STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Region Office
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December 19, 2023

Jerry-Alan Murakami
12424 83rd Avenue South
Seattle, WA 98178
(jerryskii@yahoo.com)

Re: Opinion on Proposed Cleanup of a Property associated with a Site:

- Property Address: 5001, 5015, and 5021 Rainier Avenue S, Seattle, WA 98118
- Facility/Site No.: 4321
- Cleanup Site ID No.: 12408
- VCP Project No.: NW3345

Dear Jerry-Alan Murakami:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of a property associated with the Morningside Acres facility (Site). This letter provides our opinion. We are providing this opinion under the authority of the Model Toxics Control Act (MTCA), Chapter 70A.305 RCW.

Issues Presented and Opinion

1. Upon completion of the proposed cleanup, will further remedial action likely be necessary at the Property to clean up contamination associated with the Site?

   NO. Ecology has determined that no further remedial action will likely be necessary at the Property to clean up contamination associated with the Site.

2. Upon completion of the proposed cleanup, will further remedial action likely still be necessary elsewhere at the Site?

   YES. Ecology has determined that further remedial action will likely still be necessary elsewhere at the Site.

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70A.305 RCW, and its implementing regulations, Chapter 173-340 WAC (collectively "substantive requirements of MTCA"). The analysis is provided below.

Description of the Property and the Site

This opinion applies only to the Property and the Site described below. This opinion does not apply to any other sites that may affect the Property. Any such sites, if known, are identified separately below.

1. Description of the Property.

The Property includes the following tax parcels in King County, which were affected by the Site and will be addressed by your cleanup:

- 564960-0135 (5001 Rainier Avenue S; 5001 Parcel)
- 564960-0133 (5015 Rainier Avenue S; 5015 Parcel)
- 564960-0130 (5021 Rainier Avenue S; 5021 Parcel)

The Property does not include the following right-of-way (ROW) easements, which are located on those parcels:

- Rainier Avenue S to the east

Enclosure A includes a legal description of the Property. **Enclosure B** includes a diagram of the Site that illustrates the location of the Property within the Site.

2. Description of the Site.

The Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline- (TPH-G); diesel- (TPH-D); and oil-range (TPH-O) petroleum hydrocarbons; benzene; trichloroethylene (TCE); cis-1,2-dichlorethene (DCE); 1,2-dichloroethane (EDC); 1,2-dichloropropane (DCP); and vinyl chloride into the Soil.
- TPH-G; TPH-D; TPH-O; benzene; toluene; xylenes; TCE; 1,1,2-trichloroethane (TCA); cis-1,2-DCE; EDC; and vinyl chloride into the Groundwater.
- TCE; cis-1,2-DCE; and vinyl chloride into the Air.

Those releases have affected more than one parcel of real property, including the parcels identified above.

Enclosure B includes a detailed description and diagrams of the Site, as currently known to Ecology.

3. Identification of Other Sites that may affect the Property.

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the Property is affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the documents listed in **Enclosure C**. A number of these documents are accessible in electronic form from the Site web page[1]. The complete records are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. You can request these documents by filing a records request[2]. For help making a request, contact the Public Records Officer at recordsofficer@ecy.wa.gov or call (360) 407-6040.

[1] https://apps.ecology.wa.gov/cleanupsearch/site/12408
[2] https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests

This opinion is void if any of the information contained in those documents is materially false or misleading.

Analysis of the Cleanup

1. Cleanup of the Property located within the Site.

Ecology has concluded that, upon completion of your proposed cleanup, **no further remedial action** will likely be necessary at the Property to clean up contamination associated with the Site. That conclusion is based on the following analysis:

a. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards for the Site and select a cleanup for the Property. The Site is described above and in **Enclosure B**.

- **Soil.**
  Prior use of the Site as a service station and auto repair facility resulted in the release of Site contaminants to the Soil. Soil contaminated with TCE; cis-1,2-DCE; EDC; 1,2-DCP; and vinyl chloride (collectively CVOCs) appears to be associated with releases from a floor drain located in the basement of the building on the 5021 Parcel. Concentrations of CVOCs above the Method A cleanup level are present in GLP-13, FB-25, FB-26, FB-28, MW-7, MW-17, MW-19, and MW-26 (see **Enclosure B, Figure 4)**.

  The limit of soil contaminated with CVOCs is defined horizontally with the exception of soils east of MW-26 in the Rainier Avenue S ROW. The *Final Remedial Investigation and Feasibility Study and Draft Cleanup Action Plan, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, dated November 14, 2023 (*November 2023 RI/FS/dCAP*) states that the extent of contaminated soil east of the Property will be defined by advancing soil borings and installing monitoring wells in city ROW, prior to final excavation design.

  Concentrations of vinyl chloride above the preliminary cleanup level (PCUL) in the vicinity of MW-17, MW-19, and MW-26 are attributed to elevated concentrations in groundwater in the *November 2023 RI/FS/dCAP* (see **Enclosure B, Figure 4**). Depending on the results of additional delineation of CVOCs in soil to the east of MW-26, Ecology recommends further discussion of the need for excavation of soils contaminated with vinyl chloride in the Rainier Avenue S ROW in the interest of expediting the remediation timeline in this area.

  As discussed in *Second Addendum to Remedial Investigation and Feasibility Study Report, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, dated August 8, 2023 (*August 2023 RI Addendum*), the vertical extent of soil contaminated with vinyl chloride will also be defined following demolition of the building on the 5021 Parcel.

  In addition, based on concentrations of EDC, 1,1,2-TCA, and/or vinyl chloride in groundwater in the vicinity of FB-32 and FB-22, a source of these contaminants is likely present in soil in the vicinity of these boring locations.

Soil contaminated with TPH-G, TPH-D+O, and benzene above the PCUL is present in the vicinity of a former fuel oil tank located below the building on the 5021 parcel and in the vicinity of underground storage tanks (USTs) and pump islands associated with the former service stations located on the 5001 Parcel. The TPH-D and TPH-O fractions are added together when comparing results to the PCUL in soil or groundwater since the Method A cleanup level was derived based on the addition of these fractions. The extent of soil contaminated with petroleum hydrocarbons is defined horizontally with the exception of TPH-G in soil east of MW-25. As discussed in the *November 2023 RI/FS/dCAP*, the extent of soil contaminated with TPH-G east of MW-25 will be defined prior to final excavation design.

The complete vertical extent of contamination at MW-10 is not defined. Soil sampling results from FB-23 and FB-30 indicate that contamination may not be present below in this area below approximately 19 feet bgs. The planned excavation depth described in the *November 2023 RI/FS/dCAP* is 20 feet bgs. In the event that contaminated soil remains in place after the excavation, institutional controls in the form of an environmental covenant are needed for a final No Further Action (NFA) determination.

- **Groundwater.**
  Groundwater sampling was first conducted at the Site from 2006 to 2007. Initial results indicated that concentrations of TPH-G, TPH-D+O, TCE; cis-1,2-DCE; and/or vinyl chloride exceeded the applicable PCULs in MW-3, MW-4, MW-7, MW-10, MW-11, MW-12, MW-16, MW-17, GLP-07 (see **Enclosure B, Figure 5**). A groundwater sample collected from FB-32 in July 2023 contained EDC and 1,1,2 TCA above the PCULs.

  Light non-aqueous phase liquid (LNAPL) has been observed in MW-10 since its installation in 2007 as well as in a temporary well installed in GLP-07 in January 2007. Groundwater samples containing TPH-D+O above the PCUL were collected from temporary and permanent monitoring wells at GLP-07, FB-22, FB-30, FB-31, DB-32, MW-6, MW-9, MW-10, MW-11, MW-12, MW-22, and MW-25 (see **Enclosure B, Figure 7**).

  Groundwater samples collected from MW-10 in 2007 and 2013 and FB-32 in July 2023 also contained TPH-G above the PCUL. Additionally, benzene, toluene, and xylenes were detected above their respective PCULs in the groundwater sample collected from FB-32.

  The extent of groundwater containing CVOCs and TPH above the applicable PCULs at the Site is defined to the north, west, and south. The *November 2023 RI/FS/dCAP* specifies that the full extent of CVOCs in groundwater will be defined prior to implementation of cleanup actions at the Site.

- **Air.**
  A total of seven air samples were collected from buildings on the 5015 and 5021 Parcels in July 2019. Air samples collected from the ground floor of the buildings on the 5015 and 5021 parcels contained cis-1,2-DCE above the PCULs. Air samples collected from the basement of the building on 5021 parcel contained TCE above the Method B cleanup level for unrestricted use, but below the action level for short-term TCE toxicity.

  Depending on the results of remedial actions discussed in section C below, further evaluation of the vapor intrusion pathway may be necessary. The *November 2023 RI/FS/dCAP* discusses comparing concentrations of TCE, cis-1,2-DCE, and vinyl chloride to Method B groundwater

screening levels for vapor intrusion. If performance monitoring results from excavation soil samples indicate contamination remains in soil, additional analysis of soil gas may be necessary to demonstrate the vapor intrusion pathway is incomplete.

b. Establishment of cleanup standards for the Site.

Ecology has determined the PCULs and points of compliance you established for the Site meet the substantive requirements of MTCA.

- **Soil.**
  Based on measured depth of groundwater and the presence of Site COCs in soil and groundwater, the leaching pathway is complete at the Site. Ecology concurs that MTCA Method A soil cleanup levels for unrestricted use are appropriate for the Site (WAC 173-340-740(2); Table 740-1). Where Method A cleanup levels do not exist for individual contaminants, the standard Method B cleanup levels protective of groundwater are appropriate (WAC 173-340-740(3)(b)(iii)(A)). If necessary, Method B cleanup levels may be adjusted upwards to the laboratory practical quantitation limit (PQL; WAC 173-340-740(5)(c)).

  The point of compliance for soil cleanup standards based on the protection of groundwater is soils throughout the Site (WAC 173-340-740(6)(b)).

- **Groundwater.**
  The highest beneficial use for groundwater is considered to be as a potable source, unless it can be demonstrated that groundwater is non-potable. MTCA Method A cleanup levels, which are protective of groundwater as a potable source, are appropriate for the Site (WAC 173-340-720(3)(b); Table 720-1). Where Method A cleanup levels do not exist for individual contaminants, the standard Method B cleanup level protective of potable water should be used (WAC-173-340-720(4)(b)).

  The standard point of compliance for groundwater is throughout the Site from the uppermost level of the saturated zone extending vertically to the lowest depth that could potentially be affected (WAC 173-340-720(8)(b)).

- **Air.**
  Due to the planned future use of the Property as a multi-family residential development, standard MTCA Method B cleanup levels for unrestricted use are appropriate for the Site (WAC 173-340-750(3)(b)). The standard point of compliance is defined as ambient air throughout the Site (WAC 173-340-750(6)).

c. Selection of cleanup for the Property.

Ecology has determined the cleanup you proposed for the Property is likely to meet the substantive requirements of MTCA. Your proposed cleanup meets minimum cleanup requirements and will not exacerbate conditions or preclude reasonable cleanup alternatives elsewhere at the Site.

The preferred cleanup alternative identified in the *November 2023 RI/FS/dCAP* includes the following remedial actions:

- Demolition of existing buildings and impervious surfaces at the Site;
- Removal of identified USTs on the 5001 Parcel associated with the former service station and a fuel oil UST located on the 5021 Parcel as well as any unidentified USTs on the Property;
- Data gap investigation before designing and implementing soil excavation and groundwater treatment;
- Excavation and off-site disposal of soils contaminated with CVOCs, TPH-G, and TPH-D+O from the Property and Rainier Ave S ROW as practicable;
- Treatment and/or disposal of contaminated groundwater removed during construction;
- Installation of a network of permanent groundwater monitoring and injection wells;
- Treatment of groundwater contaminated with CVOCs using in-situ chemical reduction (ISCR) and enhanced bioremediation;
- Performance groundwater monitoring on a semi-annual basis during and after the ISCR and enhanced bioremediation program, followed by at least one year of quarterly confirmational groundwater monitoring;
- Vapor intrusion evaluation and installation of a vapor barrier if applicable; and
- Establishment of an environmental covenant to address potential residual contamination on portions of the Property or in the Rainier Avenue S ROW, if needed.

As discussed in the *November 2023 RI/FS/dCAP*, a pilot test to confirm the design of the in-situ groundwater treatment system will be performed prior to full implementation of this remedial action. Prior to the start of this pilot test, Ecology recommends submitting a work plan to ensure that sufficient data will be collected to verify the effectiveness of in-situ treatments.

Ecology recommends submitting a Supplemental Data Gap Investigation Work Plan to Ecology after completing the building demolition, to ensure lateral and vertical extents of the petroleum and CVOC contamination at the Site are adequately delineated before initiation of excavation. Ecology also recommends submitting a sampling and analysis plan and quality assurance project plan (SAP/QAPP) before initiation of excavation activities to ensure appropriate soil and groundwater performance monitoring samples are collected to document cleanup actions at the Property.

2. Cleanup of the Site as a whole.

Ecology has concluded that **further remedial action** will likely still be necessary elsewhere at the Site upon completion of your proposed cleanup. In other words, while your proposed cleanup may constitute the final action for the Property, it may constitute only an **"interim action"** for the Site as a whole.

Limitations of the Opinion

1. Opinion does not settle liability with the state.

Liable persons are strictly liable, jointly and severally, for all remedial action costs and for all natural resource damages resulting from the release or releases of hazardous substances at the Site. This opinion **does not**:

- Change the boundaries of the Site.
- Resolve or alter a person's liability to the state.
- Protect liable persons from contribution claims by third parties.

To settle liability with the state and obtain protection from contribution claims, a person must enter into a consent decree with Ecology under RCW 70A.305.040(4).

2. Opinion does not constitute a determination of substantial equivalence.

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you proposed will be substantially equivalent. Courts make that determination. *See* RCW 70A.305.080 and WAC 173-340-545.

3. Opinion is limited to proposed cleanup.

This letter does not provide an opinion on whether further remedial action will actually be necessary at the Property upon completion of your proposed cleanup. To obtain such an opinion, you must submit a report to Ecology upon completion of your cleanup and request an opinion under the VCP.

4. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. *See* RCW 70A.305.170.

Contact Information

Thank you for choosing to clean up your Property under the Voluntary Cleanup Program (VCP). As you conduct your cleanup, please do not hesitate to request additional services. We look forward to working with you.

For more information about the VCP and the cleanup process, please visit our web site: www.ecy.wa.gov/programs/tcp/vcp/vcpmain.htm. If you have any questions about this opinion, please contact me by phone at (206) 459-6287 or by e-mail at david.unruh@ecy.wa.gov.

Sincerely,

David Unruh
Site Manager
Toxics Cleanup Program, NWRO

Enclosures (3): A – Legal Description of the Property
B – Description and Diagrams of the Site (including the Property)
C – Basis for the Opinion: List of Documents

cc: Branislav Jurista, Farallon Consulting LLC (bjurista@farallonconsulting.com)
Sonia Fernández, VCP Coordinator (sonia.fernandez@ecy.wa.gov)

Enclosure A

Legal Description of the Property

5001 Rainier Avenue South – King Co. Parcel no. 564960-0135

MORNINGSIDE ACRE TRACTS E 38.5 FT OF 15 & N 100 FT OF 14 LESS ST
Plat lot 14

5015 Rainier Avenue South – King Co. Parcel no. 564960-0133

MORNINGSIDE ACRE TRACTS N 60 FT OF S 131.37 FT
Plat lot 14

5021 Rainier Avenue South – King Co. Parcel no. 564960-0130

MORNINGSIDE ACRE TRACTS S 71.37 FT OF 14 & N 0.10 FT OF 30
Plat lot 14 and 30

Enclosure B

Description and Diagrams of the Site (Including the Property)

Site Description

This section provides Ecology's understanding and interpretation of Site conditions, and is the basis for the opinions expressed in the body of the letter.

Site

The Site is defined by releases of the following at 5001, 5015, and 5021 Rainier Avenue South in Seattle, King County, Washington (Property; **Figure 1**, **Figure 2**):

- TPH-G; TPH-D; TPH-O; benzene; TCE; cis-1,2-DCE; EDC; 1,2-DCP; and vinyl chloride into the Soil.
- TPH-G; TPH-D; TPH-O; benzene; toluene; xylenes; TCE; cis-1,2-DCE; EDC; 1,1,2-TCA; and vinyl chloride into the Groundwater.
- TCE; cis-1,2-DCE; and vinyl chloride into the Air.

The Site is located on the west side of Rainier Avenue South at Hudson Street, and consists of three irregularly-shaped King County tax parcels totaling 0.51 acres in area with the following King County parcel numbers:

- 564960-0135 (5001 Rainier Avenue S; 5001 Parcel)
- 564960-0133 (5015 Rainier Avenue S; 5015 Parcel)
- 564960-0130 (5021 Rainier Avenue S; 5021 Parcel)

According to MTCA, the Site is defined as all areas where contamination has come to be located. Based on the currently available site characterization data, the eastern boundary of the Site extends into the Rainier Ave S right-of-way (ROW) and is not fully delineated.

Area and Property Description

The Site is located in a mixed commercial and residential area in Seattle. The Property is currently developed with two single-story commercial buildings occupied by retail businesses. The Property is bounded by the following:

- North: S Hudson Street, with community organizations and restaurants beyond.
- East: Rainier Avenue S, with restaurants and an event venue beyond.
- South: Restaurants, retail stores, and office buildings, with S Dawson Street beyond.
- West: Warehouses, fitness facilities, and apartments, with 37th Avenue S beyond.

Property History and Current Use

The Property was developed with a service station on the 5001 Parcel in 1927 including underground storage tanks (USTs) used for storage of gasoline and diesel and pump islands (**Figure 2**). Two generations of service stations occupied this parcel from the 1920s until the late 1970s, when it was converted to a parking lot. Gasoline and diesel USTs were closed in place and service station infrastructure removed at that time. The 5001 Parcel remains in operation as a parking lot.

A single-story retail building was constructed on the 5015 Parcel in approximately 1926 (5015 Building; **Figure 2**). The parcel was in use as a lumberyard from 1926 to approximately 1965. It was used as an office building from approximately 1966 to 1980. From 1980 to the present, the 5015 Building has been occupied by a convenience store.

A single-story warehouse building with a basement was constructed on the 5021 Parcel in the 1920s (5021 Building; **Figure 2**). Historical uses of the 5021 Building have included plumbing supply, social club, fitness center, and auto and boat dealerships. A "fuel oil" UST is located on the southern side of the building (**Figure 2**). From 1964 until 2012, the building was used for auto maintenance. Aboveground storage tanks (ASTs) used for storage of solvents, waste oil, and hydraulic oil for auto maintenance operations were located in the basement of the 5021 Building. The building is currently partially occupied by a bookstore and community space on the first floor. The basement of the building was primarily used for auto maintenance in the past, but is currently unoccupied.

Sources of Contamination

The source of TCE; cis-1,2-DCE; 1,2-DCP; EDC; and vinyl chloride (collectively CVOCs) contamination at the Site is associated with historical use of the Property for auto maintenance. A sediment sample collected in January 2007 from a sump drain in the 5021 Parcel contained tetrachloroethene (PCE) and TCE. Soil and groundwater samples collected from the subsurface in the vicinity of the floor drain contained the highest concentration of CVOCs (**Figure 3**, **Figure 4**, **Figure 5**). The distribution of CVOCs in soil and groundwater at the Site indicates that the floor drain is the major source of contamination for these compounds.

Concentrations of EDC and 1,1,2 TCA exceeding the Method B cleanup level are present in groundwater in the northwestern portion of the 5001 Parcel (FB-32; **Figure 5**). Based on historical use of this portion of the Site, this release is inferred to have occurred during the first generation of service station use at the Site.

The source of petroleum contamination at the Site is likely associated with former service station operations on the 5001 Parcel. Soil and groundwater samples collected from GP-3/MW-6, GLP-04/MW-4, and GLP-05/MW-10 contained TPH-G, TPH-D, TPH-O, and benzene above the Method A cleanup level (**Figure 3, Figure 6, Figure 7**). The highest concentrations of these contaminants are oriented around the location of the first-generation service station and the second-generation service station pump islands (**Figure 2**).

A groundwater sample collected from a temporary well installed near or potentially through the fuel oil UST on the 5021 Parcel contained TPH-D above the Method A cleanup level (GLP-07; **Figure 7**). During the collection of the groundwater sample, light non-aqueous phase liquid (LNAPL) was noted in groundwater purged from the well. Soil samples were not collected from this boring. Groundwater samples collected from nearby monitoring wells were also contaminated with petroleum hydrocarbons.

Physiographic Setting

In general, the Seattle area sits on a complex and incomplete succession of glacial and nonglacial deposits that overlie an irregular bedrock surface. The City straddles the Seattle uplift, the Seattle fault zone, and the Seattle basin, three major bedrock structures that reflect north-south crustal shortening in the Puget Sound Lowland. The landforms and near-surface deposits that cover much of the Seattle area include the upland glacial till that in many areas was cut into channels during glaciation by recessional meltwater.

The glacial till can display north-south axes oriented in the former ice-flow direction. Glacially overridden deposits underlie most of the uplands, whereas loosely consolidated postglacial deposits fill deep valleys and recessional meltwater channels. Soft organic-rich deposits have filled former lakes, bogs, and sloughs.

The Property is situated in the Rainier Valley, located between two uplands to the east and west. The Property is on roughly level ground at an elevation of approximately 115 feet above mean sea level (amsl; **Figure 1**).

Surface/Storm Water System

Stormwater runoff on and in the vicinity of the Property disperses via sheet flow to catch basins connected to the City of Seattle stormwater system located on Rainier Avenue S. The nearest surface water body is Lake Washington, located approximately 0.9 miles northeast of the Property.

Ecological Setting

The Site is zoned for mixed commercial and residential use. Adjoining properties to the north, south, east, and west are also zoned for mixed commercial and residential use. Land surfaces on the Property and adjacent parcels are primarily covered by buildings, asphalt, and concrete pavement with some small landscaped areas.

Geology

The geologic map of the area[3] indicates that the Site is underlain by Vashon-Age recessional lacustrine deposits, a series of finely bedded to laminated sands, silts and clays. Boring logs for explorations completed at the Site indicate that the Property is underlain by fill materials to a maximum depth of 12 feet below ground surface (bgs). Fill materials are underlain by clays, silts, sandy silts, and silty sands to the maximum explored depth of 48 feet bgs, interpreted to be recessional lacustrine deposits.

Groundwater

From 2006 to 2023, 27 wells were installed on the Property (MW-1 to MW-27; **Figure 3**, **Figure 8**). Wells were installed with 4 to 10-foot screens installed from 3 to 48 feet bgs.

Groundwater is present at the Site at depths ranging from 0.48 to 13.37 feet bgs with the exception of MW-23. MW-23 is screened from 38 to 48 feet bgs and, since its installation in

[3] https://pubs.usgs.gov/of/2005/1252/

February 2023, depth to water measurements have ranged from 30 to 42 feet bgs. Groundwater flow at the Site is generally oriented northwest. Due to the location of the Site in a valley, groundwater flow is oriented to the north to northeast on the west side of the Site, and to the southwest on the east side of the Site (**Figure 8**).

Water Supply

Drinking water is supplied to the Property by water mains operated by the City of Seattle. Water for the City is sourced from the Cedar and Tolt River watersheds, located approximately 27 miles southeast and 29 miles northeast of the Site, respectively. The Site is located approximately 3.75 miles northwest of the closest 10-year wellhead protection zone for a municipal supply well.

Release and Extent of Contamination

Soil.

A Phase II Environmental Site Assessment (ESA) was conducted on the Site in May and June 2006 based on historical uses of the Property identified in a Phase I ESA conducted in 2005. Six borings were advanced on the 5001 and 5015 Parcels to a maximum depth of 29 feet bgs (SB-1/MW-1, SB-2/MW-2, SB-3/MW-3, SB-4/MW-4, GP-1, GP-2/MW-5; **Figure 3**). Soil samples collected from GP-1/MW-4 and GP-2/MW-5 did not contain CVOCs or TPH above laboratory detection limits. Soil samples were not collected from SB-1 to SB-4.

Three additional borings were advanced on the Property in August 2006 to a maximum of 14.5 feet bgs (GP-3/MW-6, GP-4/MW-7, GP-5/MW-8; **Figure 3**, **Figure 9**). Soil samples collected from GP-3 at 10 feet bgs contained TPH-G and benzene above the Method A cleanup level (**Figure 6**). A soil sample collected from 8 feet bgs in GP-4/MW-7 contained TCE above the Method A cleanup level (**Figure 4**). Soil samples collected from GP-5/MW-8 did not contain CVOCs or TPH above their respective Method A or B cleanup levels.

Additional subsurface investigation occurred on the Property in January and February 2007. A total of 11 borings were installed to a maximum depth of 26 feet bgs (GLP-01 to GLP-03, GLP-04/MW-9, GLP-05/MW-10, GLP-06 to GLP-08, GLP-09/MW-11, GLP-10/MW-12, GLP-11, GLP-12/MW-13, GLP-13, GLP-14/MW-14, GLP-15/MW-15, GLP-16/MW-16, GLP-17/MW-17, and GLP-18/MW-18; **Figure 3**, **Figure 9**). Soil samples collected from GLP-05 and GLP-18 contained TPH-G, TPH-D, TPH-O, and/or benzene above their respective Method A cleanup levels at depths from 5 to 18 feet bgs (**Figure 6**). Soil samples collected from 4 feet to 12 feet bgs in GLP-13 and from 15 feet bgs in GLP-17 contained vinyl chloride above the Method B cleanup level for protection of groundwater (**Figure 4**). CVOCs and TPH were not detected above Method A or Method B cleanup levels in other soil samples.

GLP-07 was advanced in the immediate vicinity of a former fuel oil UST on the 5021 Property (**Figure 4**). As discussed below, groundwater collected from a temporary well installed in this boring contained blebs of LNAPL. The boring log for the exploration notes soils encountered are potentially backfill material for the UST. Soil samples were not collected from GLP-7.

Supplemental soil sampling was conducted from 2017 through 2023 to further delineate the extent of TPH and CVOCs in soil at the Site. A total of 23 borings were advanced on the Property (MW-19, MW-21 to MW-27; FB-22 through FB-36) and one boring was completed on the east side of Rainier Ave S to the east of the Site (MW-20, **Figure 3**). Soil samples collected from MW-19, MW-26, FB-25, FB-26, and FB-28 contained TCE, cis-1,2-DCE, EDC, 1,2-DCP, and/or vinyl chloride above the applicable Method A and B cleanup levels at depths ranging from 6 to 25 feet bgs (**Figure 4**, **Figure 9**). Soil samples collected from MW-25, FB-23, FB-30, FB-32, and FB-33 contained TPH-G, TPH-D, and/or benzene above the Method A cleanup level at depths ranging from 5 to 13 feet bgs (**Figure 6**).

Groundwater.

Groundwater samples collected during the Phase II ESA in 2006 from MW-3, MW-4, and MW-7 contained vinyl chloride above the Method A cleanup level. Groundwater samples collected from MW-7 also contained TCE; cis-1,2-DCE; and EDC above their respective Method A and Method B cleanup levels. Groundwater samples from remaining monitoring wells did not contain CVOCs, TPH, or benzene above their respective cleanup levels (**Figure 5**).

MW-9 through MW-18 were installed on the Property in January and February 2007. Groundwater samples collected from FB-22, MW-3, MW-4, MW-7, MW-11, MW-12, MW-16, and MW-17 contained vinyl chloride above the Method A cleanup level. Samples collected form MW-7, MW-12, MW-16, and MW-17 also contained TCE above the Method A cleanup level. Additionally, cis-1,2-DCE was detected above the Method B cleanup level in groundwater samples collected from MW-7, MW-16, and MW-17 (**Figure 5**).

A groundwater sample collected from monitoring well MW-10 contained TPH-G, TPH-D, and TPH-O above the Method A cleanup levels. Field measurements collected at MW-10 from 2007 to the most recent sampling event in July 2023 indicate the presence of 0.21 to 0.82 feet of light non-aqueous phase liquid (LNAPL; **Figure 7**).

GLP-07 was advanced in the vicinity of a former “fuel oil” UST of unknown size on the 5021 Parcel (**Figure 7**). A groundwater sample was collected from a temporary well installed in the boring. Purge water was noted to contain globules of brown LNAPL. Analytical results for the groundwater sample indicated that it contained TPH-D above the Method A cleanup level.

Groundwater sampling conducted on the Site in February 2013 returned similar results to the previous sampling events. Vinyl chloride was detected above the Method A cleanup level in MW-4, MW-7, MW-12, MW-16, and MW-17. Groundwater samples collected from MW-7, MW-12, MW-16, and MW-17 also contained TCE above the Method A cleanup level. Cis-1,2-DCE was detected above the Method B cleanup level in groundwater samples collected from MW-7, MW-16, and MW-17. Monitoring well MW-19 was installed at the Site in 2017 and contained TCE; cis-1,2-DCE, and vinyl chloride above the Method A and Method B cleanup levels (**Figure 5**).

Groundwater samples collected from MW-6, MW-9, and MW-10 during the 2013 sampling event contained combined TPH-D and TPH-O (TPH-D+O) above the Method A cleanup level

(**Figure 7**). The remainder of groundwater samples collected from Site monitoring wells during this event did not contain TPH above their respective Method A cleanup levels.

Groundwater samples were collected from Site monitoring wells during several events following the installation of MW-19 through MW-27 from 2017 to 2023. Vinyl chloride was detected above the Method A cleanup level in MW-4, MW-7, MW-12, MW-16, MW-17, MW-19, MW-21, and MW-27 (**Figure 5**, **Figure 9**). Vinyl chloride was also detected above the Method A cleanup level in groundwater samples collected from temporary wells installed in FB-22 and FB-32 in August 2018 and July 2023, respectively. Groundwater samples collected from MW-7, MW-12, MW-17, and MW-19 also contained TCE and cis-1,2-DCE above their Method A and Method B cleanup levels (**Figure 5**). 1,2-DCP was also detected above the Method B cleanup level in groundwater samples collected from MW-7. Groundwater samples collected from the remaining wells at the Site did not contain CVOCs above Method A or Method B cleanup levels (**Figure 5**).

Groundwater samples collected from MW-6, MW-9, MW-11, MW-12, MW-22, and temporary wells installed in borings FB-22, FB-30, FB-31, and FB-32 from 2017 to 2023 contained TPH-D+O above the Method A cleanup level (**Figure 7**). The groundwater sample collected from FB-32 also contained TPH-G above the Method A cleanup level. Groundwater samples collected from MW-19 in October 2018 contained benzene above the Method A cleanup level.

Air.

Based on the analytical results of groundwater sampling, groundwater under the Property contained TCE and vinyl chloride above the Method B screening levels for vapor intrusion. Air sampling was conducted on the Property in July 2019 to address the potential for CVOCs to be present in indoor air in buildings. One indoor air sample was collected from the 5015 Building on and five from the 5021 Building. One ambient air sample was collected from the open space between the two buildings (OA-1; **Figure 10**).

Air samples IA-1, IA-2, and IA-6, collected from the 5015 Building and the first floor of the 5021 Building contained 1,2-DCE above the Method B cleanup level for unrestricted use (**Figure 10**). Air samples IA-3 through IA-5, collected from the basement of the 5021 Building, contained TCE above the Method B cleanup level for unrestricted use. Sample IA-4 also contained vinyl chloride above the Method B cleanup level for unrestricted use.

REFERENCE: 7.5 MINUTE USGS QUADRANGLE SEATTLE SOUTH, WASHINGTON, DATED 2013

Enclosure B Figure 1

0 6,200
SCALE IN FEET

N

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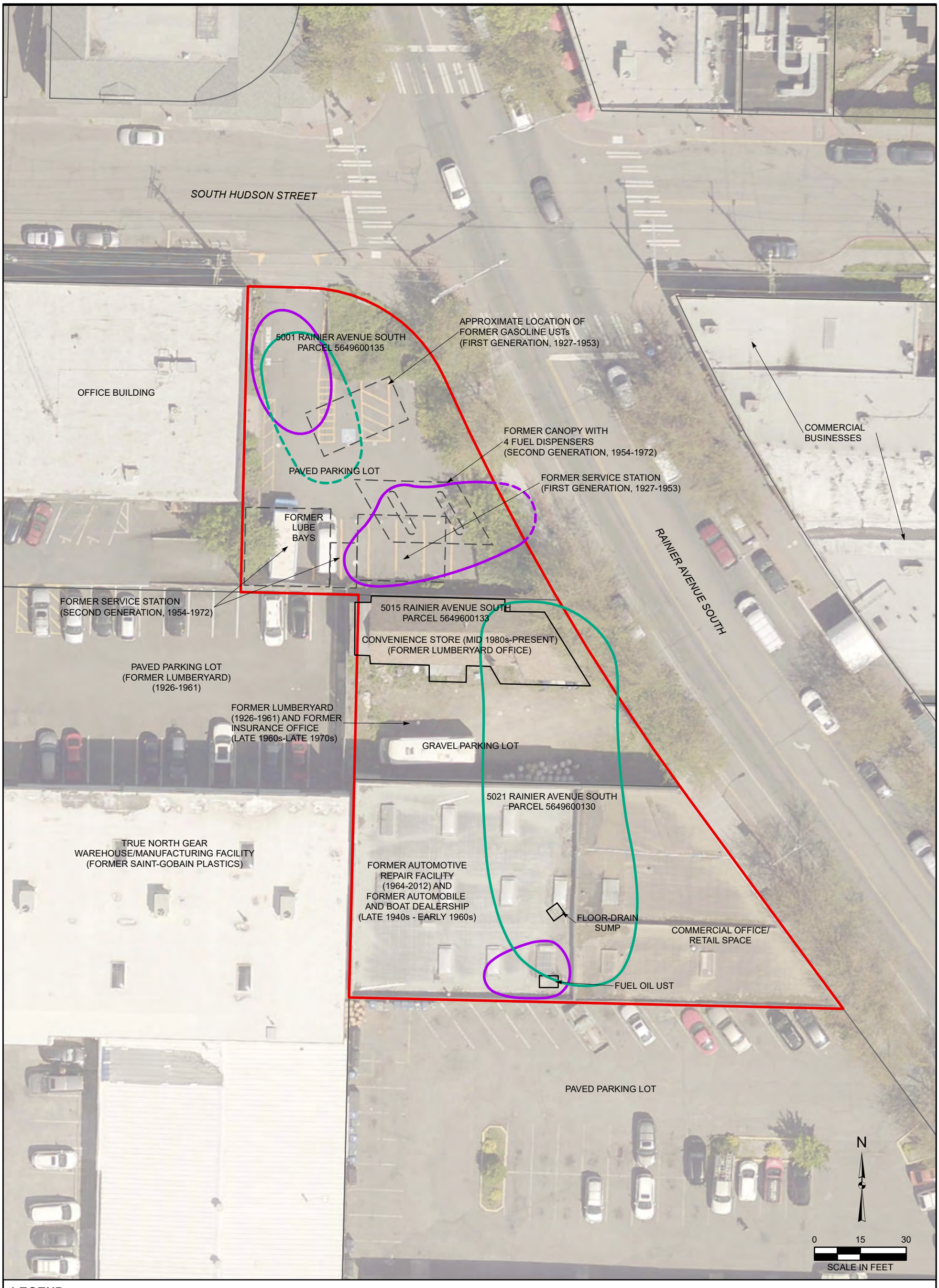
FIGURE 1

PROPERTY VICINITY MAP
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

Drawn By: vpehlivan Checked By: RL Date: 12/7/2021 Disc Reference:

Document Path: Q:\Projects\1355 Morningside\001 RainierAveS\Mapfiles\006_RI\Figure-01_SiteVicinityMap.mxd



LEGEND

- 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

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.

Enclosure B Figure 2

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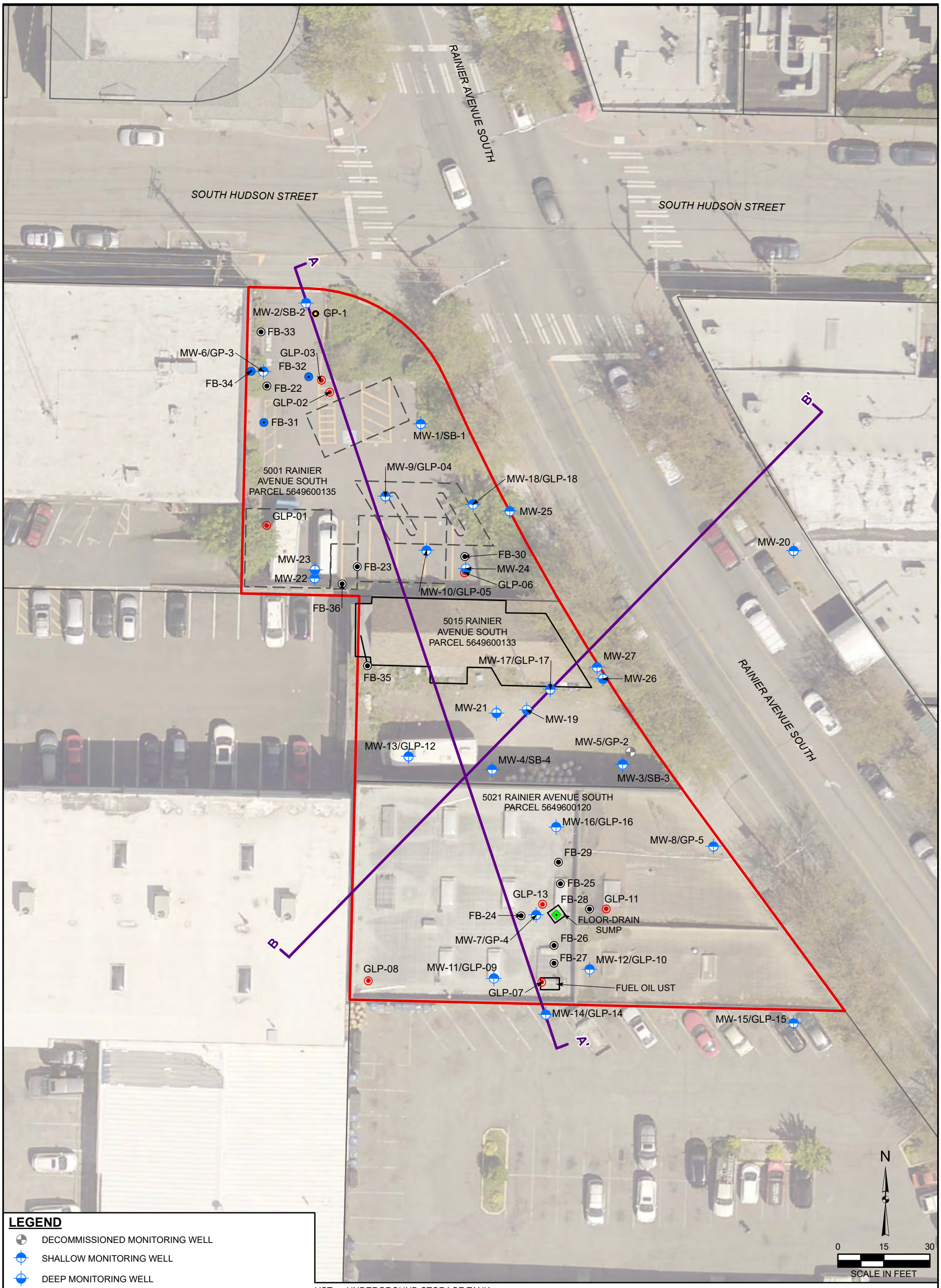
FIGURE 2

CURRENT AND HISTORICAL PROPERTY FEATURES
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

Drawn By: lmurock | Checked By: SB | Date: 8/2/2023 | Disc Reference:

Document Path: Q:\Projects\1355 Morningside\001 RainierAveS\Mapfiles\018\Figure-02_PropertyFeatures.mxd



LEGEND

- 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
- A A' LINE OF CROSS SECTION
- HISTORICAL GAS STATION FEATURE
- PROPERTY FEATURE
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY

UST = UNDERGROUND STORAGE TANK

NOTES:
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Enclosure B Figure 3

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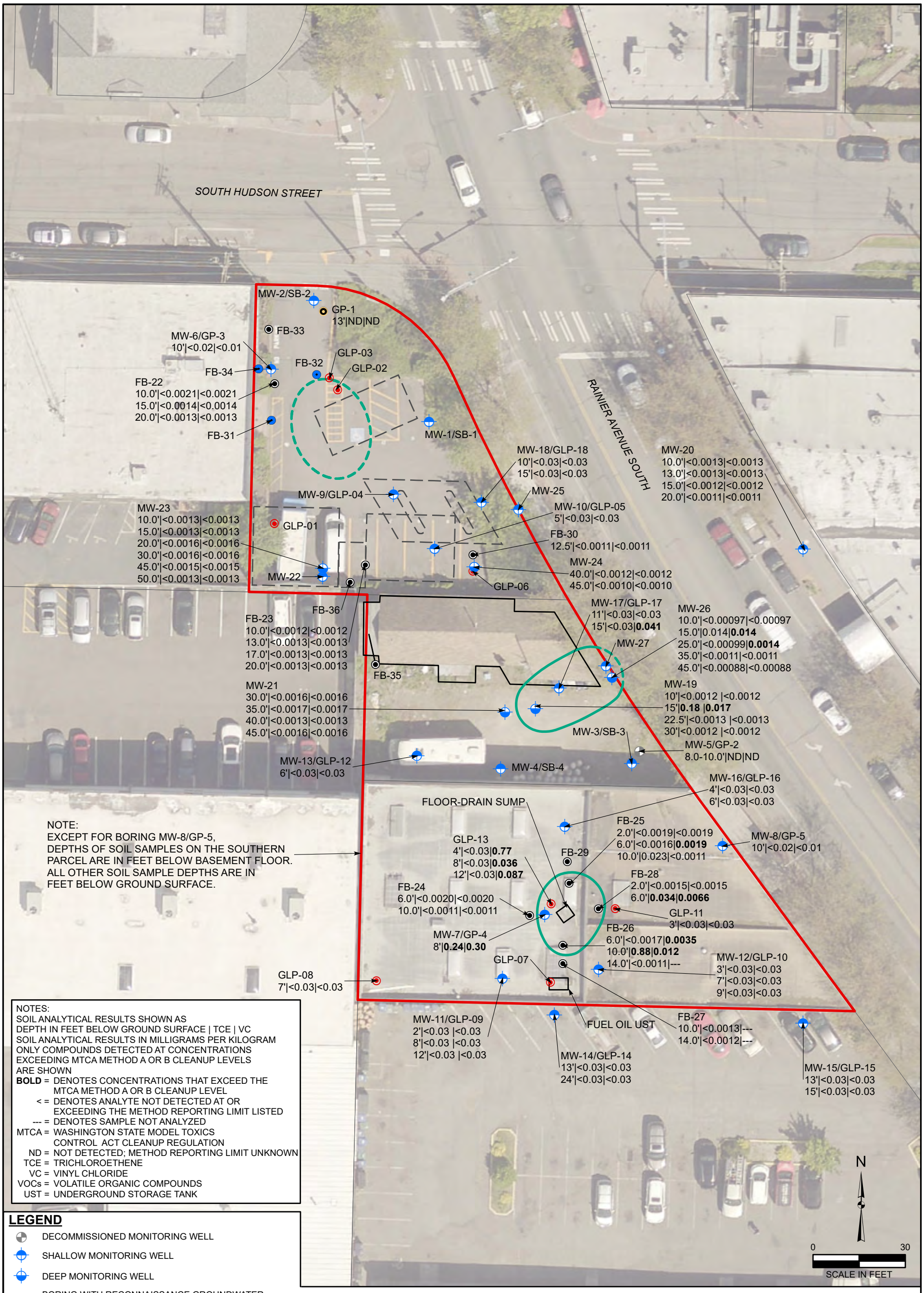
FIGURE 3

SAMPLING LOCATIONS
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

Drawn By: aguse | Checked By: SB | Date: 10/18/2023 | Disc Reference:

Document Path: Q:\Projects\1355 Morningside\001 RainierAveS\Mapfiles\018\Figure-03_SamplingLocations.mxd



NOTE:
EXCEPT FOR BORING MW-8/GP-5,
DEPTHS OF SOIL SAMPLES ON THE SOUTHERN PARCEL ARE IN FEET BELOW BASEMENT FLOOR.
ALL OTHER SOIL SAMPLE DEPTHS ARE IN FEET BELOW GROUND SURFACE.

NOTES:
SOIL ANALYTICAL RESULTS SHOWN AS
DEPTH IN FEET BELOW GROUND SURFACE | TCE | VC
SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM
ONLY COMPOUNDS DETECTED AT CONCENTRATIONS EXCEEDING MTCA METHOD A OR B CLEANUP LEVELS ARE SHOWN
BOLD = DENOTES CONCENTRATIONS THAT EXCEED THE MTCA METHOD A OR B CLEANUP LEVEL
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE METHOD REPORTING LIMIT LISTED
--- = DENOTES SAMPLE NOT ANALYZED
MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
ND = NOT DETECTED; METHOD REPORTING LIMIT UNKNOWN
TCE = TRICHLOROETHENE
VC = VINYL CHLORIDE
VOCs = VOLATILE ORGANIC COMPOUNDS
UST = UNDERGROUND STORAGE TANK

LEGEND

- 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)
- ESTIMATED EXTENT OF CHLORINATED VOCs IN SOIL EXCEEDING MTCA METHOD A OR B CLEANUP LEVELS (DASHED WHERE INFERRED)
- HISTORICAL GAS STATION FEATURE
- PROPERTY FEATURE
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY

NOTES:
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Enclosure B Figure 4

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FIGURE 5

ESTIMATED AREAL EXTENT OF CHLORINATED VOCs IN SOIL
MORNINGSIDE ACRES TRACTS 5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

Drawn By: aguse | Checked By: SB | Date: 10/19/2023 | Disc Reference:

Document Path: Q:\Projects\1355 Morningside\001 RainierAveS\Mapfiles\018\Figure-05_Soil_VOCs.mxd

RAINIER AVENUE SOUTH

SOUTH HUDSON STREET

MW-2/SB-2
1/8/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|<1
12/15/2017|<0.20|<0.20|<0.20|<0.20|<0.20
10/2/2018|<0.20|<0.20|<0.20|<0.20|<0.20
8/10/2021|<0.20|<0.20|<0.20|<0.20|<0.20

FB-32
7/13/2023|<10|<10|<10|**820**|<10|TCA:**39**

MW-6/GP-3
8/4/2006|ND|ND|ND|ND|ND
1/8/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|<1
12/15/2017|<0.20|<0.20|<0.20|<0.20|<0.20
10/2/2018|<0.20|<0.20|<0.20|<0.20|<0.20
8/10/2021|<0.20|<0.20|<0.20|<0.20|<0.20

FB-33

GP-1

GLP-03

GLP-02

MW-1/SB-1
5/30/2006|ND|ND|ND|ND|ND
1/8/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|<1
2/12/2013|<1|<1|<0.2|<1|<1

FB-34
7/14/2023|<0.20|<0.20|<0.20|<0.20|<0.20

FB-22
8/29/2018|<0.20|<0.20|**0.84**|<0.20|<0.20

FB-31
7/13/2023|<0.20|<0.20|<0.20|<0.20|<0.20

MW-18/GLP-18
2/16/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|<1
12/15/2017|<0.20|<0.20|<0.20|<0.20|<0.20
10/3/2018|<0.20|<0.20|<0.20|<0.20|<0.20
8/10/2021|<0.20|<0.20|<0.20|<0.20|<0.20

MW-20
5/10/2018|<0.20|<0.20|<0.20|<0.20|<0.20
10/3/2018|<0.20|<0.20|<0.20|<0.20|<0.20
8/10/2021|<0.20|<0.20|<0.20|<0.20|<0.20

MW-10/GLP-05
1/8/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|<1

MW-9/GLP-04
1/8/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|<1
12/15/2017|<0.20|<0.20|<0.20|<0.20|<0.20
10/3/2018|<0.20|<0.20|<0.20|<0.20|<0.20
8/10/2021|<0.20|<0.20|<0.20|<0.20|<0.20

MW-25

FB-30
2/14/2023|<0.20|<0.20|<0.20|<0.20|<0.20 (15 FT BGS)
2/16/2023|<0.20|<0.20|<0.20|<0.20|<0.20 (30 FT BGS)

GLP-01

MW-24
2/22/2023|<0.20|<0.20|<0.20|<0.20|<0.20

MW-23
2/20/2023|<0.20|<0.20|<0.20|<0.20|<0.20

MW-17/GLP-17
2/16/2007|**109**|**77.3**|**155**|<1.0|<1.0
2/12/2013|**48**|**41**|**76**|<1|---
12/14/2017|**18**|**23**|**23**|0.31|0.32
12/14/2017|**17**|**23**|**22**|0.31|0.29
10/2/2018|**31**|**34**|**46**|0.41|0.41
8/9/2021|**16**|**23**|**22**|0.20|0.26

MW-22
2/20/2023|<0.20|<0.20|<0.20|<0.20|<0.20

GLP-06

MW-27
7/20/2023|**9.4**|**34**|**48**|0.53|0.41

FB-36

MW-26
7/20/2023|<0.20|<0.20|<0.20|<0.20|<0.20

FB-23
8/29/2018|<0.20|<0.20|<0.20|<0.20|<0.20

FB-35

MW-19
12/14/2017|**6.6**|**19**|**41**|<0.40|<0.40
10/2/2018|0.86|3.7|**8.5**|<0.20|<0.20
8/9/2021|1.2|7.1|**15**|<0.20|<0.20

MW-5/GP-2
6/9/2006|2.2|13|24|ND|ND

MW-3/SB-3
8/4/2006|ND|ND|**0.72**|ND|ND
1/8/2007|<1.0|3.3|**0.46**|<1.0|<1.0
2/12/2013|<1|1.4|<0.2|<1|---
12/15/2017|<0.20|0.48|<0.20|<0.20|<0.20
10/2/2018|<0.20|1.2|<0.20|<0.20|<0.20
8/9/2021|<0.20|0.51|<0.20|<0.20|<0.20

MW-21/FB-21
10/2/2018|1.2|2.6|**7.9**|<0.20|<0.20
8/9/2021|<0.20|0.55|**0.98**|<0.20|<0.20
2/20/2023|<0.20|<0.20|**0.21**|<0.20|<0.20

MW-16/GLP-16
2/16/2007|**30.2**|**27.9**|**7**|<1.0|<1.0
2/12/2013|2.4|**24**|**6.6**|<1|---
12/14/2017|1.7|**30**|**8.1**|<0.20|<0.20
10/3/2018|1.2|**25**|**7.0**|<0.20|<0.20
8/9/2021|1.2|**25**|**7.1**|<0.20|<0.20

MW-13/GLP-12
1/8/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|---
12/14/2017|<0.20|<0.20|<0.20|<0.20|<0.20
10/2/2018|<0.20|<0.20|<0.20|<0.20|<0.20
8/9/2021|<0.20|<0.20|<0.20|<0.20|<0.20

MW-8/GP-5
8/4/2006|ND|ND|ND|ND|ND
1/8/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|---
12/15/2017|<0.20|<0.20|<0.20|<0.20|<0.20
10/3/2018|<0.20|<0.20|<0.20|<0.20|<0.20
8/10/2021|<0.20|<0.20|<0.20|<0.20|<0.20

MW-4/SB-4
5/30/2006|ND|ND|**2.1**|ND|ND
6/9/2006|1.8|2.7|**16**|ND|ND
1/8/2007|<1.0|0.79|**4.0**|<1.0|<1.0
2/12/2013|<1|1.3|**7.0**|<1|---
12/14/2017|0.31|0.71|**1.5**|<0.20|<0.20
10/2/2018|0.24|0.71|**1.5**|<0.20|<0.20

MW-7/GP-4
8/4/2006|**51**|**160**|**260**|**11**|**3.4**
1/8/2007|**16**|**173**|**593**|**8.2**|<1.0
2/12/2013|**25**|**220**|**290**|**6.1**|<1
12/14/2017|**24**|**140**|**150**|**5.1**|**2.4**
12/14/2017|**24**|**140**|**140**|5|**2.3**
10/3/2018|**50**|**210**|**250**|**6.9**|**3.9**
8/9/2021|**34**|**120**|**150**|4.2|**2.4**

FB-29

FB-25

GLP-13

GLP-11

FB-28

Sump

FB-24

FB-26

FB-27

GLP-07
1/8/2007|<1.0|<1.0|<0.2|<1.0|<1.0

GLP-08

MW-12/GLP-10
1/8/2007|**12.2**|6.2|**1.2**|<1.0|<1.0
2/12/2013|**8.3**|6.7|**0.26**|<1|---
12/14/2017|**23**|**29**|**11**|0.57|0.52
10/3/2018|**38**|**46**|**13**|0.80|0.79
8/9/2021|**47**|**57**|**20**|0.91|0.75

MW-11/GLP-09
1/8/2007|0.9|1.2|1.4|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|---
12/14/2017|<0.20|0.73|<0.20|<0.20|<0.20
10/3/2018|<0.20|1.0|<0.20|<0.20|<0.20
8/9/2021|<0.20|0.62|<0.20|<0.20|<0.20

MW-15/GLP-15
2/16/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|---
12/14/2017|<0.20|<0.20|<0.20|<0.20|<0.20
10/3/2018|<0.20|<0.20|<0.20|<0.20|<0.20
8/9/2021|<0.20|<0.20|<0.20|<0.20|<0.20

MW-14/GLP-14
2/16/2007|<1.0|<1.0|<0.2|<1.0|<1.0
2/12/2013|<1|<1|<0.2|<1|---
12/15/2017|<0.20|<0.20|<0.20|<0.20|<0.20
10/3/2018|<0.20|<0.20|<0.20|<0.20|<0.20
8/10/2021|<0.20|<0.20|<0.20|<0.20|<0.20

NOTES:
DATE SAMPLED AND ANALYTICAL RESULTS AS:
SAMPLE DATE | TCE | cis-1,2-DCE | VC | 1,2-DCA | 1,2-DCP
GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER.
ONLY COMPOUNDS DETECTED AT CONCENTRATIONS EXCEEDING MTCA METHOD A OR B CLEANUP LEVELS ARE SHOWN
BOLD = DENOTES CONCENTRATIONS THAT EXCEED THE WASHINGTON STATE MTCA METHOD A OR B CLEANUP LEVEL
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE METHOD REPORTING LIMIT LISTED
FT BGS = FEET BELOW GROUND SURFACE
TCA = 1,1,2-TRICHLOROETHANE
TCE = TRICHLOROETHENE
CIS-1,2-DCE = CIS-1,2-DICHLOROETHENE
VC = VINYL CHLORIDE
1,2-DCA = 1,2-DICHLOROETHANE
1,2-DCP = 1,2-DICHLOROPROPANE
--- = DENOTES SAMPLE NOT ANALYZED
ND = NOT DETECTED; METHOD REPORTING LIMIT UNKNOWN
MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
VOCs = VOLATILE ORGANIC COMPOUNDS
UST = UNDERGROUND STORAGE TANK

LEGEND

- 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)
- ESTIMATED EXTENT OF CHLORINATED VOCs EXCEEDING MTCA METHOD A OR B CLEANUP LEVELS IN GROUNDWATER (BASED ON MOST RECENT DATA), DASHED WHERE INFERRED
- INFERRED GROUNDWATER FLOW DIRECTION
- HISTORICAL GAS STATION FEATURE
- PROPERTY FEATURE
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY

N

0 30
SCALE IN FEET

NOTES:
1. ALL LOCATIONS ARE APPROXIMATE.
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FIGURE 11

ESTIMATED AREAL EXTENT OF CHLORINATED VOCS
IN GROUNDWATER
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

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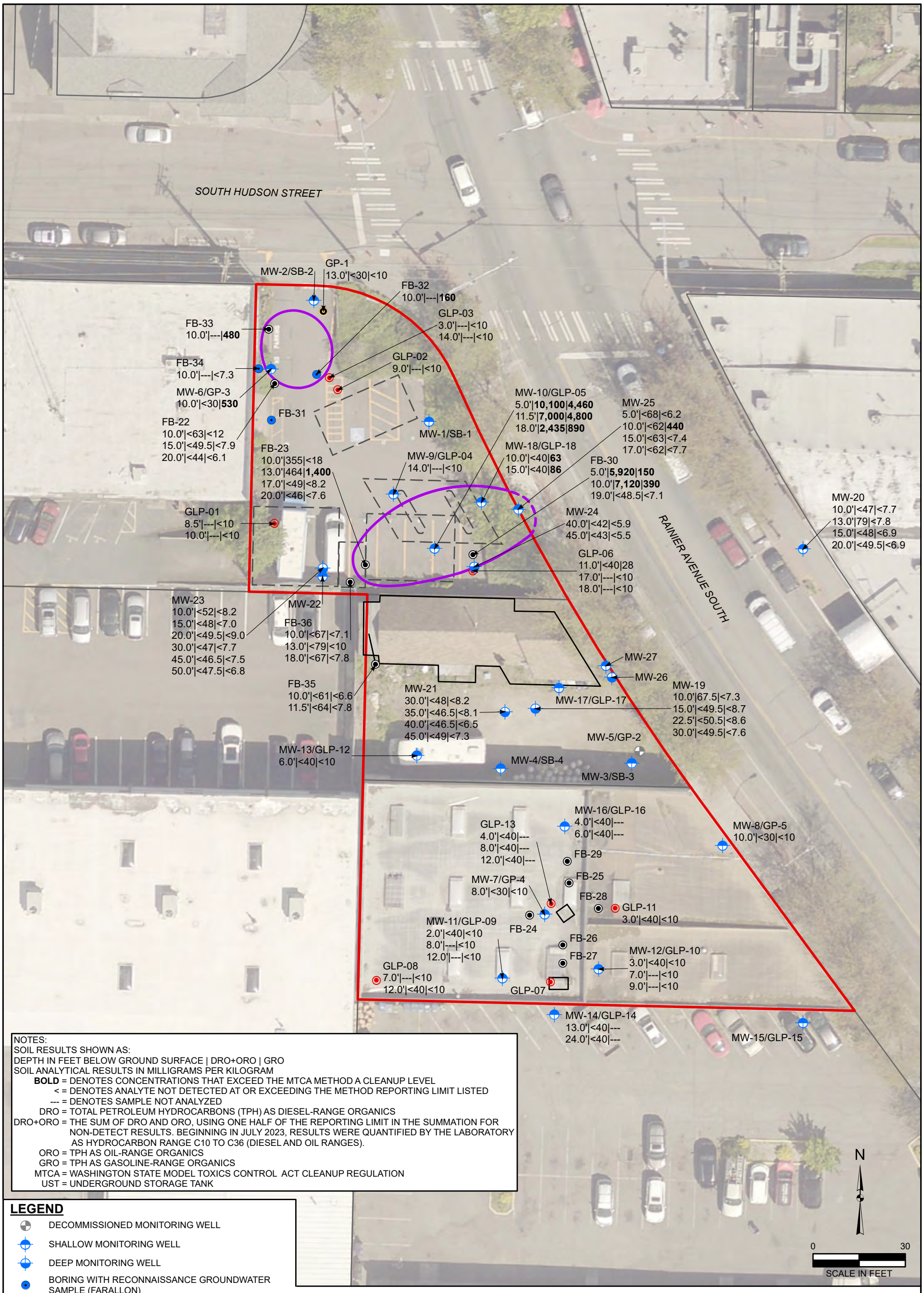

NOTES:
SOIL RESULTS SHOWN AS:
DEPTH IN FEET BELOW GROUND SURFACE | DRO+ORO | GRO
SOIL ANALYTICAL RESULTS IN MILLIGRAMS PER KILOGRAM
BOLD = DENOTES CONCENTRATIONS THAT EXCEED THE MTCA METHOD A CLEANUP LEVEL
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE METHOD REPORTING LIMIT LISTED
--- = DENOTES SAMPLE NOT ANALYZED
DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS
DRO+ORO = THE SUM OF DRO AND ORO, USING ONE HALF OF THE REPORTING LIMIT IN THE SUMMATION FOR NON-DETECT RESULTS. BEGINNING IN JULY 2023, RESULTS WERE QUANTIFIED BY THE LABORATORY AS HYDROCARBON RANGE C10 TO C36 (DIESEL AND OIL RANGES).
ORO = TPH AS OIL-RANGE ORGANICS
GRO = TPH AS GASOLINE-RANGE ORGANICS
MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
UST = UNDERGROUND STORAGE TANK

LEGEND

- 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)
- ESTIMATED EXTENT OF PETROLEUM IMPACTS IN SOIL EXCEEDING MTCA METHOD A CLEANUP LEVEL (DASHED WHERE INFERRED)
- HISTORICAL GAS STATION FEATURE
- PROPERTY FEATURE
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY

NOTES:
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FIGURE 8

ESTIMATED AREAL EXTENT OF
PETROLEUM HYDROCARBONS IN SOIL
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

Drawn By: aguse | Checked By: SB | Date: 10/19/2023 | Disc Reference:

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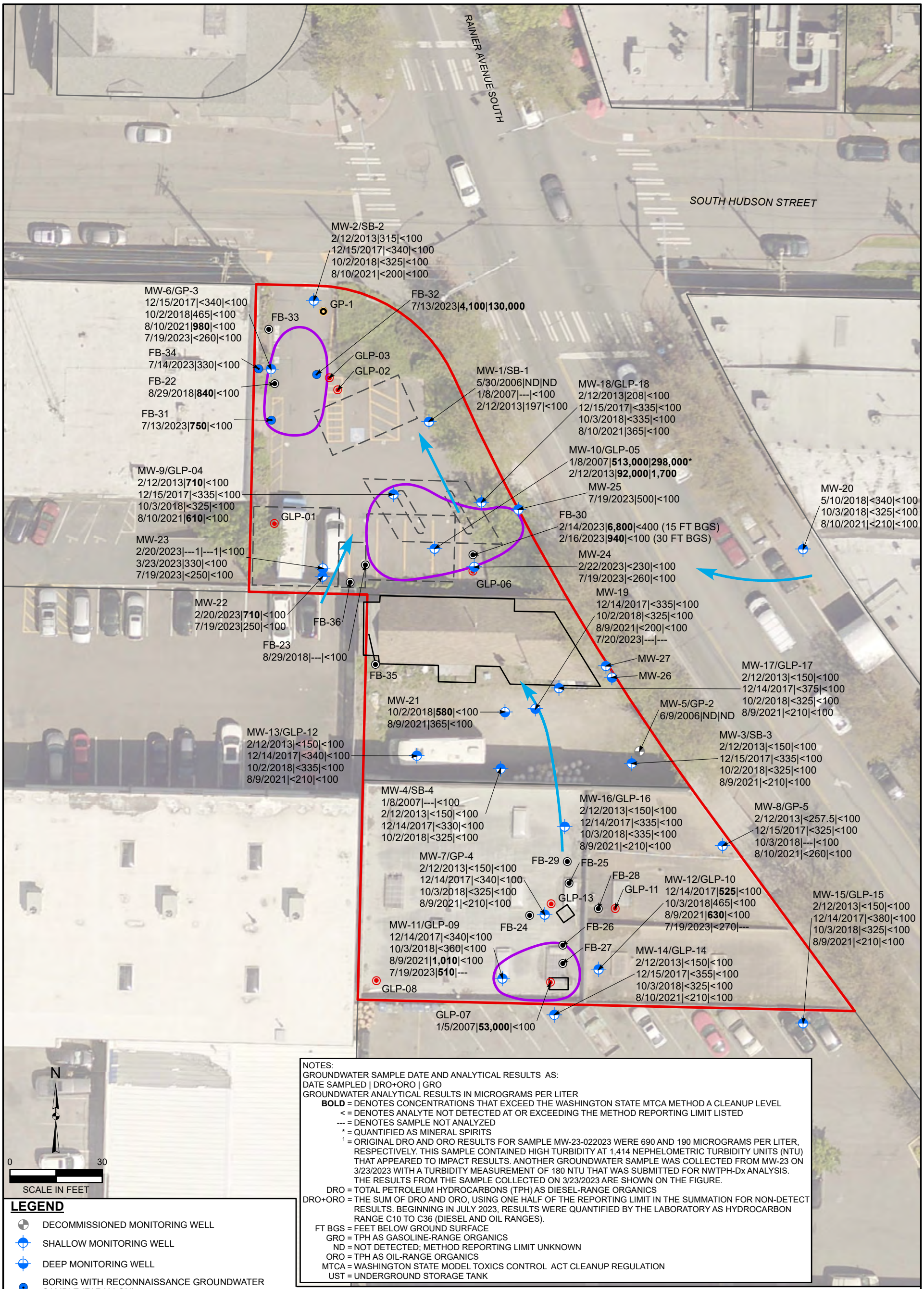

NOTES:
GROUNDWATER SAMPLE DATE AND ANALYTICAL RESULTS AS:
DATE SAMPLED | DRO+ORO | GRO
GROUNDWATER ANALYTICAL RESULTS IN MICROGRAMS PER LITER

BOLD = DENOTES CONCENTRATIONS THAT EXCEED THE WASHINGTON STATE MTCA METHOD A CLEANUP LEVEL
< = DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE METHOD REPORTING LIMIT LISTED
--- = DENOTES SAMPLE NOT ANALYZED
* = QUANTIFIED AS MINERAL SPIRITS
[1] = ORIGINAL DRO AND ORO RESULTS FOR SAMPLE MW-23-022023 WERE 690 AND 190 MICROGRAMS PER LITER, RESPECTIVELY. THIS SAMPLE CONTAINED HIGH TURBIDITY AT 1,414 NEPHELOMETRIC TURBIDITY UNITS (NTU) THAT APPEARED TO IMPACT RESULTS. ANOTHER GROUNDWATER SAMPLE WAS COLLECTED FROM MW-23 ON 3/23/2023 WITH A TURBIDITY MEASUREMENT OF 180 NTU THAT WAS SUBMITTED FOR NWTPH-Dx ANALYSIS. THE RESULTS FROM THE SAMPLE COLLECTED ON 3/23/2023 ARE SHOWN ON THE FIGURE.
DRO = TOTAL PETROLEUM HYDROCARBONS (TPH) AS DIESEL-RANGE ORGANICS
DRO+ORO = THE SUM OF DRO AND ORO, USING ONE HALF OF THE REPORTING LIMIT IN THE SUMMATION FOR NON-DETECT RESULTS. BEGINNING IN JULY 2023, RESULTS WERE QUANTIFIED BY THE LABORATORY AS HYDROCARBON RANGE C10 TO C36 (DIESEL AND OIL RANGES).
FT BGS = FEET BELOW GROUND SURFACE
GRO = TPH AS GASOLINE-RANGE ORGANICS
ND = NOT DETECTED; METHOD REPORTING LIMIT UNKNOWN
ORO = TPH AS OIL-RANGE ORGANICS
MTCA = WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
UST = UNDERGROUND STORAGE TANK

LEGEND

- 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)
- ESTIMATED EXTENT OF PETROLEUM IMPACTS IN GROUNDWATER EXCEEDING MTCA METHOD A CLEANUP LEVEL (DASHED WHERE INFERRED)
- INFERRED GROUNDWATER FLOW DIRECTION
- HISTORICAL GAS STATION FEATURE
- PROPERTY FEATURE
- APPROXIMATE PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY

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

Enclosure B Figure 7

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FIGURE 12

ESTIMATED AREAL EXTENT OF
PETROLEUM HYDROCARBONS IN GROUNDWATER
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

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LEGEND

- SHALLOW MONITORING WELL
- DEEP MONITORING WELL
- HISTORICAL GAS STATION FEATURE
- PROPERTY FEATURE
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY
- LNAPL = LIGHT NONAQUEOUS PHASE LIQUID
- UST = UNDERGROUND STORAGE TANK
- (107.80) GROUNDWATER ELEVATION MEASURED IN FEET REFERENCED TO NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88)
- [105.30] GROUNDWATER ELEVATION NOT USED IN CONTOURING
- (NM) GROUNDWATER ELEVATION NOT MEASURED
- 107.50 GROUNDWATER ELEVATION CONTOUR (DASHED WHERE INFERRED)
- APPROXIMATE GROUNDWATER FLOW DIRECTION

NOTES:
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Enclosure B Figure 8

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FIGURE 4D

GROUNDWATER ELEVATION CONTOURS
JULY 2023
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

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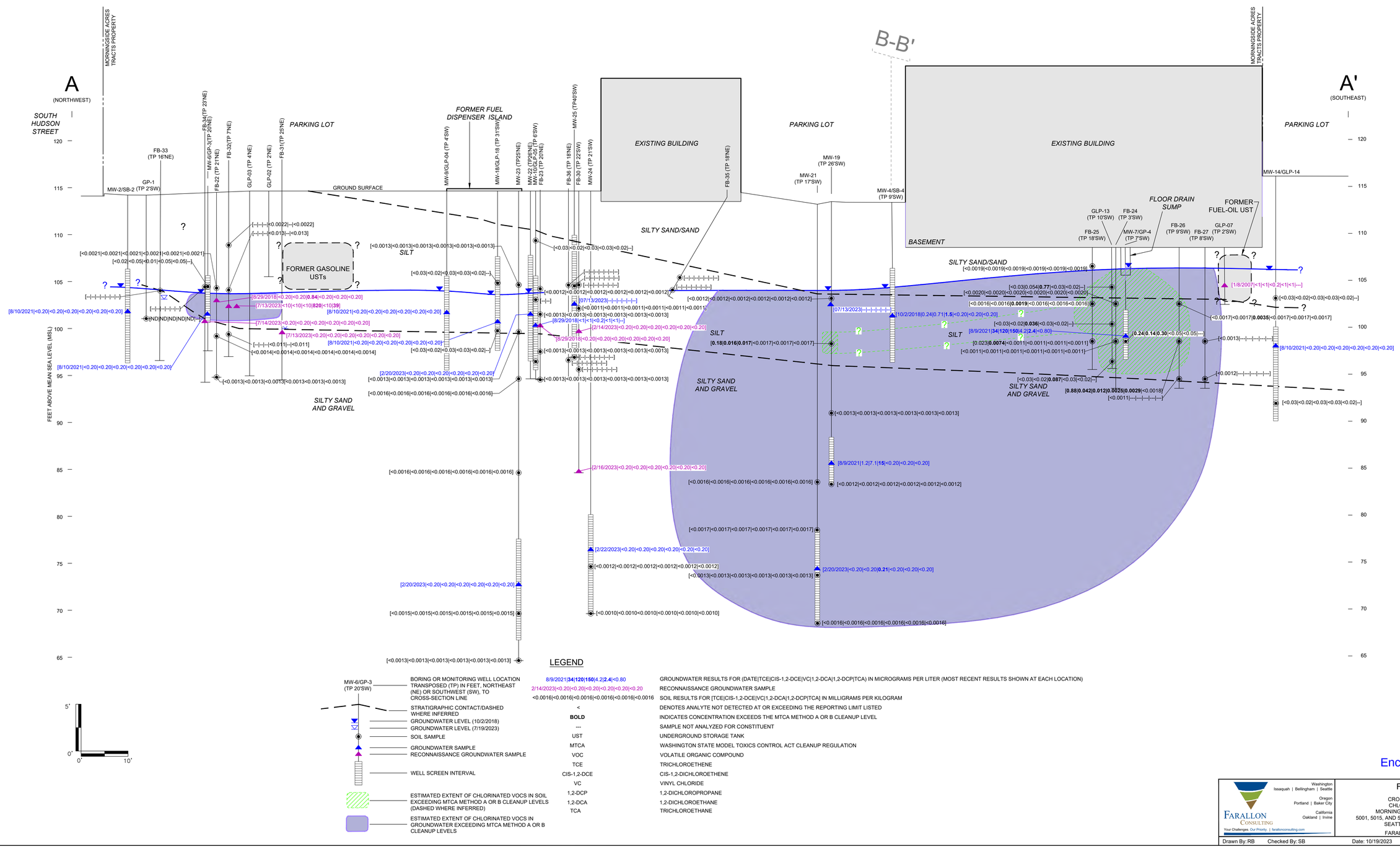

LEGEND

MW-6/GP-3 (TP 20'SW)	BORING OR MONITORING WELL LOCATION TRANSPOSED (TP) IN FEET, NORTHEAST (NE) OR SOUTHWEST (SW), TO CROSS-SECTION LINE
	STRATIGRAPHIC CONTACT/DASHED WHERE INFERRED
	GROUNDWATER LEVEL (10/2/2018)
	GROUNDWATER LEVEL (7/19/2023)
	SOIL SAMPLE
	GROUNDWATER SAMPLE
	RECONNAISSANCE GROUNDWATER SAMPLE
	WELL SCREEN INTERVAL
	ESTIMATED EXTENT OF CHLORINATED VOCS IN SOIL EXCEEDING MTCA METHOD A OR B CLEANUP LEVELS (DASHED WHERE INFERRED)
	ESTIMATED EXTENT OF CHLORINATED VOCS IN GROUNDWATER EXCEEDING MTCA METHOD A OR B CLEANUP LEVELS

8/9/2021|**34**|**120**|**150**|4.2|**2.4**|<0.80	GROUNDWATER RESULTS FOR (DATE|TCE|CIS-1,2-DCE|VC|1,2-DCA|1,2-DCP|TCA) IN MICROGRAMS PER LITER (MOST RECENT RESULTS SHOWN AT EACH LOCATION)
2/14/2023|<0.20|<0.20|<0.20|<0.20|<0.20|<0.20	RECONNAISSANCE GROUNDWATER SAMPLE
<0.0016|<0.0016|<0.0016|<0.0016|<0.0016|<0.0016	SOIL RESULTS FOR (TCE|CIS-1,2-DCE|VC|1,2-DCA|1,2-DCP|TCA) IN MILLIGRAMS PER KILOGRAM
<	DENOTES ANALYTE NOT DETECTED AT OR EXCEEDING THE REPORTING LIMIT LISTED
BOLD	INDICATES CONCENTRATION EXCEEDS THE MTCA METHOD A OR B CLEANUP LEVEL
---	SAMPLE NOT ANALYZED FOR CONSTITUENT
UST	UNDERGROUND STORAGE TANK
MTCA	WASHINGTON STATE MODEL TOXICS CONTROL ACT CLEANUP REGULATION
VOC	VOLATILE ORGANIC COMPOUND
TCE	TRICHLOROETHENE
CIS-1,2-DCE	CIS-1,2-DICHLOROETHENE
VC	VINYL CHLORIDE
1,2-DCP	1,2-DICHLOROPROPANE
1,2-DCA	1,2-DICHLOROETHANE
TCA	TRICHLOROETHANE

Enclosure B Figure 9

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FIGURE 6

CROSS-SECTION A-A'
CHLORINATED VOCs
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021 RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN:1355-001

Drawn By: RB | Checked By: SB | Date: 10/19/2023

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SOUTH HUDSON STREET

MW-2/SB-2
GP-1
MW-6/GP-3
GLP-03
FB-22
GLP-02
MW-1/SB-1
5001 RAINIER AVENUE SOUTH PARCEL 5649600135
MW-9/GLP-04
MW-18/GLP-18
GLP-01
MW-10/GLP-05
FB-23
GLP-06
MW-20/FB-20
5015 RAINIER AVENUE SOUTH PARCEL 5649600133
IA-1
MW-17/GLP-17
MW-21/FB-21
MW-19
MW-13/GLP-12
MW-5/GP-2
MW-4/SB-4
OA-1
MW-3/SB-3
RAINIER AVENUE SOUTH
5021 RAINIER AVENUE SOUTH PARCEL 5649600120
MW-16/GLP-16
MW-8/GP-5
IA-4
IA-6
GLP-13
GLP-11
IA-3
MW-7/GP-4
IA-5
FLOOR-DRAIN SUMP
GLP-08
MW-11/GLP-09
GLP-07
MW-12/GLP-10
IA-2
FUEL OIL UST
MW-14/GLP-14
MW-15/GLP-15

N

0 15 30
SCALE IN FEET

LEGEND

- BASEMENT INDOOR AIR SAMPLING LOCATION
- FIRST FLOOR INDOOR AIR SAMPLING LOCATION
- OUTDOOR AIR SAMPLING LOCATION
- MONITORING WELL
- BORING (FARALLON)
- BORING (G-LOGICS)
- BORING (KLEINFELDER)
- SUMP SEDIMENT SAMPLE
- PROPERTY BOUNDARY
- KING COUNTY PARCEL BOUNDARY

UST = UNDERGROUND STORAGE TANK

NOTES:
1. ALL LOCATIONS ARE APPROXIMATE.
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Enclosure B Figure 10

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FIGURE 2

SAMPLING LOCATIONS
MORNINGSIDE ACRES TRACTS
5001, 5015, AND 5021
RAINIER AVENUE SOUTH
SEATTLE, WASHINGTON

FARALLON PN: 1355-001

Drawn By: jjones | Checked By: JR | Date: 8/8/2019 | Disc Reference:

Document Path: Q:\Projects\1355 Morningside\001 RainierAveS\Mapfiles\008_VI_Assessment\Figure-01_SamplingLocations.mxd

Enclosure C

Basis for the Opinion:
List of Documents

1. Farallon Consulting LLC, *Remedial Investigation and Feasibility Study Report and Draft Cleanup Action Plan, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, November 14, 2023.

2. Farallon Consulting LLC, *Second Addendum to Remedial Investigation and Feasibility Study Report, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, August 8, 2023.

3. Ecology, *Technical Assistance: RE: Work Plan for Additional Investigation – Morningside Acres Tracts VCP Project No.: NW3345*, July 10, 2023.

4. Farallon Consulting, LLC, *Remedial Investigation Data Gaps Work Plan, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, July 6, 2023.

5. Ecology, *Technical Assistance: RE: Morningside Acres Additional Investigation*, June 14, 2023.

6. Ecology, *Re: Opinion Pursuant to WAC 173-340-515(5) on Remedial Action for the following Hazardous Waste Site: Morningside Acres, 5021 Rainier Avenue S, Seattle, WA*, May 23, 2023.

7. Farallon Consulting LLC, *Remedial Investigation and Feasibility Study Addendum, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, April 5, 2023.

8. Ecology, *Technical Assistance: RE: NW3345 – Morningside Acres Tracts South Letter*, January 26, 2023.

9. Ecology, *Re: Opinion Pursuant to WAC 173-340-515(5) on Remedial Action for the Following Hazardous Waste Site: Morningside Acres Tracts South, 5021 Rainier Avenue S, Seattle, Washington*, December 12, 2022.

10. Farallon Consulting LLC, *Remedial Investigation and Feasibility Study Report, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, June 20, 2022.

11. Ecology, *Re: Response to Ecology's Request for Evaluation of Trichloroethylene Risks at the Following Site: Morningside Acres Tracts South, 5021 Rainier Avenue S, Seattle, WA 98119*, September 24, 2019.

12. Farallon Consulting, LLC *Vapor Intrusion Assessment, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, September 5, 2019.

13. Ecology, *Re: Request for Evaluation of Trichloroethylene Risks at the following Site: Morningside Acres Tracts South, 5021 Rainier Avenue S, Seattle, WA 98118*, June 18, 2019.

14. Ecology, *Initial Investigation Field Report, Life Enrichment Bookstore, 5023 Rainier Avenue S, Seattle, WA 98118*, May 6, 2019.

15. Ecology, *Site Hazard Assessment, Morningside Acres Tracts South, 5021 Rainier Ave S, Seattle, King County, WA 98118*, August 19, 2015.

16. Ecology, *Initial Investigation Field Report, Morningside Acres Tracts North, 5001 Rainier Ave S, Seattle 98118, Morningside Acres Tracts South, 5015 & 5021 Rainier Ave S, Seattle 98118*, October 31, 2013.

17. The Riley Group, Inc., *Re: First Quarter 2013 Groundwater Sampling Report, Morningside Acres Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington 98118*, April 19, 2013.

18. G-Logics, Inc., *Additional Site Exploration, Murakami-Morningside Acre Tracts, 5001, 5015, and 5021 Rainier Avenue South, Seattle, WA*, April 19, 2007.

19. Kleinfelder, Inc., *Re: Draft Supplemental Phase II Environmental Site Assessment, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, August 28, 2006.

20. Kleinfelder, Inc., *Re: Limited Phase II Environmental Site Assessment, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, June 26, 2006.

21. Kleinfelder, Inc., *Re: Letter Report, Geophysical Investigation Services, Proposed building Development, 5001, 5015, and 5021 Rainier Avenue South, Seattle, Washington*, May 1, 2006.