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November 10, 2021

Susan Penoyar
Sound Transit
401 South Jackson Street
Seattle, WA 98104
(susan.penoyar@soundtransit.org)

**Re: Opinion pursuant to WAC 173-340-515(5) on Remedial Action for the following
Hazardous Waste Site:**

- **Site Name:** Y Pay Mor Drycleaner
- **Site Address:** 2210 S 320th Street, Federal Way, Washington 98003
- **Facility/Site No.:** 2518
- **Cleanup Site ID No.:** 3180
- **VCP Project No.:** NW3265

Dear Susan Penoyar:

The Washington State Department of Ecology (Ecology) received your request for an opinion on work planned at the Y Pay Mor Drycleaner 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.

Issue Presented and Opinion

Pursuant to completion of the Site characterization work described in *Remedial Investigation Work Plan, dated July 21, 2021 (July 2021 RIWP)*, is additional work necessary to resolve data gaps?

Yes. Ecology's comments on the proposed work should be addressed to ensure that the residual soil and groundwater contamination are sufficiently characterized per MTCA requirements.

Description of the Site

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

- Tetrachloroethene (PCE) and trichloroethene (TCE) into the Soil.
- PCE, TCE, cis-1,2-dichloroethene (cis-1,2-DCE), and vinyl chloride (VC) into the Groundwater.

The following terms are used in this opinion letter:

- **Property:** refers to one 7.52-acre King County parcel 2423200050. The Property is a former shopping center, and is currently being developed into a portion of the new and expanded Federal Way Transit Center (FWTC), and future surplus property.
- **Site:** refers to the area that is impacted by the halogenated volatile organic compounds (HVOC) releases from a former dry cleaner (Y Pay Mor Cleaners). The former dry cleaner operated between 1985 and 1992 in a historic tenant space (identified as Space A-6) on the eastern portion of the Property.
- **Southern source area:** refers to the contaminated soil identified near the former dry cleaning equipment and a former floor drain. This source area includes the western portion of the former dry cleaner space, and a portion of the west-adjacent former tenant space.
- **Northern source area:** refers to the contaminated soil identified near a former loading dock, and former catch basins/stormwater lines outside of the former dry cleaner back door. This source area includes the area north and northeast of the former dry cleaner space, and the northern portion of the former dry cleaner space.

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

Please note a parcel of real property can be affected by multiple sites. At this time, we have no information that the parcel(s) associated with this Site are affected by other sites.

Basis for the Opinion

This opinion is based on the information contained in the documents listed in **Enclosure B**. A number of these documents are accessible in electronic form from the [Site web page](https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=3180)¹. The complete records are kept in the Central Files of the Northwest Regional Office of Ecology

¹ <https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=3180>

(NWRO) for review by appointment only. Visit our [Public Records Request page²](#) 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 and Opinion

Based on a review of the *July 2021 RIWP*, Ecology has determined the following:

1. Positive effects of the interim actions:

Interim actions conducted at the Site included operation of a Soil Vapor Extraction (SVE) System in the southern source area in 1993 to 1994, and remedial excavations in the northern and southern source areas in July and August 2020.

During the remedial excavation in 2020, the northern source area was excavated to a maximum depth of 11 feet below ground surface (bgs), or an elevation of 412 feet above mean sea level (amsl); the southern source area was excavated to a maximum of depth of 10 feet bgs, or an elevation of 416 amsl.

Based on existing groundwater monitoring data, Site groundwater is present at elevations ranging from approximately 413 to 419 feet amsl. All identified HVOC-contaminated soil in the vadose zone in the northern and southern source areas has been removed. The remaining known HVOC contamination at the Site appears to be present below the groundwater table. Ecology appreciates your effort on the vadose zone soil cleanup.

2. Data gaps after the interim actions:

Based on the data collected to date, residual contamination remains below the seasonal high groundwater table, within and between the two source areas. The vertical extent of the residual soil contamination needs to be delineated in some areas.

Northern source area:

- Based on the soil sampling results, HVOC-contaminated soil was left in place at elevations at and below 413 feet amsl.

² <https://ecology.wa.gov/Footer/Public-records-requests>

- The vertical extent of the residual contaminated soil near soil boring 358-B12 is delineated. The contaminated soil in this area extends to an elevation of 398 feet amsl and remains in place.
- However, the vertical extent of the residual contamination soil near test pit 358-PH7, located in the vicinity of a former catch basin north of the former dry cleaner space, has not been fully delineated. Based on the soil sampling results, soil at this location contained the highest residual PCE concentration in the northern source area. The residual PCE concentration was measured at 10.1 milligrams per kilogram (mg/kg) at an elevation of 408 feet amsl, above the MTCA Method A soil cleanup level of 0.05 mg/kg.

Southern source area:

- A soil sample collected from a historical soil boring BW-2/MW-1 at 20 feet bgs, or an elevation of approximately 406 feet amsl, contained a PCE concentration greater than 39 mg/kg. The current condition and extent of the contaminated soil at this location needs to be evaluated.
- This historical soil boring (BW-2/MW-1) is located approximately 5 feet north of a former floor drain within the former dry cleaner space. Therefore, residual contaminated soil may still be present near the former floor drain below the excavation bottom, and below an elevation of 416 feet amsl where the deepest excavation confirmation soil sample was collected. The vertical extent of this potential residual contamination needs to be fully delineated.

Between the two source areas:

- Soil samples collected from soil boring 358-B5, located between the two source areas, contained PCE concentrations above the MTCA Method A soil cleanup level at elevations from 400 to 406 feet amsl. The vertical extent of this residual soil contamination needs to be fully delineated.

3. Ecology's comments on the proposed monitoring well network:

The *July 2021 RIWP* proposed a total of nine groundwater monitoring wells (FL358-MW5 through FL358-MW13). Ecology reviewed the proposed monitoring well locations and provides the following comments and recommendations:

- Ecology concurs with the following proposed monitoring well locations:
 - FL358-MW5: to delineate the vertical extent of the residual contamination near the former catch basin north of the former dry cleaner space, as well as evaluate the groundwater condition in the northern source area.
 - FL368-MW6: to delineate the vertical extent of the residual contamination near soil boring 358-B5, as well as evaluate the groundwater conditions southwest (down-gradient) of the northern source area.
 - FL358-MW7: to evaluate the groundwater conditions southwest (downgradient) of the source areas.
 - FL358-MW11: to delineate the southwestern boundary of the groundwater plume.
 - FL358-MW12 and FL358-MW-13: to delineate the western boundary of the groundwater plume.

- Ecology recommends moving the following proposed monitoring well locations:
 - FL358-MW8: Ecology recommends moving this well west/northwest, to immediately north of the northern source area excavation boundary (near the test pit 358-PH-105 and former soil boring 358-B4).

The purpose of this well is to further delineate the northeastern boundary of residual soil contamination, as well as evaluate the groundwater condition northeast (upgradient) of the source areas.

- FL358-MW9: Ecology recommends moving this well west to the central-eastern portion of the former dry cleaner space.

The purpose of this well is to delineate the eastern boundary of the groundwater plume, as well as evaluate the soil and groundwater conditions south of the northern source area and east of the southern source area.

- FL358-MW10: Ecology recommends moving this well north/northeast to the southern portion of the former dry cleaner space (near the former soil boring 358-B9).

The purpose of this well is to delineate the southeastern boundary of the groundwater plume.

- Ecology recommends one additional monitoring well in the southern source area:
 - One monitoring well is needed near the former floor drain, in the vicinity of the former soil boring BW-2/MW-1, where a PCE exceedance in soil was detected.

The purpose of this well is to determine and delineate the potential residual contaminated soil at this location, and evaluate the groundwater conditions in the southern source area.

- Additional monitoring wells may be needed if the proposed monitoring well network cannot delineate the groundwater plume.
- Please work with Ecology to determine the best-feasible well locations if there are major conflicts between the proposed/recommended well locations and the FWTC construction plan.

4. Ecology's comments on data collection:

The *July 2021 RIWP* proposed collecting soil and groundwater data, and performing slug tests on selected monitoring wells. Ecology has the following comments:

- The *July 2021 RIWP* proposed to collect soil samples during drilling of proposed monitoring wells FL358-MW5, FL358-MW6, and FL358-MW-9. It is Ecology's opinion that soil samples should also be collected during drilling of proposed monitoring well FL358-MW8, and the additional monitoring well in the southern source area.
- The deepest soil sample to be collected for laboratory analysis from each boring should be either a sample obtained from the upper 1 foot of the hard silt layer (if the silt layer is encountered), or the vertical extent of the soil contamination based on field screening evidence and laboratory sample results, whichever is deeper.
- Ecology concurs that soil samples should be collected from other monitoring well borings if field-screening evidence of contamination is encountered.
- Ecology concurs with quarterly measurement of groundwater levels and HVOC concentrations, and biannual collection of geochemical indicators in each monitoring well.
- Ecology concurs with performing slug tests in three of the new groundwater monitoring wells within the groundwater plume to evaluate hydraulic conductivity. Ecology recommends performing the slug tests on the wells installed within the two source areas, and between the two source areas.

5. Terrestrial Ecology Evaluation (TEE):

Section 3.3 of the *July 2021 RIWP* states that, “*There are no areas of contiguous, undeveloped land larger than 1.5 acres on or within 500 feet of the Site that could provide habitat for terrestrial wildlife.*” In this case, the Site may qualify for a TEE exclusion in accordance with WAC 173-340-7491(1)(c).

Please submit a completed [TEE form](#)³, with a map showing a 500-foot radius of the Site.

6. Revised Remedial Investigation (RI) Work Plan

Please submit a revised RI Work Plan that incorporates Ecology’s comments presented in this opinion letter, for Ecology review.

7. Restrictive covenants in place on the Property:

Two restrictive covenants are in place for the Property: (1) a restrictive covenant dated July 24, 1998, with King County Recording No. 9808101434; and (2) a restrictive covenant dated September 21, 1995, with King County Recording No. 9510121424.

These two restrictive covenants will remain in place until they are modified or terminated pursuant to WAC 173-340-440. Ecology has issued the following letters in 2020 through 2021 as the holder of the restrictive covenants:

- The *Approval for Supplemental Characterization* letter, dated April 8, 2020.
- The *Response to Additional Information* letter, dated April 29, 2020.
- The *Environmental Covenant – Ecology Approval for Activities at King County parcel 2423200050* letter, dated June 26, 2020.
- The *Environmental Covenant – Ecology Approval for Certain Future Construction Activities at King County parcel 2423200050* letter, dated July 21, 2021.

These letters approved certain Site characterization, interim action, and construction activities, which would otherwise be prohibited under the terms of the covenants.

Please note this opinion letter does not approve any activities that would otherwise be prohibited under the terms of the restrictive covenants. Such a request(s) should be submitted to Ecology for a review and will be addressed in a separate letter(s).

³ [Terrestrial Ecological Evaluation \(wa.gov\)](https://www.wa.gov)

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 performed is substantially equivalent. Courts make that determination. *See* RCW 70A.305.080 and WAC 173-340-545.

3. 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).

Contact Information

Thank you for choosing to clean up the Site under the VCP. After you have addressed our concerns, you may request another review of your cleanup. Please do not hesitate to request additional services as your cleanup progresses. We look forward to working with you.

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For more information about the VCP and the cleanup process, please visit our website: www.ecy.wa.gov/vcp. If you have any questions about this opinion, please contact me by phone at (425) 229-2565 or by email at jing.song@ecy.wa.gov.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Jing'.

Jing Song
Site Manager
Toxics Cleanup Program, NWRO

Enclosures (2): A – Description and Diagrams of the Site
 B – Basis for the Opinion: List of Documents

cc: Tricia DeOme, GeoEngineers, Inc. (tdeome@geoengineers.com)
 Sonia Fernandez, Ecology (sonia.fernandez@ecy.wa.gov)
 Ecology Periodic Review Site File

Enclosure A

Description and Diagrams of the Site

Site Description

This enclosure provides Ecology's understanding and interpretation of Site conditions and forms the basis for the opinions expressed in the letter.

Site: The Site is defined as PCE and TCE released into the soil, and PCE, TCE, cis-1,2-DCE, and VC released into the groundwater at 2210 South 320th Street in Federal Way, Washington. The Site is located on the eastern portion of a 7.52-acre king county parcel 2423200050 (Property). The Property is located north of South 320th Street and approximately 0.3 miles west of Interstate 5 (**Figure 1**).

Area and Property Description: The Property is located within a commercial area in downtown Federal Way. The Property is bounded to the north by the existing Federal Way Transit Center that includes a bus station and an aboveground parking structure. The Property is bounded to the east by vacant lots. The Property is bounded to the south and west by commercial buildings including retail stores, restaurants, and office buildings.

Property History and Current Use: The Property was formerly developed with the SeaTac Plaza Shopping Center (formerly known as Best Shopping Plaza). The shopping center includes a retail building on the northern half, and a paved parking lot on the southern half of Property. The retail building was constructed in 1979, and occupied by multiple tenants.

A former dry cleaner (Y Pay Mor Cleaners) occupied the easternmost tenant space (Space A-6) of the retail building from approximately November 1985 to June 1992. The dry cleaning machine was reportedly located on the western portion of the tenant space. A loading dock was located north of the tenant space. The former Property layout, including the location of the retail building and former dry cleaner space, is depicted on **Figure 2**.

The Property, as well as the surrounding properties, are currently an active construction site by Sound Transit. A portion of the Property will be developed into a part of the new and expanded Federal Way Transit Center (FWTC) that will include an elevated light rail track, supporting columns, a guideway structure, parking facilities, roads and utilities. Other portions of the Property are planned as future surplus property, which could include mixed residential and commercial uses. **Figure 2** depicts the portions of the Property that will be used as the new FWTC and the surplus property, respectively.

Sources of Contamination: HVOC contaminations in soil and groundwater are associated with the operation of the former dry cleaner (Y Pay Mor cleaners) on the eastern portion of the Property. Contaminants of concern (COCs) include PCE and its degradation products, TCE, cis-1,2-DCE, and VC.

During the former dry cleaner operation, two PCE spills were reported to Ecology in 1991: approximately 6 gallons of PCE was reportedly spilled on August 8, 1991; and an unknown amount of 99.9% PCE “waste product” was reportedly spilled on October 4, 1991.

Site assessments to date have identified two major source areas:

- Southern source area: near the former dry cleaning equipment and a former floor drain, located on the western portion of the former dry cleaner space, where two PCE spills occurred in 1991. This source area extends to the west into a portion of the west-adjacent tenant space.
- Northern source area: near the former back door, a former loading dock, former stormwater lines and catch basins (storm drains), located north of the former dry cleaner space. This source area extends to the south into the northern portion the former dry cleaner space.

Physiographic Setting: The Site was situated at an elevation of approximately 425 to 426 feet amsl before 2020. During the construction of the new FWTC, Sound Transit placed up to approximately 10 to 12 feet of clean aggregate fill across the Site between August and October 2020, raising the former ground surface elevation to approximately 434 feet amsl, nearly the same elevation as the north-adjacent existing Federal Way Transit Center. Future construction activities at the Property and nearby properties will include final grading to bring the ground surface in this area to elevations ranging between 433 and 437 feet amsl.

Surface/Storm Water System: The nearest surface water are tributaries of Hylebos Creek, located approximately 2,500 feet west and 2,700 feet south of the Site. These tributaries flow southerly to join Hylebos Creek, which flows to the south and empties into Commencement Bay, part of the Puget Sound. In addition, multiple small lakes are located nearby, including Steel Lake approximately 0.65 mile to the north, Easter Lake approximately 0.8 miles to the northwest, Lake Dolloff approximately 1 mile to the northeast, and North Lake approximately 1 mile to the southeast.

A former floor drain was located on the central-western portion of the former dry cleaner space. The connected floor drain pipe was running south-north along the west wall of the former dry cleaner space. The floor drain and pipe were removed in 2020.

Former catch basins (storm drains) were located north, northeast and east of the former dry cleaner space. Former stormwater lines were located north and east of the former dry cleaner space. A portion of the stormwater line located north of the former dry cleaner space was removed in 2020. Sanitary sewer lines are located south and east of the former dry cleaner space, and will be removed or decommissioned in place in 2021.

New subsurface utilities, including stormwater, power, communication, water, and sanitary sewer lines will be installed at elevations higher than 423 feet amsl.

Ecological Setting: The Site was occupied by a building and paved parking lot. Currently the Site is part of an active construction site and is not paved.

Geology: The Site is located within the Puget Sound Lowland Physiographic Province, a north-south trending structural and topographic depression that is bordered on its west side by the Olympic Mountains, and to the east by the Cascade Mountain foothills. The Puget Sound Lowland is underlain by Tertiary volcanic and sedimentary bedrock, and has been filled to the present day land surface with Pleistocene-aged glacial and non-glacial sediments.

Subsurface investigations indicate that the uppermost soil at the Site consists of sand and gravel, interpreted as fill. The fill unit extends approximately 5 to 8 feet below ground surface (bgs) before 2020. After the fill placement in 2020, the fill unit now extends to approximately 13 to 22 feet below the current ground surface, or elevations from approximately 414 to 425 feet amsl. A 2- to 3-foot-thick seam of organic soil (silt and sand with varying amounts of peat and woody material) is present below the fill in a portion of the Site, including beneath the former dry cleaner space.

The fill and organic soil are underlain by a soil layer consisting of silty sand, sandy silt, and sand/silt with gravel. This layer is interpreted as glacial till. The glacial till unit extends to elevations from approximately 396 to 401 feet amsl. A 10-foot-thick hard silt layer (potential glacial lacustrine) was observed in a deep boring; this layer likely acts as an aquitard. Sand and silt with gravel (potential glacial advance outwash) was encountered below the hard silt layer at an elevation of 386 feet amsl.

Groundwater: Shallow groundwater is present above the hard silt layer at elevations ranging from approximately 413 to 419 feet amsl, or approximately 15 to 21 feet below the current ground surface. Groundwater generally flows to the southwest, with measured hydraulic gradient ranging from approximately 0.01 to 0.05 feet per foot. A groundwater elevation contour map is depicted on **Figure 3**.

Seven monitoring wells were previously installed at the Site:

- Monitoring well BW-2/MW-1 was installed in June 1992, and screened from 15 to 20 feet below the former ground surface. The well was never sampled because the well casing was separated at the screen/PVC casing interface. The well was decommissioned and replaced by a vapor extraction well B1/VP-6 in August 1992 (**Figure 4**).
- Monitoring well B-5/MW-2 was installed in August 1992, and screened from 9 to 19 feet below the former ground surface (**Figure 4**). This well was sampled in 1992 and 1994, and appeared to be paved over sometime after 1994.

- Monitoring well B-11/MW-3 was installed in October 1992, and screened from 7 to 14 feet below the former ground surface (**Figure 4**). This well was sampled in 1992, 1994, and 1997. This well was later identified as Y Pay Mor-MW3 (**Figure 3**), and was sampled again in 2017 and 2020.
- Monitoring wells FL358-MW1 through FL358-MW4 were installed in October 2017 (**Figure 3**). Based on the former ground surface (approximately 425 feet amsl), well FL358-MW1 was screened from 6 to 25 feet bgs; well FL358-MW2 was screened from 6 to 24 feet bgs; and wells FL358-MW3 and FL358-MW4 were screened from 8 to 20 feet bgs. These four wells were sampled in 2017 and 2020.
- All then-existing monitoring wells (FL358-MW1 through FL358-MW4, and Y Pay Mor-MW3) were decommissioned in 2020. Currently no active groundwater monitoring wells are present at the Site.

Water Supply: Drinking water for the area is supplied by the Lakehaven Water and Sewer District. Lakehaven's water supply comes from the Green River Watershed, and 25 water supply wells within the district¹. The Site is located outside of the 10-year wellhead protection zone of all drinking water supply wells².

According to Ecology's *Well Report Viewer* database³, one water well is located approximately 0.5 miles southwest of the Site, with a static water level at 258 feet bgs. Based on the static water level, this water well appears to be screened in an aquifer deeper than Site shallow groundwater.

Release and Extent of Contamination: Site characterization and interim actions were conducted at the Site since 1992. The following bullets summarize the Site characterization and interim action activities in chronological order. Please note in the following summary, the ground surface refers to the former ground surface before the additional fill placement in 2020.

- 1992 Preliminary Remedial Investigation (RI):
 - In June 1992, twelve soil borings (BW-1 through BW-4, and B-5 through B-12) were completed to total depths ranging from 7.5 to 20 feet bgs in the southern source area, as well as upgradient and downgradient of the southern source area (**Figure 4**).
 - Among them, boring BW-2 was completed as monitoring well MW-1 and was subsequently decommissioned and replaced with vapor extraction well VP-6. Borings B-

¹ Lakehaven Water and Sewer District, 2020 Water Quality Report, July 2021; [1532 \(lakehaven.org\)](https://lakehaven.org)

² Washington Department of Health, Source Water Assessment Program (SWAP) Mapping Application; [SWAP Map](#)

³ <https://apps.wa.gov/wellconstruction/Map/WCLWebMap/default.aspx>

5 and B-11 were completed as monitoring wells MW-2 and MW-3, respectively. Borings B-6 through B-10 were completed as vapor extraction wells VP-1 through VP-5, screened from the ground surface to approximately 7 feet bgs.

- PCE concentrations exceeded the MTCA Method A soil cleanup level in the soil samples collected at the following locations and depths: boring BW-2/MW-1 at 5 and 20 feet bgs; boring B7/VP-2 at 5 feet bgs; and boring B12 at 2.5, 5, and 10 feet bgs. In addition, a TCE concentration exceeded the MTCA Method A soil cleanup level in the soil sample collected at 5 feet bgs from boring BW-2/MW-1.
- In September to October 1992, groundwater samples were collected from monitoring wells MW-2 and MW-3, and from boring B-12 located near the former floor drain. The groundwater sample collected from boring B-12 contained a PCE concentration above the MTCA Method A groundwater cleanup level.
- 1992 and 1993 Soil Vapor Survey:
 - In September 1992, four soil vapor survey points (SVS-1 through SVS-4) were completed to total depths of 5 to 10 feet bgs in or near the southern source area (**Figure 4**). The soil vapor survey points were used to measure total organic vapor concentrations in soil with a photoionization detector (PID). The PID readings ranged from 5.5 to 1,094 parts per million (ppm). The highest PID readings were obtained from SVS-2 located adjacent to the floor drain pipe.
 - In April 1993, an additional 12 soil vapor survey points (SVS-5 through SVS-16) were completed inside the former dry cleaner space (**Figure 5**). PCE were detected in the soil vapor samples from SVS-7, SVS-8, and SVS-11, located on the south-central portion of the former dry cleaner space.
- 1993 to 1994 Soil Vapor Extraction (SVE) System Operation:
 - An SVE system consisting of seven SVE wells, a vacuum blower, a moisture knockout tank, and two 1,000-pound granular activated carbon (GAC) units was installed to treat soil beneath the building slab. The SVE wells included the six wells (VP-1 through VP-6) installed during the preliminary RI and one new well (VP-7, **Figure 5**).
 - The SVE system operated for 15 months from June 1993 to September 1994. The system was shut off in September 1994 after it was determined that PCE recovery concentrations in the extracted soil vapor stream had decreased by more than 70 percent (from 130 ppm to 36 ppm) and extracted vapor levels had reached asymptotic conditions.
 - In November 1994, seven confirmation soil samples (CB-1 through CB-7) were collected

from depths of 5 to 8 feet bgs in the SVE treatment area (**Figure 5**). Soil sample CB-4, collected at 5 to 6.5 feet bgs, contained a PCE concentration above the MTCA Method A soil cleanup level.

- 1994 to 1997 Groundwater Sampling:
 - Biannual groundwater sampling was conducted in 1994 at monitoring wells MW-2 and MW-3, and in 1997 at monitoring well MW-3. Concentrations of volatile organic compounds (VOCs) were below the MTCA Method A groundwater cleanup levels in the groundwater samples collected during these monitoring events.
- 2017 Site Assessment:
 - In October 2017, two soil borings (FL358-B1 and FL358-B3) and four monitoring wells (FL358-MW1 through FL358-MW-4) were completed to total depths from 20 to 26 feet bgs (**Figure 6**).
 - Soil samples were collected from these soil borings and monitoring wells from ground surface to 20 feet bgs. The soil samples were analyzed for gasoline-, diesel, and heavy oil-range petroleum hydrocarbons (TPHg, TPHd, TPHo), VOCs, arsenic, and/or lead. The soil sample collected at 13 to 14 feet bgs from soil boring FL358-B1, located in the northern source area, contained a PCE concentration above the MTCA Method A soil cleanup level.
 - Groundwater samples were collected from monitoring wells FL358-MW1 through FL358-MW4, and Y Pay Mor-MW3 (i.e. previously installed well MW-3). All VOC concentrations were below the MTCA Method A groundwater cleanup levels.
- 2018 Site Assessment:
 - Eighteen passive soil vapor samplers (SS1 through SS-18) were installed to depths of 2.1 to 2.7 feet bgs inside, west, and north of the former dry cleaner space (**Figure 7**). Passive soil vapor samples were collected from the samplers and analyzed for PCE, TCE, and cis-1,2-DCE. These soil vapor samples provided qualitative, screening-level data for identifying locations where elevated HVOC concentrations may be present.
 - Chemical distribution contour maps generated from the laboratory analysis of the soil vapor samples (e.g. **Figure 7**) confirmed the residual presence of HVOCs in the southern source area.
- 2020 Site Assessment:
 - In May to June 2020, after the former building was demolished, a total of 15 soil borings

(358-B1 through 358-B15) were completed within and around the footprint of the former dry cleaner space (**Figure 6**). One soil boring (358-B10) was completed to a total depth of 50 feet bgs; the other soil borings were completed to total depths of 25 to 35 feet bgs.

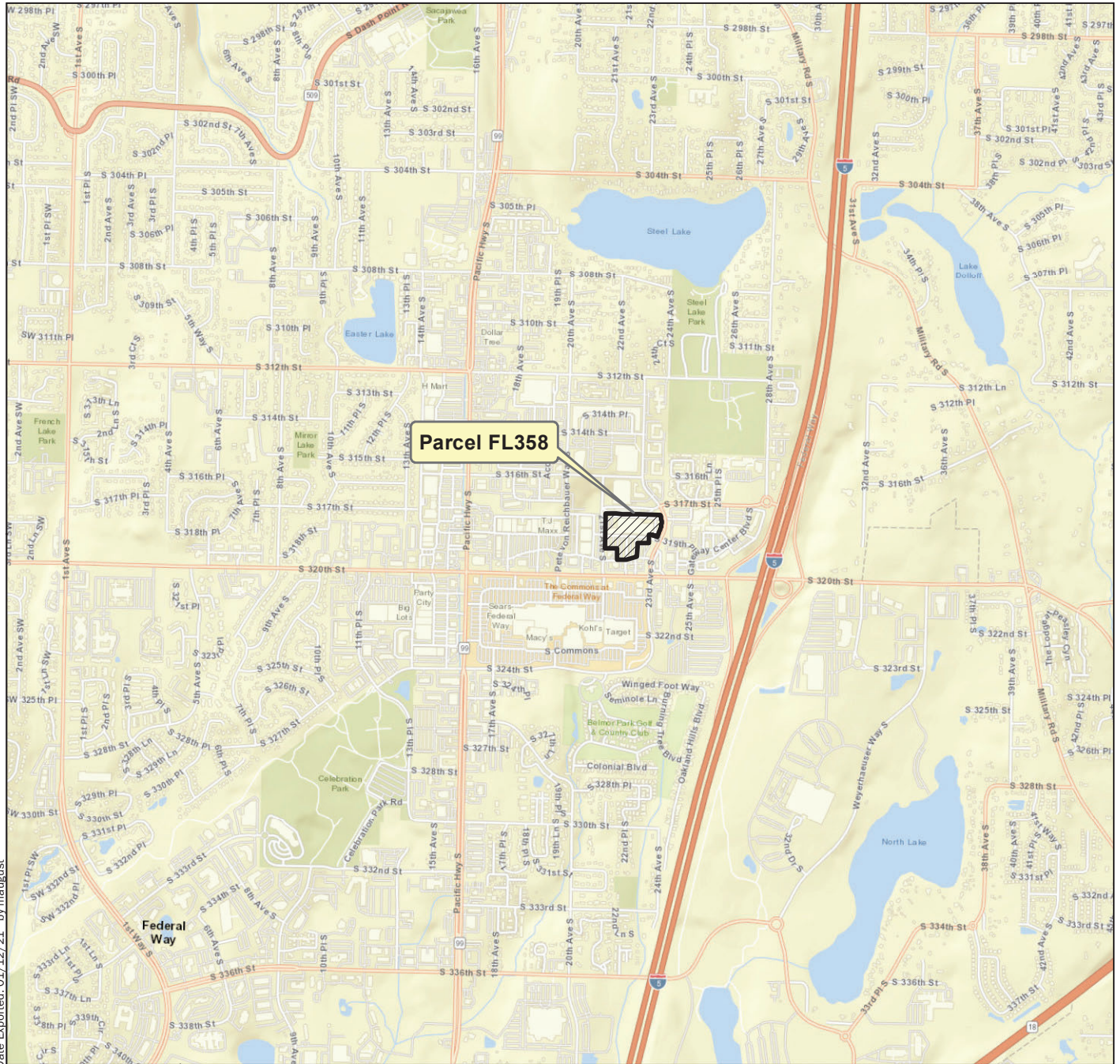
- Eight test pits (358-PH1 through 358-PH8) were completed to a maximum depth of 15 feet bgs in the northern and southern source areas (**Figure 6**).
- A total of 99 soil samples were collected from ground surface to 50 feet bgs from the soil borings and test pits, and analyzed for VOCs. Among them, 17 soil samples collected at the following locations and depths, contained PCE and/or TCE concentrations above the MTCA Method A soil cleanup levels:
 - Soil boring 358-B3 at 12-13.5 feet bgs, and 15-16.5 feet bgs;
 - Soil boring 358-B5 at 20-21 feet bgs, and 25-25.5 feet bgs;
 - Soil boring 358-B8 at 2.5-4 feet bgs;
 - Soil boring 358-B12 at 7.5-9 feet bgs, 15-16.5 feet bgs, and 25-26 feet;
 - Test pit 358-PH2 at 0-1 feet;
 - Test pit 358-PH3 at 3-4 feet bgs;
 - Test pit 358-PH7 at 3-4 feet bgs, 6-7 feet bgs, 9-10 feet bgs, 11-12 feet bgs, and 14-15 feet bgs;
 - Test pit 358-PH8 at 4-5 feet bgs.
- Temporary well screens were installed in nine soil borings (358-B3 through 358-B7, 358-B11, and 358-B13 through 358-B15) from approximately 15 to 25 feet bgs. A total of 14 groundwater samples were collected from these nine temporary wells, and monitoring wells FL358-MW1 through FL358-MW4 and Y Pay Mor-MW3 (**Figure 6**).
- Concentrations of PCE, TCE, cis-1,2-DCE, and/or VC exceeded the MTCA Method A or B groundwater cleanup levels in the groundwater samples collected from temporary wells 358-B3, and 358-B5 through 358-B7 (**Figure 8**).
- 2020 Remedial Excavations:
 - In July and August 2020, a total of approximately 4,202 tons of HVOC-contaminated soil were excavated from the northern and southern source areas (**Figure 9**). Remnant floor drain and storm drain pipes were also removed. In addition, approximately 39,634 gallons of excavation water and ponded water were disposed of off-Site. The remedial excavations were backfilled with clean fill.
 - The remedial excavations extended to a maximum depth of 10 feet bgs (or an elevation of 416 feet amsl) in the southern source area; and a maximum depth of 11 feet bgs (or an elevation of 412 feet amsl) in the northern source area. A total of 113 soil samples

were collected from the remedial excavations and analyzed for HVOCs.

- All soil samples collected at the bottom and sidewalls of the southern source area excavation contained HVOC concentrations below the MTCA Method A soil cleanup levels.
- For the northern source area, PCE and/or TCE concentrations exceeded the MTCA Method A soil cleanup levels in ten soil samples collected at the excavation bottom, at 10 to 11 feet bgs. A PCE concentration also exceeded the MTCA Method A soil cleanup level in a soil sample (358-PEX-98-10) collected at 9 to 10 feet bgs from the northeastern sidewall of the excavation.
- To delineate the northeastern extent of the residual soil contamination, a test pit (358-PH-105) was excavated approximately 5 feet north of the sidewall sample 358-PEX-98-10 (**Figure 9**). One soil sample was collected at 9 to 10 feet bgs in the test pit (358-PH-105). This soil sample did not contain detectable VOCs.
- After the 2020 interim action, residual contaminated soil remains at depths greater than 10 feet bgs on the northern portion of the Site (**Figure 9**). In addition, the current soil condition at a historically detected PCE exceedance at 20 feet bgs at boring BW-2/MW-1 in the southern source area, has not been evaluated.

Site Diagrams

Enclosure A: Figure 1



Legend

 Subject Property



2,000 0 2,000
Feet

Vicinity Map FWLE Parcel FL358

Remedial Investigation Work Plan, Y Pay Mor Drycleaner Site
Sound Transit Federal Way Link Extension
Federal Way, Washington



Figure 1

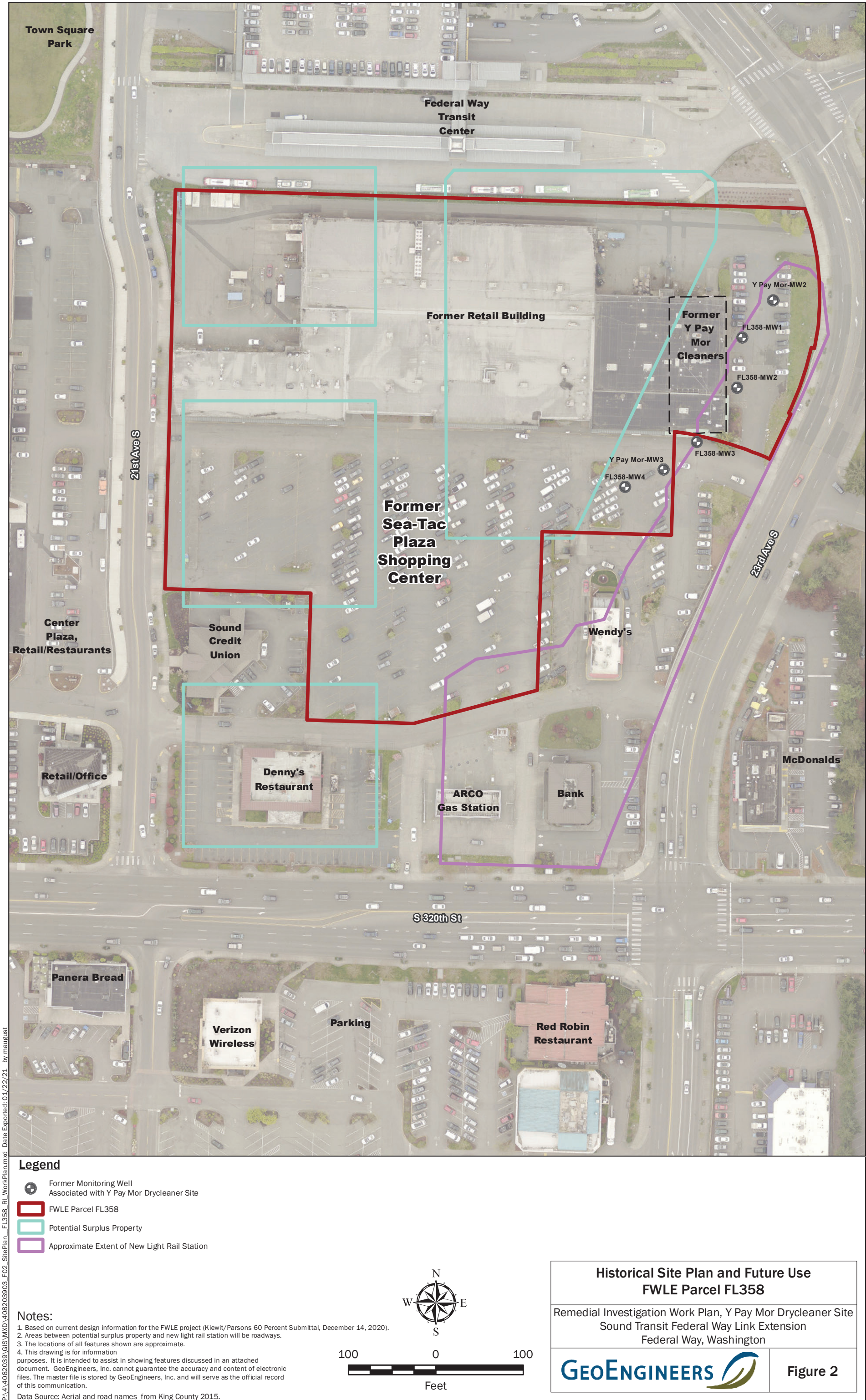
Notes:

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.

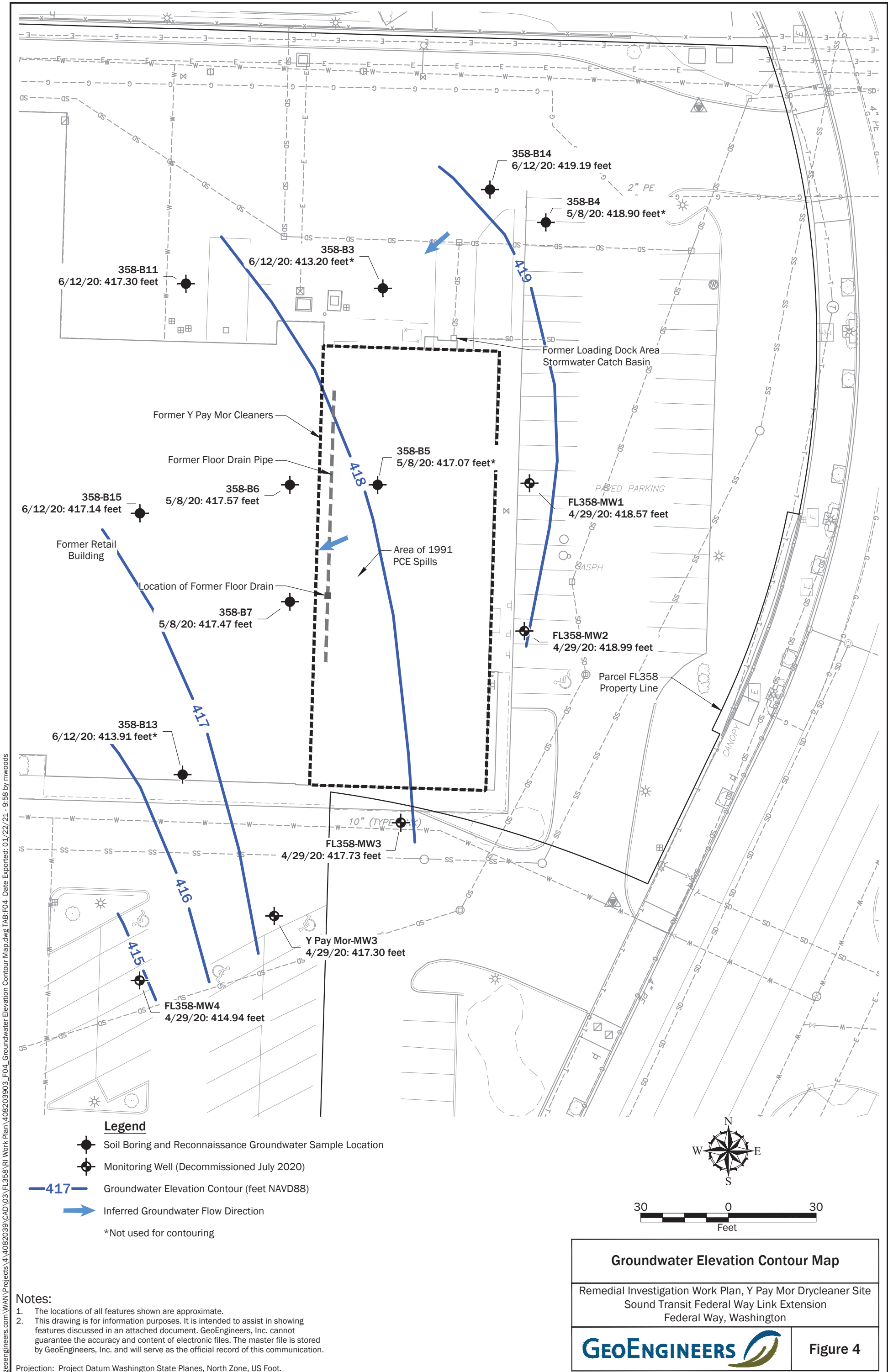
Data Source: Mapbox Open Street Map, 2017

Projection: NAD 1983 StatePlane Washington North FIPS 4601 Feet

Enclosure A: Figure 2



Enclosure A: Figure 3



LEGEND



Enclosure A: Figure 5

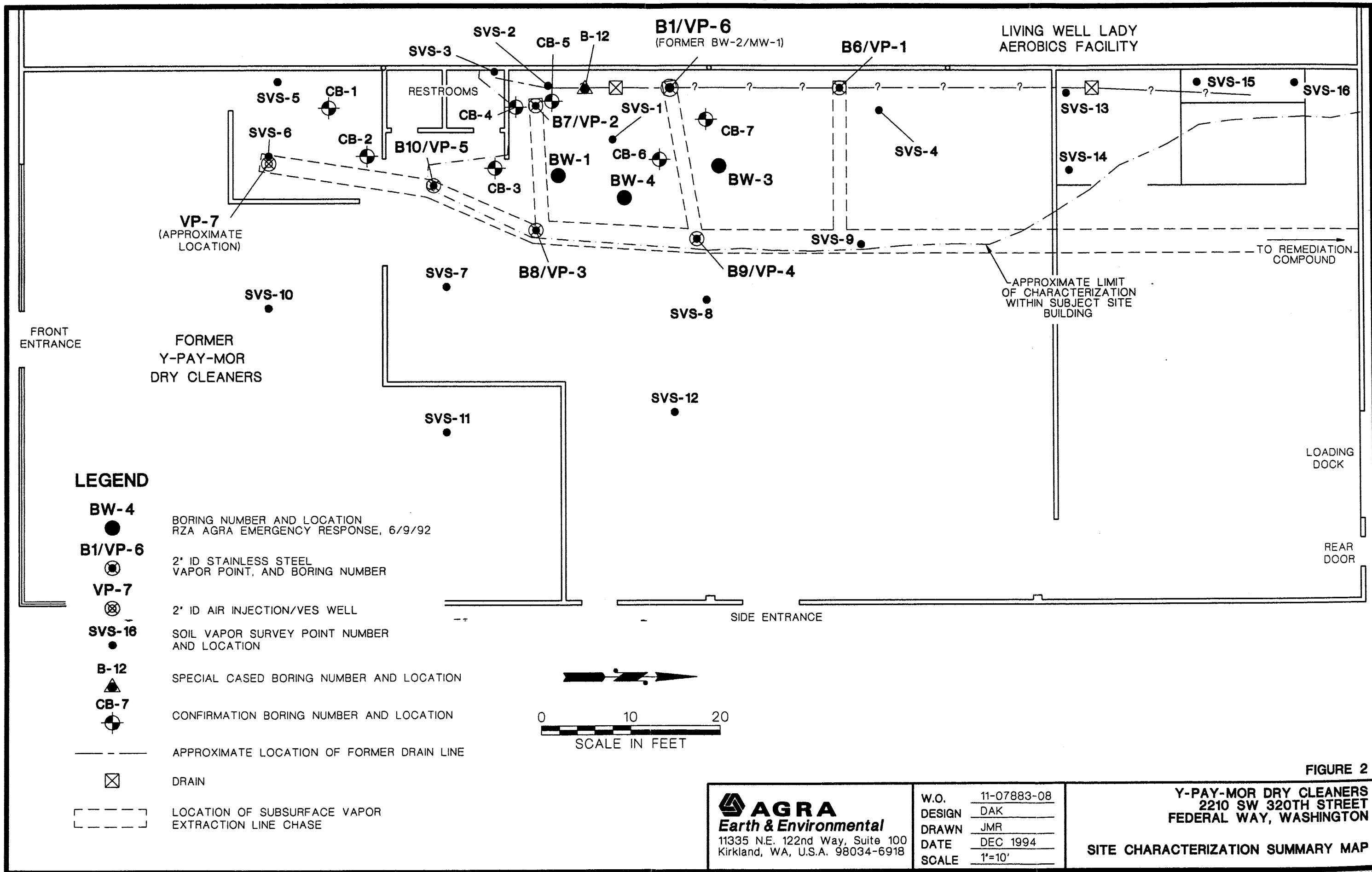
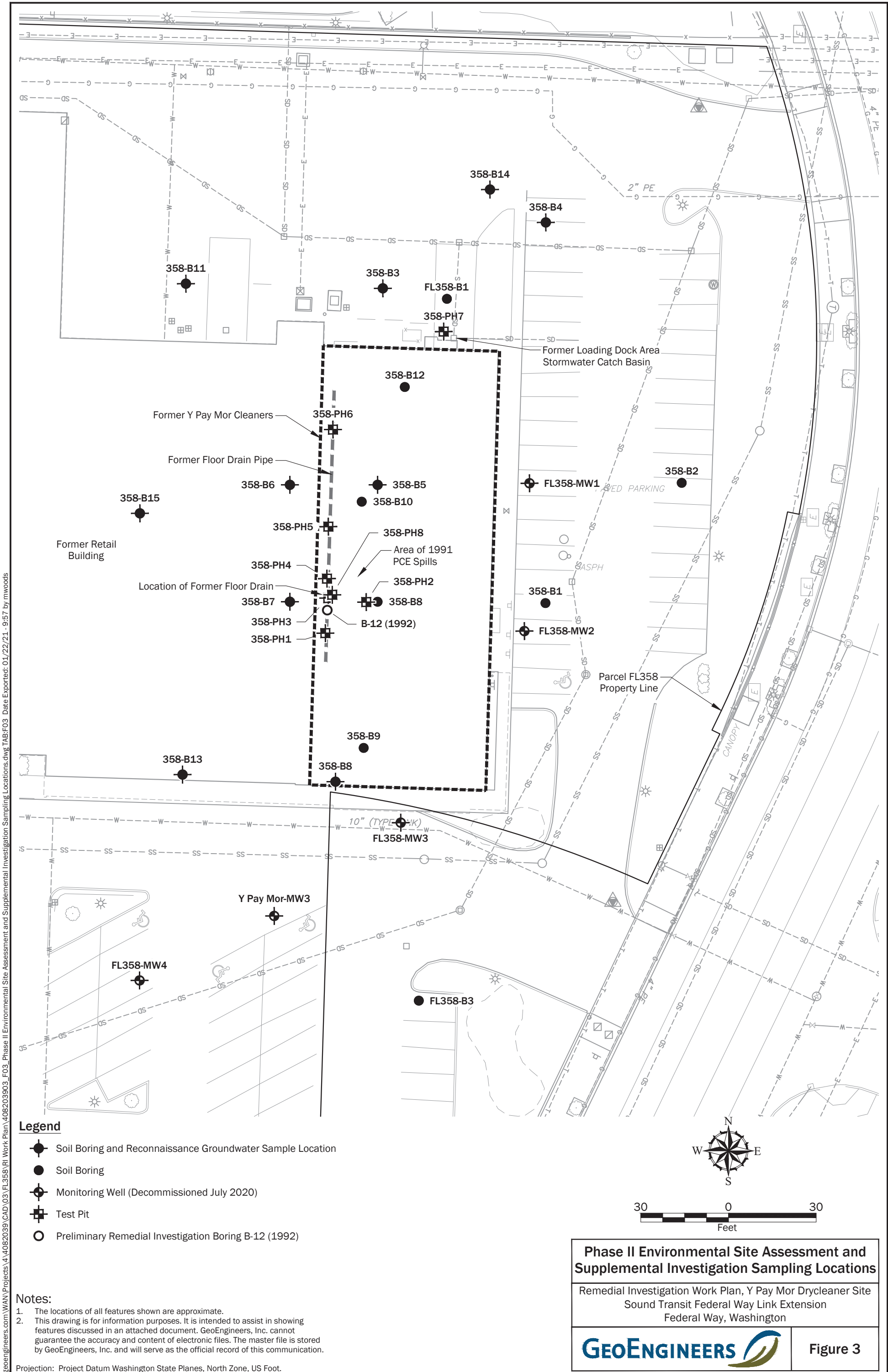


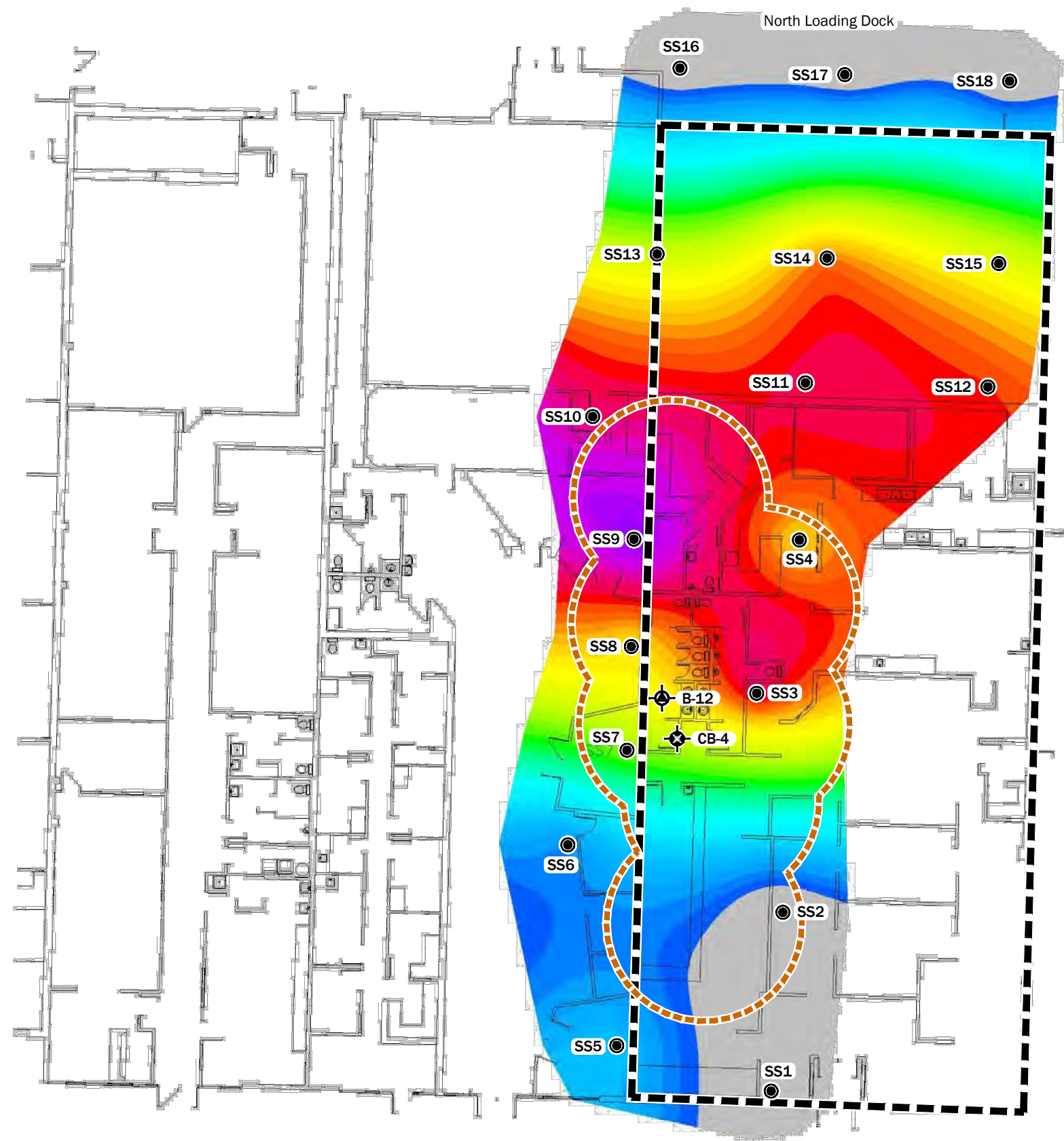
FIGURE 2

AGRA Earth & Environmental 11335 N.E. 122nd Way, Suite 100 Kirkland, WA, U.S.A. 98034-6918	W.O.	11-07883-08	Y-PAY-MOR DRY CLEANERS 2210 SW 320TH STREET FEDERAL WAY, WASHINGTON SITE CHARACTERIZATION SUMMARY MAP
	DESIGN	DAK	
	DRAWN	JMR	
	DATE	DEC 1994	
	SCALE	1"=10'	

Enclosure A: Figure 6

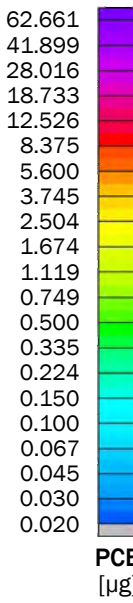


Enclosure A: Figure 7



Legend

- Approximate Former Footprint of Y Pay Mor Dry Cleaner
- Approximate Treatment Area
- SS1 Location of Sub-Slab Sample Location
- B-12 Cased Boring (AGRA, 1992)
- CB-4 Confirmation Boring (AGRA, 1994)

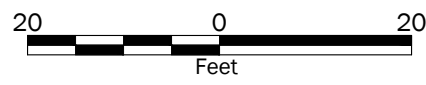


Notes:

- Mass indicates amount of analyte accumulated on passive sampler during a 9-day exposure period.
- The locations of all features shown are approximate.
- 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:

- Floor Plan 1, Retail Building - 2120 South 320th Street, Federal Way, WA 98003 by 2D Floorplans dated September 2014.
- PCE concentration plume from Amplified Geochemical Imaging (AGI) dated 1/4/2019.



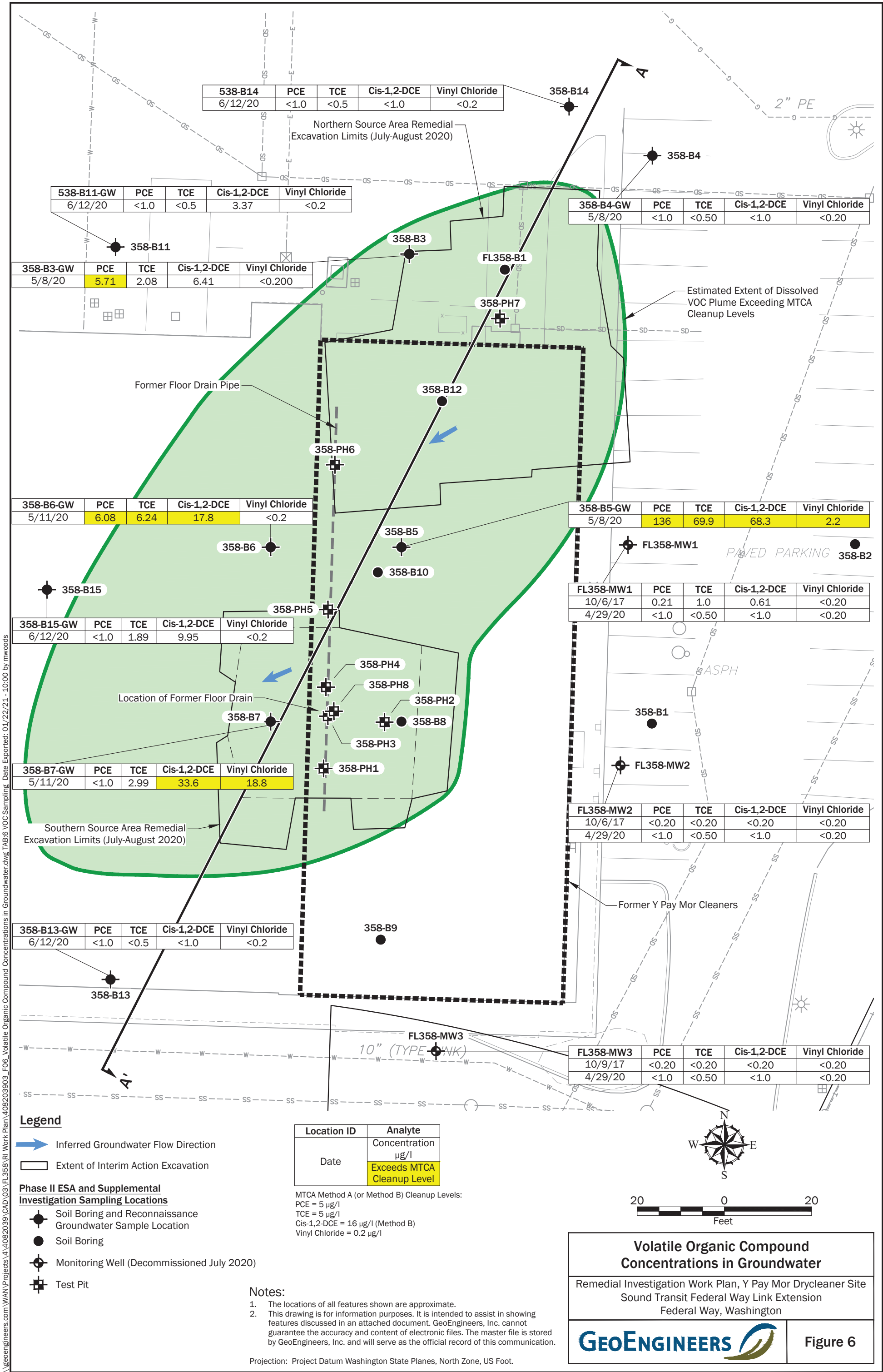
Distribution of PCE in Sub-Slab Soil Vapor by Mass, FL-358

Phase II ESA Addendum
Federal Way Link Extension
Federal Way, Washington

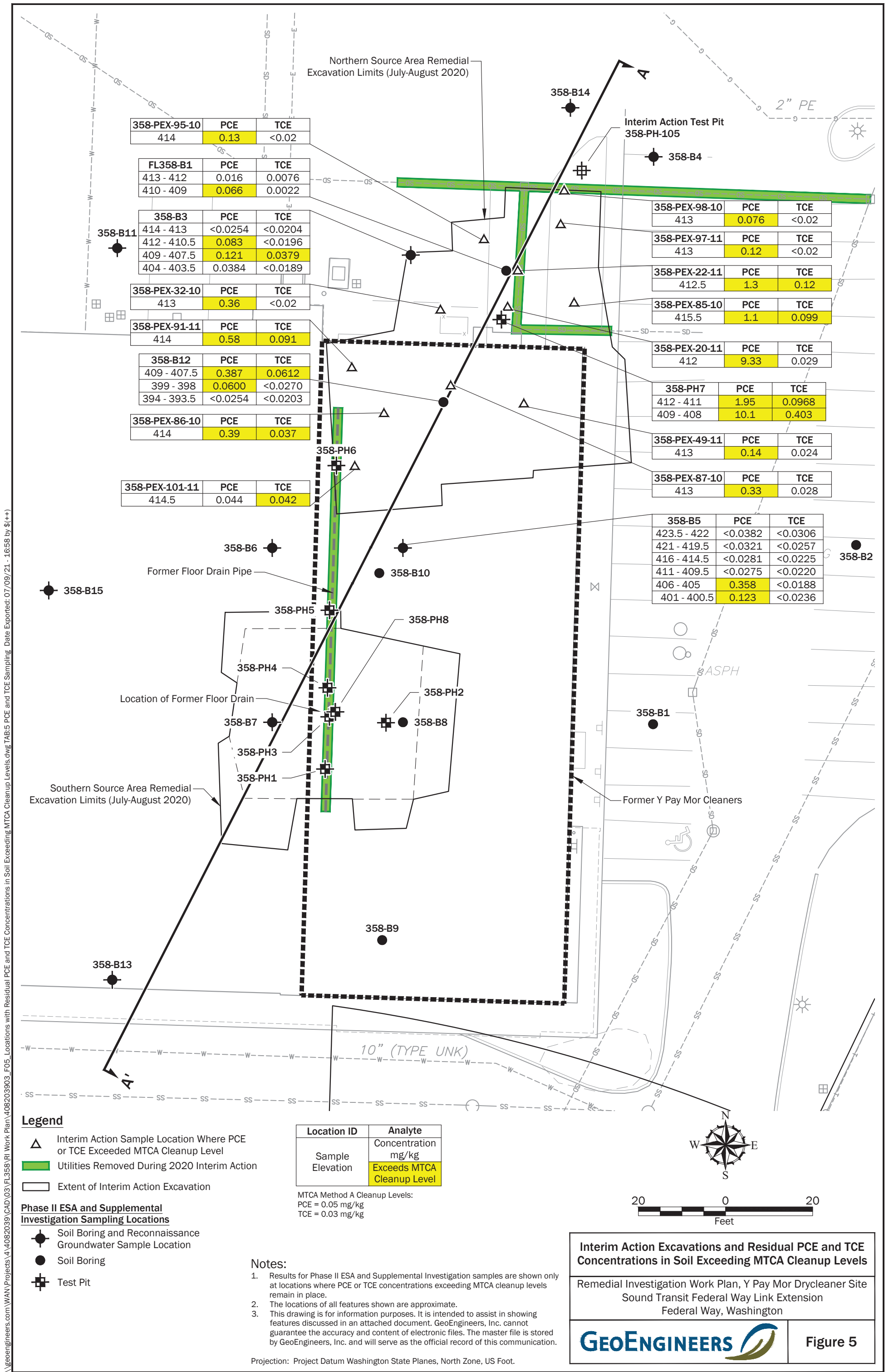


Figure 6

Enclosure A: Figure 8



Enclosure A: Figure 9



Enclosure B

**Basis for the Opinion:
List of Documents**

1. Department of Ecology (Ecology), *Re: Environmental Covenant – Ecology Approval for Certain Future Construction, Activities at King County parcel 2423200050*, July 21, 2021.
2. GeoEngineers Inc. (GeoEngineers), *Remedial Investigation Work Plan, Federal Way Link Extension Parcel FL358, Y Pay Mor Drycleaner Site, 2210 South 320th Street, Federal Way, Washington*, July 21, 2021.
3. Sound Transit, *Selection of Preferred Alternative, Y Pay Mor Drycleaner, VCP Project No. NW3265, Federal Way Link Extension Parcel FL-358*, July 13, 2021.
4. O'Neill Service Group (OSG), *Soil Characterization and Interim Action Remediation Report, Parcel FL-358, Former Y Pay Mor Dry Cleaner, VCP Project No. NW3265, Federal Way Link Extension Project, 2210 South 320th Street, Federal Way, Washington*, February 19, 2021.
5. Ecology, *Re: Opinion pursuant to WAC 173-340-515(5) on Remedial Action for the following Hazardous Waste Site, Y Pay Mor Drycleaner, 2210 S 320th Street, Federal Way, Washington 98003, VCP Project No.: NW3265*, June 26, 2020.
6. Ecology, *Re: Environmental Covenant – Ecology Approval for Activities at King County Parcel 2423200050*, June 26, 2020.
7. Sound Transit, *Selection of Preferred Alternative, Y Pay Mor Drycleaner, VCP Project No. NW3265, Federal Way Link Extension Parcel FL-358*, June 19, 2020.
8. OSG, *Technical Memorandum, FL358 – Supplemental Investigation Sound Transit Federal Way Link Extension*, May 22, 2020.
9. OSG, *Contained-In Determination Request, Supplemental Investigation, Parcel FL-358, Sound Transit Federal Way Link Extension Project, 2200 South 320th Street, Federal Way, Washington*, May 21, 2020.
10. Ecology, *Re: Response to Additional Information at the Following Cleanup Site, Y Pay Mor Drycleaner, 2210 S 320th Street, Federal Way, Washington, 98003, Facility No. 2518, Cleanup Site ID 3180, VCP Project No NW3265*, April 29, 2020.
11. Sound Transit, *Additional Information, Y Pay Mor Drycleaner, VCP Project No. NW3265*, April 13, 2020.
12. Ecology, *Approval for Supplemental Characterization at the Following Cleanup Site, Y Pay Mor Drycleaner, 2210 S 320th Street, Federal Way, Washington, 98003, Facility No. 2518, Cleanup Site ID 3180, VCP Project No NW3265*, April 8, 2020.

13. OSG, *Cleanup Action Plan, Parcels FL-358, FL-361, Federal Way Link Extension Project, 2200 South 320th Street, Federal Way, Washington*, March 11, 2020.
14. Sound Transit, *Phase II Environmental Site Assessment Addendum, Sound Transit – Federal Way Link Extension, Parcel FL-358, 2200 South 320th Street, Federal Way, Washington*, February 18, 2019.
15. Ecology, *Periodic Review, Y Pay Mor Drycleaner, 2210 South 320th, Federal Way, Washington 98003, Facility Site ID 2518, Cleanup Site ID 3180*, September 2018.
16. Sound Transit, *Phase II Environmental Site Assessment Report, Sound Transit – Federal Way Link Extension, Parcels FL358, FL361 and FL363, Sea-tac Plaza Shopping center, 2200 South 320th Street, Federal Way, Washington*, December 19, 2017.
17. Ecology, *Re: Independent Remedial Action, Sea-Tac Plaza/Former Y-Pay-Mor Drycleaner, Space A-6, 2210 S. 320th Street, Federal Way, Washington*, October 22, 1998.
18. Restrictive Covenant, King County Recording No. 199808101434, *Seatac Plaza Corporation, 2210 S 320th Street, Space A-6, Former Y-Pay-Mor Dry Cleaners, Parcel Number 242320-0050-00*, July 24, 1998.
19. AGRA Earth & Environmental, Inc. (AGRA), *Sea-Tac Plaza, Biannual Sampling of Monitoring Well MW-3, Former Y-Pay-Mor Dry Cleaners, Federal Way, Washington*, August 20, 1997.
20. AGRA, *Sea-Tac Plaza, Biannual Sampling of Monitoring Well MW-3, Former Y-Pay-Mor Dry Cleaners, Federal Way, Washington*, February 28, 1997.
21. Restrictive Covenant, King County Recording No. 199510121424, September 21, 1995.
22. AGRA, *Independent remedial Action Report (IRAP), Former Y-Pay-Mor Drycleaners, 2210 S 320th Street, Federal Way, Washington*, December 22, 1994.
23. AGRA, *Remediation System Installation, Former Y-Pay More Dry Cleaners, Federal Way, Washington*, October 1993.
24. AGRA, *Preliminary Remedial Investigation, Former Y-Pay-Mor Drycleaners, Best Shopping Plaza, 2210 320th Street South, Federal Way, Washington*, November 23, 1992.