



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
PO Box 47600, Olympia, WA 98504-7600 • 360-407-6000

May 25, 2022

Steve Orser
EVP Development
701 South Jackson Partners, LLC
159 S Jackson Street, Suite 300
Seattle, WA 98104

Re: Opinion on Proposed Cleanup of the following Site:

Site Name: Seventh Avenue Service
Site Address: 701 South Jackson Street, Seattle WA 98104
Cleanup Site ID: 11348
Facility/Site ID: 99187287
VCP Project ID: XS0009

Dear Steve Orser:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of the Seventh Avenue Service site (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.

Issue Presented and Opinion

Ecology has determined that upon completion of your proposed cleanup (implementation of institutional controls memorialized by an environmental covenant), no further remedial action will likely be necessary to clean up contamination at the Site.

This determination is dependent on yet-to be determined factors such as:

- Ecology's receipt a Cleanup Action Report that provides confirmation soil sampling results that demonstrate that MTCA cleanup levels have been achieved, and waste disposal receipts that document proper disposal of contaminated soils.

- Recording of an Ecology-signed Environmental Covenant that provides appropriate institutional controls to manage potential risks from any remaining soil contamination.
- Ecology acceptance of other submittals requested by Ecology within this letter.

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 as follows.

Summary of Opinion

Releases of petroleum (gasoline) to soil has occurred at the Site, which is located at 701 South Jackson Street in Seattle, Washington. The Site is associated with a former service/gas station located on King County Parcel No. 524780-2725 (the Property) located at the southeastern corner of 7th Avenue South and S Jackson Street, just south of downtown Seattle. Parcel No. 524780-2725 is a 0.31-acre rectangular-shaped parcel.

The gas station reportedly operated between about 1932 and the 1970s, when gasoline sales on the Property reportedly ceased. Underground storage tanks (USTs) were reportedly decommissioned and removed in 2010. The Property is reportedly still listed as a service station; however, the buildings onsite are largely vacant with the exception of a small portion of the existing garage which houses a retail tea shop.

Remedial investigations have taken place at the Site in 1992, 2006, 2010, 2011, 2019, 2021 and 2022. As part of these investigations, a total of 73 soil samples were collected at 33 locations at depths between 2.5 and 40 feet below ground surface (ft bgs). Cleanup level exceedances in soil are summarized in Table 1:

Table 1 – Summary of Cleanup Level Exceedances in Soil

Contaminant	Method A Cleanup Level	Maximum Concentration (mg/kg)	Location of Maximum/Year	Number of Exceedances/Samples
Gasoline Range Petroleum Hydrocarbons	30 ¹	24,000	B-1-11 @ 12.5'/2011	17/63
Benzene	0.03	110	B-1-11 @ 12.5'/2011	21/63
Toluene	7	1,700	B-1-11 @ 12.5'/2011	8/63
Ethylbenzene	6	470	B-1-11 @ 12.5'/2011	9/63
Xylenes	9	2,400	B-1-11 @ 12.5'/2011	13/63

Contaminant	Method A Cleanup Level	Maximum Concentration (mg/kg)	Location of Maximum/Year	Number of Exceedances/Samples
Naphthalene	5 ²	12.8	FB-5-17 @12.8'/2019	2/15
CPAHs ³	0.1	0.74	GEI-6 @2.5'/2021	1/18
Lead	250	340	GEI-4 @ 2.5'/2021	1/15

1 – Cleanup level based on benzene present.

2 – Cleanup level for total naphthalenes.

3 – CPAHs = carcinogenic polycyclic aromatic hydrocarbons, cleanup level based on benzo(a)pyrene.

The one exceedance each for CPAHs and lead in soils at a depth of 2.5 ft bgs appear to be associated with fill soils and may not be related to the gasoline release(s) at the site. No other contaminants were present above cleanup levels at these two locations. Both locations with naphthalene exceedances also had other gasoline constituents present, hence cleanup of gasoline is expected to address naphthalene in soils.

The gasoline and benzene, toluene, ethylbenzene, and xylenes (BTEX) cleanup level exceedances were found at depths between 5.0 and 17.5 ft bgs. Three locations (B-1-11, B-2-11, and B-3-11) had cleanup level exceedances at the deepest sampling depth at 17.5 ft bgs; however, only benzene exceeded its cleanup level in these samples and at relatively lower concentrations (0.12, 0.051, and 0.06 mg/kg, respectively). Note among these three locations, one (B-1-11) was located near the north edge of the Property, while the other two (B-2-11 and B-3-11) were located on 7th Avenue South, just west of the Property.

In addition, one location (FB-5) on the central portion of the Property had gasoline and BTEX concentrations exceeding cleanup levels at a sampling depth of 17 ft bgs, while a deeper soil sample at 25 ft bgs had concentrations below the cleanup levels. Hence, most contamination beneath the Property is expected to be shallower than 17.5 ft bgs, with some areas (e.g. near sample B-1-11 and FB-5) slightly deeper than 17.5 ft bgs. The soil contamination beneath 7th Avenue South is expected to extend beneath 17.5 ft bgs, but not deeper than 40 ft bgs (based on sampling data at locations GEI-11 and GEI-12).

Groundwater was characterized at three monitoring well locations; one near the center of the Property (GEI-1), and two in 7th Avenue South to the west (GEI-11 and GEI-12, see maps in Enclosure A). Groundwater was observed at a depth of 64.5 ft bgs during drilling of location GEI-1 and is expected to flow to the west-southwest, consistent with topography.

Downgradient groundwater was characterized via the two monitoring well locations within 7th Avenue South, west of the former gas station. Although groundwater contained detectable gasoline in all three monitoring wells, contaminant concentrations were below cleanup levels in all groundwater samples.

The Property is being redeveloped with current plans for construction of an eight-story building including affordable housing and ground level commercial retail space (including one floor below grade). The planned redevelopment includes demolition of the existing structures and lot-line to lot-line excavation of soils to a depth of approximately 15 to 20 ft bgs. **Ecology suggests to the extent possible, the depth of the excavation should be extended to ensure that all contaminated soils are removed.** Excavation work should include appropriate management of dewatering water, should any groundwater be encountered during the excavation work. This includes appropriate treatment and permitted discharge of dewatering water.

The cleanup of the contaminated soil will be documented in a Cleanup Action Report, which should include the confirmatory soil sampling data demonstrating removal of all soils with contaminant concentrations above the selected MTCA cleanup levels, and waste disposal receipts demonstrating proper disposal of all contaminated media. Ecology requests submittal a Confirmation Soil Sampling Plan and Contaminated Media Management Plan for our review and comment prior to performing the excavation work. These can be submitted as separate or combined documents. The Confirmation Soil Sampling Plan will detail planned soil sampling locations and analysis to demonstrate all contamination has been removed on the Property. The Contaminated Media Management Plan provides for procedures for segregation of contaminated and uncontaminated soils during excavation work.

Some soil contamination will remain under 7th Avenue South and South Jackson Street after completion of the remedial excavation. Remaining contamination under the streets may be attributable to vapor migration from the former gas station Property and/or potentially migration along localized perching zones. Contaminant concentrations under the street are expected to likely attenuate following the proposed remedial excavation work. Remediation of contamination within the street would be challenging and risks from such remaining contamination would appear to be likely effectively managed via institutional controls detailed within an Environmental Covenant (EC). The Cleanup Action Plan provides for installation of a vapor barrier along the sides of the excavation to prevent gasoline vapors within the right-of-way from entering the planned structure. A vapor barrier may also be warranted on the excavation floor.

Recording of an Ecology-signed EC by will be needed prior to Ecology's issue of a No Further Action (NFA) determination for the Site. The EC will provide for protection of the vapor barrier and prevention of exposure to remaining contamination within the right-of-way. In addition, prior to Ecology's issue of a NFA determination, a certified letter to the City of Seattle will be required providing notification of remaining contamination in the City's right-of-way.

Description of the Site

This opinion applies to the Site described as follows. The Site is defined by the nature and extent of contamination associated with the following releases:

- Gasoline (including gasoline range petroleum hydrocarbons, BTEX, and naphthalenes) into the soil and potentially groundwater.
- Lead and CPAHs into the soil.

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

Please note a parcel of real property can be affected by multiple sites. At this time, Ecology has no information suggesting that the parcels associated with this Site may be affected by another site.

Basis for the Opinion

This opinion is based on the information contained in the following documents:

1. Environmental Associates, Inc. *Underground Storage Tank Removal and Soil Testing, 7th Avenue Station, 701 South Jackson Street, Seattle Washington*. December 16, 2010.
2. GeoEngineers. *Remedial Investigation/Feasibility Study and Cleanup Action Plan, 701 South Jackson Property, Seattle Washington*. January 19, 2022.
3. GeoEngineers. *Data Gaps Investigation Report, 701 South Jackson Property, Seattle Washington*. May 13, 2022.

A number of these documents are accessible in electronic form from the Site webpage <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=11348>. The complete records are stored in the Central Files of the Headquarters Office of Ecology, for review by appointment only. Visit our Public Records Request page <https://ecology.wa.gov/About-us/Accountability-transparency/Public-records-requests>, to submit a public records request or get more information about the process. If you require assistance with this process, you may contact the Public Records Officer at publicrecordsofficer@ecy.wa.gov or 360-407-6040.

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

Analysis of the Proposed Cleanup

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

1. Characterization of the Site.

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

Site Contaminants

Gasoline, including gasoline range petroleum hydrocarbons, BTEX, and naphthalene, were found in soil at concentrations above MTCA cleanup levels at the Site. In addition, lead and CPAHs were each found in shallow soils each at one location at the Site. The gasoline in soil appears to be attributable to historical gas station operations at the Property, whereas the lead and CPAHs appear to be attributable to fill soils historically placed at the Property.

Soil Characterization

The extent of soil contamination appears to be sufficiently defined for the selection of cleanup levels and cleanup actions at the Site. Soil samples and cleanup level exceedances were summarized above.

Sampling locations were constrained by utilities within South Jackson Street and 7th Avenue South. No sampling could be conducted within the City right-of-ways adjacent to the northwest part of the Property due to utility conflicts. There are some uncertainties regarding the extent of contamination in that areas. However, the extent of soil contamination appears to likely be generally limited to within boundaries of the Property that extend to the centerline of 7th Avenue South to the west and 701 S Jackson Street to the north.

Groundwater Characterization

The extent of groundwater contamination appears to be sufficiently defined for the selection of cleanup levels and cleanup actions at the Site. Groundwater samples and cleanup level exceedances were discussed above and summarized as follows:

Groundwater was characterized at three monitoring well locations; one near the center of the Property (GEI-1), and two within 7th Avenue South to the west (GEI-11 and GE-12). Depth to groundwater in the monitoring wells ranges from 61 to 67 ft bgs. Concentrations of gasoline range petroleum hydrocarbons in groundwater samples ranged from 55 to 694 µg/L, below the Method A cleanup level of 800 µg/L (benzene

present). Benzene was detected in one monitoring well sample at 2 µg/L, below the Method A cleanup level of 5 µg/L.

Wet soils indicating potential shallower perching of groundwater were indicated in three boring logs, including at GEI-1 at 17-20 ft bgs, GEI-5 at 10 ft bgs, and GEI-9 at 12 ft bgs. However, shallow groundwater was not observed in any of the three temporary monitoring wells completed in the northern, eastern and southern portions of the Property. Based on the investigation results, shallow perched groundwater may be present at the Property and surrounding area; however, the occurrence of this unit appears to be discontinuous and not widespread.

Soil Gas Characterization

Shallow (5-10 ft bgs) soil gas sampling was conducted at three locations and deep (20-25 ft bgs) soil gas sampling was conducted at two locations in December 2021 (see Figure 2 in Enclosure A). Soil gas screening levels were exceeded in all five samples. The highest contaminant concentration was >13,231,010 µg/m³ aromatic petroleum hydrocarbons (EC-9-10) at location SSV-2-D at 20-25 ft bgs. This concentration is almost 1,000 times higher than the deep sub-slab screening level for total petroleum hydrocarbons. Based on the soil gas sampling data, the gasoline in soil currently presents a vapor intrusion concern at the site.

2. Establishment of cleanup standards and points of compliance.

Cleanup Standards

Ecology has determined the cleanup levels and points of compliance presented below meet the substantive requirements of MTCA. The following cleanup levels and screening levels have been selected for the Site:

Table 2 – Selected Cleanup Levels

Contaminant	Soil Method A Cleanup Level (mg/kg)	Groundwater Method A Cleanup Level (µg/L)	Method B Shallow Sub-Slab Screening Level (µg/m3)	Method B Deep Sub-Slab Screening Level (µg/m3)
Gasoline Range Petroleum Hydrocarbons	30 ¹	800	4,700	14,000
Benzene	0.03	5	11	32
Toluene	7	100	76,000	230,000

Contaminant	Soil Method A Cleanup Level (mg/kg)	Groundwater Method A Cleanup Level (µg/L)	Method B Shallow Sub-Slab Screening Level (µg/m3)	Method B Deep Sub-Slab Screening Level (µg/m3)
Ethylbenzene	6	700	15,000	46,000
Xylenes	9	1,000	1,500	4,600
Naphthalene	5 ²	160 ²	2.5	7.4
CPAHs ³	0.1	0.1	NA	NA
Lead	250	15	NA	NA

1 – Method A cleanup level for gasoline based on benzene present. Ecology notes that the Model Remedy generic total petroleum hydrocarbons (TPH) cleanup level of 1,500 mg/kg has potential to be considered at the Site, provided criteria from Ecology’s guidance *Model Remedies for Sites with Petroleum Impacts to Groundwater* dated December 2017 are met.

2 – Method A cleanup level for total naphthalenes.

3 – CPAHs = carcinogenic polycyclic aromatic hydrocarbons, cleanup level based on benzo(a)pyrene.

NA = Not applicable.

Points of Compliance

The points of compliance are throughout the Site. Soil cleanup levels based on the direct contact pathway apply to a depth of 15 ft bgs. The Method A cleanup levels for soil are generally based on the soil-to-groundwater pathway, and thus apply without consideration to depth. As previously discussed, the maximum depth of contamination above cleanup levels was at 17.5 ft bgs, although contamination may locally extend deeper.

Terrestrial Ecological Evaluation (TEE)

The Site is located within a highly urbanized setting with little open space other than a 0.4 acre vegetated area located approximately 175 feet to the northeast of the Site (adjacent to Interstate 5), and a park and community garden located approximately 400 feet (one block) to the north of the Site. Risks from the Site to potential ecological receptors in those areas are unlikely. Based on completion of MTCA Table 749-1, the TEE process can be ended.

3. Selection of cleanup action.

Ecology has determined the cleanup you proposed for the Site meets the substantive requirements of MTCA.

The planned redevelopment includes demolition of the existing structures and lot-line to lot-line excavation of soils to a depth of approximately 15 to 20 feet below ground surface (bgs). Ecology suggests to the extent possible, the depth of the excavation should be extended to ensure that all contaminated soils are removed. Excavation work should include appropriate management of dewatering water, should any water be generated during the excavation work. This includes appropriate treatment and discharge of dewatering water in compliance with state and local regulatory requirements.

The cleanup of the gasoline in soil will be documented in a Cleanup Action Report, which would include the confirmatory soil sampling data demonstrating removal of all soils above the selected MTCA cleanup levels, and waste disposal receipts demonstrating proper disposal of all contaminated media. Ecology requests submitting a Contaminated Media Management Plan and Confirmation Soil Sampling Plan for Ecology's review and comment prior to performing the excavation work.

Some contamination will remain under 7th Avenue South to the west and South Jackson Street to the north after completion of the remedial excavation. Remediation of contamination under the street would be challenging and risks from such remaining contamination would appear to be likely effectively managed via institutional controls detailed within an Environmental Covenant (EC). **Ecology may require a long-term monitoring plan and/or contingency plan as part of the EC, based on the results of the remedial excavation.**

The Cleanup Action Plan includes installation of a vapor barrier along the sides of the excavation to prevent gasoline vapors within the right-of-way from entering the planned structure. A vapor barrier may also be warranted on the excavation floor.

Recording of an EC signed by Ecology will be needed prior to Ecology's issue of a No Further Action (NFA) determination for the Site. The EC will provide for protection of the vapor barrier and prevention of exposure to remaining contamination in the right-of-way. In addition, prior to Ecology's issue of a NFA determination, a certified letter to the City of Seattle will be needed providing notification of remaining contamination in the City's right-of-way.

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:

- 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 Site 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 Voluntary Cleanup Program (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(6).

Steve Orser
May 25, 2022
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Contact Information

Thank you for choosing to clean up the Site under the 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 webpage ¹. If you have any questions about this opinion, please contact me by phone at (509) 454-7835 or e-mail at frank.winslow@ecy.wa.gov.

Sincerely,



Frank P. Winslow, LHG
Toxics Cleanup Program
Headquarters Section

fpw: anf

Enclosure: A – Site Description and Diagrams

cc: Tim Syverson, GeoEngineers

¹ <https://www.ecy.wa.gov/vcp>

Enclosure A

Site Description and Diagrams

Site Description

Site: The Site is defined by the extent of contamination in soil and groundwater. Site contaminants include gasoline (including gasoline range petroleum hydrocarbons, BTEX, and naphthalene); lead; and CPAHs in soil.

Area and Property Description: The Site is located at King County Parcel No. 524780-2725, a 0.31 acre rectangular-shaped parcel. The Property is surrounded by 7th Avenue South to the west, South Jackson Street to the north, and commercial properties to the south and east. The Site is located just south of downtown Seattle in an area dominated by commercial structures.

Site History: The Property has been occupied by a gas/service station since about 1932. The gas station reportedly ceased gasoline sales in the 1970s and USTs were reportedly decommissioned and removed in 2010. The Property is still reportedly listed as a service station; however, the buildings onsite are largely vacant with the exception of a small portion of the existing garage, which houses a retail tea shop.

Sources of Contamination: The gasoline in soil is attributable to the former gas station, whereas the lead and CPAHs in shallow soil (each at one location) appear to be attributable to fill materials historically placed on the Property.

Physiographic Setting: The Site is located just south of downtown Seattle approximately 3,200 feet east of Elliot Bay of Puget Sound. The Site is in an area of undulating glacial terrain within the Puget Lowland Physiographic Province.

Surface/Storm Water: The nearest surface water body is Elliot Bay. The Site is at an elevation of approximately 100 feet above mean sea level (AMSL) and land generally slopes to the west-south west. South Jackson Street drains to the west and 7th Avenue South drains to the south.

Ecological Setting: The Site is located within a highly urbanized setting with little open space other than a vegetated strip next to Interstate 5 and a park and community garden located a block to the north of the Site. Based on completion of MTCA Table 749-1, the TEE process can be ended.

Geology: The following text is from the RI/FS/CAP report:

The underlying soil is identified as pre-Vashon deposits consisting of interbedded sand, gravel, silt, and poorly sorted mixtures that are of unspecified age and origin (Troost, et al 2005). The pre-Vashon deposits are mapped as glacially deposited and are very dense and hard silt, sand, gravel and till, which have been regraded.

Based on investigations completed at the Site (further discussed in Section 2.4),

approximately 2 to 6 feet of fill consisting of silty fine to fine sand with silt containing occasional debris (concrete, plastic, metal and brick debris) is locally present beneath the existing structures and improvements and overlying the native soil. Underlying the fill is interbedded fine sand with silt and clayey silt to a depth of approximately 12 feet bgs. Fine to medium silty sand and sand with trace silt underlies the interbedded silt and clayey silt deposits to an approximate depth of 20 feet bgs. Deposits from approximately 20 feet to the maximum depth explored (76.5 feet bgs) consist of fine sand with varying amounts of silt and clayey silt.

Groundwater: The following text is from the RI/FS/CAP report:

Moist and/or wet soil interpreted as shallow perched groundwater was observed in 5 of the 25 borings completed at the Property at depths ranging from 12 to 15 feet and 20 to 26 feet bgs. However, shallow groundwater was not observed in any of the three temporary monitoring wells completed in the northern, eastern and southern portions of the Property. Based on the investigation results, shallow perched groundwater may be present at the Property and surrounding area; however, the occurrence of this unit is likely discontinuous and not widespread.

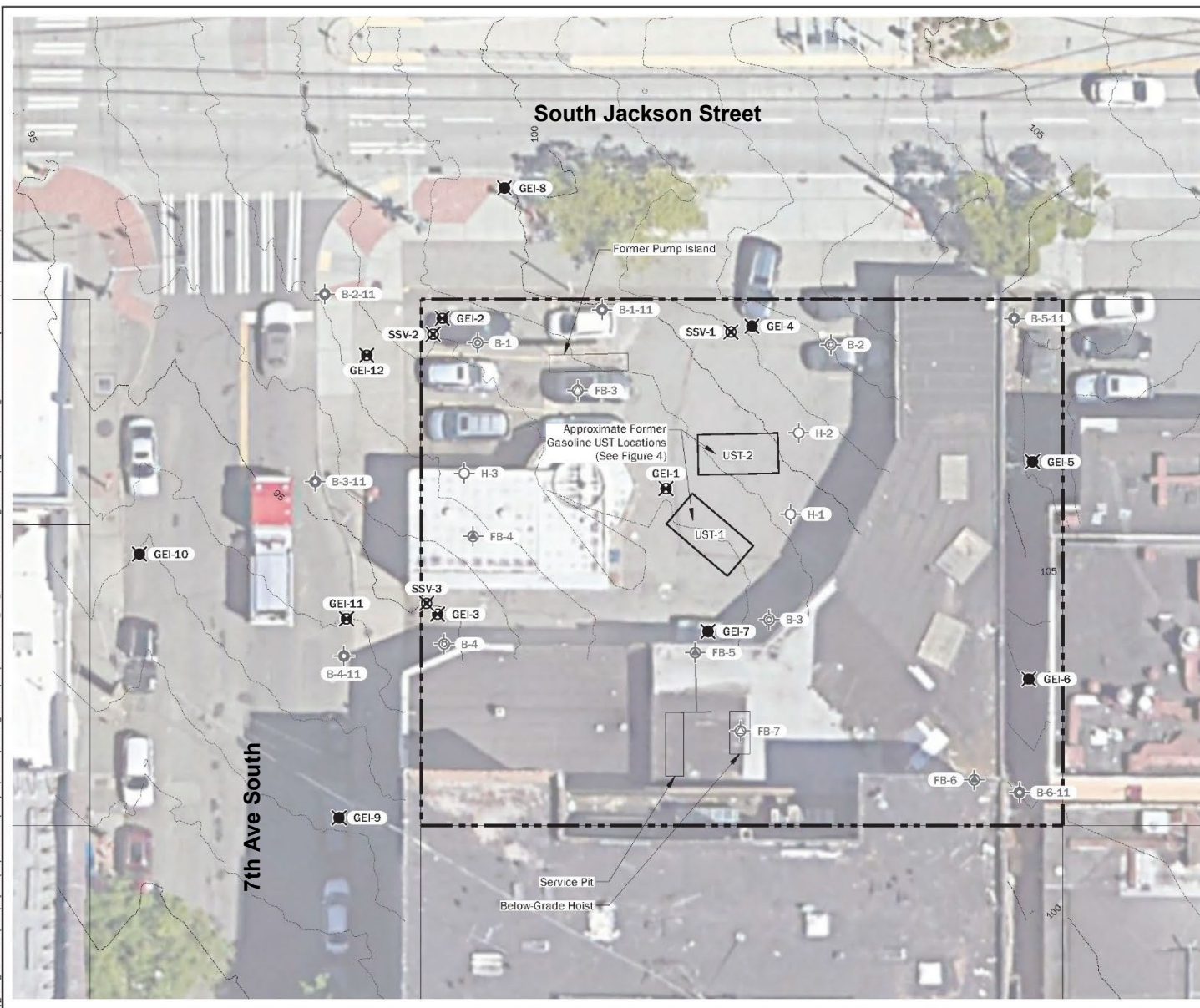
The deep regional groundwater is present beneath the Property at a depth of approximately 65 feet bgs (25 feet NAVD88), based on the depth to water measured during the drilling of boring GEI-1 in the central portion of the Property. Based on the proximity of the Property to surrounding surface water bodies (i.e., Puget Sound) and local topography, the inferred groundwater flow direction is to the west-southwest.

Water Supply: Potable water is provided to the Property by the City of Seattle. No wellhead protection zones are located in the area and the nearest Group A/B well is located approximately 2,000 feet to the west. Based on the nature of the contamination at the Site, risks to water supply wells are considered unlikely.

Extent of Contamination: The extent of soil contamination has been defined during the RI sufficient for the identification of cleanup levels and for the development of a cleanup action plan. The vertical extent of lead in soils is generally limited to approximately 17.5 ft bgs, although some contamination above cleanup levels may extend deeper. The lateral extent of the soil contamination appears to be limited to the Property and within 7th Avenue South and South Jackson Street to about the midpoints of the street. Such contamination under the streets is likely due to vapor migration and/or migration on localized perching beds. Contaminant concentrations beneath the street are expected to likely attenuate following the proposed remedial excavation work.

Site Diagrams

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Legend

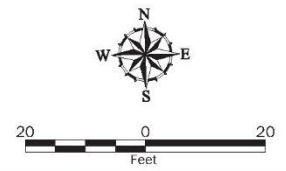
- FB-3 Hollow Stem Auger Boring by Farallon Consulting, 2019
- FB-4 Direct Push Boring by Farallon Consulting, 2019
- FB-5 Direct Push Boring by Farallon Consulting, 2019 Completed at 25 degrees to horizontal
- B-1-1.1 Hollow Stem Auger Boring by Landau Associates, 2011
- B-1 Hollow Stem Auger Boring by GEO Group Northwest, 2006
- H-1 Hollow Stem Auger Boring by GEO Group Northwest, 1992
- GEI-1 Hollow Stem Auger Boring by GeoEngineers, 2021/2022
- GEI-4 Direct Push Boring by GeoEngineers, 2021/2022
- SSV-1 Soil Vapor Boring by GeoEngineers, 2021

Notes:

1. The locations of all features shown are approximate.
2. This drawing is for information purposes. It is intended to assist in showing features discussed in an attached document. GeoEngineers, Inc. cannot guarantee the accuracy and content of electronic files. The master file is stored by GeoEngineers, Inc. and will serve as the official record of this communication.

Data Source: Aerial from Google Earth Pro dated 5/26/2018.
Lidar from Puget Sound Lidar Consortium dated 2016.

Projection: NAD83 Washington State Planes, North Zone, US Foot



Environmental Investigation Sampling Locations

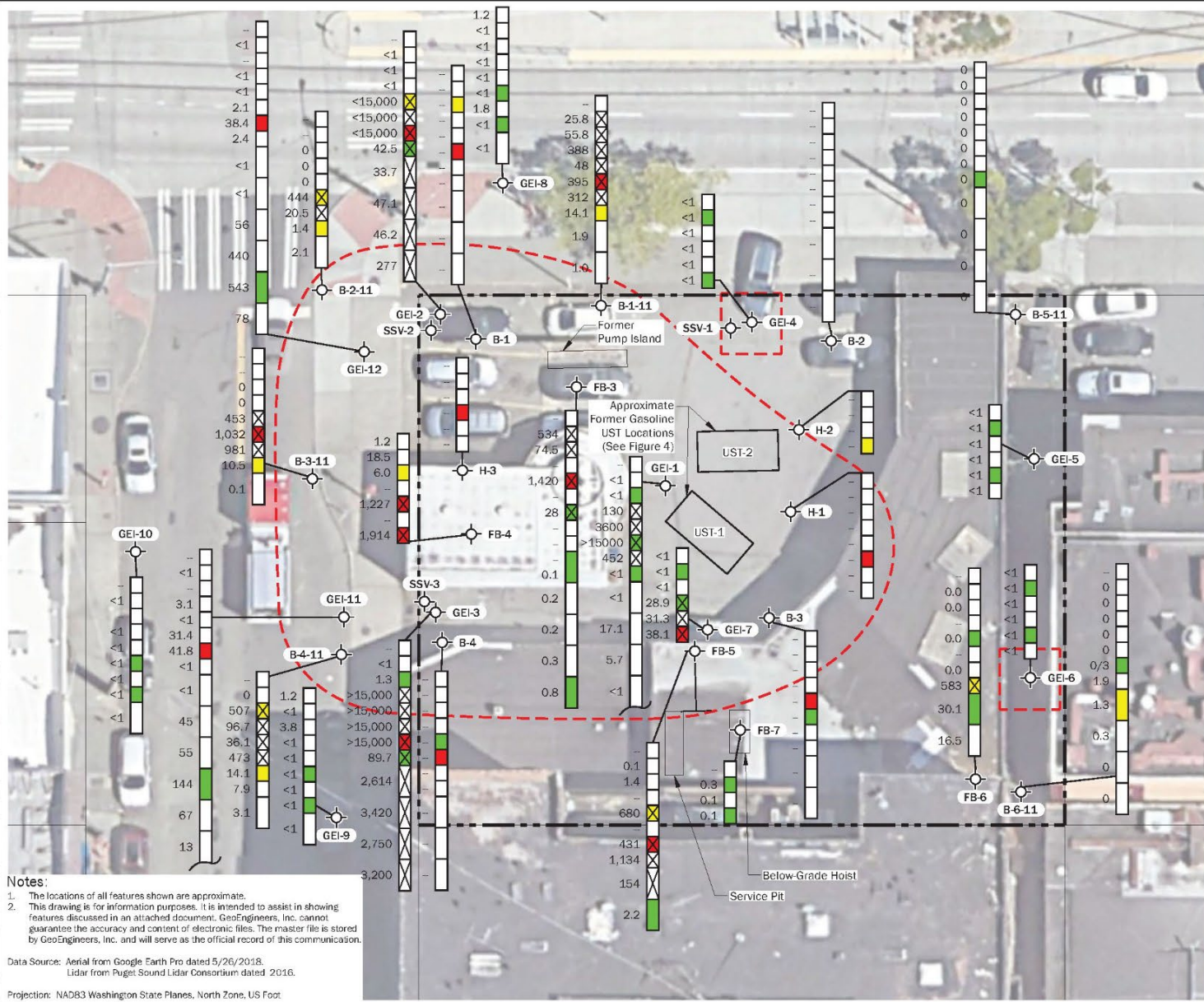
701 South Jackson Street
Seattle, Washington



Figure 2

WWW.GEOENGINEERS.COM

Y:\geotechnical\Projects\20124504001\CAD\011\Bldg_Soil_Analytical_Results - Gasoline Petroleum.dwg (18-FEB-2018 15:28 by rmeccs)



Legend

FB-4 Investigation Sampling Location
 FB-5 Investigation sampling location completed at 25 degrees to horizontal

Depth Interval of Soil Samples (bgs)

25.8	0-2.5 Feet
55.8	2.5-5.0 Feet
388	5.0-7.5 Feet
48	7.5-10.0 Feet
395	10.0-12.5 Feet
312	12.5-15.0 Feet
14.1	15.0-17.5 Feet
2.8	17.5-20 Feet
1.9	20-25 Feet
1.0	25-30 Feet
0.1	30-35 Feet
0.1	35-40 Feet

Photoionization detector (PID) Field Screening Results in parts per million (ppm)
 0.1
 1.0
 1.9

Gasoline-Range Total Petroleum Soil Chemical Analytical Results (mg/kg)

- Not Tested
- Not Detected
- Detected Less than MTCA Method A/B
- Detected Greater than MTCA Method A/B Cleanup Levels
- Elevated Field Screening Indicative of Petroleum Contamination

Estimated Lateral Extent of Soil with Contaminant Concentrations Greater than the MTCA Method A/B Cleanup Levels.

W E
 N S

20 0 20
 Feet

Notes:

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 Lidar from Puget Sound Lidar Consortium dated 2016.
 Projection: NAD83 Washington State Planes, North Zone, US Foot

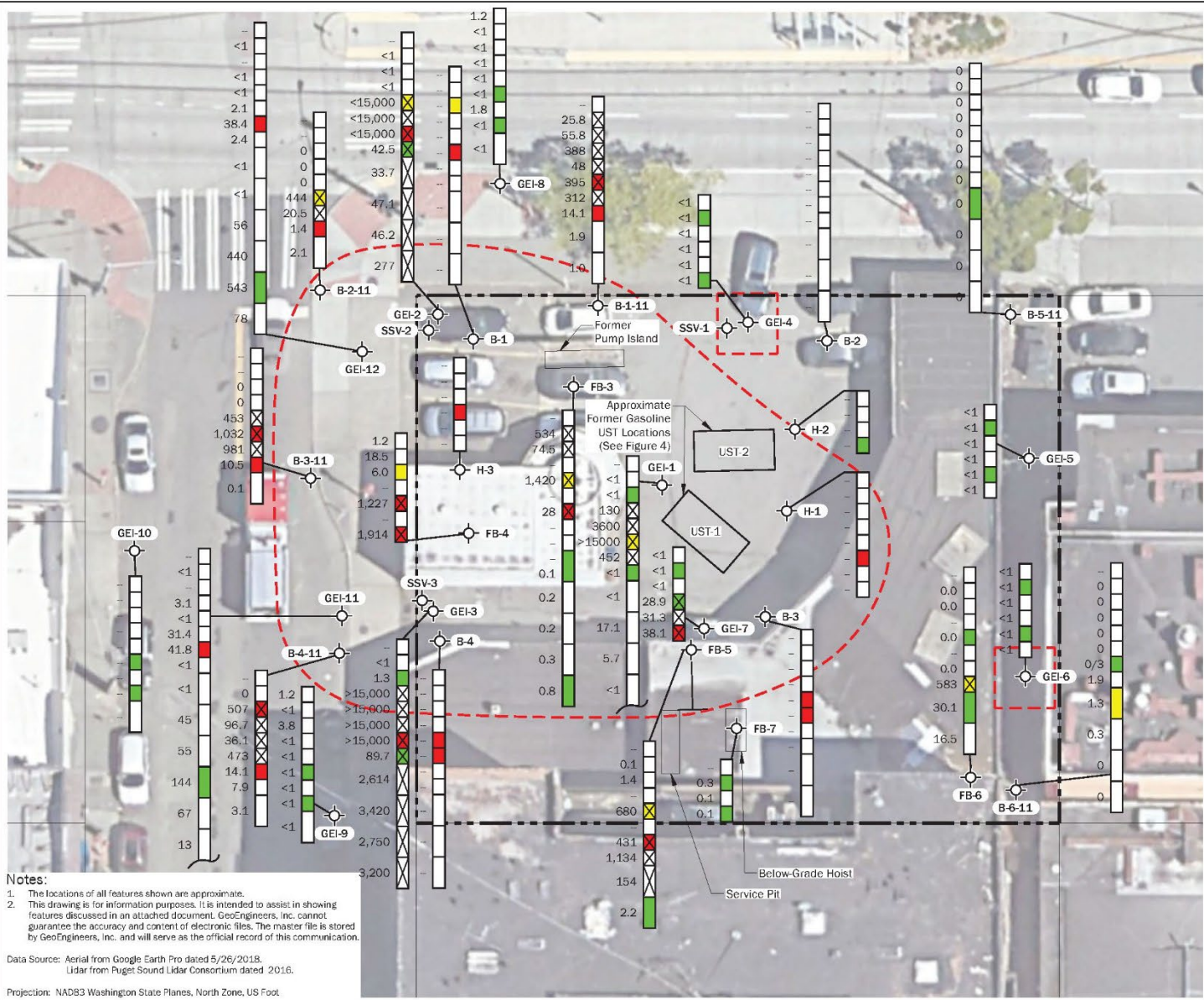
Soil Analytical Results - Gasoline Petroleum

701 South Jackson Street
Seattle, Washington

Figure 3

www.geoengineers.com

\\geoengineers.com\WAM\Projects\2415400001\CAD\01\Bore Gap Investigation\Report\2415400001_004_Soil Analytical Results - Benzene.dwg, TAB\F04_Data Exported_05/12/22 - 18:28 by meccius



Legend

- FB-4 Investigation Sampling Location
- FB-5 Investigation sampling location completed at 25 degrees to horizontal

Depth Interval of Soil Samples (bgs)

25.8	0.2.5 Feet
55.8	2.5-5.0 Feet
388	5.0-7.5 Feet
48	7.5-10.0 Feet
395	10.0-12.5 Feet
312	12.5-15.0 Feet
14.1	15.0-17.5 Feet
2.8	17.5-20 Feet
1.9	20-25 Feet
1.0	25-30 Feet
0.1	30-35 Feet
0.1	35-40 Feet

Benzene Soil Chemical Analytical Results (mg/kg)

- Not Tested
- Not Detected
- Detected Less than MTCA Method A/B
- Detected Greater than MTCA Method A/B Cleanup Levels
- Elevated Field Screening Indicative of Petroleum Contamination

Estimated Lateral Extent of Soil with Contaminant Concentrations Greater Than the MTCA Method A/B Cleanup Levels.

20 0 20
 Feet

Soil Analytical Results - BTEX

701 South Jackson Street
Seattle, Washington

GEOENGINEERS

Figure 4

WWW.GEOENGINEERS.COM

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Projection: NAD83 Washington State Planes, North Zone, US Foot

