

February 2019

FEDERAL WAY LINK EXTENSION

AE 0044-12 3.7.N
Phase II Environmental Site
Assessment Addendum
FL-358 Draft 2

Tax Parcel 2423200050



CENTRAL PUGET SOUND
REGIONAL TRANSIT AUTHORITY

**Phase II Environmental Site Assessment Addendum
Sound Transit – Federal Way Link Extension
Parcel FL-358
2200 South 320th Street
Federal Way, Washington**

File No. 4082-039-01

February 18, 2019

Prepared for:

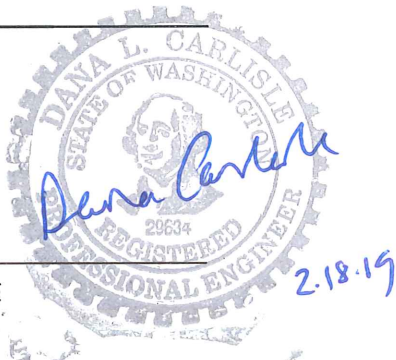
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Acronyms and Abbreviations

ASTM	ASTM International
CID	Contained-In Determination
CLARC	Cleanup Levels and Risk Calculation
CSM	Conceptual Site Model
DCE	dichloroethene
Ecology	Washington State Department of Ecology
EPA	United States Environmental Protection Agency
ESA	environmental site assessment
FWLE	Federal Way Link Extension
MTCA	Model Toxics Control Act
PCE	tetrachloroethylene
PID	photoionization detector
ppm	parts per million
TCE	trichloroethylene
VOC	volatile organic compound
WAC	Washington Administrative Code

1.0 Introduction

This report presents the results of the Phase II Environmental Site Assessment (ESA) Addendum for the former Y Pay Mor Dry Cleaner located on Federal Way Link Extension (FWLE) Parcel FL-358 (subject property, or Property). Parcel FL-358 is currently owned by Winson at Federal Way, LLC (Winson); the address of the subject property is 2200 South 320th Street, Federal Way, Washington (King County Parcel 2423200050). Parcel FL-358 is developed with the Sea-Tac Plaza shopping center, where the Y Pay Mor Dry Cleaner had been a tenant in the shopping center building in the 1980s and early 1990s. Y Pay Mor Dry Cleaner is a Model Toxics Control Act (MTCA) cleanup Site identified by the Washington State Department of Ecology (Ecology) (Cleanup Site ID 3180 – <https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=3180>).

This additional investigation was completed as an addendum to the December 2017 Phase II ESA (Federal Way Link Extension, AE 0044-12 WP 3.S, Phase II Environmental Site Assessment FL358, FL361 and FL363, Tax Parcels 2423200050, 2423200010 and 2423200060). The purpose of the additional investigation was to evaluate the presence and lateral extent of tetrachloroethylene (PCE) and associated chemicals beneath the building on FL-358.

The subject property is shown relative to surrounding physical features on the Vicinity Map, Figure 1. The general layout of Parcel FL-358 and surrounding properties is shown on Figure 2, the FWLE proposed construction plan for FL-358 and adjacent parcels is shown on Figure 3. Figure 4 shows the former Y Pay Mor Dry Cleaner tenant space and Figure 3 presents a detailed layout of the Phase II ESA addendum study area.

Sound Transit plans to acquire parcel FL-358 in full, with demolition to existing structures based on current design information for the FWLE project (HDR, provided in March 2018). Sound Transit's proposed construction and development on the Property includes an expansion to the Federal Way Transit Center and parking garage, new roads and utilities, a large stormwater vault, and an elevated light rail track (columns and guideway structure). Proposed construction and development activities by Sound Transit could change as project design is refined.

The results of this Phase II ESA Addendum will be used by Sound Transit as part of their evaluation of potential environmental liabilities associated with ownership of the Property and future design and construction of the FWLE. This report has been prepared for the exclusive use of Sound Transit, their agents and project design team. Because this environmental report is not intended for use by others, no one else should rely on this report without first conferring with GeoEngineers.

Throughout the report, references to "the FWLE", the "project", the "proposed project", "the alignment," or the "light rail corridor" refer to the alignment selected by the Sound Transit Board in January 2017 after publication of the FEIS.

1.1 Authorization

This report was prepared under the terms of the subcontract between HDR and GeoEngineers, Inc. (GeoEngineers) dated August 24, 2012, along with Amendments 1 through 12. The subcontract authorizes GeoEngineers to provide environmental services for the Sound Transit Federal Way Link Extension in accordance with Agreement No. RTA/AE 044-12 between HDR and Sound Transit.

1.2 Site History and Summary of Prior Environmental Studies

GeoEngineers completed a Phase I ESA for FL-358 in March 2017 and a Phase II ESA in December 2017. FL-358 is developed with the Sea-Tac Plaza shopping center and parking built in 1979, of which the former Y Pay Mor Dry Cleaner occupied a tenant space at the far east end of the shopping center, currently occupied by a restaurant and laser tag game facility. As noted above, the former Y Pay Mor Dry Cleaner was identified by Ecology as a MTCA cleanup Site. The following is a brief summary of information in the Ecology's file for the Y Pay Mor Dry Cleaner Site:

- Y Pay Mor Dry Cleaner was a tenant in the shopping center on FL-358 between approximately the late 1980s and 1994. A spill of PCE occurred inside the dry cleaner tenant space in 1991. Site assessment completed in 1992 included limited sampling of soil and groundwater beneath and surrounding the dry cleaner space. PCE was detected in a groundwater sample obtained from beneath the dry cleaner space (boring B-12).
- A soil vapor extraction (SVE) remediation system operated beneath the dry cleaner space in 1993 and 1994. SVE is an in-situ treatment method for soil in the unsaturated zone; SVE methods do not directly treat groundwater. Documents available at Ecology indicate the SVE treatment area was beneath the building footprint at and next to the dry cleaner space, approximately as shown in Figure 4.
- Post-remediation compliance sampling included soil sampling from borings inside the dry cleaner in 1994 and groundwater sampling at monitoring wells outside the building footprint in 1994 and 1997. PCE was detected at a concentration greater than the MTCA Method A cleanup level in one of the 1994 soil samples from inside the dry cleaner space (boring CB-4). PCE and its degradation compounds trichloroethylene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE) and vinyl chloride were detected at concentrations less than the MTCA cleanup levels in the groundwater samples from 1994 and 1997.
- Ecology issued an interim No Further Action (NFA) determination for Y Pay Mor Dry Cleaner dated June 9, 1995, conditional on the recording of a restrictive covenant in 1995. The 1995 covenant documents that residual concentrations of solvents remained in soil and groundwater at levels exceeding MTCA Method A cleanup levels. Ecology issued a final NFA dated October 23, 1998, conditioned on a second restrictive covenant recorded in August 1998. The 1998 covenant outlines the conditions required to preserve Ecology's NFA determination for the dry cleaner Site. Both the 1995 and 1998 covenants identify that the former Y-Pay-Mor Dry Cleaner facility" was located in "Space A-6" of the Sea-Tac Plaza shopping center. Based on comparison on maps and dimensions of the existing building, Space A-6 corresponds to the current locations of a restaurant and a part of

the adjacent laser tag game facility (see Figure 5). Neither covenant delineates the boundaries of the Y Pay Mor Dry Cleaner MTCA Site.

- In 2018, Ecology completed a Periodic Review for the Y Pay Mor Dry Cleaner Site as required by MTCA. Ecology determined that based on existing data available at the time of the 1998 NFA and Restrictive Covenant, additional action is not necessary and the restrictive covenant is still protective because the overlying building and pavement structure/materials act as a cap preventing infiltration and direct contact.

During the December 2017 Phase II ESA, GeoEngineers conducted an assessment in the exterior vicinity of the former Y Pay Mor Dry Cleaner by completing six exploration borings, four of which were completed as monitoring wells. Soil samples were obtained from all six explorations and selected samples were submitted for chemical analysis. Groundwater samples were obtained from the four newly installed monitoring wells and from one previously installed monitoring well (FL358-MW-1, FL358-MW-2, FL358-MW-3 and FL358-MW-4, and Y Pay Mor-MW3). Volatile organic compounds (VOCs) were also analyzed in downgradient groundwater samples obtained from the south/southwest margins of FL-358 to confirm the presence/absence of dry cleaner-related solvents in groundwater at these downgradient locations on the parcel. No explorations were completed inside the shopping center building in connection with the 2017 study. The reader is referred to GeoEngineers' Phase II ESA for FL-358, FL-361 and FL-363 for a detailed summary of conditions on these parcels.

The key findings of the 2017 Phase II ESA were as follows.

1.3 Soil

The concentration of PCE in one soil sample from a boring (FL358-B1) completed outside the building directly north of the dry cleaner space was greater than the MTCA Method A cleanup level. Detected concentrations of PCE in the remaining Phase II ESA soil samples, and detected TCE and cis-1,2-DCE concentrations in the soil samples tested, were less than the corresponding MTCA cleanup levels. Vinyl chloride was not detected in the Phase II ESA soil samples tested. Prior studies and the recent Phase II ESA did not fully delineate the lateral and vertical extent of residual PCE in soil at concentrations greater than the MTCA Method A cleanup level.

1.4 Groundwater

Five monitoring wells in close proximity to the former dry cleaner (four monitoring wells installed by GeoEngineers, FL358-MW-1, FL358-MW-2, FL358-MW-3 and FL358-MW-4, and one previously installed monitoring well, Y Pay Mor-MW3) were sampled and analyzed for the dry-cleaning solvent PCE and breakdown products TCE, cis-1,2-DCE and vinyl chloride in October 2017. PCE, TCE and cis-1,2-DCE were detected at concentrations less than the corresponding MTCA cleanup levels in groundwater from one well located cross-gradient (northeast) of the former dry cleaner. One VOC, cis-1,2-DCE, was detected at concentrations less than the MTCA cleanup level in two additional groundwater samples from downgradient wells. The October 2017 result for cis-1,2-DCE downgradient of the former dry cleaner was approximately an order of magnitude lower than the cis-1,2-DCE concentrations reported

in 1997. PCE, TCE, cis-1,2-DCE and vinyl chloride were not detected in the downgradient groundwater samples obtained in October 2017 from the south margin of FL-358 and on contiguous parcel FL-363.

Although dry cleaning solvents were not detected in the Phase II ESA groundwater samples at concentrations greater than MTCA cleanup levels, groundwater directly beneath the former dry cleaner space was not assessed during the 2017 study, and was previously documented to exceed the MTCA Method A cleanup level for PCE based on 1992 groundwater sample at B-12.

1.4.1 Phase II ESA Data Gaps

Several site characterization data gaps including those listed below were identified relative to the former Y Pay Mor Dry Cleaner Site based on our 2017 study for Sound Transit.

- The lateral and vertical extent of residual PCE and related compounds in soil and groundwater at concentrations exceeding MTCA cleanup levels;
- Hydrogeologic conditions relative to potential shallow and deeper aquifer systems;
- The potential for contaminant migration via preferential pathways such as underground utility corridors or fill; and
- The potential for indoor air vapor intrusion for dry cleaning VOCs relative to the existing shopping center building.

1.5 Purpose and Scope of Services

The purpose of the Phase II ESA Addendum is to evaluate the lateral extent of PCE and associated breakdown products to be present beneath the building as indicated in borings B-12 and CB-4. A passive soil vapor survey was conducted to support the delineation of residual impacts and development of a more complete site characterization. GeoEngineers' scope of services consisted of the following:

1. Performed a site reconnaissance of the Property.
2. Developed a health and safety plan for use by our field representatives in accordance with WAC 296-24.
3. Coordinated the marking of subsurface utilities at the exploration locations by notifying the one-call locate service for underground utilities in public rights-of-way and a private utility locate service for underground utilities on private property, for both interior and exterior sampling locations.
4. Installed eighteen sub-slab passive soil vapor samplers in and around the former Y Pay Mor Dry Cleaner tenant space to quantify the relative magnitude of dry cleaner-related VOCs in soil vapor. Following a 9-day sampler exposure period, GeoEngineers field staff returned to collect the sub-slab samplers and restore the sampling locations.
5. Submitted the soil vapor samplers for chemical mass analysis of the following: PCE, TCE and cis-1,2-DCE by the AGI Screening method, which utilizes a modification of US Environmental Protection

Agency (EPA) Method 8260 for external standard calibration.

6. Evaluated the soil vapor chemical mass analytical data relative to previous sampling locations to evaluate current subsurface conditions related to residual chlorinated solvents beneath the building slab.

2.0 Site Description

2.1 Location and Property Description

The subject property is located in an area of predominantly commercial development. The two tenant spaces of interest are located at the east end of the shopping center, and are occupied by the Western Garden restaurant and Laser Quest game facility, which together occupy the footprint of the former Y Pay Mor Dry Cleaner.

The location is shown relative to surrounding physical features in Figure 1. The current layout of the subject property and surrounding properties are shown in Figure 2.

2.2 Site Reconnaissance

GeoEngineers personnel visited the subject property on November 13 and 14, 2018 to complete a survey of sub-floor and buried utilities with a private utility locator prior to installation of passive soil vapor samplers. The Western Garden restaurant and Laser Quest tenant spaces are located at the east end of the shopping center. The Western Garden tenant space occupies the majority of the footprint of former Y Pay Mor Dry Cleaner, and is composed of a dining area and bar at the front of the space and a kitchen, food storage and restrooms at the rear. Laser Quest is located at the tenant space west-adjacent to the former Y Pay Mor Dry Cleaner, though the large game arena at the rear of the business occupies the northern portion of the former dry cleaner (Figure 5). The game facility is composed of a lobby with electronic games and private party rooms, storage for electronic game devices, and a warehouse-like arena with ramps, platforms and obstacles for play.

We did not identify visual evidence of current use or past releases of hazardous substances to the ground surface or pavement in or near the restaurant or game facility during our visit.

3.0 Subsurface Explorations

3.1 General

The Phase II ESA Addendum explorations included the installation of eighteen (18) sub-slab passive soil vapor samplers in and around the former Y Pay Mor Dry Cleaner tenant space. Subject property use, subsurface conditions and historical analytical results were evaluated to develop the sampling and analysis plan followed for the Phase II ESA Addendum (Federal Way Link Extension, AE 0044-12 3.7.N, Soil Vapor Sampling Work Plan - Phase II ESA Data Gaps Investigation Draft 2, Federal Way Link Parcel FL-358, King County Tax Parcel 2423200050).

Sample locations were selected relative to the footprint of the former dry cleaner, and historical groundwater sample location B-12 and confirmation soil sample location CB-4 where chlorinated solvents had been reported at concentrations greater than MTCA cleanup levels.

3.2 Contaminants of Concern

Potential contaminants for the Phase II ESA Addendum screening included PCE and its degradation products, of which PCE, TCE and cis-1,2-DCE had been identified in soil and groundwater beneath the former dry cleaner space.

The chemical analytical data for samples obtained during this investigation were evaluated to determine locations beneath the building slab where potential contaminants may be encountered during Sound Transit construction activities.

3.3 Sampling Methodology

Sub-slab passive vapor samplers SS-1 through SS-18 were installed to depths of 2.1 to 2.7 feet below the floor grade using hand coring and drilling methods. Four samplers were installed in the dining area and kitchen of the Western Garden Restaurant; eleven samplers were installed in the adjacent lobby and play arena of the Laser Quest game facility; three samplers were installed in the exterior pavement at the loading dock immediately north of the Laser Quest arena.

Installation of the sub-slab samplers was completed on November 27 and 28, 2018 by GeoEngineers' field technicians. GeoEngineers field staff returned on December 6 and 7, 2018 to collect the samplers following a 9-day exposure period and restore the sampling locations. Methods and the field exploration program are presented in Appendix A. Approximate sampler survey installation locations are shown on Figure 4.

4.0 Analytical Testing Results

Eighteen (18) sub-slab passive soil vapor samplers were collected from sample locations at the subject property following a 9-day sampler exposure period. Following retrieval, the passive vapor samplers were submitted to Amplified Geochemical Imaging (AGI) in Newark, Delaware for chemical analysis and graphical interpretation. The method for chemical analysis followed the AGI Screening method, which utilizes a modification of US Environmental Protection Agency (EPA) Method 8260 for external standard calibration, and reports results graphically by mass in micrograms (μg).

The soil vapor chemical analytical mass results and distribution contour maps are shown in Figures 6 through 8 for PCE, TCE and cis-1,2-DCE; laboratory-prepared contour distributions maps are provided in Appendix B.

4.1.1.1 PCE

PCE was confirmed to be present beneath the building slab in an area centered on sample location SS9. This location is situated north and west of historical sample locations B-12 and CB-4, and immediately west of the approximate footprint of the former Y Pay Mor Dry Cleaner tenant space. The presence of PCE is delineated to the southeast by sample locations SS1 and SS2, and to the north by sample locations SS16, SS17 and SS18, where PCE was not detected.

4.1.1.2 TCE

TCE was confirmed to be present beneath the building slab in an area centered on sample locations SS3 and SS9. The presence of TCE is delineated to the south by sample locations SS2 and SS6, and to the north by sample locations SS16, SS17 and SS18, where TCE was not detected.

4.1.1.3 Cis-1,2-DCE

Cis-1,2-DCE was confirmed to be present beneath the building slab in an area centered on sample locations SS3 and SS9, similar to TCE. The presence of cis-1,2-DCE is delineated to the south by sample locations SS2 and SS6, and to the north by sample locations SS13, SS15, SS16 and SS17 where cis-1,2-DCE was not detected.

4.1.1.4 Trans-1,2-DCE

Trans-1,2-DCE was confirmed to be present beneath the building slab by isolated detections in sample locations SS3 and SS9, and SS18.

4.1.1.5 Vinyl Chloride

Vinyl chloride was not detected soil vapor collected at any sample location.

5.0 Conclusions and Recommendations

The purpose of the Phase II ESA Addendum is to evaluate the presence and lateral extent of PCE and related breakdown compounds from the former dry cleaner release. Passive soil vapor samples were collected from eighteen sub-slab locations in and around the former Y Pay Mor Dry Cleaner tenant space to quantify the magnitude of dry cleaner-related VOCs present in soil vapor by location.

Chemical distribution contour maps generated from the laboratory analysis of the passive soil vapor samples confirmed the residual presence of PCE, TCE and cis-1,2-DCE beneath the building slab (SS3 and SS9), centered on the approximate vicinity of historical concentrations of PCE that exceeded MTCA Method A cleanup levels in both groundwater and soil (B-12 and CB-4, respectively). The presence of these three chlorinated solvents were generally delineated at the north and south boundaries of the building footprint as shown by decreasing mass or non-detections of these chemicals.

5.1 Sound Transit Acquisition and Future Construction Recommendations

Based on current design information for the FWLE project, Sound Transit plans to acquire parcel FL-358 in full, with demolition of the existing structures planned. Sound Transit's proposed construction and development on the Property includes an expansion to the Federal Way Transit Center and parking garage, new roads and utilities, a large stormwater vault, and elevated light rail track. Proposed construction and development activities by Sound Transit could change as project design is refined.

The results of this soil vapor survey report provide a screening method to evaluate the mass of contaminants present in sub-slab soil vapor by location. This screening method is indicative of the presence of these contaminants and potential source areas, and does not report actual concentrations.

A remedial cost estimate for MTCA cleanup is recommended for Sound Transit's acquisition, based on historical soil and groundwater exceedances for PCE at B-12 (groundwater) and CB-4 (soil) and confirmation of the residual presence of PCE and related compounds beneath the building slab. Remedial options and costs will depend on assumptions made about delineation of the Site and the conceptual site model (CSM), as well as Property use at the time of cleanup.

The findings of the Phase II ESA Addendum indicate that a cost estimate for construction purposes is recommended for FL-358 because contaminated and impacted soil and groundwater may be encountered in future Sound Transit excavation areas. Further assessment of soil and groundwater to determine concentrations of contaminants and their lateral and vertical extent in the northeast portion of FL-358 is warranted to determine the impacts that

construction may have on the conditions of the restrictive covenant and soil and groundwater that may be encountered during construction. Supplemental assessment could include soil and groundwater samples from exploratory borings where PCE and related compounds were identified in soil vapor at elevated levels and analytical testing to assess whether excavated soil will qualify for a contained-in determination (CID) from Ecology (see below).

We recommend a contaminated and impacted soil and groundwater handling plan be prepared prior to construction activities that outlines soil and groundwater segregation, handling, stockpiling and end use/disposal with potential follow-up chemical analytical testing for waste disposal characterization as needed. Based on the regulatory history and current analytical findings, soil and groundwater at the subject property contain chlorinated solvents resulting from release(s) associated with the former dry cleaner operations. Spent chlorinated solvent waste from dry cleaning would be considered an F002-listed Dangerous Waste under the State Dangerous Waste Regulations (Chapter 173-303 WAC). Therefore soil and groundwater with detections of PCE, or its degradation products TCE and/or cis-1,2-DCE, that may be excavated in the future would likely also classify as F002-listed Dangerous Waste necessitating special handling, transport, tracking and disposal. Soil from the saturated zone within the area where groundwater has detectable concentrations of dry cleaning solvents, may also be classified as dangerous waste. Based on our experience at similar sites and the soil chemical analytical data from previous studies, it is likely that there were will areas where excavated soil will meet Ecology's criteria for a CID.

The table below summarizes the Phase II ESA (and Addendum) findings relative to Sound Transit's proposed acquisition and future construction.

Potential Sources of Contamination Identified	Potential Source Within Acquisition Area	Potential Source Within Construction Area	Impacted Soil and Groundwater Present	Contaminated Soil and Groundwater Present	Remedial Cost Estimate Necessary for Construction	Remedial Cost Estimate Necessary for Acquisition
On-Site	Yes	Yes	Yes Soil vapor survey confirms presence of PCE, TCE and cis-1,2-DCE beneath building slab	Yes Historical soil and groundwater data identify PCE at concentrations greater than MTCA CUL beneath building slab	Yes	Yes

6.0 Limitations and Guidelines for Use

These Limitations provide information to help you manage your risks with respect to the use of this report. Some clients, design professionals and contractors may not recognize that the geoscience practices (geotechnical engineering, geology and environmental science) are far less exact than other engineering and natural science disciplines. This lack of understanding can create unrealistic expectations that could lead to disappointments, claims and disputes. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce such risks. Please confer with GeoEngineers if you are unclear how these “Limitations and Guidelines for Use” apply to your project or site.

This Phase II ESA Addendum has been prepared, in general accordance with the scope and limitations of the subcontract between HDR and GeoEngineers dated August 24, 2012, along with Amendments 1 through 12 and Agreement No. RTA/AE 044-12 between HDR and Sound Transit.

This report has been prepared for the exclusive use of Sound Transit and their agents. This report is not intended for use by others, and the information contained herein is not applicable to other properties. No other party may rely on the product of our services unless we agree in advance to such reliance in writing. This is to provide our firm with reasonable protection against open-ended liability claims by third parties with whom there would otherwise be no contractual limits to their actions. Within the limitations of scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted environmental science practices in this area at the time this report was prepared. The conclusions and opinions presented in this report are based on our professional knowledge, judgment and experience. No warranty, express or implied, applies to this report.

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Please refer to the appendix titled “Report Limitations and Guidelines for Use” for additional information pertaining to use of this report.

7.0 References

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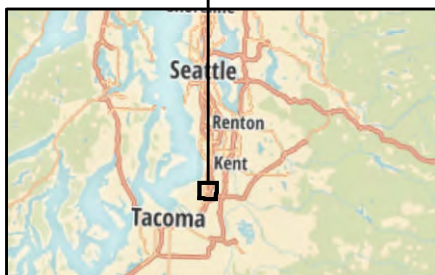
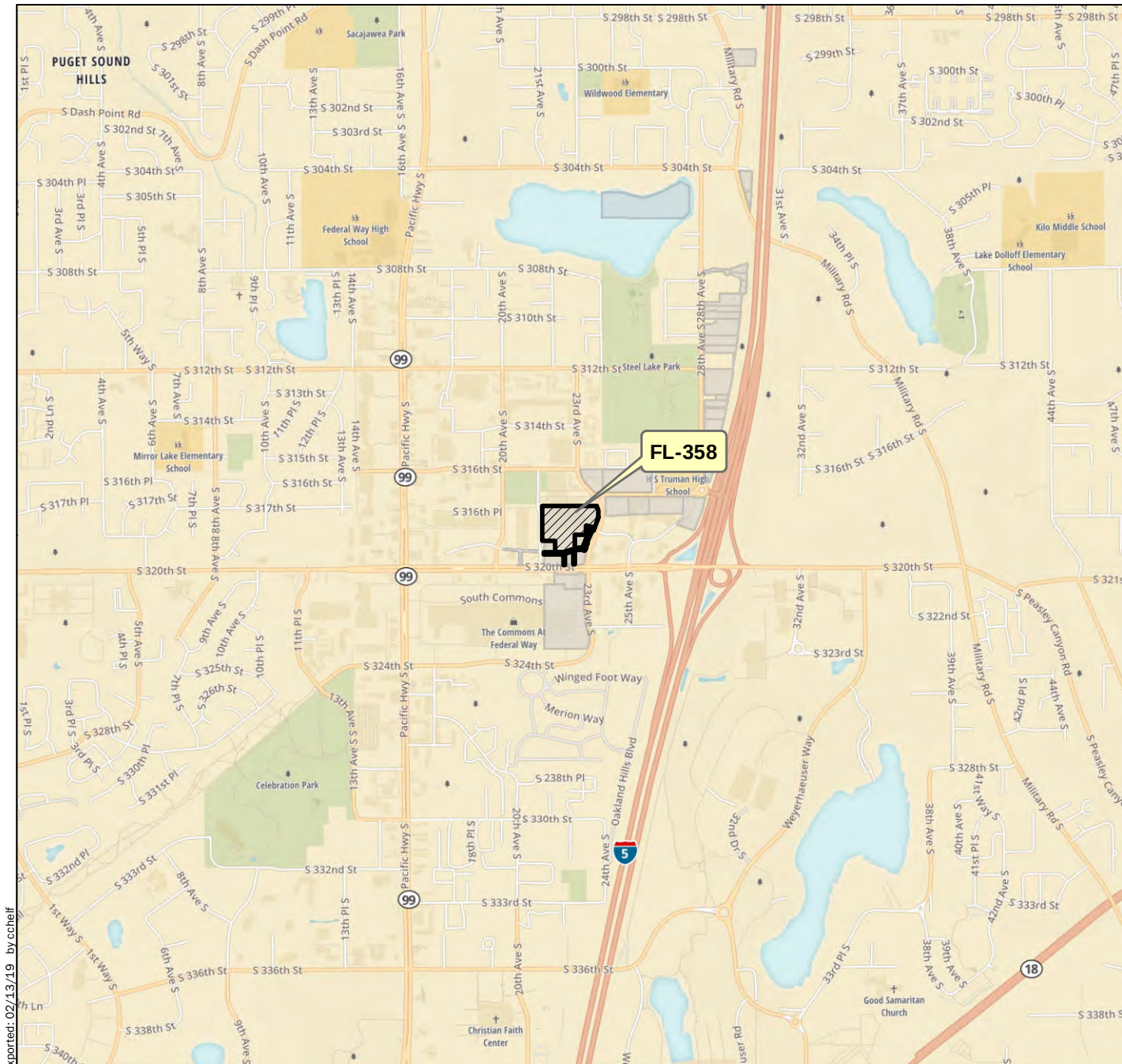
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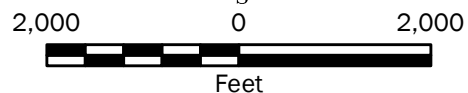
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Legend

-  Subject Property
-  Project Parcel



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 UTM Zone 10N

Vicinity Map FL-358 (With FL-361 and FL-363)

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



Figure 1



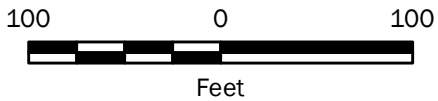
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|--|---|--|--|--|--|--|---------------------------------|
| | GeoEngineers Phase II ESA Monitoring Well | | Monitoring Well by Others Not Sampled or Located | | Boundary Mapped Historic Drainage Area (c. 1949) | | Fee Take |
| | GeoEngineers Phase II ESA Soil Boring | | Monitoring Well by Others Sampled for Phase II ESA | | Subject Property | | Permanent and Slope Easement |
| | GeoEngineers Phase II ESA Boring with Grab Water Sample | | Extraction Well Location | | Parcel | | Temporary Construction Easement |

Notes:

1. Based on current design information for the FWLE project (HDR, provided in October 2017)
 2. The locations of all features shown are approximate. 3. 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 and road names from King County 2015.

Parcel #: 2423200050, 2423200010, 2423200060
Address: 2200 S 320TH ST
City: Federal Way
Owner: WINSON AT FEDERAL WAY, LLC.
Current Use: Sea-Tac Plaza, Vacant(Commercial), Right of Way/Utility, Road

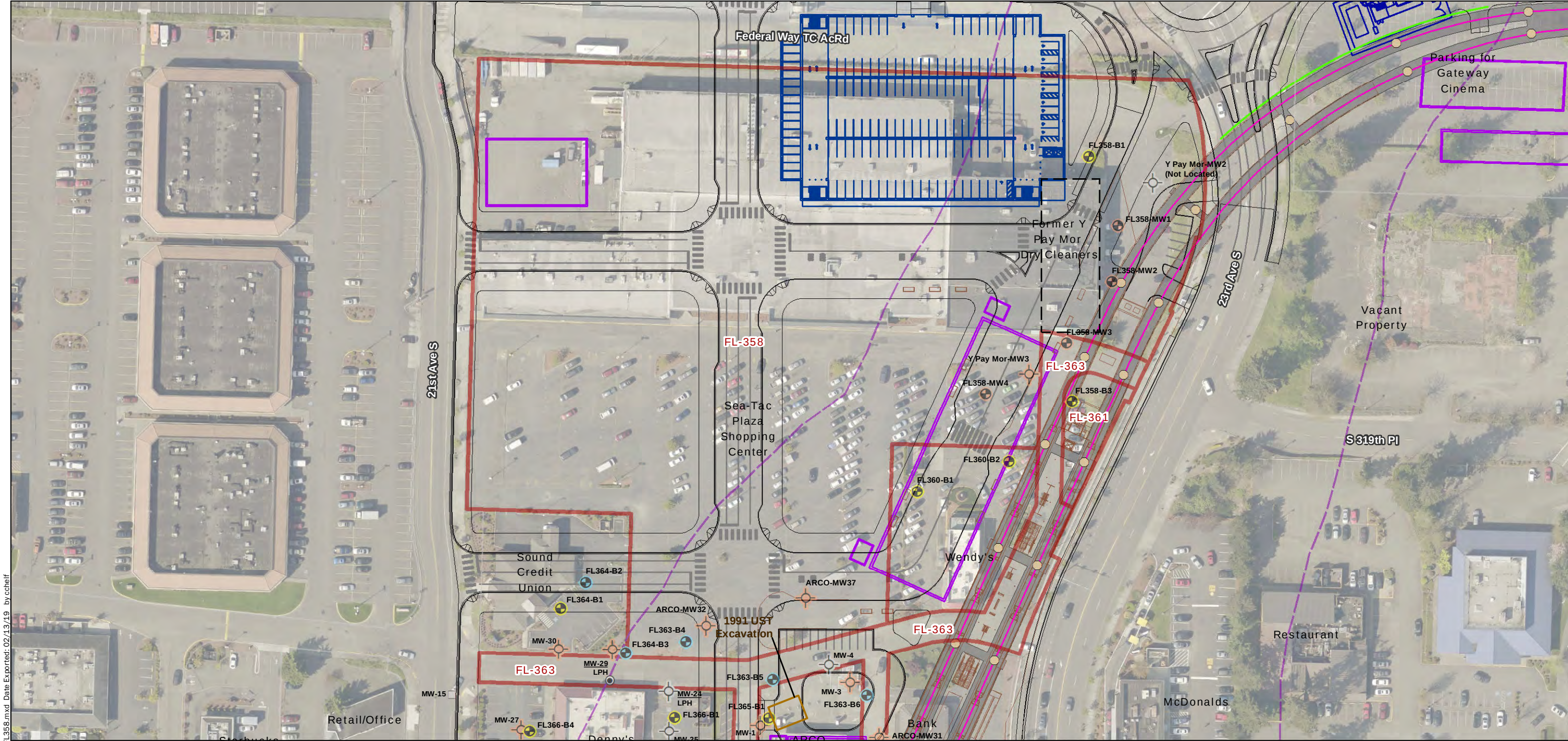


Site Plan
FL-358 (With FL-361 and FL-363)

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



Figure 2



Legend

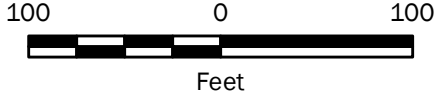
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|--|---|--|--|
| | GeoEngineers Phase II ESA Monitoring Well | | Monitoring Well by Others Not Sampled or Located |
| | GeoEngineers Phase II ESA Soil Boring | | Monitoring Well by Others Sampled for Phase II ESA |
| | GeoEngineers Phase II ESA Boring with Grab Water Sample | | Extraction Well Location |

- | | |
|--|--|
| | Boundary Mapped Historic Drainage Area (c. 1949) |
| | Subject Property |
| | Parcel |

- | | |
|--|---------------------------------|
| | Fee Take |
| | Permanent and Slope Easement |
| | Temporary Construction Easement |

Planned Construction Features

- | | | | |
|--|-----------------------|--|------------------------------|
| | Column | | Stormwater Ponds and Vaults |
| | Track | | Wall |
| | Parking Structure | | TPSS - Traction |
| | Road/Parking/Sidewalk | | Striping (Pavement Markings) |
| | Station (line) | | Structure |



Notes:

1. Based on current design information for the FWLE project (HDR, provided in October 2017)
2. The locations of all features shown are approximate. 3. 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.
4. Data Source: Aerial and road names from King County 2015.

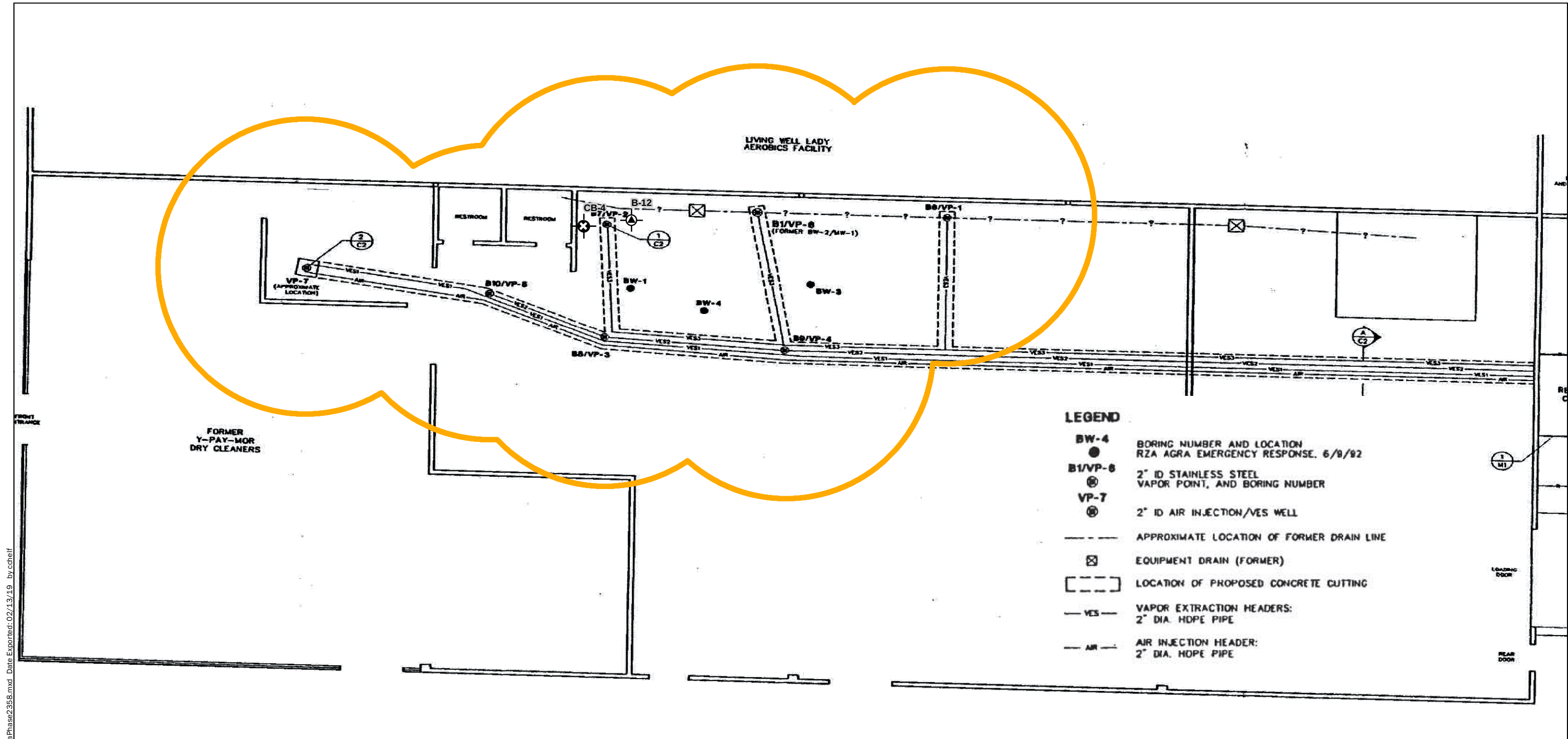
Parcel #: 2423200050, 2423200010, 2423200060
Address: 2200 S 320TH ST
City: Federal Way
Owner: WINSON AT FEDERAL WAY, LLC.
Current Use: Sea-Tac Plaza, Vacant(Commercial), Right of Way/Utility, Road

**Proposed Construction Plan
FL-358 (With FL-361 and FL-363)**

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



Figure 3



Legend

-  Approximate SVE Treatment Area
-  Cased Boring (AGRA, 1992)
-  Confirmation Boring (AGRA, 1994)

Notes:

- Figure based on RZA AGRA Preliminary Remedial Investigation, November 1992, Sheet C1, Site Plan with System Layout.
 - Approximate area of treatment based on RZA AGRA Preliminary Remedial Investigation, November 1992, Vapor Extraction Feasibility Test, Appendix F.
 - RZA AGRA SVE system startup records state that system operated at 25 inches H₂O vacuum at source.
 - Effective radius of influence is assumed to be the distance from an extraction wellhead in feet at which a vacuum of at least 0.1 inches H₂O is maintained.
 - 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:



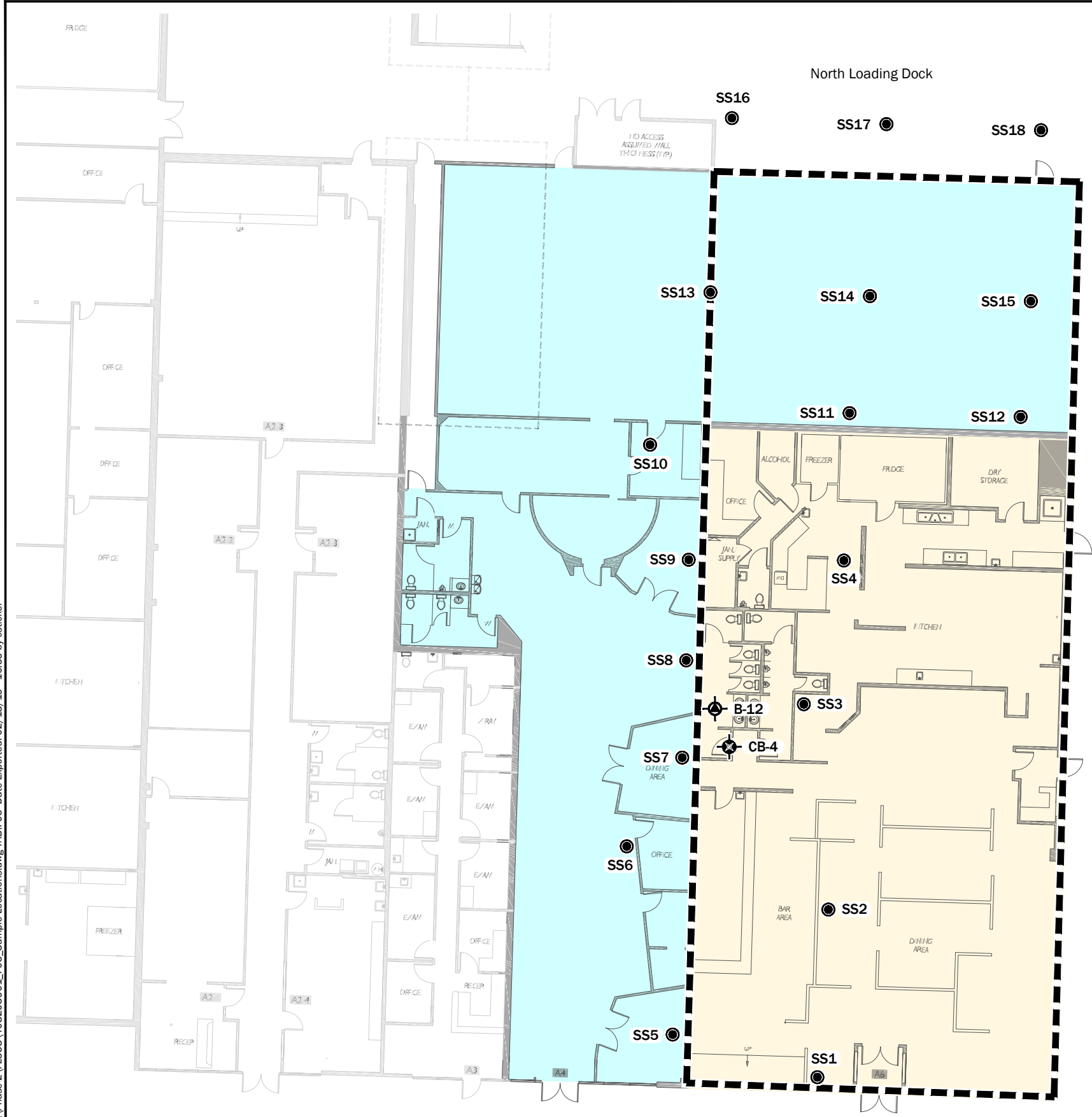
Y Pay Mor Dry Cleaner SVE System Layout with Approximate Treatment Area

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



Figure 4

P:\4082039\CAD\01\Phase 2\FL358\408203901_F05_Sample Locations.dwg TAB:F05 Date Exported: 02/13/19 - 16:55 by csticket



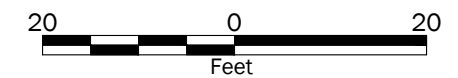
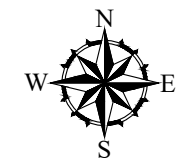
Legend

- Approximate Former Footprint of Y Pay Mor Dry Cleaner
- Current Footprint of Laser Quest Tenant Space
- Current Footprint of Western Garden Restaurant Tenant Space
- SS1 Location of Sub-Slab Sample Location
- B-12 Cased Boring (AGRA, 1992)
- CB-4 Confirmation Boring (AGRA, 1994)

Notes:

- 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.



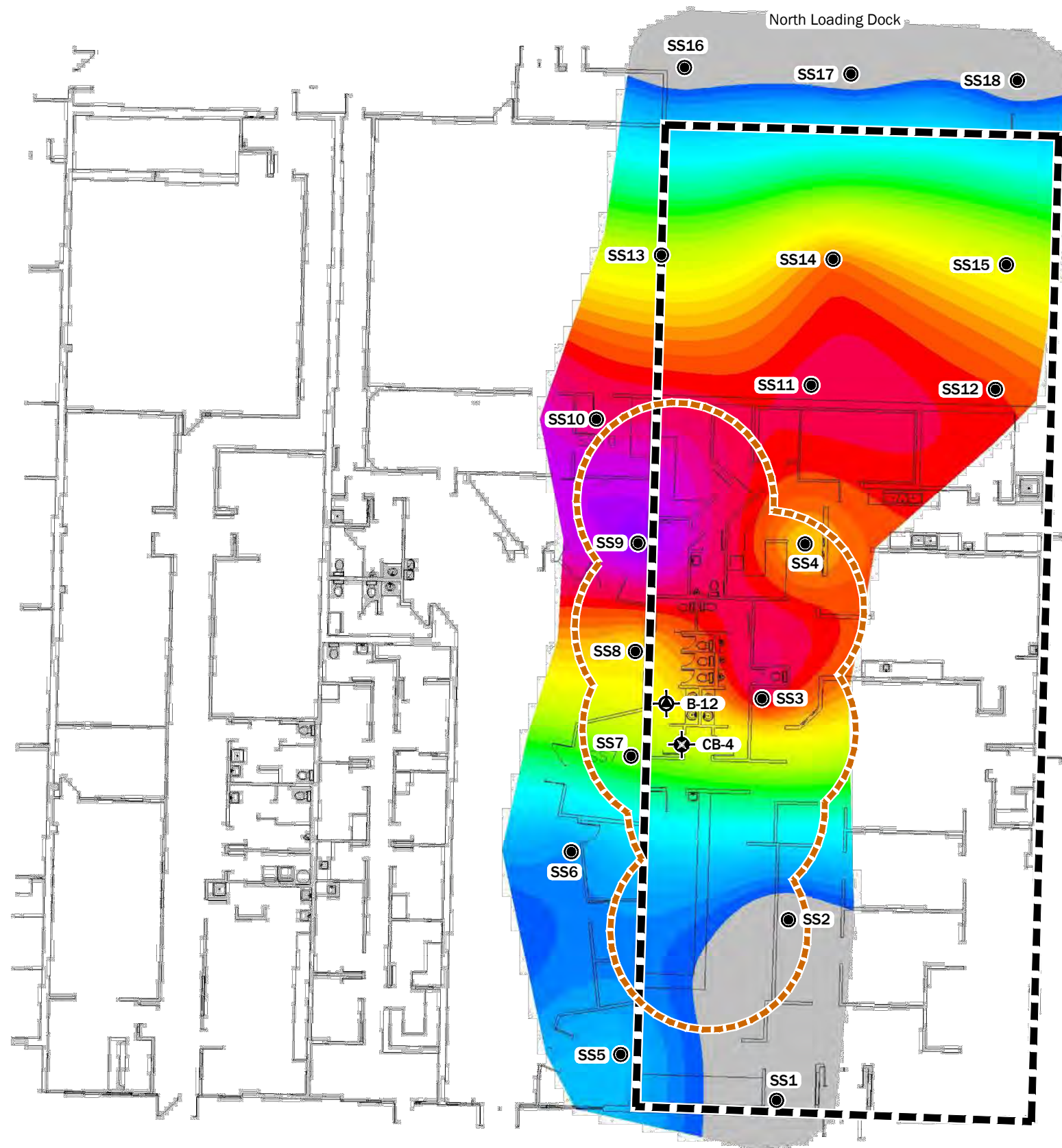
Soil Vapor Sample Locations FL-358

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



Figure 5

P:\4082039\CAD\01\Phase 2\VL358\408203901_F06-F08_AGI Concentration Maps.dwg TAB:F06 [PCE] Date Exported: 02/13/19 - 16:50 by cstichel



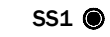
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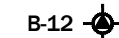
Approximate Former Footprint of
Y Pay Mor Dry Cleaner



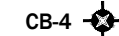
Approximate Treatment Area



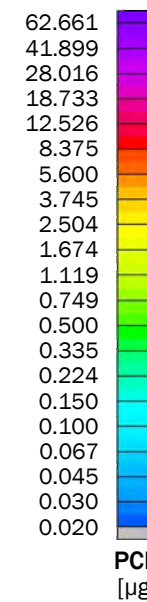
SS1 Location of Sub-Slab Sample Location



B-12 Cased Boring (AGRA, 1992)



CB-4 Confirmation Boring (AGRA, 1994)

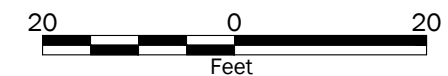


Notes:

1. Mass indicates amount of analyte accumulated on passive sampler during a 9-day exposure period.
2. The locations of all features shown are approximate.
3. 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.



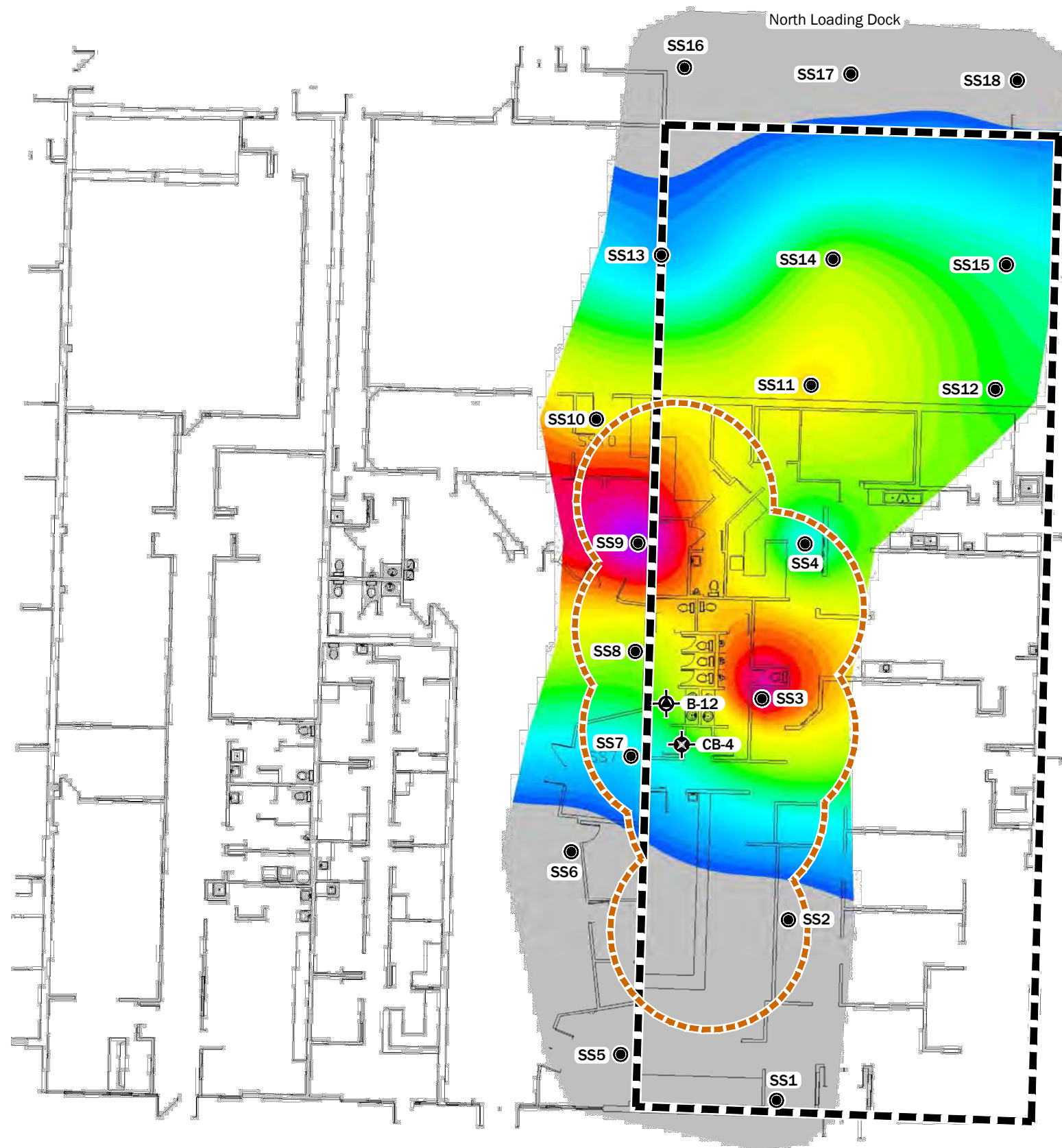
Distribution of PCE in Sub-Slab Soil Vapor by Mass, FL-358

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



Figure 6

P:\4082039\CAD\01\Phase 2\VL358\408203901_F06-F08_AGI Concentration Maps.dwg TAB:F07 [TCE] Date Exported: 02/13/19 - 16:50 by csticel



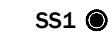
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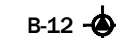
Approximate Former Footprint of
Y Pay Mor Dry Cleaner



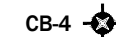
Approximate Treatment Area



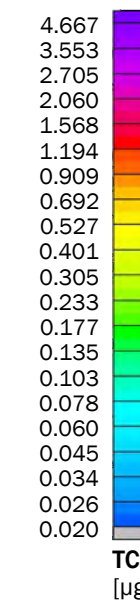
SS1 Location of Sub-Slab Sample Location



B-12 Cased Boring (AGRA, 1992)



CB-4 Confirmation Boring (AGRA, 1994)



Notes:

1. Mass indicates amount of analyte accumulated on passive sampler during a 9-day exposure period.
2. The locations of all features shown are approximate.
3. 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.



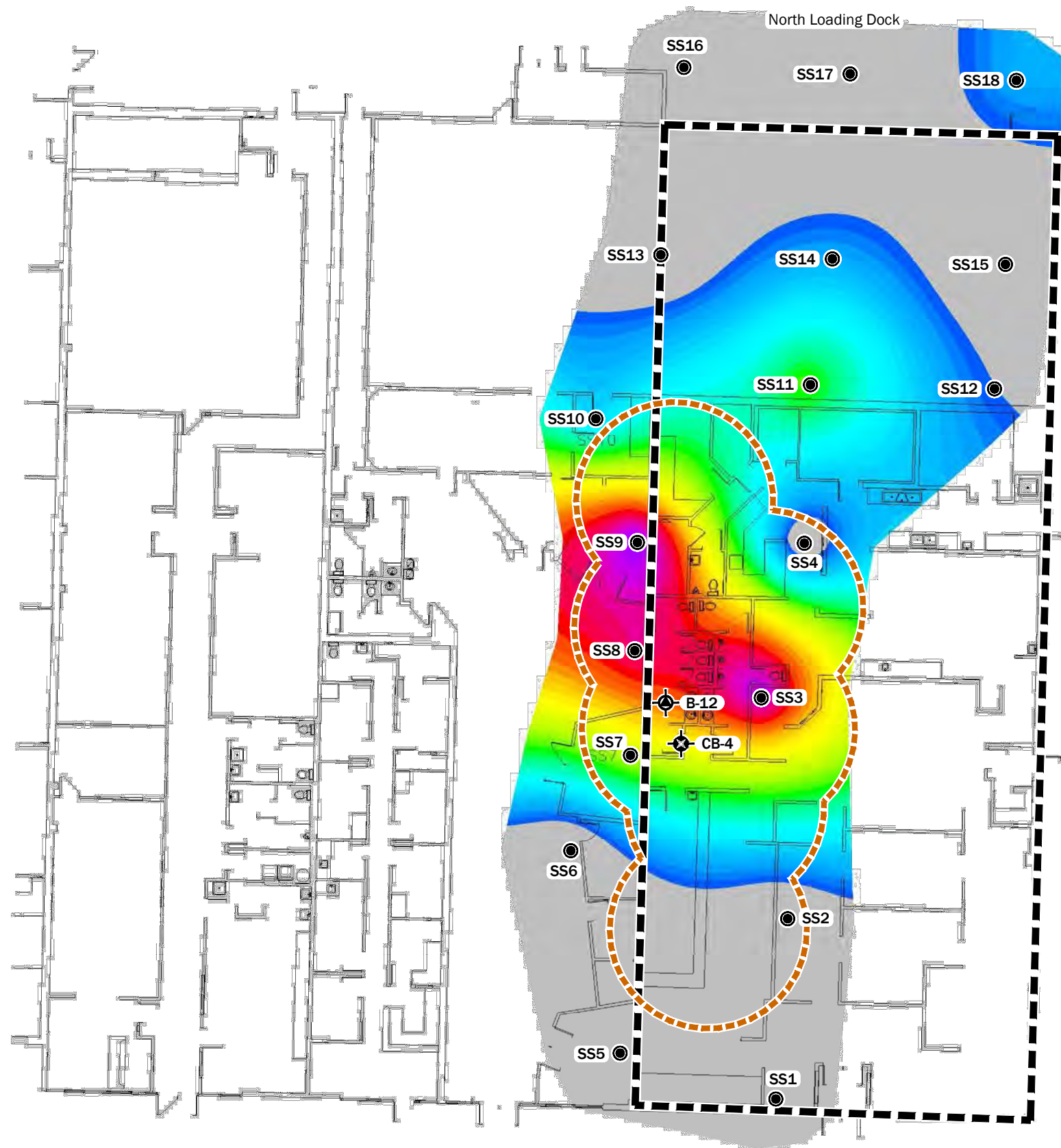
Distribution of TCE in Sub-Slab Soil Vapor by Mass, FL-358

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



Figure 7

P:\4082039\CAD\01\Phase 2\FL358\408203901_F06-F08_AGI Concentration Maps.dwg TAB:F08 [Trans-1:2] Date Exported: 02/13/19 - 16:50 by csticket



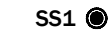
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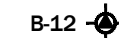
Approximate Former Footprint of Y Pay Mor Dry Cleaner



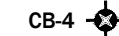
Approximate Treatment Area



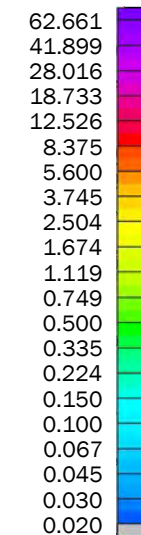
Location of Sub-Slab Sample Location



Cased Boring (AGRA, 1992)



Confirmation Boring (AGRA, 1994)



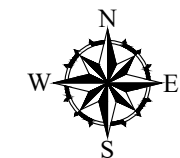
Sum cis- anPCE ns-1,2-DCE
[μg]

Notes:

1. Mass indicates amount of analyte accumulated on passive sampler during a 9-day exposure period.
2. The locations of all features shown are approximate.
3. 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 Cis-1,2-DCE in
Sub-Slab Soil Vapor by Mass, FL-358**

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



Figure 8

APPENDIX A

FIELD EXPLORATION PROGRAM

APPENDIX A

FIELD PROCEDURES

Underground Utility Locate

Prior to investigation activities, an underground utility locate was conducted in the areas of the proposed boring locations to identify subsurface utilities and/or potential underground physical hazards. The underground utility check consisted of contacting a local utility alert service (one-call) and hiring a private utility locating service.

Soil Vapor Sampler Installation

The passive sub-slab soil vapor samplers were installed at confirmed locations, in general accordance with the instructions and specifications provided by the vendor, which are included in this appendix. A 1-inch diameter hole was drilled through the building slab (or asphalt concrete in the loading dock area north of the building) at each sample location using a masonry drill to allow installation of the sampler media. Sample locations were temporarily sealed using a bentonite seal and waterproof tape to secure the sampler and prevent accidental tampering. Per vendor instructions, sub-slab soil vapor samplers remained in place undisturbed for a period of 9 days.

GeoEngineers' field staff documented sampling information in a dedicated project field log and the laboratory chain-of-custody (COC) including sample name, sample location, sample installation/collection date and time, requested analytical methods and sampler name. Sampler locations were documented by photograph both prior to and following installation/collection.

Following completion of the scheduled sampling duration, GeoEngineers field staff returned to collect the sub-slab samplers per the instructions and specifications provided by the vendor. GeoEngineers field staff restored explorations to generally match surrounding grade, and submitted to the vendor laboratory for analytical testing and graphical interpretation. Selected photographs taken during the Phase II ESA Addendum sampling are presented as Figures A-1 through A-2.

Field Screening of Sample Locations

During installation of the passive soil vapor samplers, the borings were screened in the field for evidence of contamination using vapor headspace screening with a photo-ionization detector (PID). PID readings are recorded in the installation and retrieval log included in this appendix.

Headspace vapor screening involves placing the probe of a PID at the newly-completed boring in the building slab, and the instrument measures the concentration of combustible vapor in the air removed from the sample headspace. The PID measures concentrations in ppm (parts per million) and is calibrated to isobutylene. The PID is designed to quantify combustible gas

and organic vapor concentrations up to 2,500 ppm. A lower threshold of significance of 1 ppm was used in this application. Field screening results are site-specific and vary with soil type, soil moisture content, temperature and type of contaminant.



Photograph 1 – Passive sub-slab soil vapor sample location SS4, installed in kitchen of the Western Garden restaurant. Masonry drill and shroud at right of sample location.



Photograph 2 – Detail of 1-inch hole advanced in slab at sample location SS4 in preparation of sampler installation.

FL-358 Site Photographs November-December 2018

Phase II Environmental Site Assessment Addendum
Federal Way Link Extension
Federal Way, Washington



Figure A-1



Photograph 3 – Completed passive sub-slab soil vapor sampler installation at location SS1 at the cashier station in the Western Garden restaurant. Field instrument (PID) visible surrounding location.



Photograph 4 –Detail of sample location SS1 showing cork in center of slab penetration, surrounded by bentonite seal and waterproof plastic sheet and tape.

FL-358 Site Photographs November-December 2018

Phase II Environmental Site Assessment Addendum
Federal Way Link Extension
Federal Way, Washington



Figure A-2

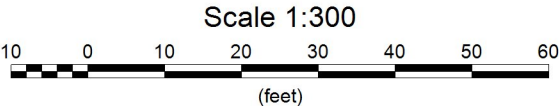
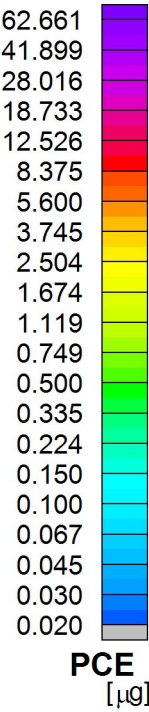
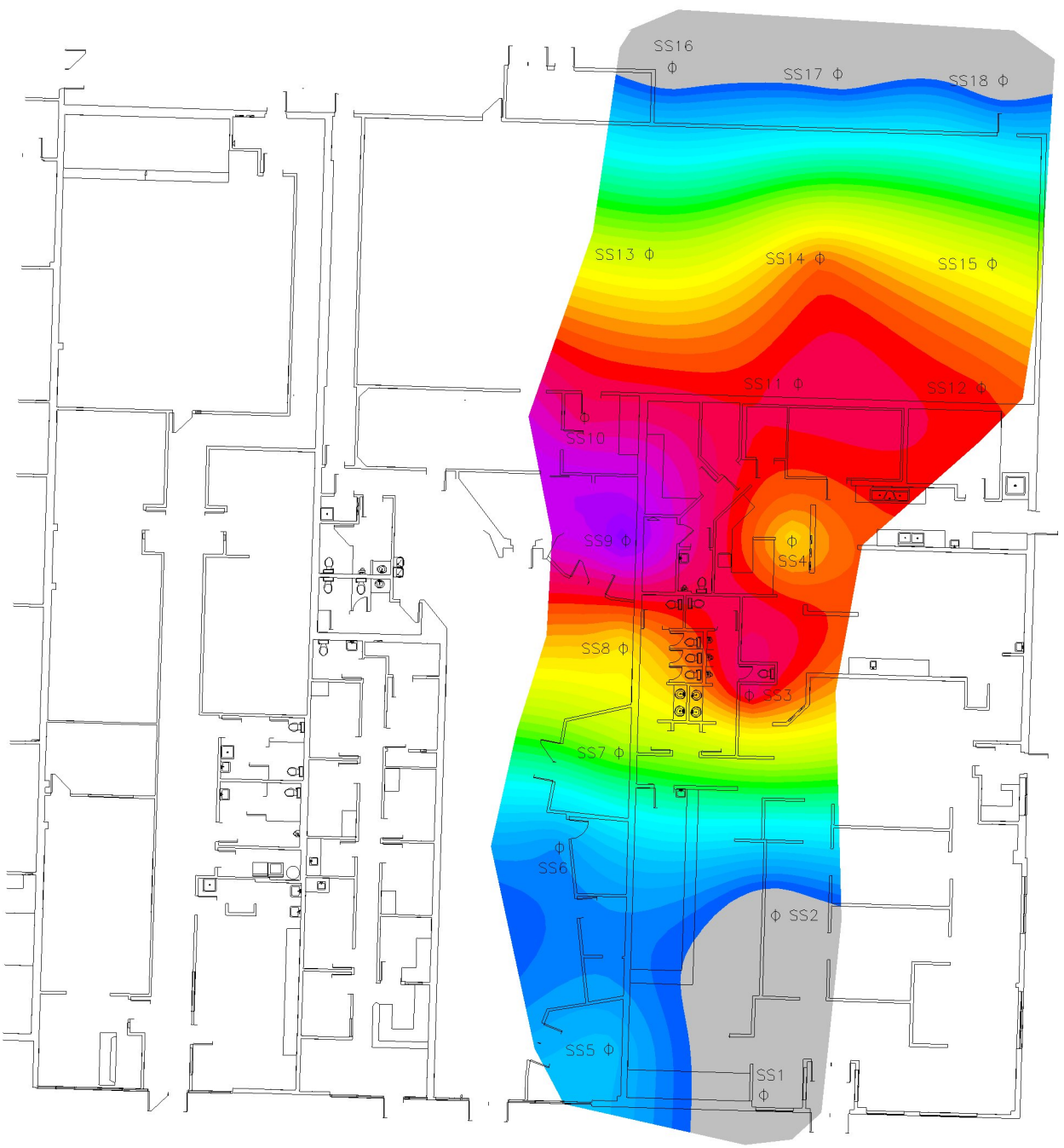
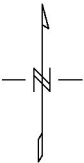
APPENDIX B
AMPLIFIED GEOCHEMICAL IMAGING LLC MAPPING REPORT

APPENDIX B

AMPLIFIED GEOCHEMICAL IMAGING LLC MAPPING REPORT

Analytical Methods

Chain-of-custody procedures were followed during the transport of the soil vapor samplers to the analytical laboratory. The analytical results, in graphical survey format are included in this appendix. The analytical results are also summarized in the text of this report.

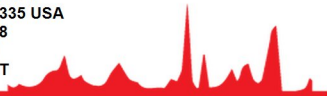


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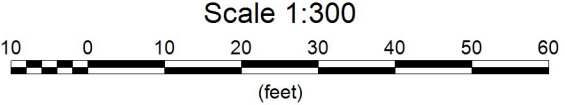
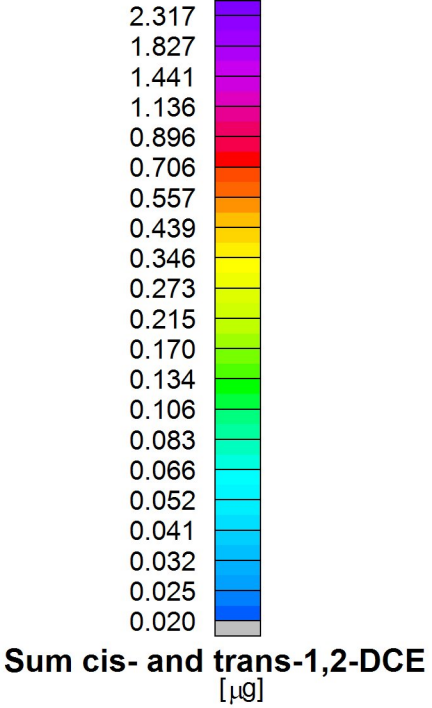
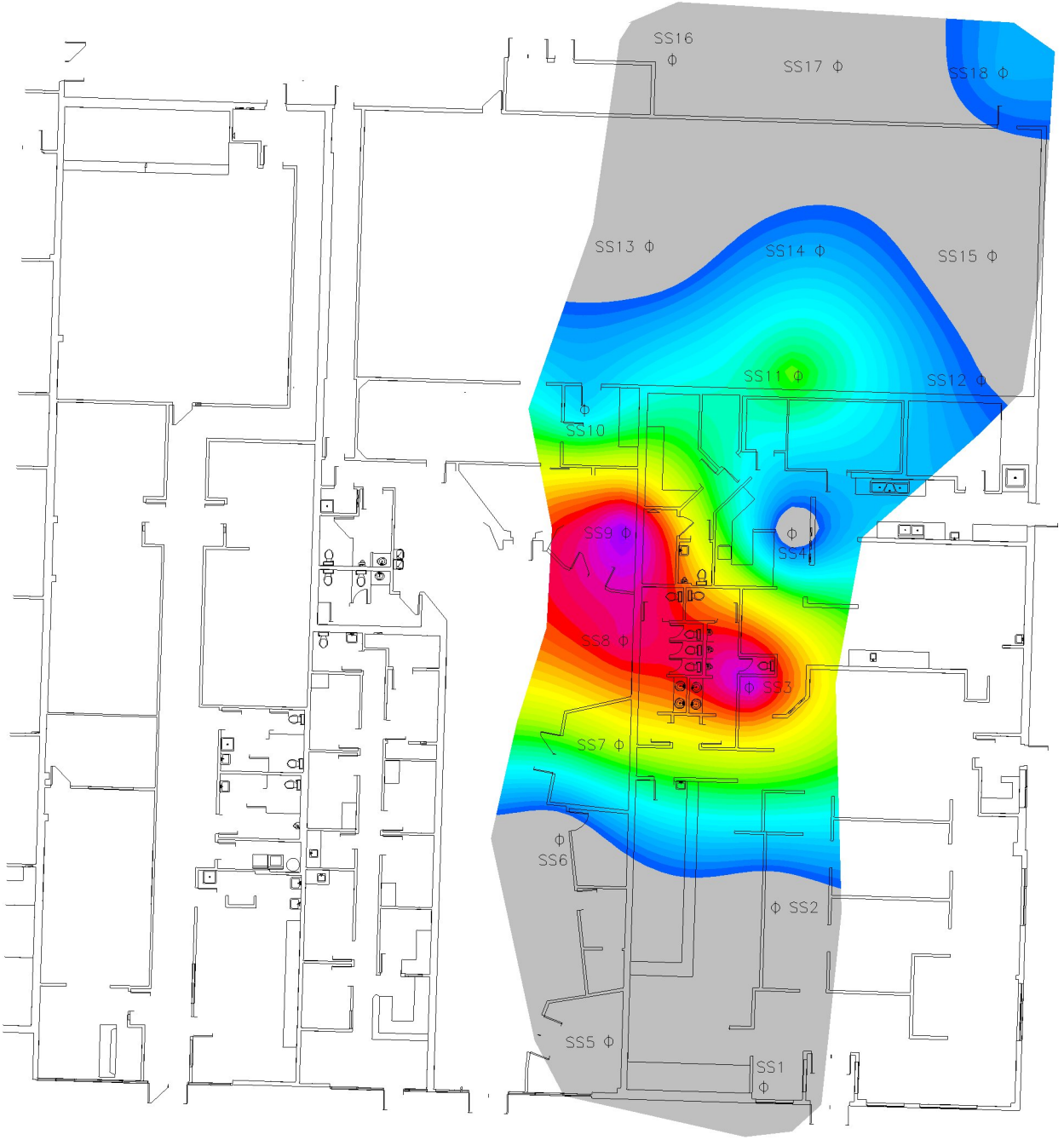
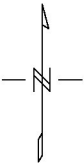
**AMPLIFIED
GEOCHEMICAL
IMAGING, LLC**

210 EXECUTIVE DRIVE, SUITE 1
NEWARK, DELAWARE 19702-3335 USA
PHONE: +1-302-266-2428
FAX: +1-302-266-2429
WWW.AGISURVEYS.NET



GeoEngineers, Inc.
FL-358 Y PAY MORE
Tetrachloroethene

DATE DRAWN: Jan 4, 2019	DRAWN BY: RF	ORIG. CAD: FL-358 Sample Locations.dwg
REV. DATE:	REV. #:	PROJECT NUMBER: 02071

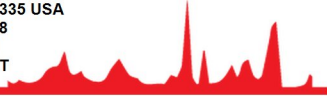


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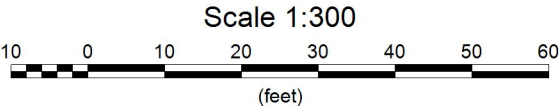
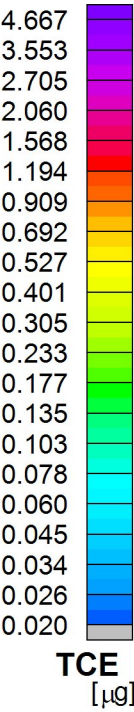
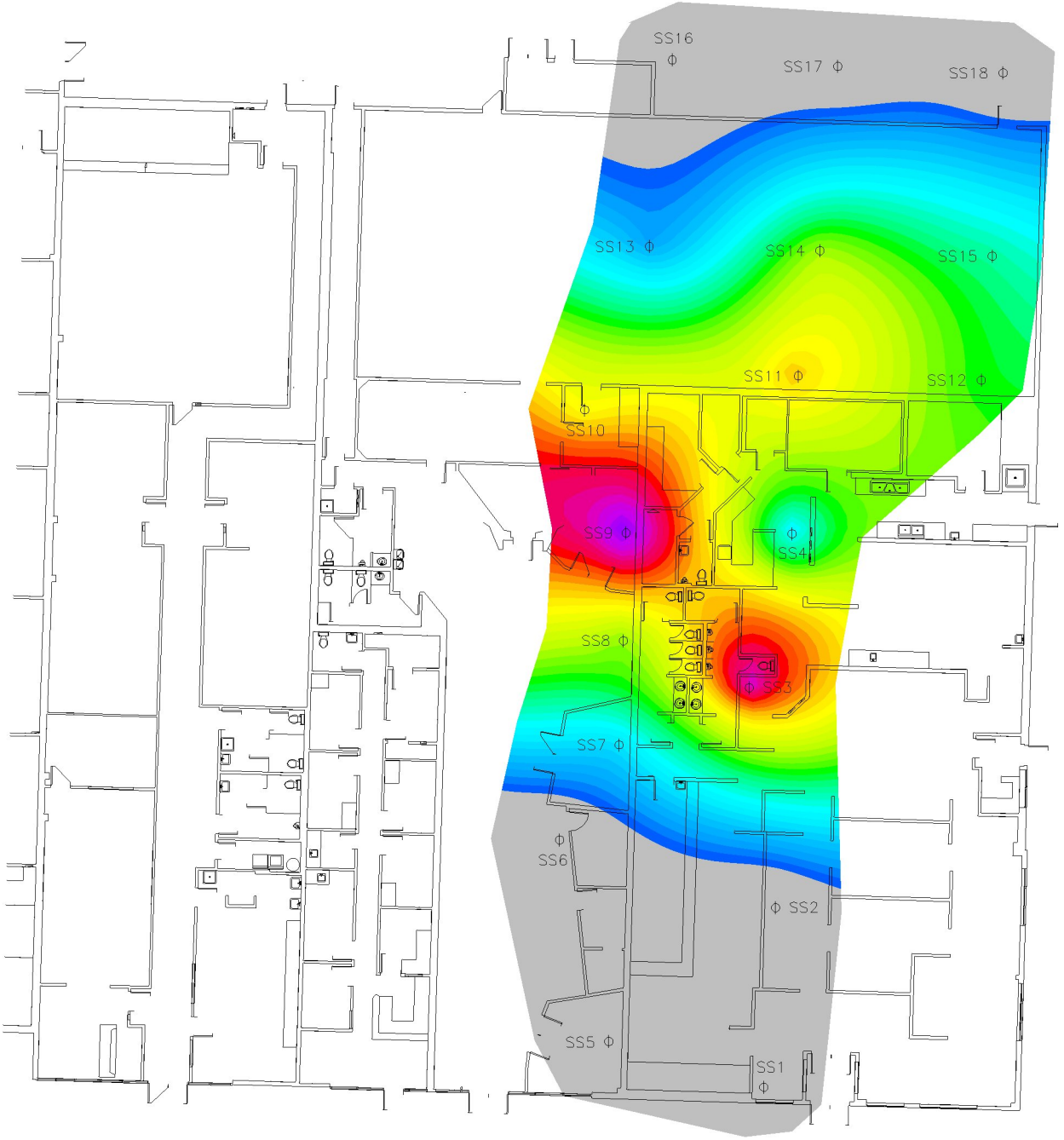
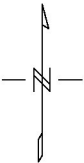
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IMAGING, LLC**

210 EXECUTIVE DRIVE, SUITE 1
NEWARK, DELAWARE 19702-3335 USA
PHONE: +1-302-266-2428
FAX: +1-302-266-2429
WWW.AGISURVEYS.NET



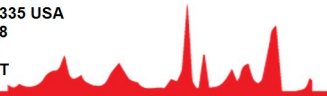
GeoEngineers, Inc.
FL-358 Y PAY MORE
Sum of cis- and trans-1,2-Dichloroethene

DATE DRAWN: Jan 4, 2019	DRAWN BY: RF	ORIG. CAD: FL-358 Sample Locations.dwg
REV. DATE:	REV. #:	PROJECT NUMBER: 02071



**AMPLIFIED
GEOCHEMICAL
IMAGING, LLC**

210 EXECUTIVE DRIVE, SUITE 1
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PHONE: +1-302-266-2428
FAX: +1-302-266-2429
WWW.AGISURVEYS.NET



GeoEngineers, Inc.
FL-358 Y PAY MORE
Trichloroethene

DATE DRAWN: Jan 4, 2019	DRAWN BY: RF	ORIG. CAD: FL-358 Sample Locations.dwg
REV. DATE:	REV. #:	PROJECT NUMBER: 02071

APPENDIX C

REPORT LIMITATIONS AND GUIDELINES FOR USE

APPENDIX C

REPORT LIMITATIONS AND GUIDELINES FOR USE¹

This appendix provides information to help you manage your risks with respect to the use of this report. Please confer with GeoEngineers if you need to know more about how these “Report Limitations and Guidelines for Use” apply to your project or property.

Read These Provisions Closely

It is important to recognize that environmental engineering and geoscience practices (geotechnical engineering, geology and environmental science) are less exact than other engineering and natural science disciplines. GeoEngineers includes these explanatory “limitations” provisions in our reports to help reduce the risk of misunderstandings or unrealistic expectations that lead to disappointments, claims and disputes.

Environmental Services Are Performed for Specific Purposes, Persons and Projects

GeoEngineers has performed this Phase II ESA Addendum for the property at 2200 South 320th Street, Federal Way, Washington, King County Parcel 2423200050, identified by Sound Transit as FWLE parcel FL-358, in general accordance with the scope and limitations of the subcontract between HDR and GeoEngineers dated August 24, 2012, along with Amendments 1 through 12 and Agreement No. RTA/AE 044-12 between HDR and Sound Transit. This report has been prepared for the exclusive use of Sound Transit and their authorized agents. This report is not intended for use by others, and the information contained herein is not applicable to other properties.

GeoEngineers structures its services to meet the specific needs of its clients. For example, an ESA study conducted for a property owner may not fulfill the needs of a prospective purchaser of the same property. Because each environmental study is unique, each environmental report is unique, prepared solely for the specific client and property. Use of this report is not recommended for any purpose or project other than as expressly stated in this report.

This Environmental Report is Based on a Unique Set of Project-Specific Factors

This report has been prepared for the property at 2200 South 320th Street, Federal Way, Washington, King County Parcel 2423200050, FWLE parcel FL-358. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this Project. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this

¹ Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

report if it was:

- not prepared for you,
- not prepared for your Project,
- not prepared for the specific site explored, or
- completed before Project changes were made.

If changes to the Project or property occur after the date of this report, GeoEngineers cannot be responsible for any consequences of such changes in relation to this report unless we have been given the opportunity to review our interpretations and recommendations in the context of such changes. Based on that review, we can provide written modifications or confirmation, as appropriate.

Reliance Conditions for Third Parties

This report was prepared for the exclusive use of Sound Transit and their authorized agents. No other party may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed Project scope, schedule and budget, our services have been executed in accordance with our Agreement with the Client and generally accepted environmental practices in this area at the time this report was prepared.

Understand That Geotechnical Issues Have Not Been Addressed

Unless geotechnical engineering was specifically included in our scope of service, this report does not provide any geotechnical findings, conclusions, or recommendations, including but not limited to, the suitability of subsurface materials for construction purposes.

Do Not Separate Documentation from the Report

Environmental reports often include supplemental documentation, such as maps, figures and tables. Do not separate such documentation from the report. Further, do not, and do not permit any other party, to redraw or modify any of the supplemental documentation for incorporation into other professionals' instruments of service.

Environmental Regulations Change and Evolve

Some substances may be present in the vicinity of the subject property in quantities or under conditions that may have led, or may lead, to contamination of the subject property, but are not included in current local, state or federal regulatory definitions of hazardous substances or do not otherwise present current potential liability. GeoEngineers cannot be responsible if the standards for appropriate inquiry, or regulatory definitions of hazardous substances, change or if more stringent environmental standards are developed in the future.

Uncertainty May Remain Even After This Phase II ESA is Completed

Performance of a Phase II ESA is intended to reduce uncertainty regarding the potential for contamination in connection with a property, but no ESA can wholly eliminate that uncertainty. Our interpretation of subsurface conditions in this study is based on field observations and chemical analytical data from widely spaced sampling locations. It is always possible that contamination exists in areas that were not explored, sampled or analyzed.

Information Provided by Others

GeoEngineers has relied upon certain data or information provided or compiled by others in the performance of our services. Although we use sources that we reasonably believe to be trustworthy, GeoEngineers cannot warrant or guarantee the accuracy or completeness of information provided or compiled by others.

Subsurface Conditions Can Change

This environmental report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the subject property, by new releases of hazardous substances, new information or technology that become available subsequent to the report date, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. Please contact GeoEngineers before applying this report for its intended purpose so that GeoEngineers may evaluate whether changed conditions affect the continued applicability of the report.

Soil and Groundwater End Use

The cleanup levels referenced in this report are site- and situation-specific. The cleanup levels may not be applicable for other properties or for other on-site uses of the affected soil and/or groundwater. Note that hazardous substances may be present in some of the on-site soil and/or groundwater at detectable concentrations that are less than the referenced cleanup levels. GeoEngineers should be contacted prior to the export of soil or groundwater from the subject property or reuse of the affected soil or groundwater on-site to evaluate the potential for associated environmental liabilities. GeoEngineers will not assume responsibility for potential environmental liability arising out of the transfer of soil and/or groundwater from the subject property to another location, or the reuse of such soil and/or groundwater on-site in any instances that we did not recommend, know of, or control.

Most Environmental Findings Are Professional Opinions

Our interpretations of subsurface conditions are based on field observations and chemical analytical data from widely spaced sampling locations at the subject property. Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted

and/or samples are taken. GeoEngineers reviewed field and laboratory data and then applied our professional judgment to render an informed opinion about subsurface conditions throughout the property. Actual subsurface conditions may differ significantly from those indicated in this report. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings or conclusions regarding the detecting, assessing, preventing or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this Project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.