FARALLON CONSULTING

April 22, 2024

David Unruh
Washington State Department of Ecology
Toxics Cleanup Program, NWRO
15700 Dayton Avenue North
Shoreline, Washington, 98133

RE: WORK PLAN FOR ADDITIONAL REMEDIAL INVESTIGATION
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021 RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON
FARALLON PN: 1355-001

Dear David Unruh:

Farallon Consulting, L.L.C. (Farallon) has prepared this Work Plan to conduct additional remedial investigation (RI) activities in the public right-of-way (ROW) adjacent to the 5001, 5015 and 5021 Rainier Avenue South parcels in Seattle, Washington, in response to the Washington State Department of Ecology (Ecology) December 19, 2023 and January 11, 2024 Opinion and Technical Assistance Letters[1],[2] following its review of Farallon's updated Final Remedial Investigation and Feasibility Study and Draft Cleanup Action Plan dated November 14, 2023 (RIFS/dCAP).[3] prepared for the Morningside Acres Tracts.

The 5001, 5015 and 5021 Rainier Avenue South parcels and limited portion of the east-adjacent Rainier Avenue South are impacted by hazardous substances associated with previous releases of chlorinated volatile organic compounds (CVOCs) and petroleum-related compounds from a former automotive repair facility in the warehouse building on the southern parcel at 5021 Rainier Avenue South, and former gasoline service stations on the northern parcel at 5001 Rainier Avenue South. The areas containing hazardous substances associated with the Morningside Acres Tracts at concentrations exceeding applicable cleanup levels are referred to as the Site.

---

[1] Washington State Department of Ecology (Ecology). Letter Regarding Opinion on Proposed Cleanup of a Property Associated with a Site: 5001, 5015, and 5021 Rainier Avenue S, Seattle, Washington 98118. From David Unruh of Ecology. To Jerry-Alan Murakami. December 19.Opinion Letter)

[2] Ecology. 2024. Letter Regarding Technical Assistance for Property NFA Likely Letter issued December 19, 2023: 5001, 2015, and 5021 Rainier Avenue S, Seattle, WA 98118. From David Unruh of Ecology. To Jerry-Alan Murakami. January 11. (Technical Assistance Letter)

[3] Farallon Consulting. L.L.C. 2023. *Final Remedial Investigation and Draft Cleanup Action Plan, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*. Prepared for Washin and Kathleen Murakami. November 14.

This Work Plan has been prepared in response to the two recent Ecology Opinion and Technical Assistance Letters, which describe the additional RI activities necessary for issuance of a Site-wide No Further Action (NFA)-likely letter. Ecology identified the following data gaps requiring additional sampling and characterization of soil and groundwater, as described in the Opinion and Technical Assistance Letters (Figure 1):

- The extent of trichloroethene (TCE), cis-1,2-dichloroethene, and vinyl chloride (collectively CVOCs) contamination in soil and groundwater east of shallow groundwater monitoring wells MW-25 and MW-27 has not been defined.
- The lateral extent of total petroleum hydrocarbons as gasoline-range organics (GRO) in soil east of shallow monitoring well MW-25 has not been defined.

The Work Plan includes a detailed description of the subsurface investigation that will address the data gaps identified by Ecology's Opinion and Technical Assistance Letters. The additional investigation will consist of advancing four borings, two of which will be completed as shallow monitoring wells, in the Rainier Avenue South ROW east-adjacent to the 5001 and 5015 Rainier Avenue South parcels, as shown on Figure 1. If the initial set of borings and monitoring wells is insufficient to provide full delineation of the contaminants in soil and/or groundwater, an additional two borings completed as monitoring wells will be advanced proximate to the centerline of Rainier Avenue South. The results from these additional investigations will be used to supplement the RI and support the selection of the final cleanup action alternatives identified in the RIFS/dCAP.

ADDITIONAL REMEDIAL INVESTIGATION SCOPE OF WORK

The additional RI scope of work includes advancing a total of four borings using hollow-stem-auger drilling technology to depths ranging from 20 to 25 feet below ground surface (bgs) in Rainier Avenue South as shown on Figure 1. Two of the borings will be completed as groundwater monitoring wells and will be screened in the shallow water-bearing zone at depths of 10 to 20 feet bgs. The additional characterization activities will consist of the following:

- Advancement of a boring northeast of monitoring well MW-25 to a depth of 20 feet bgs for delineation of GRO in soil.
- Advancement of a boring east of existing monitoring well MW-25 to a depth of 20 feet bgs for delineation of GRO in soil, and co-located installation of a shallow monitoring well screened from 10 to 20 feet bgs for delineation of CVOCs in groundwater;

- Advancement of a boring northeast of monitoring wells MW-26 and MW-27 to a depth of 25 feet bgs for delineation of CVOCs in soil, and co-located installation of a shallow monitoring well screened from 10 to 20 feet bgs for delineation of CVOCs in groundwater;
- Advancement of a boring east of monitoring wells MW-26 and MW-27 to a depth of 25 feet bgs for delineation of CVOCs in soil; and
- Collection and analysis of groundwater samples from the two new monitoring wells and from existing monitoring well MW-25.

In addition to the above scope of work, two contingency monitoring wells are proposed further east along the centerline of Rainier Avenue South in the event the soil and groundwater analytical data from the borings and monitoring wells installed during the first phase of work do not fully delineate the contaminants of concerns for the Site as required by Ecology (Figure 1).

PERMITTING REQUIREMENTS

The work will require borings and installation of monitoring wells in the Rainier Avenue South ROW, which requires issuance of a ROW street use permit and a traffic control plan. Farallon will prepare the ROW street use permit application for submittal and approval from the City of Seattle Department of Transportation (SDOT) with a traffic control plan and other necessary conditions.

HEALTH AND SAFETY

Prior to the start of the additional RI activities, Farallon will prepare a Site-specific Health and Safety Plan as required by Part 1910 of Title 29 of the Code of Federal Regulations. Public and private utility-locating services also will be retained, to clear proposed boring or sampling locations, and to provide additional information pertaining to the locations of subsurface utilities. Boring locations may be adjusted as necessary based on access limitations and the presence of utilities.

SOIL SAMPLING

Soil samples will be collected at 5-foot intervals during advancement of the borings during hollow-stem-auger drilling. Farallon field personnel will observe subsurface conditions and retain soil samples from selected intervals based on field indications of potential contamination for submittal to an analytical laboratory. Farallon field personnel observations

will be recorded on daily field report forms and boring logs. The information recorded on the field boring logs will include the soil types encountered, visual and olfactory evidence of contaminant presence, and volatile organic vapor concentrations as measured using a photoionization detector.

The soil samples will be placed on ice in a cooler and submitted to OnSite Environmental Inc. of Redmond, Washington (OnSite) under standard chain-of-custody protocols for the following laboratory analyses:

- GRO by Northwest Method NWTPH-Gx – soil samples collected from 10, 15, and 20 feet bgs from the two borings advanced adjacent to existing monitoring well MW-25; and
- CVOCs by U.S. Environmental Protection Agency (EPA) Method 8260D – soil samples collected from 15, 20, and 25 feet bgs from the two borings advanced adjacent to existing monitoring wells MW-26 and MW-27.

Following the receipt of final laboratory data for soil, if the contaminants of concern for the Site are not fully delineated in the Rainier Avenue South ROW, up to two additional borings will be advanced along the centerline of the Rainier Avenue South ROW for collection of additional soil samples. The soil samples will be collected from similar depths and analyzed for the same parameters as the soil sample(s) with concentrations exceeding the MTCA Method A cleanup levels in the initial set of borings advanced in the Rainier Avenue South ROW.

MONITORING WELL CONSTRUCTION

As described above, two borings will be completed as monitoring wells during the first phase of investigation (Figure 1). The monitoring wells will be installed using 2-inch-diameter polyvinyl chloride well casings with a 0.010-inch slotted well screen. A filter pack consisting of No. 10/20 Colorado Silica Sand will be placed around the monitoring well screens. The boreholes will be sealed to within 2 feet of the surface with hydrated bentonite chips. The monitoring wells will be completed with flush-mounted steel monuments set in concrete and developed following installation. Monitoring well development will consist of surging and pumping with a submersible pump until the majority of the fine-grained sediment in the well and surrounding filter pack has been removed and purge water appears relatively clear.

Farallon will contract a Washington State licensed surveyor to perform a survey of the newly installed monitoring wells. The survey will include measurement of the elevation of the top of

the monitoring well casings in reference to the North American Vertical Datum of 1998 to assist in the calculation of groundwater elevations and interpretation of groundwater flow and gradient.

Following the groundwater sampling and receipt of final laboratory data, if the contaminants of concern for the Site are not fully delineated in the Rainier Avenue South ROW, up to two additional monitoring wells will be installed along the centerline of the Rainier Avenue South ROW following procedures described above.

GROUNDWATER SAMPLING

A groundwater monitoring event will be performed after a minimum of 48 hours following monitoring well installation and well development activities. The groundwater monitoring event will include measuring depth-to-groundwater at all accessible monitoring wells at the Site and collecting groundwater samples using low-flow sampling methods from selected monitoring wells. Farallon field personnel will remove the locking well cap from each monitoring well to allow groundwater levels to equilibrate to atmospheric pressure for a minimum of 30 minutes. The depth to groundwater will be measured from the top of the well casing in each monitoring well to the nearest 0.01 foot using an electronic water-level measuring device. The total depth of each monitoring well will be measured to evaluate siltation of the well-screen interval.

Groundwater samples will be collected from the two new monitoring wells and monitoring well MW-25. Each monitoring well will be purged at a low-flow rate ranging from 100 to 300 milliliters per minute using a peristaltic pump or bladder pump and dedicated tubing. Temperature, pH, specific conductance, dissolved oxygen, and oxidation-reduction potential will be monitored during purging to determine when stabilization of these parameters occurs. Following stabilization of the parameters, groundwater samples will be collected directly from the low-flow pump outlet. If the turbidity is high, the sample would not be collected. In that case, Farallon will return after 1 week to attempt to collect a sample that is less turbid.

The groundwater samples will be placed on ice in a cooler and submitted to OnSite under standard chain-of-custody protocols for the following analyses:

- DRO and ORO by Northwest Method NWTPH-Dx – monitoring well MW-25 and a contingency groundwater sample from a new monitoring well advanced northeast-

adjacent to monitoring well MW-25 if the DRO+ORO concentration exceeds the MTCA Method A cleanup level in groundwater at monitoring well MW-25;

- GRO by Northwest Method NWTPH-Gx – monitoring well MW-25; and
- CVOCs by EPA Method 8260D – newly installed monitoring wells in the Rainier Avenue South ROW.

Following the groundwater sampling and receipt of final laboratory data, if the contaminants of concern for the Site are not fully delineated by installation of the initial set of borings and monitoring wells in the Rainier Avenue South ROW, up to two additional monitoring wells are proposed to be installed and sampled along the centerline of the Rainier Avenue South , following issuance of the necessary SDOT permits and traffic control plan similar to the initial four borings in the ROW adjacent to the 5001 and 5015 Rainier Avenue South parcels described above. The groundwater samples will be collected and analyzed for the same parameters as the groundwater samples with concentrations exceeding the MTCA Method A cleanup levels in the initial set of monitoring well(s) advanced in the Rainier Avenue South ROW.

REPORTING

Upon completion of this scope of work, Farallon will document the results of the additional RI in an Addendum to the 2023 RIFS/dCAP Report summarizing the results of the additional RI activities. This will include the following actions:

- A summary of completed field activities, including monitoring well installation and soil and groundwater sampling performed as part of this scope of work;
- Updates to the conceptual site model to supplement the RI portion of the RIFS/dCAP Report;
- Updates to the FS portion of the RIFS/dCAP Report, if necessary;
- Updates to the CAP portion of the RIFS/dCAP Report, if necessary;
- Supporting documentation, including updates to summary tables and figures, laboratory analytical results, boring and well construction logs, and groundwater contours as appropriate;
- Updates to the existing cross sections that will depict the vertical distribution of CVOC and petroleum plumes in groundwater; and

- Compilation, formatting, and uploading environmental data collected from the ROW to the Ecology Environmental Information Management database, as required by Ecology.

The Work Plan presented herein will be implemented following review and receipt of approval from Ecology.

Please contact either of the undersigned at (425) 295-0800 if you have questions or need additional information.

Sincerely,

Farallon Consulting, L.L.C.

Greg Peters
Associate Environmental Scientist

Branislav Jurista, L.G., P.G.
Principal Geologist

Attachments: Figure 1, *Proposed Boring and Monitoring Well Locations*

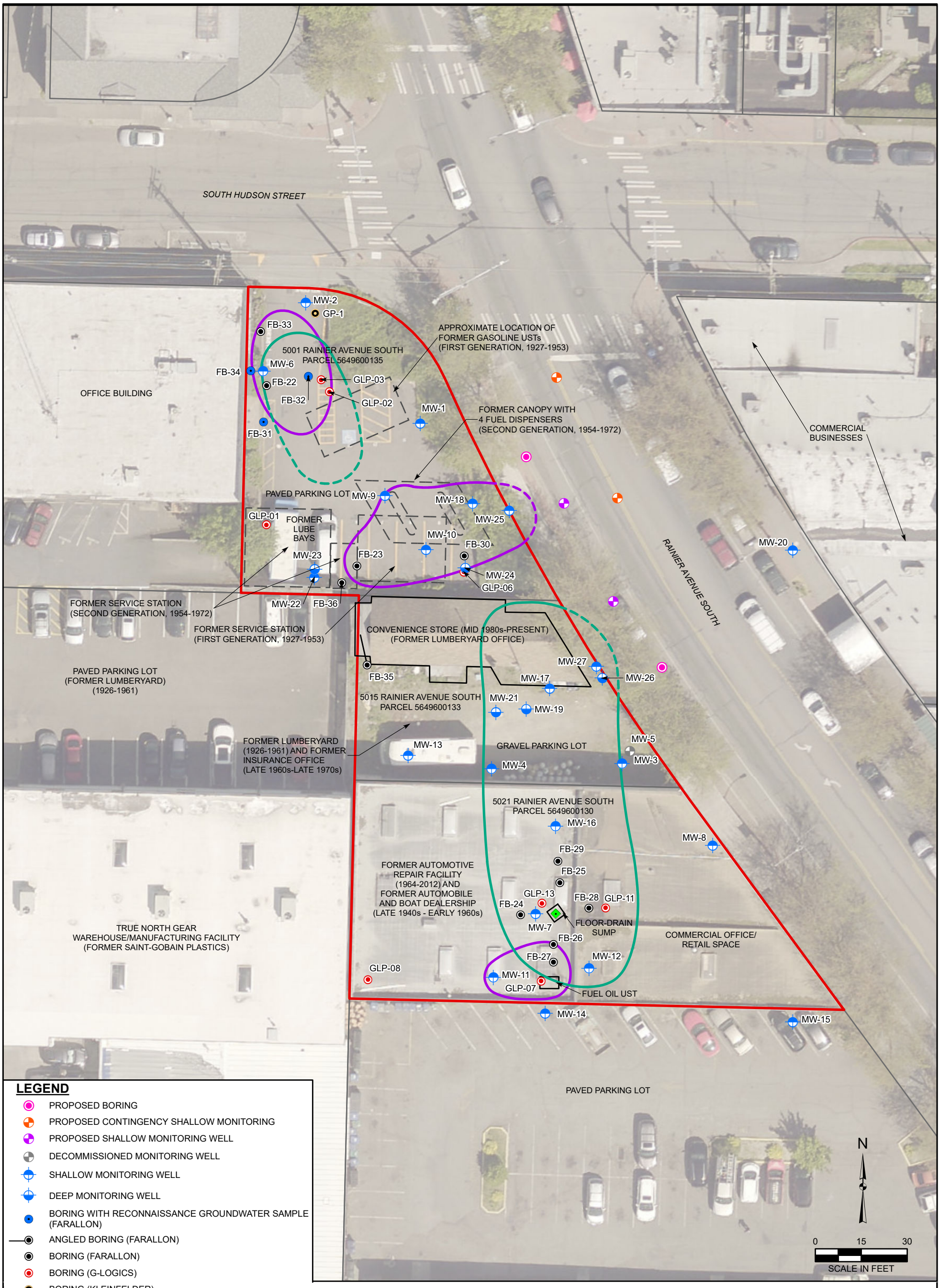
cc: Allan Bakalian, Bakalian & Associates PS

GP/BJ:ca

FIGURE

ADDITIONAL REMEDIAL INVESTIGATION WORK PLAN
Morningside Acres Tracts
5001, 5015, and 5021 Rainier Avenue South
Seattle, Washington

Farallon PN: 1355-001



LEGEND

- PROPOSED BORING
- PROPOSED CONTINGENCY SHALLOW MONITORING
- PROPOSED SHALLOW MONITORING WELL
- DECOMMISSIONED MONITORING WELL
- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- BORING WITH RECONNAISSANCE GROUNDWATER SAMPLE (FARALLON)
- ANGLED BORING (FARALLON)
- BORING (FARALLON)
- BORING (G-LOGICS)
- BORING (KLEINFELDER)
- SUMP SEDIMENT SAMPLE
- APPROXIMATE EXTENT OF CHLORINATED VOC CONTAMINATION (DASHED WHERE INFERRED)
- APPROXIMATE EXTENT OF PETROLEUM CONTAMINATION (DASHED WHERE INFERRED)
- HISTORICAL GAS STATION FEATURE
- PROPERTY FEATURE
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY

HVOC = HIGH VOLATILITY ORGANIC COMPOUND
TPH = TOTAL PETROLEUM HYDROCARBONS
UST = UNDERGROUND STORAGE TANK
VOC = VOLATILE ORGANIC COMPOUND

NOTES:
1. ALL LOCATIONS ARE APPROXIMATE.
2. FIGURE WAS PRODUCED IN COLOR. GRAYSCALE COPIES MAY NOT REPRODUCE ALL ORIGINAL INFORMATION.

FARALLON CONSULTING
Your Challenges. Our Priority. | farallonconsulting.com

Washington
Issaquah | Bellingham | Seattle

Oregon
Portland | Baker City

California
Oakland | Irvine

FIGURE 1

PROPOSED BORING AND MONITORING WELL LOCATIONS
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

Drawn By: aguse | Checked By: BJ | Date: 3/22/2024 | Disc Reference:

Document Path: \\192.168.0.248\gis\Projects\1355 Morningside\001 RainierAveS\Mapfiles\018\Figure-01_Proposed_Boring_and_MW_Locations.mxd