Electronic Copy

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Region Office
PO Box 330316, Shoreline, WA 98133-9716 • 206-594-0000

May 17, 2023

M. Bruce Anderson
MBA Cascade Plaza, LLC
7420 SE 24th Street, Suite 4
Mercer Island, WA 98040
(bruce@mbanderson.net)

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

- **Site Name:** Cascade Cleaners Renton
- **Site Address:** 16912 116th Avenue SE, Renton, WA 98058
- **Facility/Site No.:** 59939615
- **Cleanup Site ID No.:** 16659
- **VCP Project No.:** NW3348

Dear M. Bruce Anderson:

The Washington State Department of Ecology (Ecology) received your request for an opinion on the work planned at the Cascade Cleaners Renton 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

Does the proposed work documented in the *Remedial Investigation Work Plan, dated July 1, 2022 (July 2022 RI WP)*, meet the stated objectives with respect to Site data gaps?

NO. Ecology has determined that additional soil sampling and groundwater monitoring wells are needed to delineate the extents of the contamination.

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), trichloroethene (TCE), and cis-1,2-dichloroethene (cis-1,2-DCE) into the Soil.

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

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

The Site is located within one 13.63-acre parcel (Property), east of 116th Avenue SE and south of SE 168th Street in Renton, WA (see **Figure 1 of Enclosure A**). The Property was developed with five buildings (Building A through Building E, **Figure 2 of Enclosure A**). Among them, Building C was demolished in 2017.

Please note a parcel of real property can be affected by multiple sites. Two cleanup sites are located on the Property, including:

- Cascade Cleaners Renton Site (Site).

  The Site is associated with a former Cascade Cleaners, that historically operated in former Building C. The Site was confirmed with halogenated volatile organic compounds (HVOCs) contamination in soil, groundwater, and soil vapor. The Site is managed under the voluntary cleanup program (VCP), with a VCP number NW3348. This letter is to provide Ecology's opinion on the cleanup at this Site.

- Cascade Retail Center Site (facility ID 9788994)

  The Cascade Retail center site is associated with a former Texaco service station operated in Building E, in the northwest corner of the Property. Petroleum hydrocarbons contamination in soil and groundwater was discovered at the Cascade Retail Center site. This site was previously managed under VCP with a VCP number NW1501. A No Further Action (NFA) determination was issued to Cascade Retail Center site on February 9, 2007.

Data indicate that the Cascade Retail Center site does not appear to adversely affect the Cascade Cleaners Renton Site (Site). This opinion does not apply to any contamination associated with the Cascade Retail Center site.

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[1]. The complete records are kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Visit our Public Records Request page[2] to submit a public records request or get more information about the process. If you require assistance

[1] https://apps.ecology.wa.gov/cleanupsearch/site/16659
[2] https://ecology.wa.gov/publicrecords

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

Ecology reviewed the *July 2022 RI WP*, and *February and March 2023 Groundwater Monitoring Report*, dated April 18, 2023. Ecology has the following opinions and comments based on the current data:

1. Preliminary soil cleanup levels.

HVOC contamination is confirmed in groundwater, indicating the "soil leaching to groundwater" pathway is complete. Soil cleanup levels that are protective of groundwater are appropriate for soil contaminants of concern (COCs).

MTCA Method A soil cleanup levels are appropriate for PCE and TCE in soil, based on protection of groundwater.

For other soil COCs that do not have an established Method A soil cleanup level, Method B soil cleanup levels that are protective of groundwater are appropriate. These Method B cleanup levels are available in Ecology's Cleanup Levels and Risk Calculation (CLARC) database[3], and are listed below:

- cis-1,2-DCE: 0.079 milligram per kilogram (mg/kg);
- trans-1,2-dichloroethene: 0.52 mg/kg;
- 1,1-dichloroethene: 0.046 mg/kg;
- VC: 0.0017 mg/kg (can adjust upward to laboratory's reporting limit, RL)

Note that the Method B cleanup levels referenced in soil data tables in the *July 2022 RI WP* are Method B direct contact cleanup levels and need to be revised to reflect the groundwater protection cleanup levels listed in the previous paragraph. Exceedances of these preliminary soil cleanup levels need to be noted in the soil data tables and on associated soil data maps.

The Terrestrial Ecological Evaluation (TEE) included in the *July 2022 RI WP* confirmed that a TEE exclusion is appropriate for this Site, and that soil cleanup levels do not require adjustment for protection of plants and wildlife.

2. Soil and groundwater characterization in source zones.

[3] https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Contamination-clean-up-tools/CLARC/Data-tables

Two source zones are identified at the Site during Site investigation (see **Enclosure A, Figure 3**):

- Beneath the former dry cleaner tenant space in former Building C, where the dry-cleaning machine was present, and the dry-cleaning business operated.
- The alleyway located adjacent to the southwest corner of the former Building C, where drums historically used for storing spent solvents were kept.

a. Characterization in the source zone beneath the former dry cleaner tenant space.

The first source zone encompasses the area beneath the southwest portion of the former Building C, as well as the alleyway located to the west of the building. Ecology reviewed the data collected during Site investigations and the interim actions in this source zone, and identified the following data gaps:

- Contaminated soil was discovered across the source zone at depths ranging from approximately 2 to 14 feet below ground surface (bgs). A remedial excavation was completed to approximately 8 to 9 feet bgs. Confirmation soil samples collected at the excavation bottom (8 feet bgs) exceeded the MTCA Method A cleanup level for PCE. The vertical extent of the soil contamination is not delineated.
- Confirmation soil samples collected at the north and west sidewalls (between 2 and 6 feet bgs) exceeded the MTCA Method A soil cleanup level for PCE. The lateral extent of soil contamination is not delineated.
- The excavation backfilled with stockpiled contaminated soil, which was mixed with treatment chemicals (sodium persulfate and sodium hydroxide solutions). The current soil condition in the remedial excavation area is unknown.
- The groundwater condition in this source zone has not been evaluated.

Ecology reviewed the work proposed in *July 2022 RI WP* in this source zone, and have the following comments:

- Ecology concurs with the proposed soil boring locations A through C (see **Enclosure A, Figure 6)**. These borings can provide useful data points to determine the current soil conditions in the remedial excavation area.
- Ecology recommends converting the proposed soil boring “A” to an “intermediate” well, screened in the native soil (below 10 feet bgs), to evaluate the groundwater condition in the remedial excavation area.
- Ecology recommends advancing additional soil borings north, east, and west of the proposed boring locations to further evaluate the current soil condition in the remedial excavation area.
- Ecology recommends advancing at least one soil boring northwest of the remedial

excavation (north or northwest of ESW-W6) to delineate the north extent of the soil contamination.

- Additional soil borings and/or monitoring wells may be needed, depending on the results of the additional investigation.

b. Characterization in the source zone in southwest alleyway.

Monitoring wells MW-2 and MW-7A/7B were installed within this source zone, and monitoring wells MW-8A/8B were installed immediately downgradient of this source zone (see **Enclosure A, Figure 4**). Among them, well MW-7A and MW-8A were screened at "shallow" intervals between approximately 5 and 15 feet bgs; wells MW-2, MW-7B, and MW-8B were installed at "intermediate" intervals between approximately 25 and 40 feet bgs. Based on the geology and the water level measurements in wells, it appears that the "shallow" and "intermediate" wells are screened in the same aquifer, with a downward vertical gradient within the aquifer.

Ecology identified the following data gaps in this source zone:

- PCE and TCE contamination in soil was discovered in this source zone at depths ranging from approximately 15 to 30 feet bgs. The vertical extent of soil contamination is not fully delineated.
- The "intermediate" wells in this source zone (MW-2 and MW-7B) frequently contain HVOC concentrations one order of magnitude higher than the "shallow" well (MW-7A), indicating a downward migration of HVOC contamination in the aquifer. The vertical extent of groundwater contamination is not delineated.
- High PCE concentrations in the "intermediate" wells in the source zone (up to 18,000 micrograms per liter, µg/L) suggest a potential presence of dense non-aqueous phase liquid (DNAPL) in this source zone.
- The "intermediate" well immediately downgradient of the source zone (MW-8B) showed detection of a PCE concentration above the MTCA Method A groundwater cleanup level for the first time in February 2023, indicating the groundwater plume is likely continuously migrating laterally and vertically from this source zone.

Based on the current soil and groundwater data, Ecology recommends the following:

- Install a deep monitoring well immediately next to monitoring wells MW-7A/7B, to delineate the vertical extent of contaminated soil and groundwater plume in this source zone, and assess the potential presence of DNAPL.
- Install a deep monitoring well immediately next to monitoring wells MW-8A/8B, to delineate the lateral and vertical extent of groundwater plume immediately downgradient of this source zone.

- A sonic drill rig is recommended to continuously document the subsurface geology and identify potential DNAPL. Double casing is likely needed to prevent cross-contamination of deeper saturated zones during drilling through shallow contamination.

3. Extent of soil and groundwater contamination down-gradient of the source zones.

HVOC contamination in groundwater was detected for the first time in 2023 in the following wells: (1) "shallow" well MW-5 and "intermediate" well MW-3, located northeast of the former dry cleaner; and (2) deep well MW-1, located southwest of former dry cleaner. These newly detected exceedances appear to indicate that the groundwater plume is expanding.

The horizontal groundwater flow direction in the "shallow" and "intermediate" zones is to the southeast, with variations to the south and southwest. The lateral extent of the groundwater plume is not delineated to the south, southeast, and southwest.

Ecology reviewed the work proposed in *July 2022 RI WP*, and has the following comments:

- Ecology concurs with the proposed monitoring well cluster MW-9A/9B/9C and MW-10A/10B/10C. These monitoring wells are useful in delineating lateral and vertical extents of the contaminated soil and the groundwater plume to the south and southeast.
- Ecology recommends installing one pair of "shallow" and "intermediate" monitoring wells south or southeast of monitoring wells MW-8A/8B, to delineate the downgradient extent of the groundwater plume.
- Ecology recommends installing one pair of "shallow" and" intermediate" wells southeast of monitoring well MW-3, to delineate the lateral extent of the groundwater plume north/northeast of the source zone.
- Ecology recommends installing a pair of "shallow" and "intermediate" wells southwest of the former Building C, near the deep well MW-1, to delineate the southwest extent of the groundwater plume.
- Soil samples should be collected during the drilling to delineate the soil contamination to the south, southeast, and southwest.
- Additional monitoring wells may be needed based on groundwater monitoring data.

4. Vapor intrusion pathway evaluation.

Historically, soil vapor samples collected beneath Building C contained concentrations of PCE, TCE, and trans-1,2-DCE above the Method B sub-slab soil gas screening levels. Building C was subsequently demolished in 2007.

Soil vapor samples were collected beneath the adjacent Building B and Building D. One soil vapor sample collected beneath Building B, near the southwest corner of former Building C, contained a PCE concentration slightly above the Method B sub-slab soil gas screening level.

Ecology reviewed the proposed work in *July 2022 RI WP*, and concurred with collecting an additional round of sub-slab soil vapor samples from the existing vapor pins SSG-1 and SSG-2, beneath the existing Buildings B and D (see **Enclosure A, Figure 3**).

Ecology will review the additional soil vapor data and determine if further vapor intrusion evaluation is needed.

5. Environmental Information Management (EIM) data submittal.

Electronic submittal of all sampling data into Ecology's Electronic EIM database is a requirement in order to receive a final Ecology opinion for this Site. Molly Ware (email Molly.Ware@ecy.wa.gov, or via telephone at 360-280-7712) is Ecology's contact and resource on entering data into EIM.

6. Next Steps.

Ecology appreciates your effort on conducting interim remedial actions, which helps reducing the contamination in the source zones. Ecology appreciates your continuous commitment to Site cleanup. Ecology recommends submitting a Remedial Investigation Work Plan Addendum or similar document to ensure that the proposed work meets MTCA requirements and addresses the data gaps identified in this opinion letter.

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 Voluntary Cleanup Program (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.

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

Sincerely,

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: Mike Noll, GHD Services Inc. (Michael.Noll@GHD.com)
Emily Blakeway, GHD Services Inc. (emily.blakeway@GHD.com)
Allyse Bourm, MBA Cascade Plaza, LLC. (allyse@mbanderson.net)
Sonia Fernández (sonia.fernandez@ecy.wa.gov)

Enclosure A

Site Description and Diagrams

Site Description

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

Site

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

- PCE, TCE, and cis-1,2-DCE to soil.
- PCE, TCE, cis-1,2-DCE, and VC to groundwater.
- PCE, TCE, trans-1,2-DCE to soil vapor.

The Site is located within one 13.63-acre King County parcel 2823059009 (Property, **Figure 1**). The Property is located east of 116th Avenue SE and south of SE 168th Street in Renton, WA, and is part of the Cascade Village shopping center.

Area and Property Description

The Property is located in a mixed residential and commercial area, designated as Commercial Arterial (CA). The CA Zone provides for a wide variety of retail sales, services, and other commercial activities along high-volume traffic corridors. Residential uses may be integrated into the CA zone through mixed-use buildings.

The Property is bounded by the following commercial or residential properties (**Figure 2**):

- ***North***: The Property is bounded by a baseball field and SE 168th Street.
- ***East***: The Property is bounded by single-family residences.
- ***South***: The Property is bounded by additional Cascade Village buildings that are currently used for offices, martial arts, dance studios, gyms, and salons. An apartment complex is located to the southeast of the Property.
- ***West***: The Property is bounded by 116th Avenue SE. Commercial and residential developments are located west of the street.

Property History and Current Use

The Property was initially developed as Cascade Village shopping center in 1959. Five buildings (Buildings A through E; **Figure 2**) were constructed on the Property from 1959 to 1986:

- ***Building A***: Building A is located at the southern portion of the Property. Building A was originally built between 1959 and 1960, and operated as a Johnny's Food Center

supermarket through 1992. A car wash structure was located south of Building A between 1968 and 1985. During a renovation of the shopping center in 1986, Building A was expanded to its current footprint. A Quality Food Center (QFC) supermarket operated in Building A from 1995 through 2005. After that, Building A appeared to be vacant. Currently, Building A is being remodeled to facilitate a school operation (Impact Public Schools).

- ***Building B***: Building B is located immediately northwest of Building A, and was constructed in approximately 1986. Building B is occupied by multiple tenants. Former and current tenants include Bartell Drugs (until the 2010s), a martial arts studio, a gun shop, a church, and a restaurant.

- ***Building C***: Building C was located northwest of Building B. Building C was constructed in 1959, and was occupied by multiple tenants. Building C was demolished in 2017.

    - A dry cleaners, Cascade Cleaners, operated in a tenant space in Building C from at least 1977 to approximately 2010 (**Figure 3**). The address associated with Cascade Cleaners is 16912 116th Avenue SE. Releases of dry cleaning solvents (PCE and its degradation products) were identified in soil, groundwater, and soil gas in and around the dry cleaner tenant space. The cleanup of the Cascade Cleaners Site is managed under the current VCP, NW3348.

- ***Building D:*** Building D is located southwest of Building B, and was constructed in 1961 as a bowling alley. The bowling alley operated under various business names until the late 2000s. In 2009, the bowling alley remodeled and reopened as a Hooter's brand sports bar until it was closed in 2011. Building D has been vacant since that time.

- ***Building E***: Building E is located in the northwest corner of the Property. Building E originally operated as a Texaco gasoline service station from approximately 1950 until 1985. The building was then converted to a bank in 1985, followed by a Dominos Pizza store. Currently Building E operates as a barber shop and salon.

  Petroleum-contaminated soil and groundwater was discovered near the former underground storage tanks (USTs) associated with the former Texaco service station in 2002. The cleanup of the petroleum contamination was managed under VCP NW1501, with a facility name Cascade Retail Center. In 2005, approximately 1,219 tons of petroleum-contaminated soil and approximately 1,500 gallons of contaminated groundwater were removed from the site. Post-remediation groundwater monitoring was completed in 2006 and 2007. Petroleum hydrocarbons and associated compounds were below the MTCA Cleanup levels for four consecutive quarters. Ecology issued a No Further Action (NFA) letter for the Cascade Retail Center site on February 9, 2007.

Sources of Contamination

The HVOC contamination at the Site are associated with the historic dry cleaning operations at the former Cascade Cleaners, located in a tenant space in former Building C.

The former dry cleaning machine was located on the west end of the tenant space (**Figure 3**). In addition, it was reported that separator water and spent solvents generated by the dry cleaners were stored in 30-gallon drums that were possibly staged near the southwest corner of Building C (near well MW-2, **Figure 3**). Based on the data collected to date, these two areas are the two most contaminated areas, and are likely the source zones of the HVOC contamination.

Physiographic Setting

Land surface on the Property is generally sloping to the southeast, from approximately 445 feet above mean sea level (amsl) at the north end, to approximately 425 feet amsl at the south end.

Surface/Storm Water System

The nearest surface water is Big Soos Creek, located approximately 1,000 feet south and west of the Property. Big Soos Creek flows generally south to join the Green River approximately 6.5 miles south of the Property.

Storm water on the Property flows to the catch basins in the alleyway between Buildings B and D, then flows to the southeast toward a City of Renton stormwater main located in 119th Ave SE. Other utilities on the Property included water, sewer, natural gas, and overhead electric lines (**Figure 3**).

Ecological Setting

Land surfaces on the Property and adjacent properties are primarily covered by buildings and asphalt or concrete pavement. The Site qualifies for an exclusion from further terrestrial ecological evaluation (TEE) per WAC 173-340-7491(1)(c). There is less than 1.5 acres of contiguous undeveloped land on or within 500 feet of any area of the Site.

Geology

Based on borings advanced at the Site, subsurface soils consist predominantly of fine sand and silty sand with gravel from the ground surface to depths ranging from approximately 25 to 35 feet below ground surface (bgs). Underneath are poorly graded gravel and gravel-sand mixtures interbedded with clays and clayey sands to the maximum explored depth of 80 feet bgs.

Groundwater

A total of 10 monitoring wells were installed at the Site (**Figure 3**), including wells MW-1 through MW-3, MW-5, MW-6A/6B, MW-7A/7B, and MW-8A/8B. Among them, wells MW-5, MW-6A, MW-7A and MW-8A were installed with 5- or 10-foot-long screens between 5 and 15 feet bgs ("shallow" wells). Wells MW-2, MW-3, MW-6B, MW-7B, and MW-8B were installed with 10-or 15-foot-long screens between 20 and 40 feet bgs ("intermediate" wells). Well MW-1 was installed with a 5-foot-long screen from 67 to 82 feet bgs (deep well).

The static water levels measured in "shallow" wells range from approximately 2 to 14 feet bgs. The static water levels measured in "intermediate" wells range from approximately 8 to 19 feet bgs. Based on the geology and the water level measurements, it appears that the "shallow" and "intermediate" wells are screened in the same aquifer, with a downward vertical gradient within the aquifer. Data indicate the groundwater flows in the "shallow" and "intermediate" zones are to the southeast, with variations to the south and southwest.

The static water levels measured in the deep well (MW-1) are at approximately 64 feet bgs, or approximately 380 feet amsl. This water level is consistent with the regional groundwater in the Vashon advance outwash (Qva) aquifer in this area. The predominant groundwater flow direction in the deep zone is unknown.

Water Supply

Water to the Property is provided by Soos Creek Water and Sewer District. Water for the district is received from Seattle Public Utilities (SPU) via Lake Youngs. The Property is located outside of the 10-year time of travel wellhead protection zone of all water supply wells.

Release and Extent of Contamination

Subsurface investigations and interim actions were conducted on the Property from 2008 to 2021. Based on data collected to date, the Site appears to include the areas of former Building C, part of Building B, and the alleyway southwest of former Building C. Historical soil, groundwater, and soil vapor sampling locations at the Site are depicted on **Figure 4**.

In addition, soil and soil vapor samples were collected in or near Building A, as part of the environmental assessment for the future school that will occupy Building A. The sampling location in or near Building A are depicted on **Figure 5**.

Additional soil and groundwater sampling locations are proposed at the Site, in a *Remedial Investigation Work Plan*, dated July 1, 2022. The proposed soil borings and groundwater monitoring well locations are depicted on **Figure 6**.

Below is a summary of the results of historical investigations and interim actions, in chronological order.

Soil

- In 2015, six soil borings (B1 through B6) were advanced to depths ranging from approximately 5.5 to 12 feet bgs, within (B1 through B3) and outside (B4 through B6) the dry cleaner tenant space. Three monitoring wells MW-1 through MW-3 were installed to depths ranging from approximately 35 to 82 feet bgs around Building C.

  PCE and/or TCE exceeded the MTCA Method A soil cleanup levels in soil samples collected from borings B2 (7 feet bgs), B3 (5.5 feet bgs), B4 (5, 9, and 12 feet bgs), B6 (5 and 9 feet bgs), and well MW-2 (15 and 25 feet bgs).

- After the demolition of Building C in 2017, sixteen soil borings (EB-1 through EB-16) were advanced to depths ranging from approximately 8 to 15 feet bgs within the footprint of the former Building C, or the alleyway southwest of former Building C.

  PCE and/or TCE exceeded the MTCA Method A soil cleanup levels in soil samples collected from all soil borings except for EB-5 and EB-7. The exceedances were detected between depths of 4 and 13 feet bgs.

- In 2018, remedial excavation was conducted in areas of former Building C and southwest alleyway. The excavation extended to approximately 9 feet bgs in the footprint of the former Building C, and to approximately 8 feet bgs in the southwest alleyway.

  Confirmation soil samples were collected between approximately 2 to 8 feet bgs from the bottom and sidewalls of the excavation. PCE exceeded the MTCA Method A soil cleanup level in all three bottom samples (BOT-W-8, BPT-N-8, and BOT-E-8), two north sidewall samples (ESW-N-4, ESW-NE-5), and two west sidewall samples (ESW-W-6, ESW-NW-2).

  Approximately 910 cubic yards of contaminated soil were removed from the excavation and stockpiled on Property. Five samples were collected from the stockpiles, which all exceeded the MTCA Method A soil cleanup level for PCE. The excavation was backfilled with stockpiled soils, which were mixed with sodium persulfate treatment compound and sodium hydroxide (NaOH) solution. Approximately 9,642 pounds of sodium persulfate and 2,260 gallons of NaOH solution were mixed into the soil excavation area.

  Before backfilling the excavation, horizontal pipes, oriented southwest to northeast, were installed at the bottom of the excavation to facilitate future remedial actions (TW-1A through TW-4A, TW-5, and TW-1B through TW-4B, **Figure 3**).

- In November 2019 and January 2020, two shallow L-shaped trenches were excavated to approximately 2 feet deep, on the southwest corner of the excavation area (**Figure 3**). Approximately 1,047 pounds of sodium persulfate and 290 gallons of NaOH solution were placed into the trenches. Excavated soil was placed back into the trenches.

- In 2018 and 2020, six monitoring wells (MW-6A/6B, MW-7A/7B, and MW-8A/8B) were installed to depths ranging from approximately 15 to 36.5 feet bgs. PCE and/or TCE exceeded the MTCA Method A soil cleanup levels in soil samples collected from well MW-7B (25 and 30 feet bgs).

- In September 2021, six soil borings (GEI-1 through GEI-6) were advanced to a maximum depth of 15 feet bgs next to Building A, as part of a separate assessment to support Building A redevelopment. Soil samples collected between approximately 3 and 15 feet bgs contained HVOCs below the MTCA Method A soil cleanup levels.

Groundwater

- Groundwater monitoring initiated at the Site in January 2008. Groundwater samples were then collected from site monitoring wells in 2015, 2018 through 2020, and 2023.

- In January 2018, a string of 5-foot-long enhanced reductive dechlorination (ERD) Passive Release Sock (PRS) units were installed in well MW-2 to treat groundwater. The PRS units were removed in April 2018. A new string of four new PRS units were installed in well MW-2 in April 2018, and removed in November 2018.

- In November 2019, groundwater treatment injections were conducted through the horizontal pipes within the remedial excavation (**Figure 3**). Approximately 1,595 pounds of sodium persulfate compound and 247 gallons of NaOH solution were injected.

- The most recent Site data (collected in February and March 2023) show concentrations of PCE, TCE, cis-1,2-DCE, and/or VC exceeded the MTCA Method A or Method B groundwater cleanup levels in the following wells:

    - "Shallow" wells MW-5, MW-7A, and MW-8A;
    - "Intermediate" wells MW-2, MW-3, MW-7B, and MW-8B; and
    - Deep well MW-1.

Soil Vapor

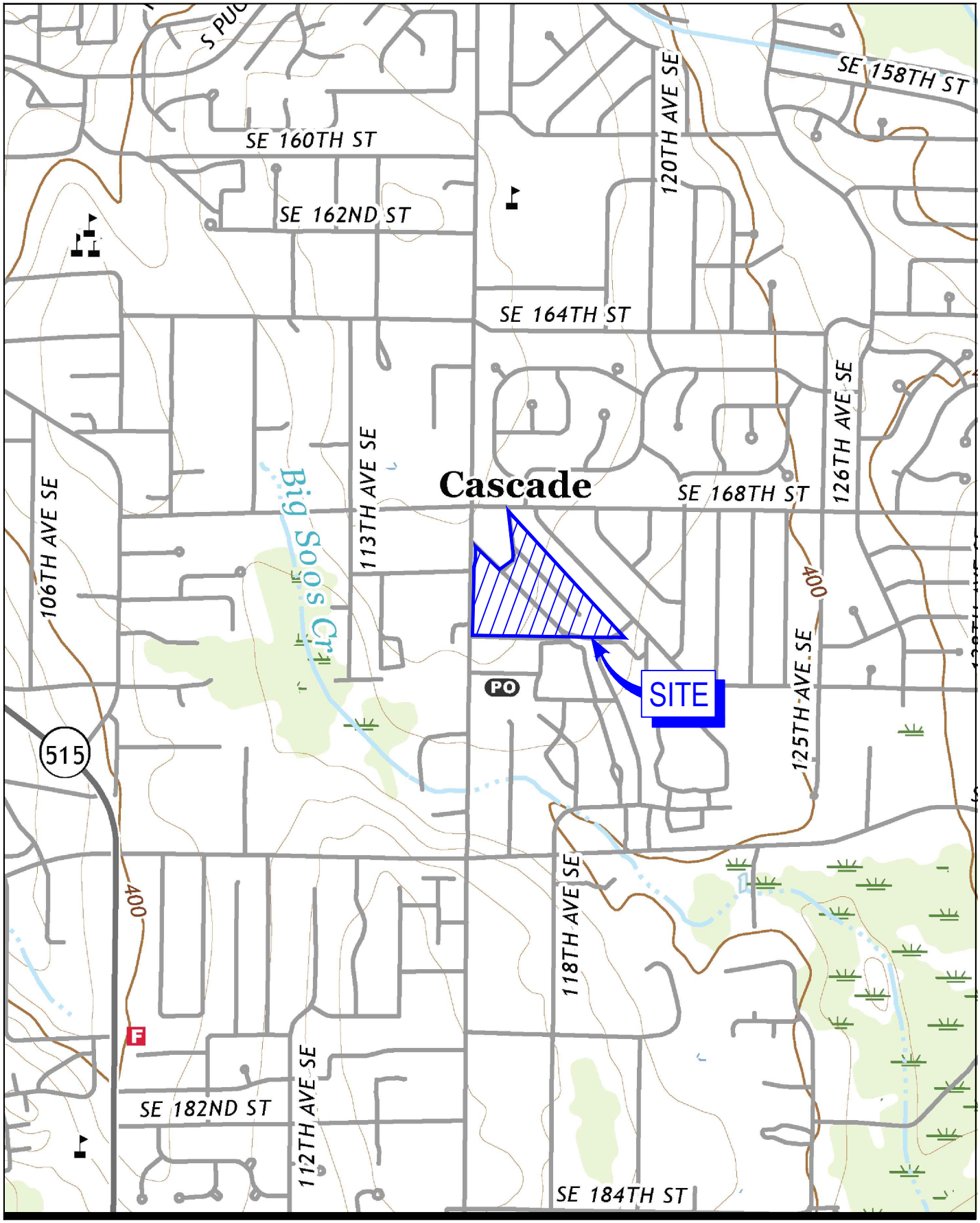
- In June 2015, three soil vapor samples (SG1-4 through SG3-4) were collected from temporary soil vapor probes installed in borings B1 through B3, within the former dry cleaner tenant space. PCE, TCE, and/or trans-1,2-DCE exceeded the MTCA Method B sub-slab soil gas screening levels in samples SG2-4 (B2) and SG3-4 (B3).

- In November 2018, two sub-slab vapor pins were installed in the northwest corner of Building B, and northeast corner of Building D, respectively. Soil vapor samples were collected from SSG-1 and SSG-2 in November 2018 and September 2020. PCE slightly exceeded the MTCA Method B sub-slab soil gas screening level in SSG-1 in September 2020.

- Three sub-slab soil vapor samples (SV-1 through SV-3) were collected beneath the west end of Building A in September 2021, as part of a separate assessment to support Building A redevelopment. HVOCs were below the MTCA Method B sub-slab soil gas screening levels in these samples.

Site Diagrams

Enclosure A: Figure 1



0 500 1000ft

Coordinate System: Washington North State Plane WA83-NF

N

GHD

CASCADE VILLAGE - FORMER CASCADE CLEANERS
16912 116th AVENUE SE
RENTON, WASHINGTON

VICINITY MAP

Project No. **12561532**
Date **September 2021**

FIGURE 1

Filename: N:\US\Lynnwood\Projects\561\11215715\Digital_Design\ACAD 2020\Figures\12561532-PRE001(Formerly 11215715)\PRE001\12561532-GHD-0000-PRE-EN-0102_SO-001.DWG
Plot Date: 14 September 2021 12:21 PM

Data Source: USGS Quad Map, Renton, WA, 2020.

Enclosure A: Figure 2

LEGEND

PROPERTY BOUNDARY LINE

0 60 120 ft

1" = 120 ft

Coordinate System:
Washington North
State Plane
WA83-NF

N

GHD

CASCADE VILLAGE - FORMER CASCADE CLEANERS
16912 116th AVENUE SE
RENTON, WASHINGTON

AREA MAP

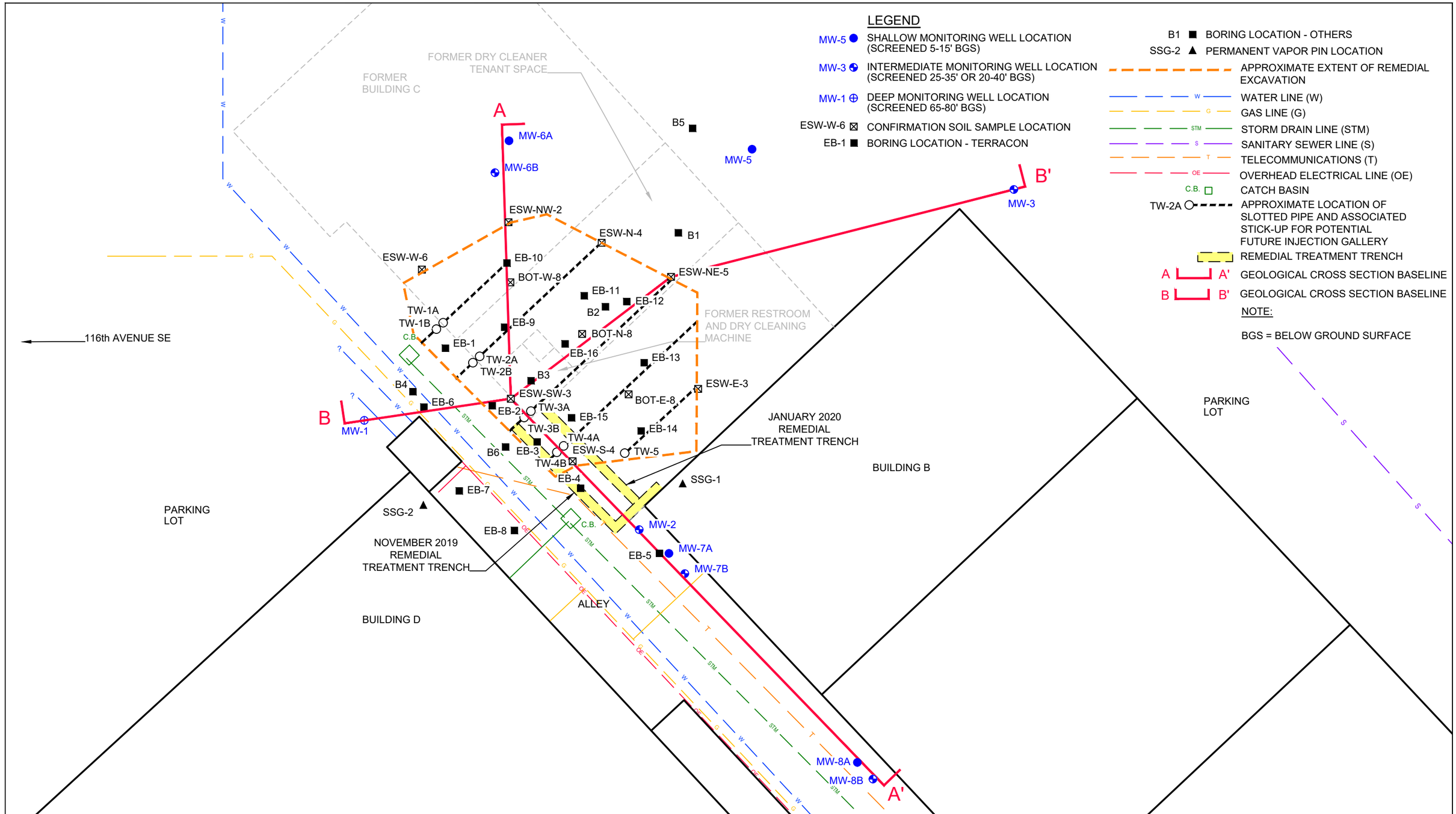
Project No. **12561532**
Date **June 2022**

FIGURE 3

Filename: N:\US\Lynnwood\Projects\561\12561532\Digital_Design\ACAD\Figures\RPT\RIWP\12561532-GHD-0000-RPT-EN-0101_SO-RIWP.DWG
Plot Date: 16 June 2022 2:11 PM

Data Source: Terracon Consulting and Engineers and Scientists, Site Diagrams dated 6/2018 and 8/2017.

Enclosure A: Figure 3



CASCADE VILLAGE - FORMER CASCADE CLEANERS
16912 116th AVENUE SE
RENTON, WASHINGTON

SOIL SAMPLE AND CROSS SECTION LOCATION MAP

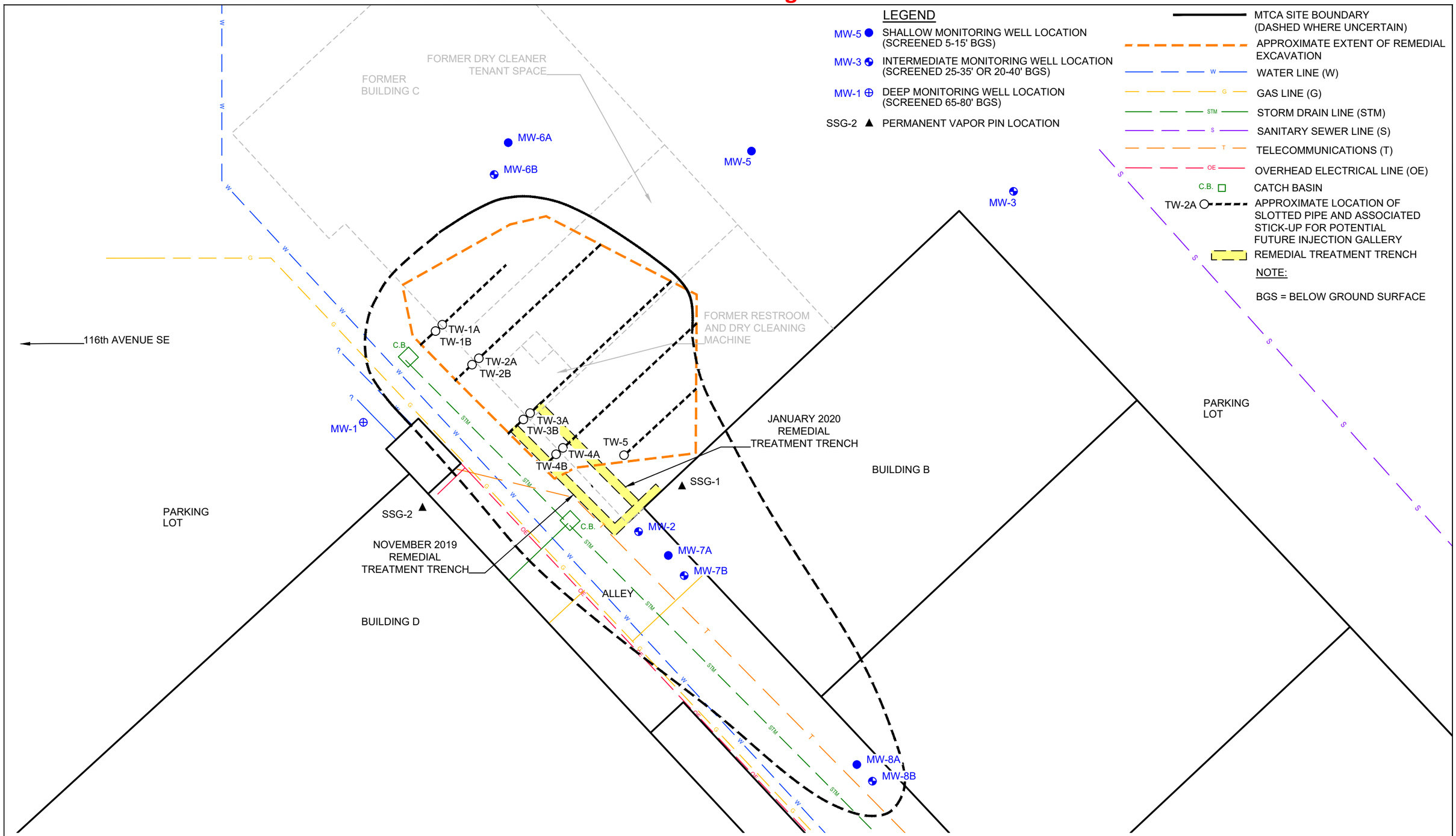
Project No. **12561532**
Date **June 2022**

FIGURE 4

Filename: N:\US\Lynnwood\Projects\561\12561532\Digital_Design\ACAD\Figures\RPTRIWP\12561532-GHD-0000-RPT-EN-0104_SO-RIWP.DWG
Plot Date: 07 June 2022 8:20 AM

Data Source: Terracon Consulting and Engineers and Scientists, Site Diagrams dated 6/2018 and 8/2017.

Enclosure A: Figure 4



Filename: N:\US\Lynnwood\Projects\561\12561532\Digital_Design\ACAD\Figures\RPTRIWP\12561532-GHD-0000-RPT-EN-0103_SO-RIWP.DWG
Plot Date: 16 June 2022 2:07 PM

Data Source: Terracon Consulting and Engineers and Scientists, Site Diagrams dated 6/2018 and 8/2017.

Enclosure A: Figure 5

Approximate Subject Property Boundary

Parcel Boundaries

Inferred Groundwater Flow Direction

GEI-1 Direct-Push Boring Location

SV-1 Sub-Slab Sample Location

N W E S

Source: 2017 aerial photograph, King County iMAP

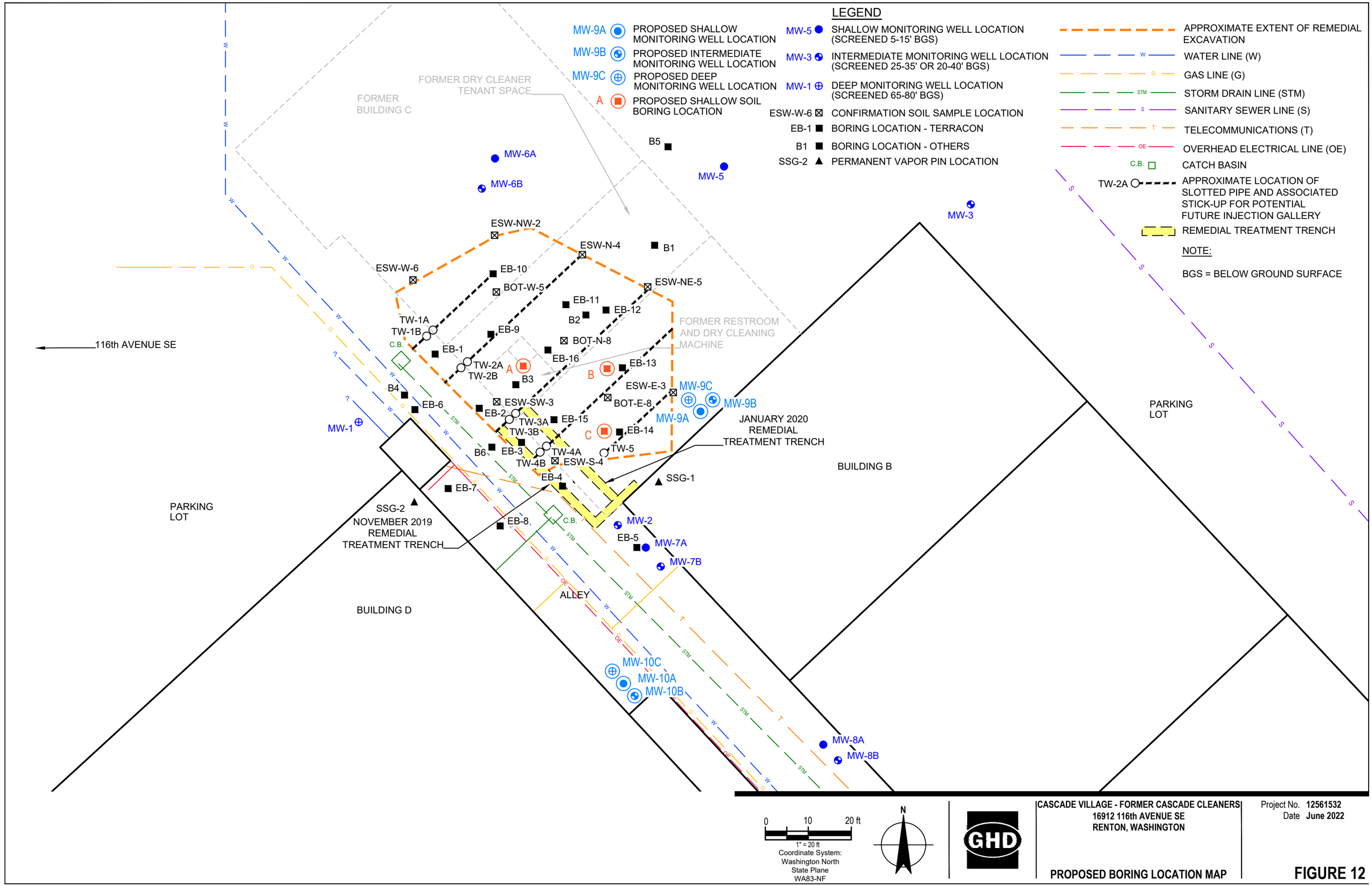
21565-006-04 October 2021

DRAFT Site Plan

Focused Sampling and Analysis
Former QFC Property
Renton, Washington

GeoEngineers | **Figure 2**

Enclosure A: Figure 6



Filename: N:\US\Lynnwood\Projects\561\12561532\Digital_Design\ACAD\Figures\RPTRIWP\12561532-GHD-00-00-RPT-EN-D112_SO-RIWP.DWG
Plot Date: 07 June 2022 9:05 AM

Data Source: Terracon Consulting and Engineers and Scientists, Site Diagrams dated 6/2018 and 8/2017.

Enclosure B

Basis for the Opinion: List of Documents

1. Surveys Inc., *Phase I Environmental Site Assessment, Cascade Shopping Center, 16840-17112 116th Avenue SE, Renton, Washington*, December 14, 2007.

2. ZZA-Terracon, *Limited Groundwater Sampling Results, 16840 116th Avenue Southeast, Renton, Washington*, January 23, 2008.

3. AMERCO Real Estate Company, *Phase I Environmental Site Assessment, Cascade Village, 16910-17062 116th Avenue Southeast, Renton, WA*, June 5, 2015.

4. Partner Engineering and Science, Inc. (Partner), *Phase II Subsurface Investigation Report, Cascade Village, 16950-17060 116th Avenue Southeast, Renton, Washington*, July 6, 2015.

5. Partner, *Phase II Subsurface Investigation Report, Cascade Village, 16950-17060 116th Avenue Southeast, Renton, Washington*, October 13, 2015.

6. Partner, *Additional Subsurface Investigation Report, Cascade Village, 16950-17060 116th Avenue Southeast, Renton, Washington*, November 24, 2015.

7. EPI, *Technical Memorandum, Response to Ecology Letter (November 18, 2014)*, February 14, 2015.

8. GeoEngineers, *Focused Phase II Environmental site Assessment, Impact Renton (Former QFC Store Property), 16950 116th Avenue SE, Renton, Washington*, November 10, 2021.

9. GHD Services Inc. (GHD), *Remedial Investigation Work Plan, Former Cascade Cleaners, Cascade Village, 16912 116th Avenue Southeast, Renton, Washington*, July 1, 2022.

10. GHD, *February and March 2023 Groundwater Monitoring Report, Cascade Village – Former Cascade Cleaners, 16912 116th Avenue Southeast, Renton, Washington*, April 18, 2023.