensure that the Data Quality Objectives (DQOs) are achieved.
- Provide a record of the project to facilitate final report preparation.

The DQOs for the project include both qualitative and quantitative objectives, which define the appropriate type of data and specify the tolerable levels of potential decision errors that will be used as a basis for establishing the quality and quantity of data needed to support the environmental assessment. This QAPP describes both quantitative and qualitative measures of data and details aspects of data collection including analytical methods, QA/QC procedures, and

data quality reviews to ensure that the DQOs are achieved. DQOs dictate data collection rationale, sampling and analysis designs, and sample collection procedures that are presented in the SAP (Section A.1).

A.2.2 Analytical Methods

Chemical analysis of the soil and groundwater samples will be conducted by a laboratory accredited by Ecology, using MTCA-required analytical methods as outlined in Ecology's Guidance (Ecology, 2016), as follows:

- Northwest Method NWTPH-Gx for gasoline-range TPH
- Northwest Method NWTPH-Dx for diesel- and oil-range TPH, with and without silica gel cleanup
- EPA Method 8260 for VOCs
- EPA Method 8270 for PAHs, including cPAHs
- EPA 6000/7000 Series for metals
- VPH/EPH for volatile and extractable petroleum hydrocarbons

Chemical analysis of soil gas samples will be conducted using the following methods:

- Massachusetts Department of Environmental Protection (MDEP) Method for air-phase petroleum hydrocarbons (APH) using
- EPA Method TO-15 for VOCs

The quality control procedures specified by these methods will be implemented by the laboratory in accordance with their internal QC standards (lab method blanks, spikes, etc.) to ensure that the analytical results are of known quality, as discussed further in this QAPP.

A.2.2.1 Method Detection Limit and Method Reporting Limit

The method detection limit (MDL) is the minimum concentration of a compound that can be measured and reported with a 99 percent confidence that the analyte concentration is greater than zero. MDLs are established by the laboratory using prepared samples, not samples of environmental media.

The method reporting limit (MRL) is defined as the lowest concentration at which a chemical can be accurately and reproducibly quantified, within specified limits of precision and accuracy, for a given environmental sample. The MRL can vary from sample to sample depending on sample size, sample dilution, matrix interferences, moisture content, and other sample-specific conditions. As a minimum requirement for organic analyses, the MRL should be equal to or greater than the concentration of the lowest calibration standard in the initial calibration curve and equal to or, preferably less than, the project screening levels. The expected MRLs for each method and contaminant of potential concern are summarized in Tables 5a to 5c of the RIWP. MRLs are operationally equivalent to practical quantitation limits (PQLs) as defined in MTCA.

A.2.3 Measurement Quality Objectives

Measurement quality objectives (MQOs), including the Measurement Quality Indicators (MQIs)—precision, accuracy, representativeness, comparability, completeness, and sensitivity (namely PARCCS parameters)—and sample-specific reporting limits (RLs) are dictated by the project requirements and intended uses of the data. For this project, the analytical data must be of sufficient technical quality to determine whether contaminants are present and, if present, whether their concentrations are greater than or less than applicable screening levels as adjusted for PQLs.

The quality of data generated through the implementation of the field program will be assessed against the MQIs set forth in this QAPP. Specific MQI goals and evaluation criteria (i.e., percent recovery (%R) for accuracy measurements, relative percent difference (RPD) for precision measurements, are defined in Table A.2 along with the MRLs. Definitions of these parameters and the applicable QC procedures are presented below.

A.2.3.1 Precision

Precision measures the reproducibility of measurements under a given set of conditions. Specifically, it is a quantitative measure of the variability of a group of measurements compared with their average values. Analytical precision is measured through matrix spike/matrix spike duplicate (MS/MSD) samples and laboratory control samples/laboratory control sample duplicate (LCS/LCSD) for organic analysis and through laboratory duplicate samples for inorganic analyses.

Analytical precision is quantitatively expressed as the RPD between the LCS/LCSD, MS/MSD, or laboratory duplicate pairs, and is calculated with the following formula:

$$RPD(\%) = 100 \times \frac{|S - D|}{(S + D)/2}$$

where:

- S = analyte concentration in sample
- D = analyte concentration in duplicate sample

Analytical precision measurements will be carried out at a minimum frequency of 1 per 20 samples for each matrix sampled, or 1 per laboratory analysis group. Laboratory precision will be evaluated against laboratory quantitative RPD performance criteria provided with the laboratory's analytical data report. If the control criteria are not met, the laboratory will supply a justification of why the limits were exceeded and implement the appropriate corrective actions. The RPD will be evaluated during data review and validation. The data reviewer will note deviations from the specified limits and will comment on the effect of the deviations on reported data.

A.2.3.2 Accuracy

Accuracy measures the closeness of the measured value to the true value. The accuracy of chemical test results is assessed by "spiking" samples with known standards (surrogates, blank

spikes, labeled compounds, or matrix spikes) and establishing the recovery. Accuracy is quantified as the %R. The closer the %R is to 100 percent, the more accurate the data.

Surrogate, LCS/LCSD, and labeled compound recovery will be calculated as follows:

$$\text{Recovery (\%)} = 100 \times \frac{MC}{SC}$$

where:

- SC = spiked concentration
- MC = measured concentration

MS/MSD percent recovery will be calculated as follows:

$$\text{Recovery (\%)} = 100 \times \frac{(MC - USC)}{SC}$$

where:

- SC = spiked concentration
- MC = measured concentration
- USC = unspiked sample concentration

Accuracy measurements on MS samples will be carried out at a minimum frequency of 1 in 20 samples per matrix analyzed, as applicable to the method. Blank spikes will also be analyzed at a minimum frequency of 1 in 20 samples per matrix analyzed. Surrogate recoveries for organic compounds will be determined for each sample analyzed for respective compounds. Laboratory accuracy will be evaluated against the laboratory's quantitative MS and surrogate spike recovery performance criteria as provided with the laboratory's analytical data report. Labeled compound recoveries for HRMS methods will be evaluated against the method criteria. If the control criteria are not met, the laboratory will supply a justification of why the limits were exceeded and implement the appropriate corrective actions. Percent recoveries will be evaluated during data review and validation, and the data reviewer will comment on the effect of the deviations on the reported data.

A.2.3.3 *Representativeness*

Representativeness measures how closely the measured results reflect the actual concentration or distribution of the chemical compounds in the matrix sampled. The SAP sampling techniques and sample handling protocols (e.g., storage, preservation, and use of duplicates and blanks) have been developed to ensure representative samples. Sampling locations are described in Table A.1. The field sampling procedures are described in the SAP (Section A.1).

A.2.3.4 *Comparability*

Comparability is a qualitative parameter expressing the confidence with which one data set can be compared with another. This goal will be achieved through the use of standard techniques to collect samples, EPA-approved standard methods to analyze samples, and consistent units to

report analytical results. Data comparability also depends on data quality. Data of unknown quality cannot be compared.

A.2.3.5 *Completeness*

Completeness is defined as the percentage of measurements made that are judged to be valid. Results will be considered valid if the precision, accuracy, and representativeness objectives are met and if RLs are sufficient for the intended uses of the data. Completeness is calculated as follows:

$$\text{Completeness (\%)} = 100 \times \frac{V}{P}$$

where:

- V = number of valid measurements
- P = number of measurements taken

Valid and invalid data (i.e., data qualified with the R flag [rejected]) will be identified during data validation. The target completeness goal for this project is 95 percent.

A.2.3.6 *Sensitivity*

Sensitivity depicts the level of ability an analytical system (i.e., sample preparation and instrumental analysis) has in detecting a target component in a given sample matrix with a defined level of confidence. Factors affecting the sensitivity of an analytical system include: analytical system background (e.g., laboratory artifact or method blank contamination), sample matrix (e.g., mass spectrometry ion ratio change, co-elution of peaks, or baseline elevation), and instrument instability.

A.2.4 *Quality Control Procedures*

Field and laboratory QC procedures are outlined below.

A.2.4.1 *Field Quality Control*

Beyond use of standard sampling and decontamination protocols defined in the SAP, field QC procedures include maintaining the field instruments. Field instruments (e.g., YSI or equivalent meter for measuring field parameters during groundwater sampling, PID for measuring headspace volatiles during soil sampling) are maintained and calibrated regularly prior to use, in accordance with manufacturer recommendations.

In addition, field QC samples will be collected and submitted for analyses to monitor the precision and accuracy associated with field procedures. Field QC samples to be collected and analyzed for this investigation include trip blanks and field duplicates. The definition and sampling requirements for field QC samples are presented below.

A.2.4.1.1 Trip Blank

Trip blank samples will be used to monitor possible VOC cross-contamination occurring during sample transport. Trip blank samples are prepared and supplied by the laboratory using organic-free reagent-grade water into a VOC vial prior to the collection of field samples. The trip blank sample vials are placed with and accompany the VOC and gasoline-range TPH samples through the entire transporting process. One trip blank will be collected for each soil sampling round and each groundwater sampling round, where VOC or gasoline-range TPH analyses are conducted.

In case a target compound is present in a trip blank, results for all samples shipped with this trip blank will be evaluated and data qualified accordingly if determined that the results are affected.

A.2.4.1.2 Field Duplicate

Field duplicate samples are used to check for sampling and analysis reproducibility; however, the field duplicate sample results include variability introduced during both field sampling and laboratory preparation and analysis, and Ecology data validation guidance provides no specific evaluation criteria for field duplicate samples. Advisory evaluation criteria are set forth at 35 percent for RPD (if both results are greater than five times the RL) and two times the RLs for concentration difference (if either result is less than five times the RL) between the original and field duplicate results.

Field duplicates will be submitted “blind” to the laboratory as discrete samples (i.e., given unique sample identifiers to keep the duplicate identity unknown to the laboratory), but will be clearly identified in the field log. Field duplicate samples will be collected at a frequency of 5 percent (1 per 20) of the field samples for each matrix (soil and groundwater) and analytical method, but not less than one duplicate per sampling event per matrix.

If a given soil sample depth interval lacks sufficient volume (recovery) to supply material for a planned analysis and its field duplicate analysis, the field duplicate aliquot will be collected for that analysis from another depth interval in that same location if practical.

A.2.4.2 Laboratory Quality Control

The laboratories’ analytical procedures must meet requirements specified in the respective analytical methods or approved laboratory standard operating procedures (SOPs), such as instrument performance check, initial calibration, calibration check, blanks, surrogate spikes, internal standards, and/or labeled compound spikes. Specific laboratory QC analyses required for this project will consist of the following at a minimum:

- Instrument tuning, instrument initial calibration, and calibration verification analyses as required in the analytical methods and the laboratory SOPs.
- Laboratory and/or instrument method blank measurements at a minimum frequency of 5 percent (1 per 20 samples) or in accordance with method requirements, whichever is more frequent.
- Accuracy and precision measurements as defined in Table A.2, at a minimum frequency of 5 percent (1 per 20 samples) or in accordance with method requirements, whichever is

more frequent. In cases where a pair of MS/MSD or MS/laboratory duplicate analyses are not performed on a project sample, a set of LCS/LCSD analyses will be performed to provide sufficient measures for analytical precision and accuracy evaluation.

The laboratories' QA officers are responsible for ensuring that the laboratory implements the internal QC and QA procedures detailed in each laboratory's Quality Assurance Manual.

A.2.4.2.1 Preventative Maintenance Procedures and Schedules

Preventative maintenance in the laboratories will be the responsibility of each laboratory's personnel and analysts. This maintenance includes routine care and cleaning of instruments and inspection and monitoring of carrier gases, solvents, and sampleware used in analyses. Details of the maintenance procedures are addressed in the respective laboratory SOPs.

Precision and accuracy data are examined for trends and excursions beyond control limits to determine evidence of instrument malfunction. Maintenance will be performed when an instrument begins to change as indicated by the degradation of peak resolution, shift in calibration curves, decrease in sensitivity, or failure to meet one or another of the method-specific QC criteria.

Maintenance and calibration of instruments used in the field for sampling (e.g., YSI meter for measuring field parameters during groundwater sampling) will be conducted regularly in accordance with manufacturer recommendations prior to use.

A.2.4.2.2 Performance and System Audits

The Black River project coordinator has responsibility for reviewing the performance of the laboratory QA program; this review will be achieved through regular contact with the analytical laboratory's project manager. To ensure comparable data, all samples of a given matrix to be analyzed by each specified analytical method will be processed consistently by the same analytical laboratory.

A.2.4.2.3 Corrective Actions

If routine QC audits by the laboratories result in detection of unacceptable conditions or data, actions specified in each of the laboratory's SOPs will be taken. Specific corrective actions are outlined in each SOP used and can include the following:

- Identifying the source of the violation
- Reanalyzing samples if hold time criteria permit
- Resampling and analyzing
- Evaluating and amending sampling and analytical procedures
- Accepting but qualifying data to indicate the level of uncertainty

If unacceptable conditions occur, the laboratory will contact Black River's project coordinator to discuss the issues and determine the appropriate corrective action. Corrective actions taken by the laboratory during analysis of samples for this project will be documented by the laboratory in the case narrative associated with the affected samples.

In addition, Black River will review the laboratory data generated for this investigation to ensure that project DQOs are met. If the review indicates that non-conformances in the data have resulted from field sampling or documentation procedures or laboratory analytical or documentation procedures, the impact of those non-conformances on the overall project data usability will be assessed. Appropriate actions, including re-sampling and/or re-analysis of samples may be recommended to the project coordinator to achieve project objectives.

A.2.5 Data Reduction, Quality Review, and Reporting

All data will undergo a QA/QC evaluation at the laboratories, which will then be reviewed by Black River. Initial data reduction, evaluation, and reporting at each laboratory will be carried out in full compliance with the method requirement and laboratory SOPs. The laboratory internal review will include verification (for correctness and completeness) of the electronic data deliverable (EDD) accompanied with each laboratory report. Black River will verify the completeness and correctness of all laboratory deliverables (i.e., laboratory report and EDDs) before releasing the deliverables for data validation.

A.2.5.1 *Minimum Data Reporting Requirements*

The following sections specify general and specific requirements for analytical data reporting to provide sufficient deliverables for project documentation and data quality assessment.

A.2.5.1.1 **General Requirements**

The following requirements apply to laboratory reports for all types of analyses:

- A laboratory report will include a cover page signed by the laboratory director, the laboratory QA officer, or his/her designee to certify the eligibility of the reported contents and the conformance with applicable analytical methodology.
- Definitions of abbreviations, data flags, and data qualifiers used in the report.
- Cross reference of field sample names and laboratory sample identity for all samples in the sample delivery group (SDG).
- Completed COC document signed and dated by parties who acquired and received the samples.
- Completed sample receipt document with record of cooler temperature and sample conditions upon receipt at the laboratory. Anomalies such as inadequate sample preservation, inconsistent bottle counts, and sample container breakage, and the communication record and corrective actions in response to the anomalies will be documented and incorporated in the sample receipt document. The document will be initialed and dated by personnel that complete the document.
- Case narrative that addresses any anomalies or QC outliers in relation to sample receiving, sample preparation, and sample analysis on samples in the SDG. The narrative will be presented separately for each analytical method and each sample matrix.

- All pages in the report are to be paginated. Any insertion of pages after the laboratory report is issued will be paginated with starting page number suffixed with letters (e.g., pages inserted between pages 134 and 135 should be paginated as 134A, 134B, etc.)
- Any resubmitted or revised report pages will be submitted to Black River with a cover page stating the reason(s) and scope of the resubmission or revision, and signed by the laboratory director, QA officer, or the designee.

A.2.5.1.2 Specific Requirements

The following presents specific requirements for laboratory reports:

- **Sample results:** Sample results will be evaluated and reported down to the MDLs if the MRLs are higher than the most stringent potential screening level. Detections at levels greater than the MDLs but less than the MRLs will be reported and flagged with "J". If sample results are reported to the MRL for a given analyte, non-detect results or results less than the MRL will be reported at the MRL and flagged with "U". If sample results are reported to the MDL for a given analyte, non-detect results or results less than the MDLs will be reported at the MDLs and flagged with "UJ". The report pages for sample results (namely Form 1s) will, at a minimum, include sample results, MRLs, MDLs, units, proper data flags, dates of sample collection, preparation, and analysis, dilution factor, and sample volume (used for analysis).
- **Instrument run log:** The run log will list, in chronological order, all analytical runs on field samples, QC samples, calibrations, and calibration verification analyses in the SDG with data file name (and/or legible laboratory codes) and analysis date/time for each analytical run.
- **Original sample preparation and analyst worksheet:** The worksheet will be initialed and dated by analyst and reviewer.
- **Gas Chromatography/Mass Spectrometry (GC/MS) and ICP/MS tune report:** The report will include ion abundance ratios and criteria for all required ions.
- **Initial calibration summary:** The summary will include the data file name for each calibration standard file; response factor or calibration factor for each calibration standard and each target and surrogate compound; average response factor or calibration factor, percent relative standard deviation, correlation coefficient, or coefficient of determination; and absolute and relative retention times and ion ratios for high-resolution GC/MS (HRGC/HRMS) methods for each target compound, surrogate (labeled) compounds, and/or extracted internal standard (EIS) compounds.
- **Calibration verification summary:** The summary will include the true amount, calculated amount, and percent difference or percent drift as applicable for target compounds.
- **Method blank results** will be included.
- **LCS and LCSD** (if MSD analysis is not performed) results with laboratory acceptance criteria for %R and RPD.

- Surrogate spike or EIS spike and labeled compound results with laboratory acceptance criteria for %R.
- MS and MSD results with laboratory acceptance criteria for %R and RPD (such as, for metals and SVOCs analysis). In cases where MS/MSD analyses were not performed on a project sample, LCS/LCSD analyses should be performed and reported instead.
- Laboratory duplicate results with RPD and acceptance criteria
- Internal standard (as applicable) results: Internal standard response areas in field samples, QC analyses, and associated calibration verification analyses.
- Interference check standards
- Serial dilutions (metals)

A.2.5.2 Data Quality Verification

Reported analytical results will be qualified by the laboratory to identify QC concerns in accordance with the specifications of the analytical methods. Additional laboratory data qualifiers may be defined and reported by the laboratory to more completely explain QC concerns regarding a particular sample result. All data qualifiers will be defined in the laboratory's narrative reports associated with each case.

Data qualifiers will be assigned based on the outcome of the data validation:

- **U** - The analyte was analyzed for but was determined to be non-detect above the reported sample quantitation limit, or the quantitation limit was raised to the concentration found in the sample due to blank contamination.
- **J** - The reported concentration is an estimate of the concentration of the analyte in the sample. E.g., the analyte was positively identified at levels greater than the MDLs but less than the MRLs.
- **UJ** - The analyte was not detected above the reported quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
- **H** - The sample was analyzed outside the method-specified holding time requirement.
- **R** - The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet QC criteria. The presence or absence of the analyte cannot be verified.
- **DNR** - Do not report from this analysis; the result for this analyte is to be reported from an alternative analysis.

In cases of multiple analyses (such as an undiluted and a diluted analysis) performed on one sample, the optimal result will be determined and only the determined result will be reported for the sample.

A.2.5.3 Data and Records Management

Records will be maintained documenting all activities and data related to field sampling and chemical analyses.

A.2.5.3.1 Field Documentation

The Black River field manager will ensure that the field team receives and understands the final approved version of this QAPP, the Site Health and Safety Plan, and the SAP prior to initiation of field activities and that all approved plans are followed at all times. Field documents will be maintained in the project file.

A.2.5.3.2 Analytical Data Management

Raw data received from the analytical laboratory in EDD format will be reviewed, entered into a computerized database, and verified for consistency and correctness. The database will be updated based on data review and independent validation if necessary.

The following data will be included in the database:

- Laboratory analytical results, including laboratory data qualifiers
- Data validator qualifiers
- Sample location name and coordinates
- Sample media (i.e., groundwater or soil)
- Sample date
- Sample ID
- Sample fraction (e.g., total or dissolved phase)
- Sample type (e.g., parent, field duplicate, field blank, equipment blank, or dilution)
- Calculated values, such as the total toxic equivalency for carcinogenic polycyclic aromatic hydrocarbons

Data will be submitted to Ecology's Environmental Information Management (EIM) database once data have been reviewed and validated.

References

Washington State Department of Ecology (Ecology), 2016, Guidelines for Preparing Quality Assurance Project Plans for Environmental Studies, Ecology, No. 04-03-030.

TABLES

APPENDIX A

Table A-1. Summary of Proposed Explorations

Remedial Investigation Work Plan, Appendix A. SAP QAPP | Estelita's Library Solidarity House Affordable Housing Development Project

Location Name	Location Description	Exploration Type & Drilling Method	Anticipated Total Depth (bgs)	Anticipated Screen Interval (bgs)	Media to be Sampled	Rationale/Purpose
Soil and Groundwater Characterization						
B-13	<u>On-Property</u> Inside detached garage of 1615 Residence, approximately 20 feet north-northwest of the former waste oil UST	Boring, Direct Push Drilling	20 feet	--	Soil	Assess northern extent of soil impacts from the waste oil UST release; assess potential source area in detached garage of 1615 Residence.
B-14	<u>On-Property</u> Inside detached garage of 1615 Residence, approximately 30 feet north-northwest of former waste oil UST	Boring, Direct Push Drilling	20 feet	--	Soil	Assess northern extent of soil impacts from the waste oil UST release; assess potential source area in detached garage of 1615 Residence; assess southeastern extent of soil impacts from refueling UST release area.
B-15	<u>On-Property</u> At gas station source area, near former gasoline refueling USTs/pump islands	Boring, Direct Push Drilling	20 feet	--	Soil	Collect soil sample(s) for EPH/VPH analysis to support development of Method B screening levels for TPH.
B-16	<u>On-Property</u> At gas station source area, near former gasoline refueling USTs/pump islands	Boring, Direct Push Drilling	20 feet	--	Soil	Collect soil sample(s) for EPH/VPH analysis to support development of Method B screening levels for TPH.
B-17	<u>On-Property</u> At gas station source area, near former gasoline refueling USTs/pump islands	Boring, Direct Push Drilling	20 feet	--	Soil	Collect soil sample(s) for EPH/VPH analysis to support development of Method B screening levels for TPH.
MW-12	<u>Off-Property</u> East-side of 17th Ave S near Stevens Place Park, approximately 50 feet south-southeast of AMW-11	Monitoring Well, Sonic Drilling	40 feet	20 to 35 feet	Soil, Groundwater	Assess southern/crossgradient extent of LNAPL and soil and groundwater impacts.
MW-13	<u>Off-Property</u> East-side of Beacon Ave S, approximately 120 feet east of AMW-11 and 40 feet south-southeast of AMW-09	Monitoring Well, Sonic Drilling	40 feet	20 to 35 feet	Soil, Groundwater	Assess southeastern/crossgradient extent of soil and groundwater impacts.
MW-14	<u>Off-Property</u> South-side of S Forest St, approximately 120 feet northeast of AMW-09 (downgradient)	Monitoring Well, Sonic Drilling	40 feet	20 to 35 feet	Soil, Groundwater	Assess northeastern/downgradient extent of soil and groundwater impacts.
MW-15	<u>Off-Property</u> West-side of Beacon Ave S, approximately 60 feet north-northwest of AMW-07	Monitoring Well, Sonic Drilling	40 feet	20 to 35 feet	Soil, Groundwater	Assess northern/crossgradient extent of LNAPL and soil and groundwater impacts.
MW-16	<u>Off-Property</u> North-side of S Forest St, approximately 90 feet north of AMW094 and 90 feet west of AMW-07	Monitoring Well, Sonic Drilling	40 feet	15 to 30 feet	Soil, Groundwater	Assess northwestern/crossgradient extent of LNAPL and soil and groundwater impacts.
MW-17	<u>On-Property</u> Driveway of 1615 Residence, approximately 20 feet west of AMW-01	Boring, Direct Push Drilling	20 feet	--	Soil	Assess eastern extent of impacts from refueling UST area and eastern extent of LNAPL.

Table A-1. Summary of Proposed Explorations

Remedial Investigation Work Plan, Appendix A. SAP QAPP | Estelita's Library Solidarity House Affordable Housing Development Project

Location Name	Location Description	Exploration Type & Drilling Method	Anticipated Total Depth (bgs)	Anticipated Screen Interval (bgs)	Media to be Sampled	Rationale/Purpose
Vapor Intrusion Evaluation						
SS-04	Off-Property Basement of the 1615 Residence	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the 1615 Residence building.
SS-05	Off-Property Basement of the 1615 Residence	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the 1615 Residence building.
SS-06	Off-Property Basement of the 1615 Residence	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the 1615 Residence building.
SS-07	Off-Property Basement or crawlspace of the 2911 Rooming House	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the 2911 Rooming House building.
SS-08	Off-Property Basement or crawlspace of the 2911 Rooming House	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the 2911 Rooming House building.
SS-09	Off-Property Basement or crawlspace of the 2911 Rooming House	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the 2911 Rooming House building.
SS-10	Off-Property Basement or crawlspace of the 2911 Rooming House	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the 2911 Rooming House building.
SS-11	Off-Property Southeast corner of SPL Beacon Hill Branch building	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the SPL Beacon Hill Branch building.
SS-12	Off-Property South-central area of SPL Beacon Hill Branch building	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the SPL Beacon Hill Branch building.
SS-13	Off-Property Inside SPL Beacon Hill Branch building, northwest of SS-11	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the SPL Beacon Hill Branch building.
SS-14	Off-Property Inside SPL Beacon Hill Branch building, northwest of SS-12	Temporary Soil Gas Point	Subslab	--	Soil Gas	Assess vapor intrusion risk at the SPL Beacon Hill Branch building.

Notes

- bgs = below ground surface
- UST = underground storage tank
- EPH/VPH = extractable petroleum hydrocarbons/volatile petroleum hydrocarbons
- TPH = total petroleum hydrocarbons
- LNAPL = light non-aqueous phase liquid



Table A-2 - Quality Control Parameters

Remedial Investigation Work Plan, Appendix A. SAP QAPP | Estelita's Library Solidarity House Project

Data Quality Indicator	Quality Control Parameters
Precision	RPD values of:
	1) Blank spikes
	2) Matrix spike/matrix spike duplicate (MS/MSD)
	3) Field duplicates
Accuracy/Bias	Percent Recovery (%R) or Relative Percent Difference (%PRD) values of:
	1) Initial calibration and calibration verification
	2) Blank spikes
	3) MS
	4) Surrogate spikes
	Results of:
	1) Instrument and calibration blank
	2) Method (preparation) blank
Representativeness	Results of all blanks
	Sample integrity (chain-of-custody and sample receipt forms)
	Holding times
Comparability	Sample-specific reporting limits
	Sample collection methods
	Laboratory analytical methods
Completeness	Data qualifiers
	Laboratory deliverables
	Requested/reported valid results
Sensitivity	Method Detection Limits (MDLs) and Method Reporting Limits (MRLs)

APPENDIX B

INADVERTENT DISCOVERY PLAN



INADVERTENT DISCOVERY PLAN PLAN AND PROCEDURES FOR THE DISCOVERY OF CULTURAL RESOURCES AND HUMAN SKELETAL REMAINS

To request ADA accommodation, including materials in a format for the visually impaired, call Ecology at 360-407-6000 or visit <https://ecology.wa.gov/accessibility>. People with impaired hearing may call Washington Relay Service at 711. People with a speech disability may call TTY at 877-833-6341.

Site Name(s):

Location:

Project Lead/Organization:

County:

If this Inadvertent Discovery Plan (IDP) is for multiple (batched) projects, ensure the location information covers all project areas.

1. INTRODUCTION

The IDP outlines procedures to perform in the event of a discovery of archaeological materials or human remains, in accordance with applicable state and federal laws. An IDP is required, as part of Agency Terms and Conditions for all grants and loans, for any project that creates disturbance above or below the ground. An IDP is not a substitute for a formal cultural resource review (Executive 21-02 or Section 106).

Once completed, **the IDP should always be kept at the project site** during all project activities. All staff, contractors, and volunteers should be familiar with its contents and know where to find it.

2. CULTURAL RESOURCE DISCOVERIES

A cultural resource discovery could be prehistoric or historic. Examples include (see images for further examples):

- An accumulation of shell, burned rocks, or other food related materials.
- Bones, intact or in small pieces.
- An area of charcoal or very dark stained soil with artifacts.
- Stone tools or waste flakes (for example, an arrowhead or stone chips).
- Modified or stripped trees, often cedar or aspen, or other modified natural features, such as rock drawings.
- Agricultural or logging materials that appear older than 50 years. These could include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, and many other items.
- Clusters of tin cans or bottles, or other debris that appear older than 50 years.
- Old munitions casings. **Always assume these are live and never touch or move.**
- Buried railroad tracks, decking, foundations, or other industrial materials.
- Remnants of homesteading. These could include bricks, nails, household items, toys, food containers, and other items associated with homes or farming sites.

The above list does not cover every possible cultural resource. When in doubt, assume the material is a cultural resource.

3. ON-SITE RESPONSIBILITIES

If any employee, contractor, or subcontractor believes that they have uncovered cultural resources or human remains at any point in the project, take the following steps to **Stop-Protect-Notify**. **If you suspect that the discovery includes human remains, also follow Sections 5 and 6.**

STEP A: Stop Work.

All work must stop immediately in the vicinity of the discovery.

STEP B: Protect the Discovery.

Leave the discovery and the surrounding area untouched and create a clear, identifiable, and wide boundary (30 feet or larger) with temporary fencing, flagging, stakes, or other clear markings. Provide protection and ensure integrity of the discovery until cleared by the Department of Archaeological and Historical Preservation (DAHP) or a licensed, professional archaeologist.

Do not permit vehicles, equipment, or unauthorized personnel to traverse the discovery site. Do not allow work to resume within the boundary until the requirements of this IDP are met.

STEP C: Notify Project Archaeologist (if applicable).

If the project has an archaeologist, notify that person. If there is a monitoring plan in place, the archaeologist will follow the outlined procedure.

STEP D: Notify Project and Washington Department of Ecology (Ecology) contacts.

Project Lead Contacts

Primary Contact

Name:

Organization:

Phone:

Email:

Alternate Contact

Name:

Organization:

Phone:

Email:

Ecology Contacts (completed by Ecology Project Manager)

Ecology Project Manager

Name:

Program:

Phone:

Email:

Alternate or Cultural Resource Contact

Name:

Program:

Phone:

Email:

STEP E: Ecology will notify DAHP.

Once notified, the Ecology Cultural Resource Contact or the Ecology Project Manager will contact DAHP to report and confirm the discovery. To avoid delay, the Project Lead/Organization will contact DAHP if they are not able to reach Ecology.

DAHP will provide the steps to assist with identification. DAHP, Ecology, and Tribal representatives may coordinate a site visit following any necessary safety protocols. DAHP may also inform the Project Lead/Organization and Ecology of additional steps to further protect the site.

Do not continue work until DAHP has issued an approval for work to proceed in the area of, or near, the discovery.

DAHP Contacts:

Name: Rob Whitlam, PhD
Title: State Archaeologist
Cell: 360-890-2615
Email: Rob.Whitlam@dahp.wa.gov
Main Office: 360-586-3065

Human Remains/Bones:

Name: Guy Tasa, PhD
Title: State Anthropologist
Cell: 360-790-1633 (24/7)
Email: Guy.Tasa@dahp.wa.gov

4. TRIBAL CONTACTS

In the event cultural resources are discovered, the following tribes will be contacted. See Section 10 for Additional Resources.

Tribe:	Tribe:
Name:	Name:
Title:	Title:
Phone:	Phone:
Email:	Email:
Tribe:	Tribe:
Name:	Name:
Title:	Title:
Phone:	Phone:
Email:	Email:

Please provide contact information for additional tribes within your project area, if needed, in Section 11.

5. FURTHER CONTACTS (if applicable)

If the discovery is confirmed by DAHP as a cultural or archaeological resource, or as human remains, and there is a partnering federal or state agency, Ecology or the Project Lead/Organization will ensure the partnering agency is immediately notified.

Federal Agency:

Agency:

Name:

Title:

Phone:

Email:

State Agency:

Agency:

Name:

Title:

Phone:

Email:

6. SPECIAL PROCEDURES FOR THE DISCOVERY OF HUMAN SKELETAL MATERIAL

Any human skeletal remains, regardless of antiquity or ethnic origin, will at all times be treated with dignity and respect. Follow the steps under **Stop-Protect-Notify**. For specific instructions on how to handle a human remains discovery, see: [RCW 68.50.645: Skeletal human remains—Duty to notify—Ground disturbing activities—Coroner determination—Definitions.](#)

Suggestion: If you are unsure whether the discovery is human bone or not, contact Guy Tasa with DAHP, for identification and next steps. Do not pick up the discovery.

Guy Tasa, PhD State Physical Anthropologist

Guy.Tasa@dahp.wa.gov

(360) 790-1633 (Cell/Office)

For discoveries that are confirmed or suspected human remains, follow these steps:

1. Notify law enforcement and the Medical Examiner/Coroner using the contacts below. **Do not call 911** unless it is the only number available to you.

Enter contact information below (required):

- Local Medical Examiner or Coroner name and phone:

 - Local Law Enforcement main name and phone:

 - Local Non-Emergency phone number (911 if without a non-emergency number):
2. The Medical Examiner/Coroner (with assistance of law enforcement personnel) will determine if the remains are human or if the discovery site constitutes a crime scene and will notify DAHP.
 3. **DO NOT speak with the media, allow photography or disturbance of the remains, or release any information about the discovery on social media.**
 4. If the remains are determined to be non-forensic, Cover the remains with a tarp or other materials (not soil or rocks) for temporary protection and to shield them from being photographed by others or disturbed.

Further activities:

- Per [RCW 27.44.055](#), [RCW 68.50](#), and [RCW 68.60](#), DAHP will have jurisdiction over non-forensic human remains. Ecology staff will participate in consultation. Organizations may also participate in consultation.
- Documentation of human skeletal remains and funerary objects will be agreed upon through the consultation process described in [RCW 27.44.055](#), [RCW 68.50](#), and [RCW 68.60](#).
- When consultation and documentation activities are complete, work in the discovery area may resume as described in Section 8.

If the project occurs on federal lands (such as a national forest or park or a military reservation) the provisions of the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA) apply and the responsible federal agency will follow its provisions. Note that state highways that cross federal lands are on an easement and are not owned by the state.

If the project occurs on non-federal lands, the Project Lead/Organization will comply with applicable state and federal laws, and the above protocol.

7. DOCUMENTATION OF ARCHAEOLOGICAL MATERIALS

Archaeological resources discovered during construction are protected by state law [RCW 27.53](#) and assumed eligible for inclusion in the National Register of Historic Places under Criterion D until a formal Determination of Eligibility is made.

The Project Lead/Organization must ensure that proper documentation and field assessment are made of all discovered cultural resources in cooperation with all parties: the federal agencies (if any), DAHP, Ecology, affected tribes, and the archaeologist.

The archaeologist will record all prehistoric and historic cultural material discovered during project construction on a standard DAHP archaeological site or isolate inventory form. They will photograph site overviews, features, and artifacts and prepare stratigraphic profiles and soil/sediment descriptions for minimal subsurface exposures. They will document discovery locations on scaled site plans and site location maps.

Cultural features, horizons, and artifacts detected in buried sediments may require the archaeologist to conduct further evaluation using hand-dug test units. They will excavate units in a controlled fashion to expose features, collect samples from undisturbed contexts, or to interpret complex stratigraphy. They may also use a test unit or trench excavation to determine if an intact occupation surface is present. They will only use test units when necessary to gather information on the nature, extent, and integrity of subsurface cultural deposits to evaluate the site's significance. They will conduct excavations using standard archaeological techniques to precisely document the location of cultural deposits, artifacts, and features.

The archaeologist will record spatial information, depth of excavation levels, natural and cultural stratigraphy, presence or absence of cultural material, and depth to sterile soil, regolith, or bedrock for each unit on a standard form. They will complete test excavation unit level forms, which will include plan maps for each excavation level and artifact counts and material types, number, and vertical provenience (depth below

surface and stratum association where applicable) for all recovered artifacts. They will draw a stratigraphic profile for at least one wall of each test excavation unit.

The archaeologist will screen sediments excavated for purposes of cultural resources investigation through 1/8-inch mesh, unless soil conditions warrant 1/4-inch mesh.

The archaeologist will analyze, catalogue, and temporarily curate all prehistoric and historic artifacts collected from the surface and from probes and excavation units. The ultimate disposition of cultural materials will be determined in consultation with the federal agencies (if any), DAHP, Ecology, and the affected tribe(s).

Within 90 days of concluding fieldwork, the archaeologist will provide a technical report describing any and all monitoring and resultant archaeological excavations to the Project Lead/Organization, who will forward the report to Ecology, the federal agencies (if any), DAHP, and the affected tribe(s) for review and comment.

If assessment activities expose human remains (burials, isolated teeth, or bones), the archaeologist and Project Lead/Organization will follow the process described in **Section 6**.

8. PROCEEDING WITH WORK

The Project Lead/Organization shall work with the archaeologist, DAHP, and affected tribe(s) to determine the appropriate discovery boundary and where work can continue.

Work may continue at the discovery location only after the process outlined in this plan is followed and the Project Lead/Organization, DAHP, any affected tribe(s), Ecology, and the federal agencies (if any) determine that compliance with state and federal laws is complete.

9. ORGANIZATION RESPONSIBILITY

The Project Lead/Organization is responsible for ensuring:

- This IDP has complete and accurate information.
- This IDP is immediately available to all field staff at the sites and available by request to any party.
- This IDP is implemented to address any discovery at the site.
- That all field staff, contractors, and volunteers are instructed on how to implement this IDP.

10. ADDITIONAL RESOURCES

Informative Video

Ecology recommends that all project staff, contractors, and volunteers view this informative video explaining the value of IDP protocol and what to do in the event of a discovery. The target audience is anyone working on the project who could unexpectedly find cultural resources or human remains while excavating or digging. The video is also posted on DAHP's inadvertent discovery language website.

[Ecology's IDP Video](https://www.youtube.com/watch?v=ioX-4cXfbDY) (<https://www.youtube.com/watch?v=ioX-4cXfbDY>)

Informational Resources

[DAH P \(https://dahp.wa.gov\)](https://dahp.wa.gov)

[Washington State Archeology \(DAH P 2003\)](https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch_0.pdf)

[\(https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch_0.pdf\)](https://dahp.wa.gov/sites/default/files/Field%20Guide%20to%20WA%20Arch_0.pdf)

[Association of Washington Archaeologists \(https://www.archaeologyinwashington.com\)](https://www.archaeologyinwashington.com)

Potentially Interested Tribes

[Interactive Map of Tribes by Area](https://dahp.wa.gov/archaeology/tribal-consultation-information)

[\(https://dahp.wa.gov/archaeology/tribal-consultation-information\)](https://dahp.wa.gov/archaeology/tribal-consultation-information)

[WSDOT Tribal Contact Website](https://wsdot.wa.gov/tribal/TribalContacts.htm)

[\(https://wsdot.wa.gov/tribal/TribalContacts.htm\)](https://wsdot.wa.gov/tribal/TribalContacts.htm)

11. ADDITIONAL INFORMATION

Please add any additional contact information or other information needed within this IDP.

Implement the IDP if you see...

Chipped stone artifacts.

Examples are:

- Glass-like material.
- Angular material.
- “Unusual” material or shape for the area.
- Regularity of flaking.
- Variability of size.



Stone artifacts from Oregon.



Stone artifacts from Washington.



Biface-knife, scraper, or pre-form found in NE Washington. Thought to be a well knapped object of great antiquity. Courtesy of Methow Salmon Rec. Foundation.

Implement the IDP if you see...

Ground stone artifacts.

Examples are:

- Unusual or unnatural shapes or unusual stone.
- Striations or scratching.
- Etching, perforations, or pecking.
- Regularity in modifications.
- Variability of size, function, or complexity.



Above: Fishing Weight - credit [CRITFC Treaty Fishing Rights website](#).



Artifacts from unknown locations (left and right images).



Implement the IDP if you see...

Bone or shell artifacts, tools, or beads.

Examples are:

- Smooth or carved materials.
- Unusual shape.
- Pointed as if used as a tool.
- Wedge shaped like a “shoehorn”.
- Variability of size.
- Beads from shell (‘dentalium’) or tusk.



Upper Left: Bone Awls from Oregon.

Upper Center: Bone Wedge from California.

Upper Right: Plateau dentalium choker and bracelet, from Nez Perce National Historical Park, 19th century, made using Antalis pretiosa shells Credit: Nez Perce - Nez Perce National Historical Park, NEPE 8762, Public Domain.

Above: Tooth Pendants. Right: Bone Pendants. Both from Oregon and Washington.



Implement the IDP if you see...

Culturally modified trees, fiber, or wood artifacts.

Examples are:

- Trees with bark stripped or peeled, carvings, axe cuts, de-limbing, wood removal, and other human modifications.
- Fiber or wood artifacts in a wet environment.
- Variability of size, function, and complexity.



Left and Below: *Culturally modified tree and an old carving on an aspen (Courtesy of DAHP).*

Right, Top to Bottom: *Artifacts from Mud Bay, Olympia: Toy war club, two strand cedar rope, wet basketry.*



Implement the IDP if you see...

Strange, different, or interesting looking dirt, rocks, or shells.

Human activities leave traces in the ground that may or may not have artifacts associated with them. Examples are:

- “Unusual” accumulations of rock (especially fire-cracked rock).
- “Unusual” shaped accumulations of rock (such as a shape similar to a fire ring).
- Charcoal or charcoal-stained soils, burnt-looking soils, or soil that has a “layer cake” appearance.
- Accumulations of shell, bones, or artifacts. Shells may be crushed.
- Look for the “unusual” or out of place (for example, rock piles in areas with otherwise few rocks).



Shell Midden pocket in modern fill discovered in sewer trench.



Underground oven. Courtesy of DAHP.

Shell midden with fire cracked rock.



Hearth excavated near Hamilton, WA.

Implement the IDP if you see...

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Agricultural or logging equipment. May include equipment, fencing, canals, spillways, chutes, derelict sawmills, tools, etc.
- Domestic items including square or wire nails, amethyst colored glass, or painted stoneware.



Left: Top to Bottom: *Willow pattern serving bowl and slip joint pocket knife discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*



Right: *Collections of historic artifacts discovered during excavations in eastern Washington cities.*



Implement the IDP if you see...

Historic period artifacts (historic archaeology considered older than 50 years).

Examples are:

- Railway tokens, coins, and buttons.
- Spectacles, toys, clothing, and personal items.
- Items helping to understand a culture or identity.
- Food containers and dishware.



Main Image: *Dishes, bottles, workboot found at the North Shore Japanese bath house (ofuro) site, Courtesy Bob Muckle, Archaeologist, Capilano University, B.C. This is an example of an above ground resource.*



Right, from Top to Bottom: *Coins, token, spectacles and Montgomery Ward pitchfork toy discovered during Seattle Smith Cove shantytown (45-KI-1200) excavation.*



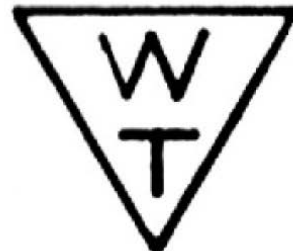
Implement the IDP if you see...

- Old munition casings – if you see ammunition of any type – ***always assume they are live and never touch or move!***
- Tin cans or glass bottles with an older manufacturer's technique – maker's mark, distinct colors such as turquoise, or an older method of opening the container.



Far Left: .303 British cartridge found by a WCC planting crew on Skagit River. Don't ever touch something like this!
Left: Maker's mark on bottom of old bottle.

Right: Old beer can found in Oregon. ACME was owned by Olympia Brewery. Courtesy of Heather Simmons.



Logo employed by Whithall Tatum & Co. between 1924 to 1938 (Lockhart et al. 2016).



Can opening dates, courtesy of W.M. Schroeder.

Implement the IDP if you see...

You see historic foundations or buried structures.

Examples are:

- Foundations.
- Railroad and trolley tracks.
- Remnants of structures.



Counter Clockwise, Left to Right: *Historic structure 45KI924, in WSDOT right of way for SR99 tunnel. Remnants of Smith Cove shantytown (45-KI-1200) discovered during Ecology CSO excavation, City of Spokane historic trolley tracks uncovered during stormwater project, intact foundation of historic home that survived the Great Ellensburg Fire of July 4, 1889, uncovered beneath parking lot in Ellensburg.*

Implement the IDP if you see...

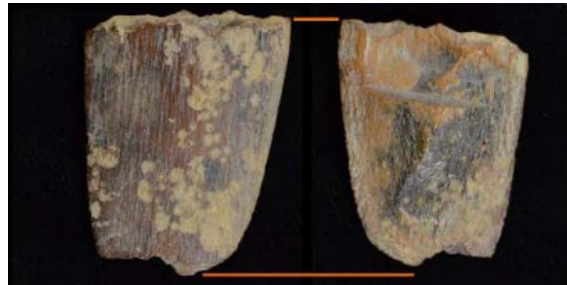
Potential human remains.

Examples are:

- Grave headstones that appear to be older than 50 years.
- Bones or bone tools--intact or in small pieces. It can be difficult to differentiate animal from human so they must be identified by an expert.
- These are all examples of animal bones and are not human.

Center: *Bone wedge tool, courtesy of Smith Cove Shantytown excavation (45KI1200).*

Other images (Top Right, Bottom Left, and Bottom) Center: Courtesy of DAHP.



Directly Above: This is a real discovery at an Ecology sewer project site.

What would you do if you found these items at a site? Who would be the first person you would call?

Hint: Read the plan!

APPENDIX C

HEALTH AND SAFETY PLAN





HEALTH AND SAFETY PLAN

SOLIDARITY HOUSE AFFORDABLE HOUSING DEVELOPMENT

2901 17th Avenue South
Seattle, Washington

Project Number

25009

Date

December 5, 2025

Black River
Environmental, LLC
26311 NE Valley St. #141
Duvall, Washington
425-725-3832
[www.blackriver
environmental.com](http://www.blackriverenvironmental.com)

HEALTH AND SAFETY PLAN

SOLIDARITY HOUSE AFFORDABLE HOUSING DEVELOPMENT

2901 17th Avenue South, Seattle, Washington

Estelita's Library

Project Number

25009

Date

December 5, 2025 | FINAL

Prepared by

Reviewed by



Jessica Smith, LG

Principal Geologist

jessica@blackriverenv.com

12/5/2025:



Ali Cochrane, LG

Associate Geologist

ali@blackriverenv.com

12/5/2025:

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Site Information Overview

Site Location

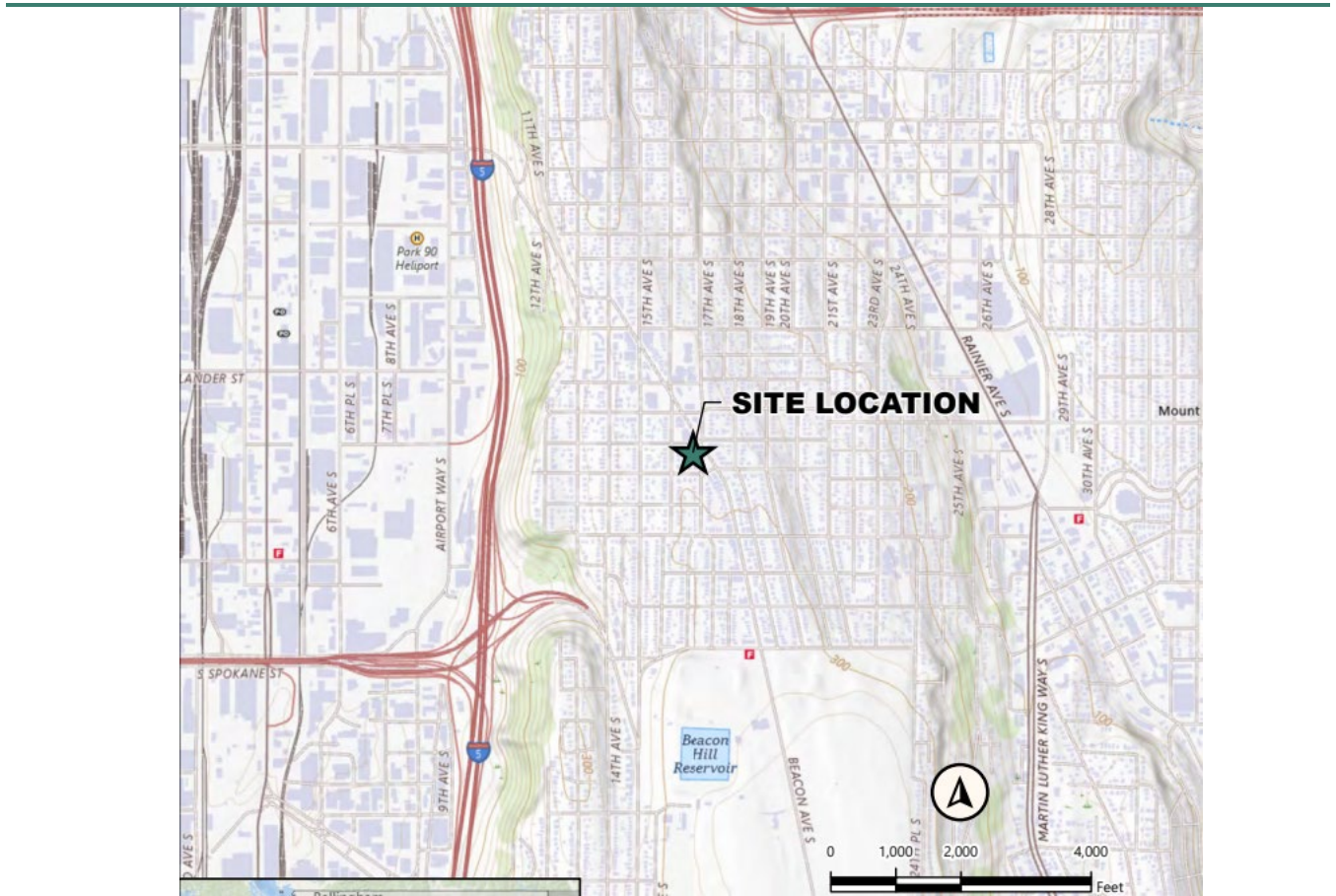


Table 1. General Site Information

Project Name:	Solidarity House Affordable Housing Development
Project Number:	25009
Site Address:	2901 17 th Avenue South Seattle, Washington
Possible Chemicals of Concern:	<ul style="list-style-type: none"> • Gasoline-, diesel- and oil-range TPH • Petroleum-related VOCs, including BTEX • PAHs • Lead • Chromium • Other VOCs, including tetrachloroethene (PCE) in one sample
Minimum Level of Protection:	Level D

Table 2. Emergency Contact Information

Ambulance, Police, Fire	911
Poison Control	800-222-1222
Harborview Hospital – Emergency Room	206-520-5000
Black River Project Manager	Ali Cochrane 206-949-7478
Black River Field Lead	Andrew Yonkofski 404-272-3488
Client Contact	Edwin Lindo 415-342-9009
State Emergency Response Commission (for releases of hazardous substances)	800-258-5990
National Response Center (for releases of hazardous substances)	800-424-8802

Table C. Hospital and Urgent Care Clinic Information

Category	Information
Hospital – Refer to Attachment A for Directions	
Hospital Name	Emergency Room at Harborview Medical Center
Address	325 9 th Ave
City, State Zip	Seattle, WA 98104
Phone	206-520-5000
Urgent Care Clinic – Refer to Attachment B for Directions	
Clinic Name	MultiCare Indigo Urgent Care – Seattle – Rainier Ave.
Address	3820 Rainier Ave S, Suite I
City, State Zip	Seattle, WA 98118
Phone	206-731-7500

Emergency Response Procedures

In the event of an emergency, the following steps should be used a guideline for the response:

1. Secure the scene – Verify that the scene is safe for yourself and/or the victim. Do not endanger your own health or safety to respond to an accident.
2. Call the appropriate emergency number (generally, 911 when cellular service is available). Make sure to provide the following information:
 - Where you are: include address, cross streets, or landmarks
 - Phone number you are calling from
 - What happened: type of injury or accident
 - How many persons need help
 - What is being done for the victim(s)
 - Any possible chemical exposure
3. Have someone retrieve the first aid kit and/or automated external defibrillator (AED); only use an AED if you have been properly trained and are certified to do so.
4. Decontaminate the victim without delaying lifesaving procedures.
5. Administer first aid and cardiopulmonary resuscitation (CPR), if properly trained, until emergency responders arrive.
6. If safety at the scene necessitates an evacuation, the Field Lead should perform a head count to verify all personnel are accounted for.

7. Notify the Field Lead and the Project Manager; the Project Manager will notify the Project Director, Corporate Health and Safety Officer, and the client.
8. Once the victim is under the care of medical professionals, complete the appropriate incident report.

1 Introduction

This project-specific health and safety plan (HASP) establishes procedures and practices to protect employees of Black River Environmental, LLC (Black River) from potential hazards posed by field activities at the Solidarity House Affordable Housing Development (the site). This HASP will be used in conjunction with Black River's Corporate Health and Safety Program. This HASP covers activities with potential exposure to contaminated media during activities at the site. The intent of this HASP is to meet the requirements of the Washington State Division of Occupational Safety and Health (DOSH) Hazardous Waste Site Operations regulation (Washington Administrative Code [WAC] 296-843). It is not intended to address safety practices on construction sites, such as covered in the DOSH Safety Standards for Construction Work (WAC 296-155).

The procedures in this HASP are mandatory for all Black River employees working at this site. A copy of the HASP will be maintained, kept on site, and always made available to Black River employees for review. In this HASP, measures are provided to minimize potential exposure, accidents, and physical injuries that may occur during daily activities and adverse conditions. Contingency arrangements are also provided for emergency situations. Black River will inform its subcontractors working on-site of potential fire, explosion, health, safety, or other hazards associated with planned site activities, and Black River can make available to them this project-specific HASP. **HOWEVER, all subcontractors are solely responsible for preparation of their own HASP, and for the health and safety of their employees.**

Personnel assigned to work at the project site will be required to read this plan and must sign the HASP Acknowledgement Form, included as Attachment C, to confirm that they understand and agree to abide by the provisions of this HASP.

2 Site Information and Background

2.1 Site Description

The Solidarity House Affordable Housing Development project is located at 2901 17th Avenue South in Seattle, Washington in Seattle's Beacon Hill neighborhood. The Subject Property comprises two parcels totaling 120,000 square feet in size, according to tax assessor records (King County parcel nos. 308600-3356 and 308600-3355), as follows:

- Parcel 308600-3356 with address 2901 17th Avenue South is referred to herein as the C L Auto Parcel. This parcel was historically used as two generations of gasoline service

stations between 1939 and 1990, and then as an auto body service and repair shop from 1990 to 2022. Those businesses are now closed, and the existing 2,254-square foot former auto repair building is in use by Estelita's Library as a community gathering space.

- Parcel 308600-3355 with address 1615 South Forest Street is referred to herein as the 1615 Residence Parcel. This parcel is residential with a 920-square foot existing residence and detached garage constructed in 1909. The existing residence is a multi-unit rental, and is currently unoccupied.

Estelita's Library purchased the C L Auto Parcel under Prospective Purchaser Consent Decree (PPCD) no. 25-2-17319-4 dated June 11, 2025, and is in the process of modifying the PPCD to include the 1615 Residence Parcel, which they purchased in 2025. Estelita's Library's planned development, Solidarity House, spans both parcels of the Subject Property and will consist of an affordable housing apartment building with community center.

2.2 Site Background

The 1615 Residence Parcel has been developed with the existing residence and detached garage since their construction in 1909, based on tax assessor records and discussions with the former owner. This is the only identified use and development of the 1615 Residence Parcel.

The C L Auto Parcel was historically used as two generations of gasoline service stations from 1939 to 1990, and subsequently as an auto body service and repair shop from 1990 until 2022. The first generation of gasoline station was Gilmore-branded and operated out of a former structure situated on the northwestern portion of the C L Auto Parcel from 1939 to 1956. The second generation gasoline station was Mobil-branded, which operated out of the existing building from 1956 to 1990. The existing building was also utilized by the subsequent auto body service and repair operation from 1990 to 2022. Historical records indicate that three refueling USTs, one for leaded gasoline and two for unleaded gasoline) and two pump islands were previously situated on the north-northeast portion of the C L Auto Parcel, and were removed in August 1990. Records also show that one 285-gallon capacity waste oil UST is decommissioned-in-place beneath the western wing of the existing building in 2001. All known gasoline refueling infrastructure has been removed.

Soil, groundwater, and soil gas contamination is present on the Subject Property as a result of the historical use of the C L Auto Parcel as gasoline service stations and auto body service and repair shop. Based on the information available at this time, chemicals of potential concern (COPC) in environmental media at the Site include the following:

- Metals: chromium and Lead
- Polycyclic Aromatic Hydrocarbons (PAHs), include naphthalenes

- Gasoline- diesel- and oil-range total Petroleum Hydrocarbons (TPH)
- Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)
- Volatile Organic Compounds (VOCs): tetrachloroethene (PCE)

3 Scope of Work

This HASP was written and/or amended to consider hazards associated with the following activities at the Site:

- Advancement of borings via sonic and direct push drilling and soil sample processing
- Monitoring well drilling, installation, and development
- Groundwater sampling
- Subslab soil gas sampling
- Indoor air sampling

A detailed description of the scope of work can found in the draft Remedial Investigation Work Plan.

4 Personnel Organization and Responsibilities

This section describes the authority and responsibilities of key Black River project personnel. All personnel, including non-Black River personnel at the site, have **STOP WORK AUTHORITY**, which is the authority to stop or suspend work if unsafe conditions arise that pose a health or safety risk or if conditions change that require modification to this HASP.

The contact information for the following key safety personnel are listed in the Site Emergency Overview section at the beginning of this HASP; their roles are summarized in Table 3 below.

Table 3. Black River Personnel Organization

Team Member	Function
Ali Cochrane	Project Director
Ali Cochrane	Project Manager
Andrew Yonkofski	Field Lead
Andrew Yonkofski	Site Health and Safety Officer

4.1 Project Director

The Project Director provides the overall direction for the project. The Project Director is ultimately responsible for ensuring the project meets the client's objectives in a safe and timely manner.

4.2 Project Manager

The Project Manager is responsible for ensuring that the provisions in Corporate Health and Safety Manual and this HASP are being implemented. That includes ensuring that field staff have the appropriate level of training and medical clearance for the tasks assigned and ensuring that the field staff have the appropriate equipment and level of protection to conduct the work safely. The Project Manager is generally responsible for the following tasks prior to and during site activities:

- Overseeing preparation of the scope of work
- Verifying the appropriate permissions for site access are in place and coordinating with site operators/tenants/etc.
- Briefing the Field Lead and other field personnel on specific tasks for the project
- Escalating issues related to unsafe work conditions, incidents, or other changes in the scope of work

4.3 Field Lead / Site Health and Safety Officer

The Field Lead / Site Health and Safety Officer reports to the Project Manager, but they assume control over the on-site field activities and have the authority to direct emergency responses. Their duties include:

- Directing field activities at the site, including communicating requirements to field personnel and subcontractors.
- Ensuring that the provisions of the Corporate Health and Safety Manual and this HASP are being implemented through daily tailgate safety briefing meetings and through daily inspections.
- Monitoring site conditions during activities where hazardous compounds may be present.
- Recording any variances in conditions.
- Recording any injury, illness, or accident for any Black River personnel on the site.
- Periodically inspecting personal protective equipment and clothing
- Monitoring site personnel for signs of stress, including heat/cold stress and overexertion

- Providing emergency procedures, evacuation routes, and telephone numbers for the local hospital, fire department, police department, and poison control center (in this HASP)
- Communicating incidents promptly to the Project Manger
- Notifying emergency response personnel in the event of an emergency and coordinating medical care.

The Field Lead / Site Health and Safety Officer will record health and safety related details for the project at a minimum daily as part of the tailgate safety briefing before work on site commences each day. A copy of the Daily Tailgate Safety Meeting form is included as Attachment C.

The Field Lead / Site Health and Safety Officer will have completed Occupational Safety and Health Administration (OSHA) 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training (including annual updates), the 8-hour HAZWOPER supervisor training, and current first aid and CPR training.

4.4 Corporate Health and Safety Officer

The Corporate Health and Safety Officer is responsible for all aspects of implementation of the Corporate Health and Safety Manual and this HASP. Their role is to support the Project Manager and Field Lead on all health and safety related issues, including:

- Consulting with the Field Lead on emergency incident response
- Ensuring completion of incident reporting
- Implementing corrective actions for deficiencies in the safety program and/or changes to site conditions.

4.5 Field Team

All field personnel will attend a project-specific safety briefing with the Field Lead / Site Health and Safety Officer and will review this HASP before beginning work on the Site. It is the responsibility of each individual field team member to read and comply with the requirements of the Corporate Health and Safety Manual and this HASP. Additionally, the field team personnel have the following responsibilities:

- Check all personal protective equipment and clothing to ensure it is in good working order
- Immediately report any accidents/illness, unsafe conditions, unusual smells or chemical smells for the Field Lead / Site Health and Safety Officer
- Immediately report any symptoms of illness, stress, or chemical exposure
- Participate in and/or complete incident reports following an injury/illness/accident

All field team personnel will have completed Occupational Safety and Health Administration (OSHA) 40-hour Hazardous Waste Operations and Emergency Response (HAZWOPER) training (including annual updates) and shall maintain current first aid and CPR training.

5 Air Monitoring

The type and frequency of air monitoring will change based on the phase of the project and the potential for worker and community and exposure. During soil boring advancement, soil sampling, excavation, trenching, or demolition in soils known to contain petroleum contamination or VOC contamination, the work will be monitored using a direct-read photoionization detector (PID) for the detection of VOCs. In addition, if odors are detected in other areas of the site during soil disturbing activities, the PID will be used to determine if the odor may represent a release of site COPCs to workplace or community air, even in areas where contamination has not been previously documented. The following table describes action levels based on air monitoring:

Table 4. Action Levels for VOCs for Worker Protection

PID Readings (ppm)	Action	Personal Protective Equipment
≤ 5 ppm	Continued periodic monitoring	Level D
≥5 ppm, but <20 ppm, not sustained for > 1 minute	Inform site workers of potentially high VOC levels. Increase engineering controls such as fans.	Level D
≥5 ppm, but <20 ppm, sustained for > 1 minute	STOP WORK and notify Site Health and Safety Officer	Upgrade PPE as specified by a Certified Industrial Hygienist

6 Hazard Analysis

The following sections discuss the potential health and safety hazards associated with the field tasks described in the Scope of Work, Section 3. To mitigate these hazards, procedures related to physical control, use of PPE, monitoring, training, decontamination, and emergency response are included in this HASP.

6.1 Physical Hazard Analysis

Table 6 below summarizes the primary potential hazards and the control measures identified for each of the work activities described in Section 3. Site conditions may change and require further identification and mitigation of hazards during execution of the work.

Table 6. Work Activities, Primary Potential Hazards, and Control Measures

Work Activity	Primary Potential Hazards	Control Measures
All Field Activities	Hit by vehicles/trucks working on the Property	Wear high-vis safety vest or clothing Use the buddy system while accessing locations in active traffic lanes Delineate work areas with traffic cones and barriers
	Road traffic on road entering the site	Obey road crossing alerts Use traffic control and flaggers, as needed and as defined.
	Heat Stress	Take breaks, seek shade, and increase fluids intake
	Cold Stress	Wear appropriate layers, including moisture wicking underlayers Take frequent breaks to warm yourself in field vehicle as necessary Monitor for signs of cold stress (shivering, numbness, tingling, etc.)
Drilling Soil Borings / Monitoring Wells	Hit by drill rig / drill equipment, especially overhead	Delineate zone around drill rig and remain outside of area; if access to immediate drill rig area is needed, get attention of operator before entering Modified Level D PPE (with hard hat, traffic vest, and safety-toe boots)
	Excessive noise	Wear hearing protection
	Chemical exposure (skin or eye contact, ingestion, inhalation)	Modified Level D PPE Air Monitoring (Section 5)
Subslab soil gas and indoor air sampling	Injury caused by handheld drill equipment	Delineate zone around sampling area and stay alert while operating handheld equipment. Modified Level D PPE (with hard hat, traffic vest, and safety-toe boots)
	Excessive noise	Wear hearing protection Modified Level D PPE
	Chemical exposure (skin or eye contact, ingestion, inhalation)	Air Monitoring (Section 5) Ensure pump/tubing connections are secure prior to operation
Well Development and Groundwater Sampling	Chemical exposure (skin or eye contact, ingestion)	Modified Level D PPE Ensure pump/tubing connections are secure prior to operation

6.2 Chemical Hazard Analysis

For each chemical hazard, possible exposure routes including inhalation, dermal contact, ingestion (of dust/solids/gases/liquid) were considered:

- **Inhalation:** To mitigate potential inhalation of chemical substances, position personnel upwind of work activities at the sampling location. Additionally, air monitoring for VOCs will be conducted in accordance with the procedures set forth in Section 5.
- **Dermal Contact:** Dermal contact with chemical substances will be mitigated through the use of appropriate PPE (primarily nitrile gloves) and decontamination procedures.
- **Ingestion:** Ingestion can occur either directly or indirectly through cross contamination of food, water, tobacco, and other oral sources. Ingestion of chemical substances will be mitigated through the appropriate worker hygiene practices and decontamination procedures.

The potential chemical hazards for the Site, the associate environmental media, and air concentrations established by OSHA as permissible exposure limits (PELs), short-term exposure limits (STELs), and immediately dangerous to life and health (IDLH) are summarized in Table 7 below.

Table 7. Known and Suspected Chemicals of Potential Concern

Substance	Environmental Media	OSHA Air Concentrations		
		PEL	STEL	IDLH
Gasoline-Range TPH	Soil, GW, SG, IA	10 ppm	15 ppm	250 ppm
Diesel- and Oil-Range TPH	Soil, GW, SG, IA	1 ppm	5 ppm	500 ppm
Benzene	Soil, GW, SG, IA	1 ppm	5 ppm	500 ppm
Toluene	Soil, GW, SG, IA	200 ppm	--	500 ppm
Ethylbenzene	Soil, GW, SG, IA	100 ppm	--	800 ppm
Xylenes	Soil, GW, SG, IA	100 ppm	150 ppm	900 ppm
Lead	Soil, GW	0.05 mg/m ³	--	0.05 mg/m ³
TCE	Soil, GW	50 ppm	100 ppm	1,000 ppm
cDCE	Soil, GW	100 ppm	200 ppm	1,000 ppm
Vinyl Chloride	Soil, GW	1 ppm	--	--

Notes:
 -- = none established
 IA = indoor air
 GW = groundwater
 ppm = parts per million
 SG = soil gas
 mg/m³ = milligrams per cubic meter

7 Site Control Plan

The primary purpose of site controls is to prevent unauthorized access or exposure to potentially contaminated materials, limit the migration of potentially contaminated materials

into uncontaminated areas, and to mitigate exposure of potentially contaminated materials to site workers.

7.1 Worker Hygiene Practices

Black River personnel will use the following hygiene practices when working with potentially contaminated environmental media:

- Eating, drinking, chewing gum, or using tobacco are prohibited in potentially contaminated areas and are restricted to designated areas at the Site. Drinking of replacement fluids for heat stress control is permitted in areas that are free from contamination (except in emergency situations).
- Hands and faces must be washed and decontaminated upon leaving the work area and before eating, drinking, chewing gum or, using tobacco.
- Long hair will be secured away from the face so it does not interfere with work activities.
- Personnel leaving potentially contaminated areas will follow the appropriate decontamination procedures before leaving the contaminated work area.

7.2 Site Access Control

The site has no barrier to unauthorized persons. Controls used to prevent entry by unauthorized persons include:

- Fences and/or barricades
- Traffic cones, barriers, and/or use of flaggers
- Caution tape
- Other physical barriers such as field vehicles

The exclusion zone (EZ) may or may not be mobile, depending upon the task. EZ dimensions will be determined based on the size of the work area, Site limitations, and the potential for exposure to contaminated soils or other media. The edges of the work area shall be marked in some way to identify the exclusion zone. The EZ will be designated as the area immediately surrounding each soil boring being advanced or monitoring well being sampled at the time of drilling/purging/sampling.

The Contamination Reduction Zone (CRZ) shall provide a buffer to ensure that the physical transfer of Site by personnel, equipment, or through the air is limited by a combination of decontamination, distance between the EZ and population, air dilution, zone restrictions, and work functions. The CRZ will be physically marked or well defined by barrier tape, signs, or physical barriers (e.g., chains, fences, ropes, etc.).

The Support Zone is the outermost part of the work area and is considered to be a non-contaminated or clean area. Access is restricted to authorized Site personnel and visitors. Because normal work clothes are appropriate within this zone, potentially contaminated personnel clothing, equipment, and samples are not permitted until they are decontaminated, if necessary, in the CRZ.

7.3 Emergency Communications

All Black River employees on site will have a mobile phone, which will be used for communications should an emergency arise. Emergency contact phone numbers are listed in Table 2, and phone numbers for Black River personnel are listed in Table 4.

8 Decontamination

The following procedures will be used to limit the distribution of contamination outside the EZ or cross-contamination of samples:

- Personnel:
 - Avoid walking through spilled materials and/or potentially contaminated environmental media
 - Do not handle sample media directly
 - Ensure PPE is in good working condition before use
 - Stay upwind of airborne dust and vapors
 - Do not eat, drink, chew gum, or use tobacco products in the work zones
 - Wash boots and rain gear that have contacted potentially contaminated environmental media with Alconox/tap water and air dry
- Sampling Equipment
 - Avoid spilling sampled media outside of sample containers and/or collection vessels (i.e., buckets)
 - Use plastic bags as necessary to contain sampleware
 - Keep contaminated equipment, tools, and sampleware separate from clean supplies
 - Clean up spilled material immediately
 - Collect disposal PPE (such as gloves, Tyvek) in garbage bags and dispose of appropriately
 - Follow project-specific decontamination process (generally involving a detergent like Alconox and distilled water) to clean equipment
- Investigation-derived waste (IDW)

- Place soil cuttings, purged groundwater, and decontamination water into United States Department of Transportation-approved steel drums at the Property for future disposal. Each drum should be secured with a locking lid and labeled with the date of sampling and the contents.

9 Personal Protection Equipment Requirements

Based on the hazards identified above, the following PPE will be required for the work activities described in Section 3. A modified Level D PPE ensemble will be used with the main objective of preventing unnecessary dermal and ingestion exposures. Table 8 below describes the minimum PPE that should be used for each work activities, unless conditions change:

Table 8. Minimum PPE Requirements for Each Work Activity

PPE	General Site Work	Soil Borings	Groundwater Sampling	Soil Gas and Indoor Air Sampling
Hard Hat		X		
High-Visibility Vest	X	X	X	X
Safety Glasses/Goggles	X	X	X	X
Ear Plugs	Av	X	Av	Av
Nitrile Gloves	Av	X	X	X
Tyvek Coveralls	Av	Av	Av	Av
Safety-Toe Boots	X	X	X	X
N95 Face Mask	Av	Av	Av	Av

Notes:

X = Required PPE

Av = Have available at work site and use as needed.

Level D protection will only be used when atmospheric concentrations of contaminants are less than the PELs established in Section 6.2.

10 Other Required Safety Equipment

Based on the work activities identified in Section 3, the following safety equipment will be on site and easily accessible during field activities:

Table 9. Other Required Safety Equipment

Item	Required
First Aid Kit	X
Eyewash	X
Fire Extinguisher	X
Drinking Water	X
PID	X
Exhaust Fan	
Wind Sock	
Fall Protection	
Personal Flotation Device	
Other:	

11 Spill Containment

The proposed field work does not include the handling of bulk chemicals, and spill containment provisions for the work are not necessary.

12 Medical Monitoring

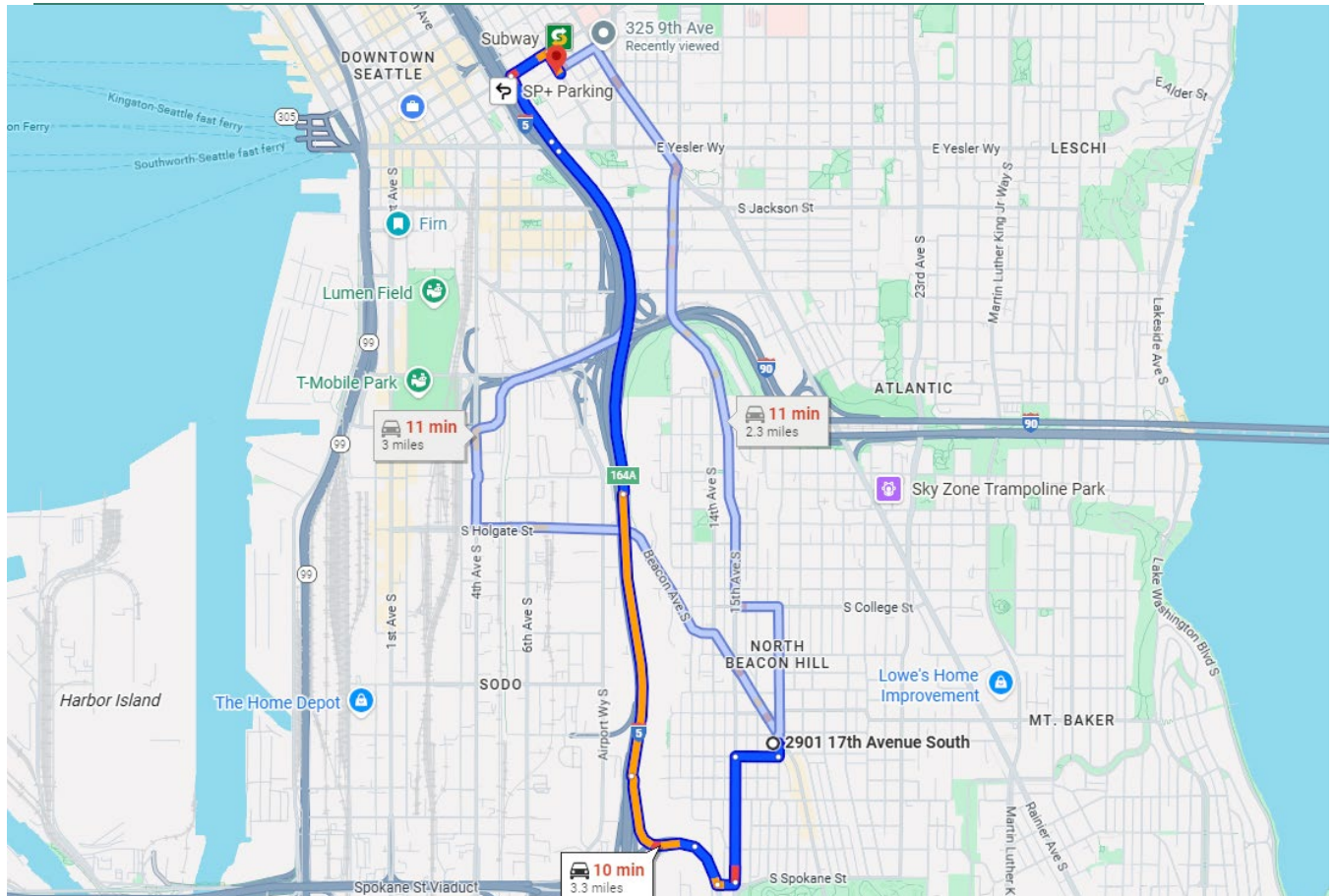
Black River employees who perform site work are responsible for understanding potential health and safety hazards at the site. All Black River site workers will have health and safety training for hazardous waste operations in accordance with WAC 296-843-200. Additionally, all employees potentially exposed to chemical hazards in concentrations in excess of the PEL for more than 30 days per year will undergo medical monitoring, in accordance with WAC 296-843-210.

ATTACHMENT A

HOSPITAL DIRECTIONS AND MAP

Hospital Information

Hospital Name	Emergency Room at Harborview Medical Center
Address	325 9 th Ave
City, State Zip	Seattle, WA 98104
Phone	206-520-5000



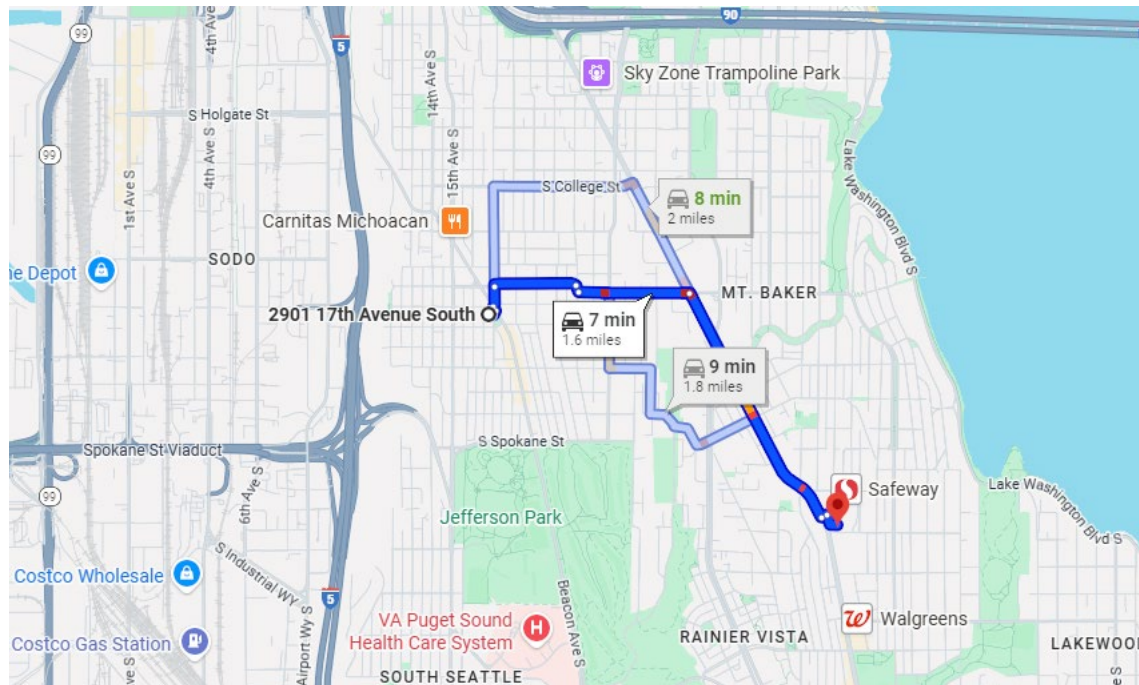
1. Head south on 17th Ave S toward S Stevens St (197 ft)
2. Turn right onto S Stevens St (0.1 mi)
3. Turn left onto 15th Ave S (0.4 mi)
4. Turn right onto S Spokane St (289 ft)
5. Use the left lane to turn right onto S Columbian Way (0.1 mi)
6. Slight left to merge onto 1-5 N toward Vancouver (0.3 mi)
7. Take Exit 164A from the 2nd to the right lane for Dearborn St toward James/Madison St (2.1 mi)
8. Use right lane to take the ramp to Madison St N (154 ft)
9. Use the right lane to take the James St ramp (0.2 mi)
10. Turn right onto James St (0.1 mi)
11. Turn right onto 9th Ave – Destination will be on the right (364 ft)

ATTACHMENT B

URGENT CARE CLINIC DIRECTIONS AND MAP

Urgent Care Clinic Information

Clinic Name	MultiCare Indigo Urgent Care – Seattle – Rainier Ave.
Address	3820 Rainier Ave S, Suite I
City, State Zip	Seattle, WA 98118
Phone	206-731-7500



1. Head northeast on 17th Ave S toward Beacon Ave S (69 ft)
2. Turn left onto Beacon Ave S (75 ft)
3. Slight right onto 17th Ave S (328 ft)
4. Turn right onto McClellan St (0.3 mi)
5. Slight right onto 21st Ave S (108 ft)
6. Turn left onto S McClellan St (0.3 mi)
7. Turn right after O'Reilly Auto Parts on the right (0.8 mi)
8. Turn left then right, destination will be on right (377 ft)

ATTACHMENT C

HEALTH AND SAFETY PLAN
ACKNOWLEDGEMENT FORM

ATTACHMENT D

DAILY TAILGATE SAFETY MEETING FORM

DAILY SAFETY BRIEFING

DATE: _____

PROJECT NAME: _____

PROJECT NO.: _____

Person Conducting Meeting: _____

Health & Safety Officer: _____

Project Manager: _____

TOPICS COVERED:

- | | | |
|---|--|---|
| <input type="checkbox"/> Emergency Procedures | <input type="checkbox"/> Self and Coworker Monitoring | <input type="checkbox"/> Buddy System |
| <input type="checkbox"/> Evacuation Route | <input type="checkbox"/> Lines of Authority | <input type="checkbox"/> Lifting Techniques |
| <input type="checkbox"/> Directions to Hospital | <input type="checkbox"/> Communication | <input type="checkbox"/> Slips, Trips, and Falls |
| <input type="checkbox"/> HASP Review & Location | <input type="checkbox"/> Site Security | <input type="checkbox"/> Hazard Exposure Routes |
| <input type="checkbox"/> Safety Equipment Location | <input type="checkbox"/> Equipment Safety Protocols | <input type="checkbox"/> Heat and Cold Stress |
| <input type="checkbox"/> Proper Equipment Use | <input type="checkbox"/> Work Zones | <input type="checkbox"/> Overhead and Underfoot Hazards |
| <input type="checkbox"/> Fire Extinguisher Locations | <input type="checkbox"/> Vehicle Safety and Driving Conditions | <input type="checkbox"/> MSDS Location(s) |
| <input type="checkbox"/> Eye Wash Station(s) | <input type="checkbox"/> Decontamination Procedures | <input type="checkbox"/> Chemical Hazards |
| <input type="checkbox"/> Eating/Drinking/Smoking Areas & Restrictions | | <input type="checkbox"/> Flammable Hazards |
| <input type="checkbox"/> Proper Use of PPE | | <input type="checkbox"/> Biological Hazards |
| <input type="checkbox"/> Other: | | |

DETAILS

Weather Conditions: _____

Daily Work Scope: _____

Site-Specific Hazards: _____

Safety Comments: _____

ATTENDEES

Printed Name, Company

Signature



Black River Environmental, LLC

26311 NE Valley St. #141
Duvall, Washington

425-725-3832

www.blackriverenvironmental.com