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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

Northwest Region Office
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June 4, 2025

Romeo Gonyea
c/o Jason Bontrager
Gonyea Management
3102 Hoyt Avenue, #12135
Everett, Washington 98201
(gwi7@hotmail.com)

Re: Opinion on Proposed Cleanup of the following Site:

- **Site Name:** HERS Industrial Park
- **Site Address:** 4403-4480 Russell Road, Mukilteo, WA 98275
- **Cleanup Site ID:** 3971
- **Facility/Site ID:** 127256
- **VCP Project ID:** NW1554

Dear Romeo Gonyea:

The Washington State Department of Ecology (Ecology) received your request for an opinion on your proposed independent cleanup of the HERS Industrial Park 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](#)¹.

Issue Presented and Opinion

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

NO. Ecology has determined that, upon completion of your proposed cleanup and addressing Ecology's comments in this letter, no further remedial action will likely be necessary to clean up contamination at the Site.

¹ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305>

This opinion is based on an analysis of whether the remedial action meets the substantive requirements of MTCA, Chapter 70A.305 RCW, and its implementing regulations, Chapter [173-340 WAC](#)² (collectively “substantive requirements of MTCA”). The analysis is provided as follows.

Description of the Site

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

- Tetrachloroethene (PCE) and trichloroethylene (TCE) into the soil.
- PCE, TCE, cis-1,2-dichloroethylene (cis-DCE), vinyl chloride (VC), methylene chloride, total petroleum hydrocarbons in the diesel and oil range (TPH-D and TPH-O), and arsenic into the groundwater.

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

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

Basis for the Opinion

This opinion is based on the information contained in the documents listed in **Enclosure B**. A number of these documents are accessible in electronic form from the [Site webpage](#)³. The complete records are stored in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Visit our [Public Records Request page](#)⁴, to submit a public records request or get more information about the process. If you require assistance with this process, you may contact the Public Records Officer at publicrecordsofficer@ecy.wa.gov or 360-407-6040.

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

Analysis of the Cleanup

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

² <https://app.leg.wa.gov/WAC/default.aspx?cite=173-340>

³ <https://apps.ecology.wa.gov/cleanupsearch/site/3971>

⁴ <https://ecology.wa.gov/footer-pages/public-records-requests>

1. Characterization of the Site.

Ecology has determined your characterization of the Site is sufficient to establish cleanup standards and select a cleanup action. The Site is described above and in **Enclosure A**. The remedial investigation was completed in 2021.

- **Soil contamination at the Site has been sufficiently characterized.**

The lateral and vertical extents of soil impacted by releases at the Site have been adequately defined per MTCA requirements by the completion of Site investigations conducted from 1994 to 2021.

- PCE and/or TCE-contaminated soil above the Method A cleanup levels remains from approximately 15 to 65 feet below ground surface (bgs) at the location of MW-16/16D, and at approximately 10 to 16.5 feet bgs in AB-5, AB-6, AB-7, AB-9, AB-10, and MW-21.
- The majority of the soil contamination appears to be located near the northeast corner of the former Intermec building (4403 Russell Road) at the weathered/unweathered glacial till contact (approximately 12 to 17 feet bgs).
- Soil is completely capped by the building and pavement.

- **Groundwater contamination at the Site has been sufficiently characterized.**

The lateral and vertical extents of contaminated groundwater at the Site have been adequately defined per MTCA requirements by the completion of groundwater monitoring from 2005 to 2023.

- Groundwater monitoring has been conducted in the shallow wells (MW-1 through MW-23) and the deeper wells (MW-2D and MW-16D). MW-14 was abandoned in 2012.
- Shallow, perched groundwater is encountered at approximately 2 to 15 feet bgs.
 - Chlorinated volatile organic compounds (CVOCs) including PCE, TCE, cis-1,2-DCE, and VC are currently above the MTCA cleanup levels near the former Intermec building (MW-1, MW-12, MW-15, MW-16, MW-20 and MW-21).
 - TPH-D+TPH-O have historically been above the MTCA cleanup level near the former Intermec building (MW-1, MW-6, MW-8, MW-9, MW-13, and MW-16D) and near the former ACS tenant space located at 4433 Russell Road (MW-3 and MW-19).
 - Dissolved arsenic has historically been above the background in shallow wells MW-3, MW-15, MW-17, and MW-19.
 - Contamination has not migrated off the Property.

- Deeper groundwater is encountered at approximately 58 feet bgs (MW-16D) within the glacial till. MW-16D is located in the source area and is screened from 80 to 100 feet bgs in the Vashon Till.
 - TCE is above the Method A cleanup level in MW-16D. Concentrations of TCE in MW-16D have decreased since April 2021 and appear to be stabilizing.
- Regional groundwater is encountered in the advance outwash layer beneath the glacial till at 162 feet bgs (MW-2D). MW-2D is screened from 176 to 196 feet bgs in the Esperance Sand (Vashon Advance Outwash).
 - The regional groundwater just downgradient of the source area in well MW-2D has not contained CVOCs above the method reporting limits (MRLs) since it was installed in 2015.

- **Vapor intrusion has been sufficiently evaluated.**

A vapor intrusion assessment was conducted in October 2019 and May 2022. Soil gas samples (SG-1 and SS-1) showed that CVOCs including PCE and TCE were not detected above the MTCA Method B screening levels. Vapor intrusion is not a current risk for human health or the environment.

2. **Establishment of cleanup standards.**

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

- **Cleanup Levels**

Soil

- MTCA Method A soil cleanup levels for unrestricted land uses ([WAC 173-340-900](https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-900), [Table 740-1](https://www.codepublishing.com/WA/Mukilteo/#!/Mukilteo17/Mukilteo1716.html)⁵) are based on the protection of groundwater and are appropriate for the Site.

The Property is zoned “LI” (light industrial) by the City of Mukilteo. According to the Mukilteo Municipal Code (MMC) [Chapter 17.16.040](https://www.codepublishing.com/WA/Mukilteo/#!/Mukilteo17/Mukilteo1716.html)⁶, permitted uses include daycare facilities, hospitals, temporary homeless encampments, and K-12 and preschools; therefore, soil cleanup levels for unrestricted land uses are appropriate.

- Cleanup levels protective of terrestrial species are not needed at the Site.

The Site meets the terrestrial ecological evaluation (TEE) exclusion criteria in accordance with WAC [173-340-7491](https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-7491)(1)(c)(i)⁷. There are less than 1.5 acres of contiguous

⁵ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-900>

⁶ <https://www.codepublishing.com/WA/Mukilteo/#!/Mukilteo17/Mukilteo1716.html>

⁷ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-7491>

undeveloped land on or within 500 feet of the Site. Therefore, the Method A cleanup levels do not need to be adjusted for protection of terrestrial ecological receptors.

Groundwater

- MTCA Method A groundwater cleanup levels ([WAC 173-340-900, Table 720-1](#)⁸) are appropriate for the Site.

The highest beneficial use for groundwater under MTCA is as a drinking water source, unless it can be demonstrated that the groundwater is not potable. MTCA Method A groundwater cleanup levels are protective of potable use.

- Method B cleanup levels are appropriate for CVOCs that do not have a Method A cleanup level. Method B cleanup levels are found on the [Cleanup Levels and Risk Calculation \(CLARC\) Tables](#)⁹.
 - Cis-1,2-DCE: use the Method B cleanup level of 16 micrograms per liter (µg/L)
- The Snohomish County natural background level can be used for arsenic. The Method A cleanup level for arsenic is adjusted up to natural background. Background levels are documented in the [Natural Background Groundwater Arsenic Concentrations in Washington State](#)¹⁰.
 - Arsenic: use 13.6 µg/L

Air

- Cleanup levels for the protection of air are not needed. The air pathway is incomplete based on the results of soil gas samples.

• **Point of Compliance**

Soil

- The point of compliance for the protection of groundwater is soils throughout the Site.

Groundwater

- The point of compliance for groundwater is throughout the Site, from the uppermost level of the saturated zone extending vertically to the lowest depth that could possibly be affected.

Air

- The air pathway is incomplete.

⁸ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-900>

⁹ <https://ecology.wa.gov/regulations-permits/guidance-technical-assistance/contamination-cleanup-tools/clarc>

¹⁰ <https://apps.ecology.wa.gov/publications/documents/1409044.pdf>

3. Selection of cleanup action.

Ecology concurs that the selected cleanup action is the preferred remedial alternative for the Site provided that (1) groundwater contamination does not migrate off the Property, and (2) the items documented in the **Next Steps** section of this letter are resolved.

- **A feasibility study and disproportionate cost analysis (FS/DCA) were completed in 2021.**

- The selected cleanup action focuses on the cleanup of CVOC-impacted soil and groundwater using in-situ chemical reduction/enhanced anaerobic biodegradation (ISCR/EAB) with institutional controls(IC) and monitored natural attenuation (MNA). When active treatment is discontinued (estimated 4 years), an environmental covenant will be recorded for the affected parcels to address any remaining contamination and a NFA will be requested at that time.

- **A pilot test completed in 2023 confirmed that the selected cleanup action is effective.**

- The results of the pilot test showed the successful reduction of PCE and TCE in groundwater in the source area, and the complete dichlorination of a substantial portion of the CVOC mass. The results of the pilot test were used to design a full-scale injection plan which was submitted to Ecology in 2024. The implementation of the full-scale injection program is expected to start in 2025.

4. Cleanup Action.

The following cleanup actions have been completed at the Site.

- **Underground storage tank (UST) removal.**

- Removed a 500-gallon heating UST and 25 tons of petroleum-contaminated soil (PCS) from the Property in 1995. Soil and groundwater confirmation samples were below the MTCA Method A cleanup levels.

- **Excavation of contaminated soil from floor drains and catch basins.**

- Removed 1 cubic yard of PCS from the floor drain (former Exotic Tool Welding space) in 1995. Confirmation samples were below the MTCA Method A cleanup levels.
- Removed 25 tons of PCS from around Catch Basin #34 (drain D34) in 1996. The confirmation sample was below the MTCA Method A cleanup levels.

- **Groundwater treatment**

- Completed three rounds (March, April and October 2006) of In-Situ Chemical Oxidation (ISCO) injections in the area of PCE and TCE contamination east and northeast of the former Intermec building. Wells MW-1, MW-7, and MW-9 through MW-15 were used as injection points. Groundwater samples were analyzed for CVOCs.

- Completed one round of injections in the source area in 2023. The injections were associated with the ISCR/EAB pilot test which included baseline groundwater sampling in May, one injection event in June, and post-injection groundwater monitoring in September and December, and May 2024. Direct-push borings IP-1, IP-2a, IP-2b, IP-3, IP-4a, and IP-4b were used as injection points. Groundwater samples were analyzed for CVOCs and geochemical parameters.

5. Data submitted to the Ecology Environmental Information Management (EIM) database.

Site data has been uploaded to the Ecology [EIM](#)¹¹ database. Electronic submittal of all sampling data into the EIM is a requirement in order to receive a NFA opinion for this Site. Please refer to [Ecology Policy 840: Data Submittal Requirements](#)¹², revised April 12, 2016, for further information regarding EIM submittal requirements.

6. Next Steps.

- Continue quarterly groundwater sampling.
- Submit a contingency plan to address any potential deviations from the planned cleanup action. The contingency plan should also list potential additional actions (including additional remediation or treatment events) if the results of the planned cleanup action are not positive. Incorporate Ecology's comment regarding Section 3.3.2 of the Revised FFS (refer to the Ecology opinion letter dated February 9, 2022).
- Submit a post-injection monitoring plan to determine the effectiveness of the cleanup action. Sufficient groundwater monitoring is needed to observe whether rebound is occurring and to confirm that the plume is shrinking. These demonstrations need to be made before an environmental covenant is recorded for the Property. The post-injection monitoring plan should include:
 - One groundwater sampling event that includes all shallow and deep wells and should be conducted at the start of the post-injection monitoring phase.
 - Quarterly sampling of all affected wells, including the wells selected for performance monitoring (MW-1, MW-11, MW-12, MW-16, MW-20, and MW-21) and the additional wells MW-13, MW-15, and MW-16D. The sampling network will depend on the results of the comprehensive sampling event (all wells) to be conducted at the start of the post-injection monitoring phase. Four quarters of results below the cleanup levels are required to show compliance.
 - Additional analysis of TPH-D+TPH-O with and without silica gel cleanup for wells that have historically contained TPH above the cleanup level (MW-1, MW-3, MW-6, MW-8, MW-9, MW-13, MW-19, and MW-16D) to assess the post-injection TPH concentrations.

¹¹ <https://ecology.wa.gov/Research-Data/Data-resources/Environmental-Information-Management-database>

¹² <https://apps.ecology.wa.gov/publications/SummaryPages/1609050.html>

Evaluation of compliance with the Method A cleanup levels for TPH-D and TPH-O requires adding concentrations of the two fractions and comparing the result to the cleanup level, per [Implementation Memorandum #4](#)¹³, and [Guidance for Remediation of Petroleum Contaminated Sites](#)¹⁴. Specify to the analytical laboratory to report TPH-Dx analysis as one concentration (TPH-D+TPH-O). Evaluate results following the [Silica Gel Cleanup Guidance](#)¹⁵.

- Updated trend plots for PCE and TCE in MW-16D, MW-22, and MW-23 (refer to the Ecology opinion letter dated February 9, 2022).
- Quarterly reporting to Ecology.
- Resolve Ecology's comments (Ecology opinion letter dated February 9, 2022) in future Site reports, as requested.
- Continue to submit all additional and future sampling results and data to the EIM.

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)¹⁶.

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

To recover remedial action costs from other liable persons under MTCA, one must demonstrate that the action is the substantial equivalent of an Ecology-conducted or Ecology-supervised action. This opinion does not determine whether the action you proposed will be substantially equivalent. Courts make that determination. See RCW [70A.305.080](#)¹⁷ and WAC [173-340-545](#)¹⁸.

3. Opinion is limited to proposed cleanup.

This letter does not provide an opinion on whether further remedial action will actually be

¹³ <https://apps.ecology.wa.gov/publications/SummaryPages/0409086.html>

¹⁴ <https://apps.ecology.wa.gov/publications/SummaryPages/1009057.html>

¹⁵ <https://apps.ecology.wa.gov/publications/SummaryPages/2209059.html>

¹⁶ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.040>

¹⁷ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.080>

¹⁸ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-545>

necessary at the Site upon completion of your proposed cleanup. To obtain such an opinion, you must submit a report to Ecology upon completion of your cleanup and request an opinion under the Voluntary Cleanup Program (VCP).

4. State is immune from liability.

The state, Ecology, and its officers and employees are immune from all liability, and no cause of action of any nature may arise from any act or omission in providing this opinion. See RCW [70A.305.170](#)(6)¹⁹.

Contact Information

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

For more information about the VCP and the cleanup process, please visit our [webpage](#)²⁰. If you have any questions about this opinion, please contact me by phone at (206) 556-5258 or e-mail at kim.vik@ecy.wa.gov.

Sincerely,



Kim Vik, L.G.

Site Manager

Toxics Cleanup Program, NWRO

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

cc: Jason Bontrager, Gonyea Management, (jason@gonyeamanagement.com)
 Jeremy Porter, Aspect Consulting, LLC, (Jeremy.Porter@aspectconsulting.com)
 Daniel Babcock, Aspect Consulting, LLC, (Daniel.Babcock@aspectconsulting.com)
 David Unruh, Ecology VCP Coordinator, (vcp-nwro@ecy.wa.gov)

¹⁹ <https://app.leg.wa.gov/RCW/default.aspx?cite=70A.305.170>

²⁰ <https://ecology.wa.gov/spills-cleanup/contamination-cleanup/voluntary-cleanup-program>

Enclosure A

Description and Diagrams of the Site

Site Description

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

Site: The Property is identified as 4403 Russell Road in Mukilteo, Washington (**Figure 1**), and is comprised of eight Snohomish County tax parcels located between Russell Road and Chennault Beach Road in Mukilteo, Washington. The [Snohomish County Online Property Information](https://www.snohomishcountywa.gov/5414/Interactive-Map-SCOPI)²¹ identifies the parcels as follows:

Tax Parcel #	Size (acres)	Address	Owner
Impacted Parcels			
00441400004600	1.64	4403 Russell Road	Russell Road Industrial Park LLC
00441400004700	1.59	4351 Chennault Beach Road	Russell Road Industrial Park LLC
00548700001700 00548700001701 (shown as one parcel)	2.86	4424 Chennault Beach Road	International Church of the Foursquare Gospel
Non-impacted Parcels			
00441400004502	1.10	4433 Russell Road	Russell Road Industrial Park LLC
00441400004400	1.17	4463 Russell Road	Russell Road Industrial Park LLC
00441400004300	1.41	4493 Russell Road	Russell Road Industrial Park LLC
00548700001600	1.29	4440 Chennault Beach Road	Russell Road Industrial Park LLC
01031600000100 01031600000200 (shown as one parcel)	NR	4470 Chennault Beach Road 4480 Chennault Beach Road	Blunt Family LLC

NR = Not recorded with Snohomish County

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

- Tetrachloroethene (PCE) and trichloroethylene (TCE) in soil.
- PCE, TCE, cis-1,2-dichloroethene (cis-DCE), vinyl chloride (VC), methylene chloride, total petroleum hydrocarbons (TPH) in the diesel and oil ranges (TPH-D and TPH-O), and arsenic in groundwater.

Area and Property Description: The Property (eight parcels) covers approximately 13 acres. The Property is currently developed with eight flex facility industrial buildings ranging in size from 10,200 to 43,152 square feet. The Property is in an area zoned "LI" (light industrial) by the City of Mukilteo. Per the City of Mukilteo Municipal Code ([Chapter 17.16.040](#)), "LI" zoning permits daycare facilities, hospitals, temporary homeless encampments, and K-12 and preschool. The Property is bounded on the north and south by Chennault Beach Road and

²¹ <https://www.snohomishcountywa.gov/5414/Interactive-Map-SCOPI>

Russell Road, respectively, and on the west and east by light industrial and commercial properties (**Figures 1 and 2**).

Site History and Current Use: The Property was undeveloped land until approximately 1953 when a single-family residence was constructed on the southeast portion of the Property. The current industrial buildings were constructed between 1976 and 1978. Former tenants included Intermec Corporation (Intermec)(electronics manufacturer), King Machine, Inc. (motorcycle repair and service), Absolute Cleaning Services (ACS) (commercial rag cleaning), storage warehouses, woodworking businesses, and other light industrial operations since 1976 (**Figure 2**). Current tenants include commercial and light industrial businesses.

Sources of Contamination: The known contamination was caused by releases from former operations at the Property including former Intermec and King Machine, Inc. (both located at 4403 Russell Road), Exotic Metals Welding, aka Exotic Tool Welding (4433 Russell Road), ACS (located at 4403 and 4433 Russell Road), and the underground storage tank (UST) on the south side of the building at 4493 Russell Road.

The primary source of chlorinated volatile organic compounds (CVOCs) contamination in soil and groundwater appears to have originated from storm drains located east of the former Intermec building (4403 Russell Road). The catch basins were reportedly not tight-lined to the existing main line, but allowed to discharge directly to the subsurface. The primary source of TPH contamination appears to be from the former UST (4493 Russell Road) and operations in the former Intermec building (4403 Russell Road) and the former ACS business (4403 and 4433 Russell Road).

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

Repeated advances and retreats of the continental glaciers that flowed through the area out of Canada more than 10,000 years ago created the low undulating plains that are characteristic of the Puget Sound Lowland. Current land surfaces reflect the changes that are directly related to the most recent glacial advance and retreat through Snohomish County. Known as the Vashon Stade of the Fraser Glaciation, it took place between 13,000 and 20,000 years ago (**Figure 3**).

The Property is relatively flat with an elevation of approximately 540 feet above mean sea level. The Property is situated near the top of the west-facing slope of an upland plain between Puget Sound and the Snohomish River, known as the Intercity Plateau. The general area surrounding the Property slopes to the west towards Puget Sound.

Surface/Storm Water System: The Picnic Point stream that drains to Picnic Point is located approximately 1,000 feet south-southwest of the Property. Big Gulch Creek is located approximately 2,000 feet north-northwest of the Property. Upper and Lower Chennault Beach Creeks are located approximately 4,000 feet west of the Property. All these creeks and streams flow westward and discharge to Puget Sound that is located approximately 8,500 feet west of the Property.

The Property is covered by impervious surfaces and stormwater is captured by a private stormwater system consisting of perforated pipe. Stormwater runoff captured on the Property is conveyed to the municipal stormwater system along Chennault Beach Road and Russell Road (**Figure 2**).

Ecological Setting: The Property is in a light-industrial area that is predominantly covered in buildings and pavement. The Site qualifies for an exclusion under [WAC 173-340-7491\(1\)\(c\)\(i\)](#) since there is less than 1.5 acres of contiguous undeveloped land on the Site or within 500 feet of any area of the Site.

Geology: Soils in the area have been formed primarily through glacial till and glacial meltwater deposition processes. Based on the [geologic map of Mukilteo](#)²², the Property is situated in an upland area that is capped by Vashon Till, a poorly sorted, non-stratified lodgment, till deposited as ground moraine (**Figure 3**). The Vashon Till is characterized as an extremely compact mixture of clay, silt, sand, pebbles, and cobbles. The Vashon Till is underlain by the Vashon Advance Outwash which is characterized by fine-grained sediments at the base that grade upward into coarse-grained deposits. The Vashon Advance Outwash is subdivided into several members, including the Esperance Sand, Lawton Clay, and Pilchuck Clay.

Fill is present on the Property from the ground surface to approximately 5 feet below the ground surface (bgs). The fill is underlain by Quaternary Vashon Till (dense, silt, sand and gravel) to approximately 177 feet bgs. The upper 15 feet is described as weathered till underlain by very dense, relatively impermeable unweathered till. Vashon Advance Outwash deposits described as dense sand (Esperance Sand member) occur beneath the till to the maximum explored depth of 200 feet bgs (cross-sections are shown on **Figures 4 and 5**, and the section lines are shown on **Figure 9**). The Esperance Sand was encountered at 177 feet bgs in MW-2D and is estimated to be approximately 120 to 160 feet thick based on observations at a nearby outcrop located 5,500 feet west of MW-2D (**Figure 3**).

Groundwater: There are 23 shallow groundwater monitoring wells (MW-1 through MW-13, and MW-15 through MW-23) and two deep monitoring wells (MW-2D and MW16D) currently at the Site. Monitoring well MW-14 was abandoned in January 2012 (**Figure 2**).

²² https://file.dnr.wa.gov/publications/ger_gm20_geol_map_mukiteoevertt_24k.pdf

- Shallow perched groundwater occurs from 2 to 7 feet bgs (perched within the weathered till) in MW-1 through MW-13, and MW-15 through MW-23 (all screened from 5 to 15 feet bgs) (**Figures 4 and 5**). Shallow groundwater is likely recharged by stormwater infiltration from perforated storm drains since the Site is largely covered by impervious surfaces that prevent precipitation infiltration from the ground surface. The groundwater flow in the shallow zone is influenced by the topography and the stormwater system. The groundwater flow direction is variable, but generally flows to the north-northwest (**Figure 2**).
- Regional groundwater is encountered at well MW-2D (screened from 176 to 196 feet bgs in the Esperance Sand) at approximately 162 feet bgs. Regional groundwater is anticipated to follow topography and flow to the west towards Puget Sound. In addition, groundwater is encountered in MW-16D (screened from 80 to 100 feet bgs) at approximately 58 feet bgs within the more permeable part of the glacial till.

Water Supply: The Property is served by the [Mukilteo Water and Wastewater District](https://www.mukilteowwd.org/31/Your-Water)²³, which obtains its water from the Sultan Basin Watershed. The watershed drains into Spada Lake Reservoir, located approximately 30 miles east of Everett, Washington. Water flows from Spada Lake Reservoir to Everett's water treatment facility at Chaplain Reservoir and ultimately serves most of Snohomish County. According to Ecology's Well Report database, no drinking water wells are located within ½-mile of the Property.

Previous Investigations and Cleanup Actions: Investigations at the Site have been conducted from 1994 to 2022. The following summarizes investigations and cleanup actions at the Site.

- **Storm Drain System Investigation 1995 and 1996:** Soil samples were collected from test pits (TP1 through TP7) in June and July 1995 and borings (unlabeled) in August 1996. TP1 through TP5 and the borings were advanced adjacent to 34 catch basins (D1 through D34) across the Property. TP6 and TP7 were advanced inside the former Exotic Metals Welding space and King Machine space (former Intermec building), respectively (**Figures 6 and 7**).

The soil samples were collected from the test pits at approximately 1.5 to 3 feet bgs and from the borings at approximately 5 to 7 feet bgs. Soil sample from TP4 (adjacent to drain D34) contained TPH-D, methylene chloride and carcinogenic polycyclic aromatic hydrocarbons (cPAHs) above the MTCA Method A cleanup levels.

Following the investigation, geotextile inserts were installed in 33 of the 34 catch basins across the Property in October 1996 (the insert was not compatible with D30). The purpose of the inserts was to prevent contaminants and sediment from entering the

²³ <https://www.mukilteowwd.org/31/Your-Water>

stormwater system through the catch basins during stormwater runoff events.

- **Phase II Investigation (2005):** Ten direct-push borings (SP1 through SP10) were advanced to a maximum depth of approximately 12 feet bgs across the Property (**Figure 8**). Four soil samples (SP1-7-8, SP8-7.5-8, SP10-8-9, and SP10-10-11) and ten groundwater samples (one from each boring) were analyzed for one or more of the following:
 - TPH identification (TPH-HCID)
 - TPH in the gasoline range (TPH-G)
 - TPH-D and TPH-O
 - PAHs
 - halogenated VOCs (HVOCs)
 - metals (arsenic, barium, chromium, lead, and mercury)
 - benzene, toluene, ethylbenzene, and total xylenes (BTEX)

None of the soil samples contained contaminants above the MTCA Method A cleanup levels. The groundwater samples collected from SP2, SP3 and SP10, located northeast and northwest of the former Intermec building, contained one or more CVOCs above the MTCA cleanup levels. Sample SP10 contained the highest concentrations of CVOCs (up to 300 micrograms per liter [$\mu\text{g/L}$] PCE and 42,000 $\mu\text{g/L}$ TCE). SP10 also contained methylene chloride above the MTCA cleanup level. All other contaminants were below the cleanup levels.

- **Well Installations and Groundwater Sampling (2005 and 2006):** Monitoring wells were installed in 2005 (MW-1 through MW-8) and 2006 (MW-9 through MW-15) (**Figure 9**). The initial groundwater sample from MW-7 contained CVOCs (460 $\mu\text{g/L}$ PCE and 7,000 $\mu\text{g/L}$ TCE) above the cleanup levels. MW-7 is near the catch basin (D29) located at the northeast corner of the former Intermec building (near the location of boring SP10). Based on the groundwater data, the plume appears to be centered around location D29.

Cleanup Actions: Cleanup actions were completed in 1995, 1996, and 2006 and are summarized below:

- **UST Removal (June 1995).** An abandoned, single-wall steel UST was removed from the south side of the building located at 4493 Russell Road (**Figures 2 and 6**). The UST was 500 gallons in size and was used to store heating oil. Approximately 25 tons of petroleum-contaminated soil (PCS) were excavated and disposed of off the Property. Soil samples were collected from the excavation sidewalls (two composite samples from 4 to 8 feet bgs) and bottom (one discrete sample at 7 feet bgs) and analyzed for TPH-D.

The confirmation soil samples were below the MTCA Method A cleanup level. Groundwater was not mentioned in the UST removal report.

- **Floor Drain Removal and Soil Excavation (July 1995):** The floor drain located within the former Exotic Metals Welding tenant space (4433 Russell Road) was removed along with approximately 1 cubic yard of visually contaminated soil near test pit TP6 (**Figure 2 and Figure 6**). The confirmation soil sample collected at 3 feet bgs did not contain TPH above the laboratory method reporting limits (MRL).
- **Catch Basin D34 Soil Excavation and Removal (September 1996):** Contaminated soil at Catch Basin D34 near test pit TP4 was excavated and disposed of off the Property (**Figure 8**). Approximately 25 tons of PCS were excavated to a depth of 10 to 12 feet bgs. One discrete confirmation soil sample was collected from the base of the excavation. TPH-D was not detected above the MRL. The catch basin was repaired and the area was restored.
- **Groundwater Treatment (2006):** Groundwater remediation was conducted in March, April, and October using In-Situ Chemical Oxidation (ISCO). Fenton's Reagent was injected into the area of PCE and TCE contamination east and northeast of the former Intermec building. Monitoring wells MW-1, MW-7, and MW-9 through MW-15 were used as injection wells (**Figure 9**). CVOC concentrations in seven of the nine monitoring wells located within the groundwater treatment area decreased following the October 2006 injections. However, TCE concentrations in MW-1 increased and PCE was detected for the first time.

Remedial Investigation (RI): The RI was conducted from 2014 to 2022 to characterize the Site.

- **Gore Soil Gas Survey.** A Gore soil gas survey was conducted in 2014 to assess the extent of VOCs in soil gas. The Gore survey measures contamination adsorbed by the samplers and is indicative of the presence of soil and/or groundwater contamination. The results indicated presence of CVOC and TPH contamination near the former ACS space (4403 and 4433 Russell Road), and TPH contamination along the perforated lateral storm drain downstream from former drain D34 (**Figures 10 and 11**).
- **Monitoring Well Installations.** Additional shallow monitoring wells (MW-16 through MW-23) and deep monitoring wells (MW-2D and MW-16D) were installed to delineate the lateral and vertical extents of groundwater contamination (**Figure 9**).
- **Soil Sampling.** Soil samples collected from MW-16 through MW-23 showed that PCE and/or TCE were detected in soil samples above the Method A cleanup levels in MW-16 (at approximately 16 feet bgs), MW-16D (from 15 to 65 feet bgs), and MW-21 (at approximately 10 feet bgs). Exceedances were not detected in other wells.

Soil borings were advanced to total depths from 5 to 16.5 feet bgs near the floor drain in the former Intermec building (AB-1 through AB-4) and outside the building (AB-5 through AB-10) (**Figure 12**). PCE and/or TCE were detected above the MTCA Method A cleanup levels at depths up to 16.5 feet bgs in AB-5 through AB-7, AB-9, and AB-10. No exceedances were detected inside the building (AB-1 through AB-4).

- **Vapor Intrusion Assessment:** Sub-slab soil gas samples (SG-1 and SS-1) were collected in October 2018 and May 2022 from the area northeast of the former Intermec building (source area) (**Figure 9**). VOCs including CVOCs were not detected above the MTCA Method B screening levels.

Groundwater Sampling and Monitoring: Groundwater monitoring has been ongoing at the Site from 2005 through the present (most recent data is from 2023). CVOCs (PCE, TCE, cis-1,2-DCE, and VC), TPH-D, TPH-O, and arsenic have been above the Method A cleanup levels in groundwater at the Site.

CVOCs. CVOCs are currently above the cleanup levels in shallow wells MW-1, MW-11, MW-12, MW-15, MW-16, MW-20, and MW-21 and deep well MW-16D (**Figures 4 and 5**). MW-16 and MW-16D are located nearest the source area (northeast corner of the former Intermec building). The groundwater plume is centered near the source area and has not migrated off the Property (**Figure 9**).

- **TPH:** TPH-D and TPH-O have been detected above the cleanup level in MW-1, MW-3, MW-6, MW-8, MW-9, MW-13, MW-19, and MW-16D. TPH-D+TPH-O concentrations (without silica gel cleanup) were above the MTCA Method A cleanup level in shallow wells MW-3, MW-6, and MW-9 when sampled in August 2015. All of the results with silica gel cleanup showed TPH-D and TPH-O were not detected at the MRLs; however, the calculated polar metabolite concentrations exceeded the polar metabolite cleanup level of 500 µg/L ([Silica Gel Cleanup Guidance](#)²⁴). Subsequent sampling in 2019 and 2021 showed that TPH-D and TPH-O have been intermittently detected above the cleanup levels. Concentrations appear to be decreasing in MW-9, MW-19, and MW-16D; however, there are not enough data to evaluate accurate trends.
- **Arsenic.** Based on the most recent sampling data in April 2021, dissolved arsenic concentrations exceeded the [Natural Background Groundwater Arsenic Concentrations in Washington State](#)²⁵ level of 13.6 µg/L for Snohomish County) in shallow wells MW-15 and MW-19. MW-3 and MW-17 were not sampled in 2021; however, dissolved arsenic was detected in MW-3 and MW-17 above the background level in October 2019. Arsenic

²⁴ <https://apps.ecology.wa.gov/publications/SummaryPages/2209059.html>

²⁵ <https://apps.ecology.wa.gov/publications/SummaryPages/1409044.html>

above the cleanup level has not been detected in the deep wells (MW-2D and MW-16D).

Extent of Soil and Groundwater Contamination:

- **Soil.** PCE- and/or TCE-contaminated soil above the Method A cleanup levels remains from approximately 15 to 65 feet bgs at the location of MW-16/16D, and at approximately 10 to 16.5 feet bgs in AB-5, AB-6, AB-7, AB-9, AB-10, and MW-21 (**Figures 4, 5 and 12**). The majority of the soil contamination appears to be located near the northeast corner of the former Intermec building (source area) at the weathered/unweathered glacial till contact (approximately 12 to 17 feet bgs). Soil is completely capped by the building and surrounding pavement.
- **Groundwater:** PCE, TCE, cis-1,2-DCE, and VC are above the Method A cleanup levels in shallow groundwater near the former Intermec building (source area) (**Figures 9 and 12**). TCE is present in the deep well located beneath the source area (MW-16D), but is not present in the downgradient deep well (MW-2D). TCE concentrations in MW-16D appear to be stabilizing (**Figure 13**). TPH present in groundwater is expected to continue decreasing. Arsenic concentrations in groundwater also appear to be stable. Contamination has not migrated off the Property.

Selection of the Cleanup Action: The feasibility study and disproportionate cost analysis (FS/DCA) were completed in 2021. Ecology reviewed the *Revised Focused Feasibility Study*, dated July 20, 2021 (Revised FFS) and concurred that the selected cleanup action (Alternative 2) was the preferred remedial alternative for the Site (Ecology opinion letter dated February 9, 2022).

- **Selected Cleanup Action (Alternative 2).** Alternative 2 focuses on the cleanup of CVOCS in soil and groundwater using in-situ chemical reduction/enhanced anaerobic biodegradation (ISCR/EAB) with institutional controls (IC) and monitored natural attenuation (MNA). ISCR/EAB is designed to destroy the contaminant mass and reduce the restoration time frame. It is anticipated that cleanup would transition to MNA (groundwater monitoring) when the effectiveness of the active treatment levels off. When active treatment is discontinued, an IC in the form of an environmental covenant will be recorded for the affected parcels to address any remaining contamination and a NFA will be requested at that time. The treatment would include two injection events within 4 years, and an estimated 5 years of groundwater monitoring.
- **Cleanup Action Pilot Test.** The ISCR/EAB pilot test was completed in 2023 . The pilot test included baseline groundwater sampling in May, injections (IP-1, IP-2a, IP-2b, IP-3, IP-4a, and IP-4b) in June, and post-injection groundwater monitoring in September and December, and May 2024 (**Figure 14**). The performance monitoring network included

MW-1, MW-11, MW-12, and MW-16; groundwater was analyzed for CVOCs and geochemical parameters. Wells MW-20 and MW-21 were sampled once for CVOCs, but were not a part of the regular network.

- The results of the pilot test showed that CVOC concentrations were significantly reduced in groundwater in the source area. Performance monitoring results demonstrated a reduction in PCE and TCE at MW-1, MW-12, and MW-16, and complete dichlorination of a substantial portion of the CVOC mass in groundwater. These results verified that the selected reagents injected were effective to treat groundwater when well-distributed in the subsurface.
- The results of the pilot test were used to design a full-scale injection plan. The work plan (dated August 26, 2024) was received by Ecology and includes expanding the injection points from 6 to 13 with a target radius of influence of 7 feet (**Figure 15**). The performance monitoring network will include MW-1, MW-11, MW-12, MW-16, MW-20, MW-21, and MW-23. Groundwater samples will be analyzed for CVOCs and geochemical parameters.
- The implementation of the full-scale injection program is expected to start in 2025.

Site Diagrams

FIGURE 1

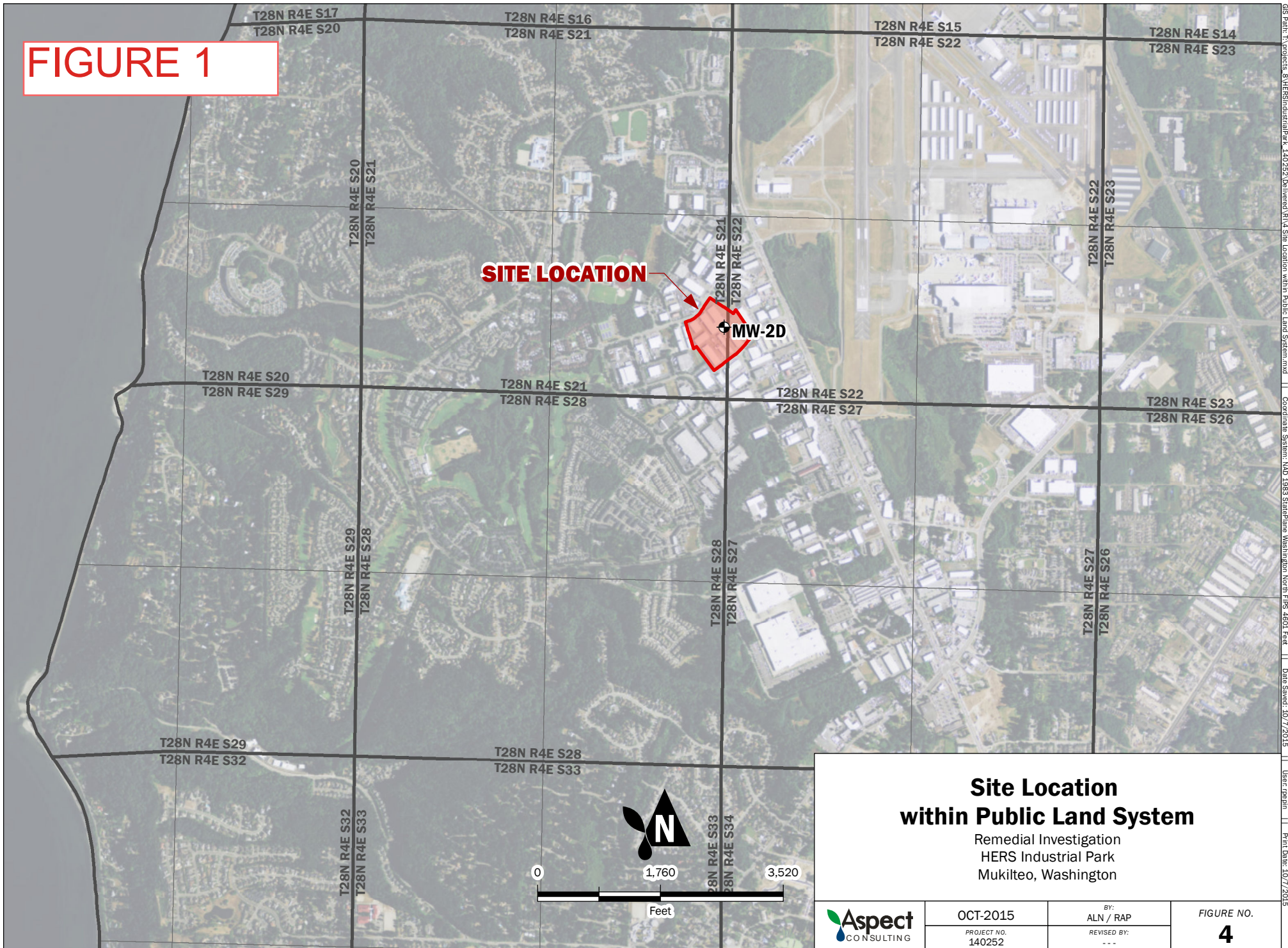
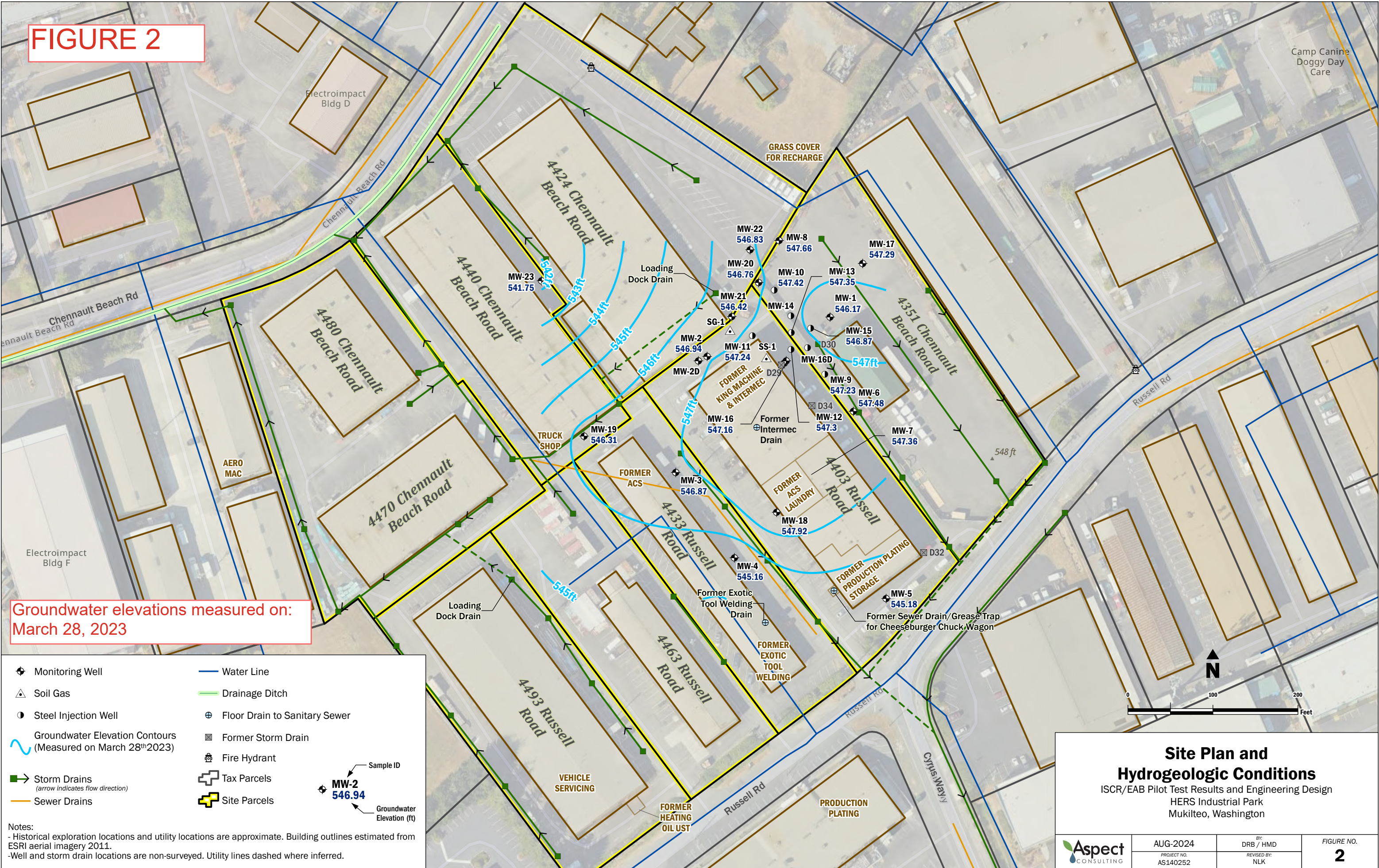


FIGURE 2

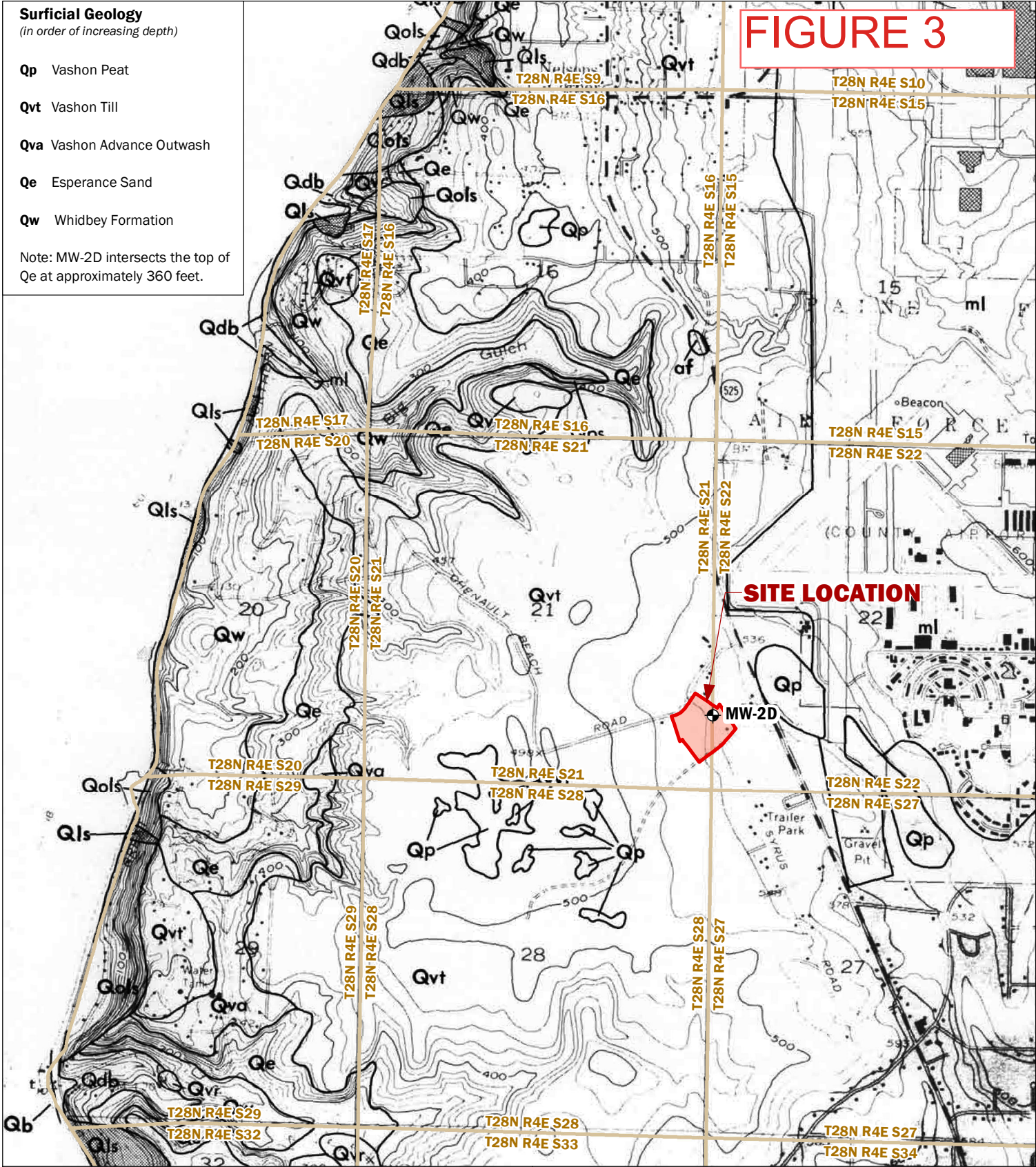


Surficial Geology
(in order of increasing depth)

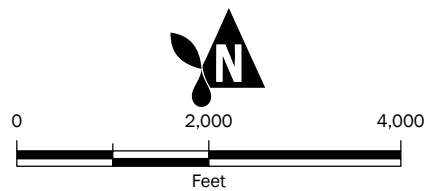
Qp Vashon Peat
Qvt Vashon Till
Qva Vashon Advance Outwash
Qe Esperance Sand
Qw Whidbey Formation

Note: MW-2D intersects the top of Qe at approximately 360 feet.

FIGURE 3



Geology Source: Preliminary Surficial Geologic Map of the Mukilteo and Everett Quadrangles, Snohomish County, Washington. Mackey Smith, 1976

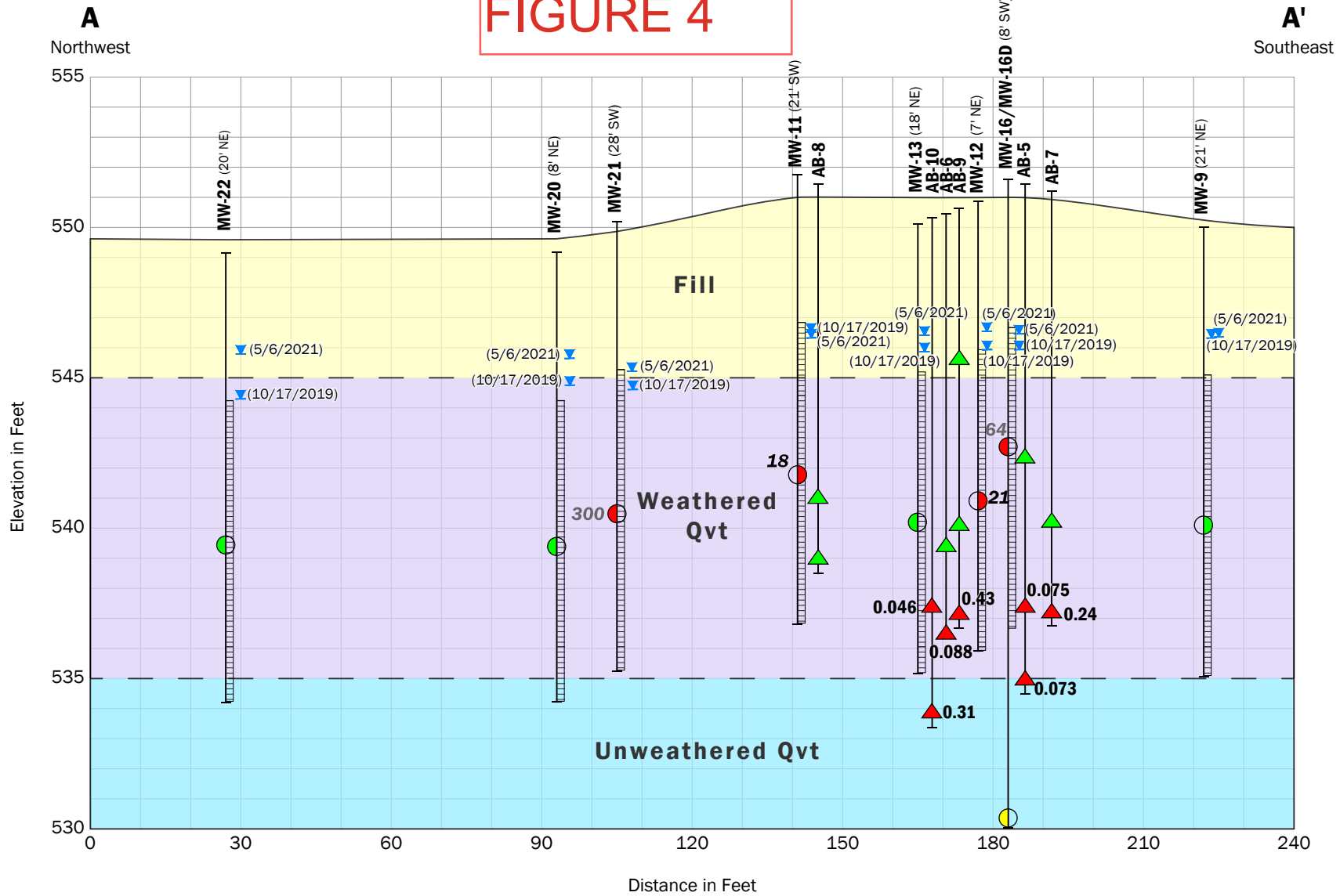


Surficial Geology
Remedial Investigation
HERS Industrial Park
Mukilteo, Washington

	OCT-2015	BY: ALN / RAP	FIGURE NO. 3
	PROJECT NO. 140252	REVISED BY: ---	

GIS Path: I:\Projects\8\HERSIndustrialPark_140252\Delivered\RI_3 Surficial Geology.mxd | Coordinate System: NAD 1983 StatePlane Washington North FIPS 4801 Feet | Date Saved: 10/7/2015 | User: mepin | Print Date: 10/7/2015

FIGURE 4



- Trichloroethene (TCE) was not detected.
- TCE was detected at a concentration less than the MTCA Method A cleanup level.
- TCE was detected at a concentration greater than the MTCA Method A cleanup level.
- No data available

Groundwater Analytical Results from 10/8/2019, expressed in $\mu\text{g/L}$

 Fill
 Qvt: Weathered Vashon Till
 Qvt: Unweathered Vashon Till
 -- Inferred Geologic Contact

Offset from
Cross Section →
Monitoring Well
Identification → **MW-19** (46' S)
Groundwater
Elevation ↓
(10/17/2019)
Well Screen →

0 30 60 Feet

Vertical Exaggeration = 6x

Notes:

- The MTCA Method A Cleanup Level for soil is 0.03 mg/kg
- The MTCA Method A Cleanup Level for groundwater is 5 µg/L
- MTCA = Model Toxics Control Act

DRAFT

Cross Section A-A'

Revised Focused Feasibility Study
HERS Industrial Park
Mukilteo, Washington



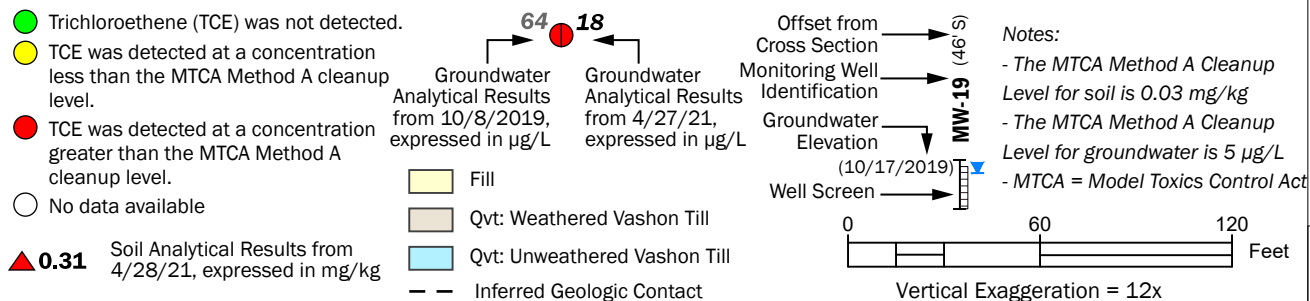
JULY-2021
PROJECT NO.
140252

BY:
RAC

REVISED BY:
-

FIGURE NO.

1-4



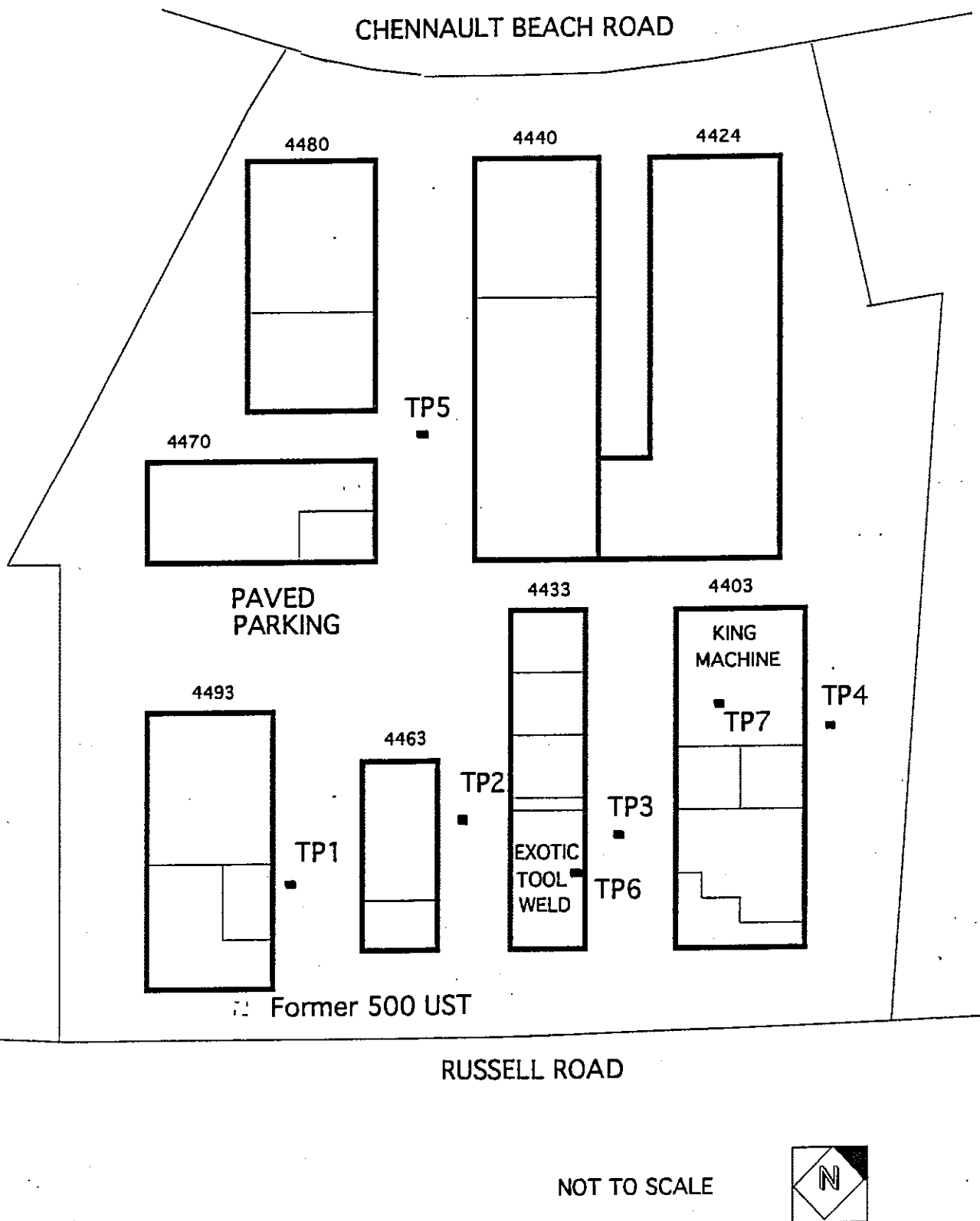
Cross Section B-B'
Revised Focused Feasibility Study
HERS Industrial Park
Mukilteo, Washington



JULY-2021
PROJECT NO.
140252

BY:
ALN/SCC/RAC
REVISED BY:
-

FIGURE NO.
1-5

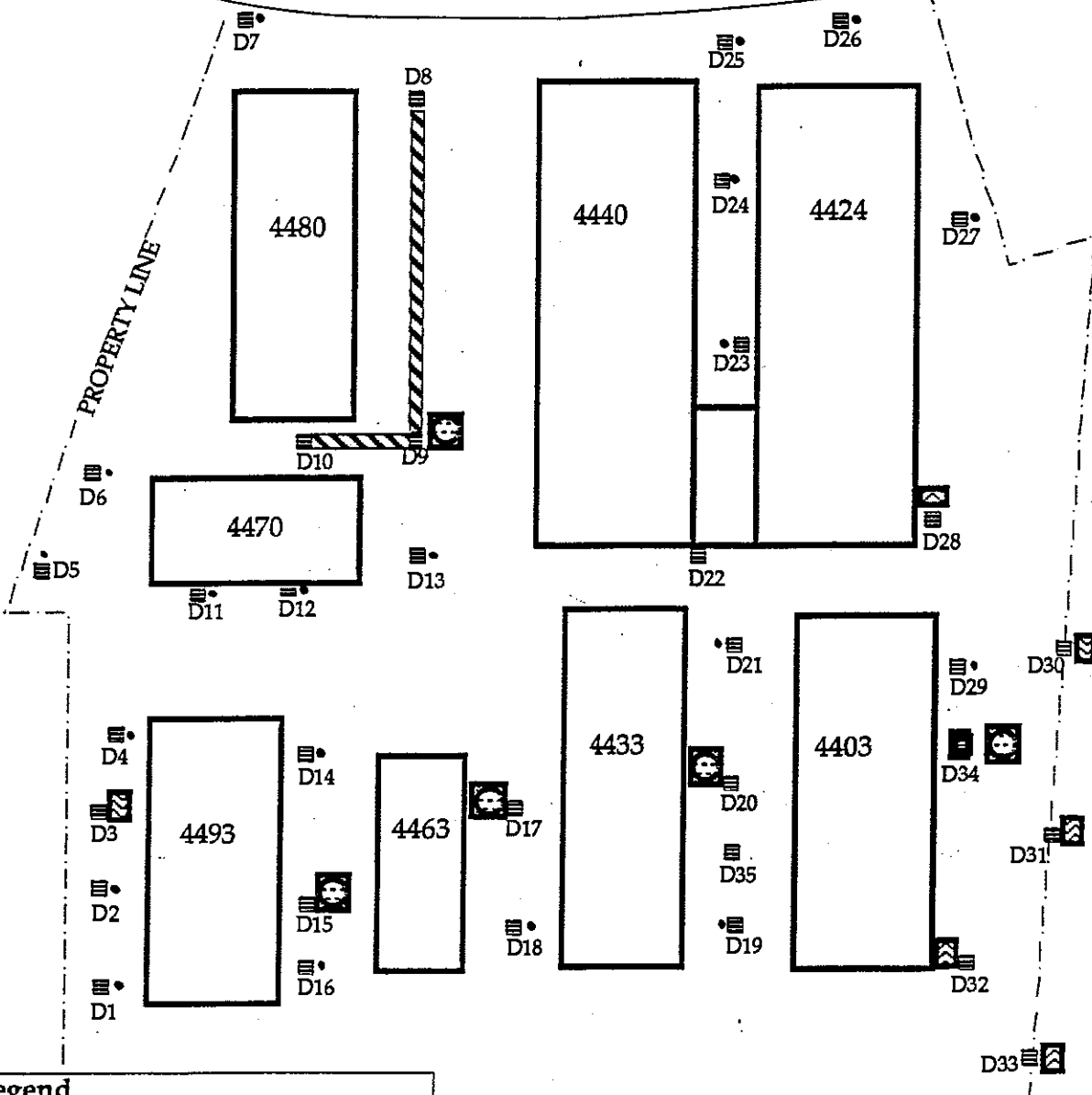
FIGURE 6

Real Estate Graphics Inc. ©COPYRIGHT 1976

EXHIBIT B
SITE PLAN

FIGURE 7

CHENNAULT BEACH ROAD

**Legend**

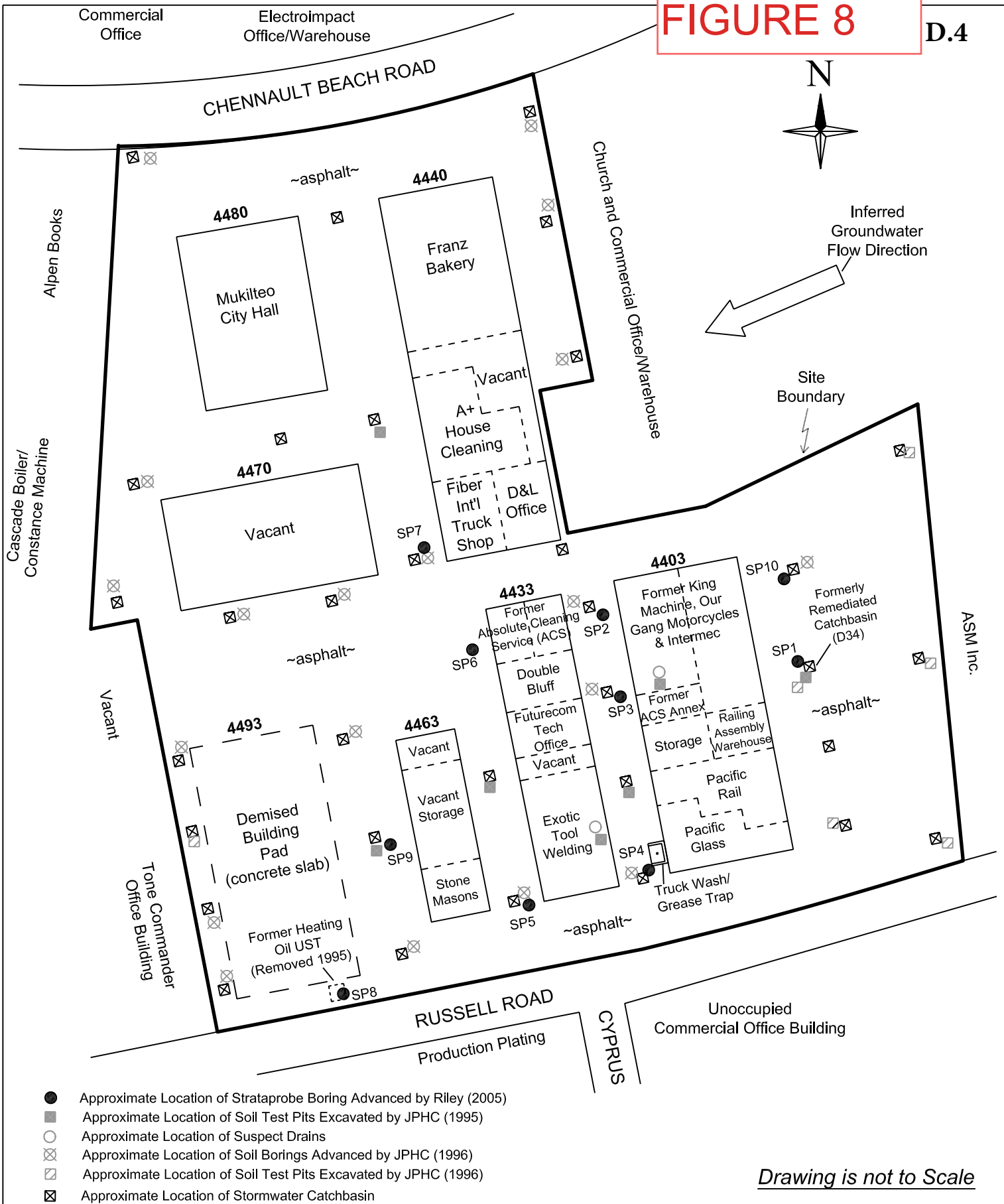
- Trench excavation during pipe repair project (August 1995)
- Exploratory test pit (July 1995)
- Catch Basin
- Exploration test pit (September 1996)
- Geoprobe (September 1996)

RUSSELL ROAD

not to scale

FIGURE 8

D.4



Drawing is not to Scale



The Riley Group, Inc.
17522 BOTHELL WAY NE, SUITE A
BOTHELL, WASHINGTON 98011

Hers Industrial Park

Project # 2005-087b

Site Plan

Figure 2

Site Address: 4403 Russell Road, Mukilteo, Washington

FIGURE 9

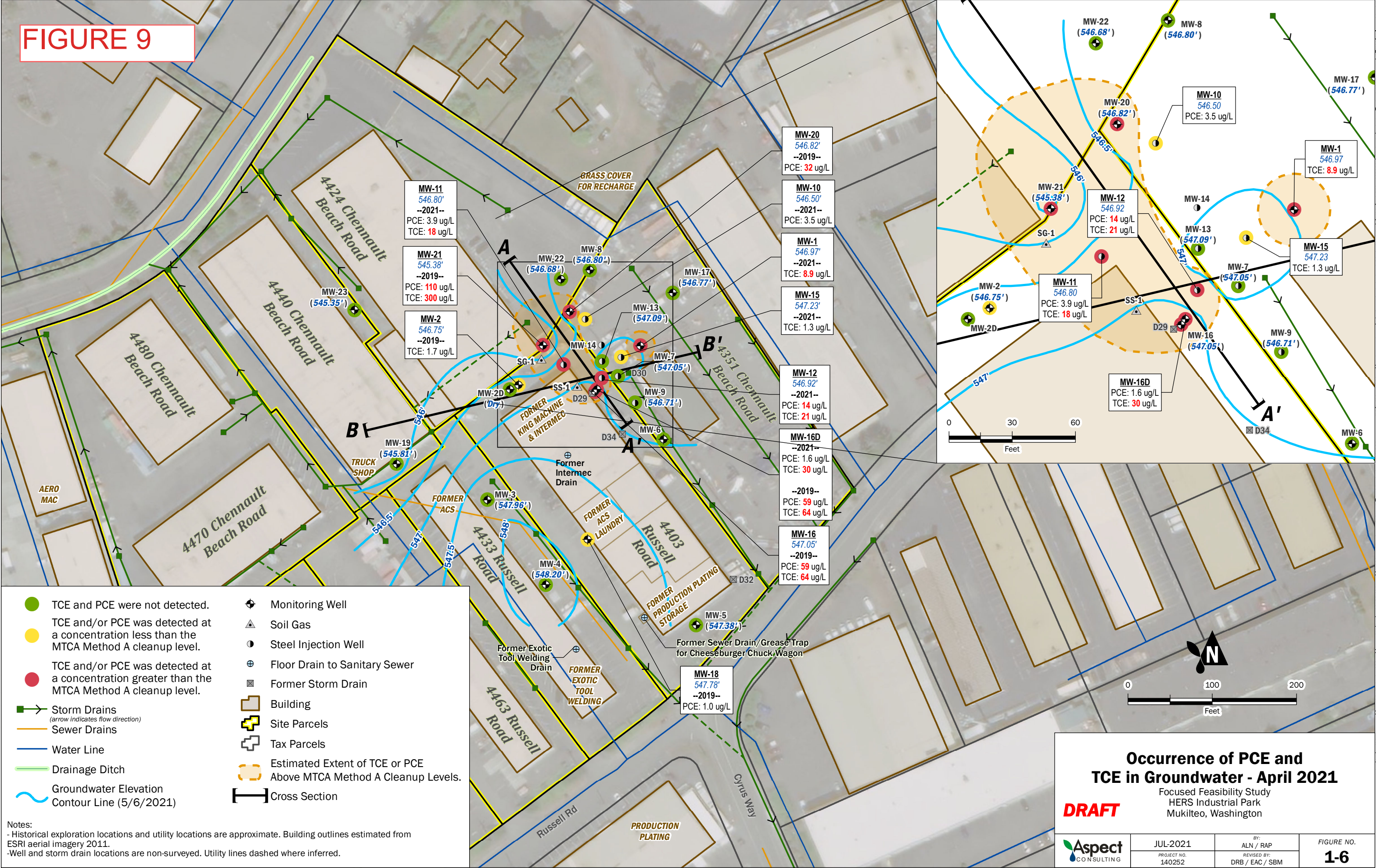


FIGURE 10

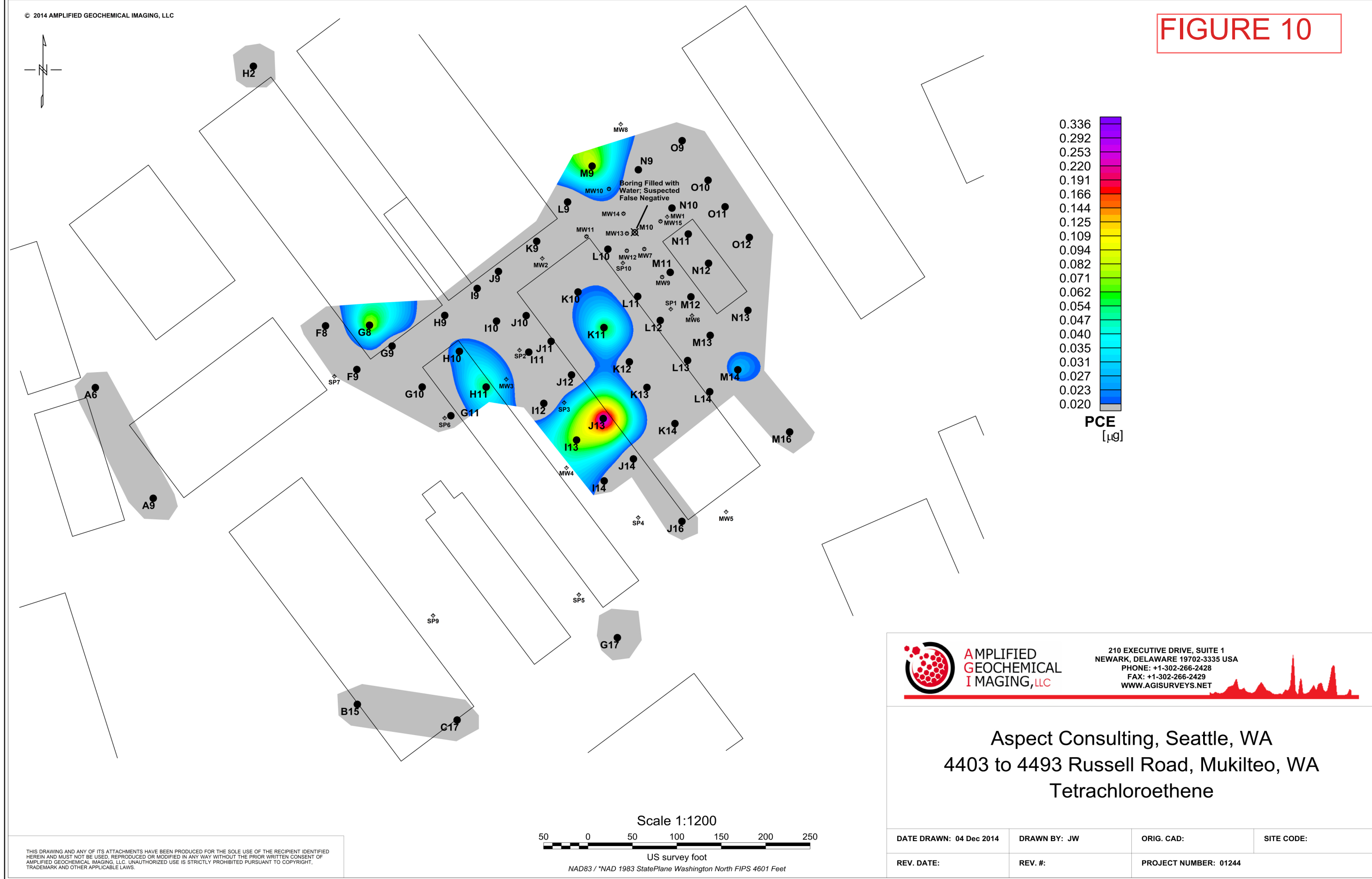
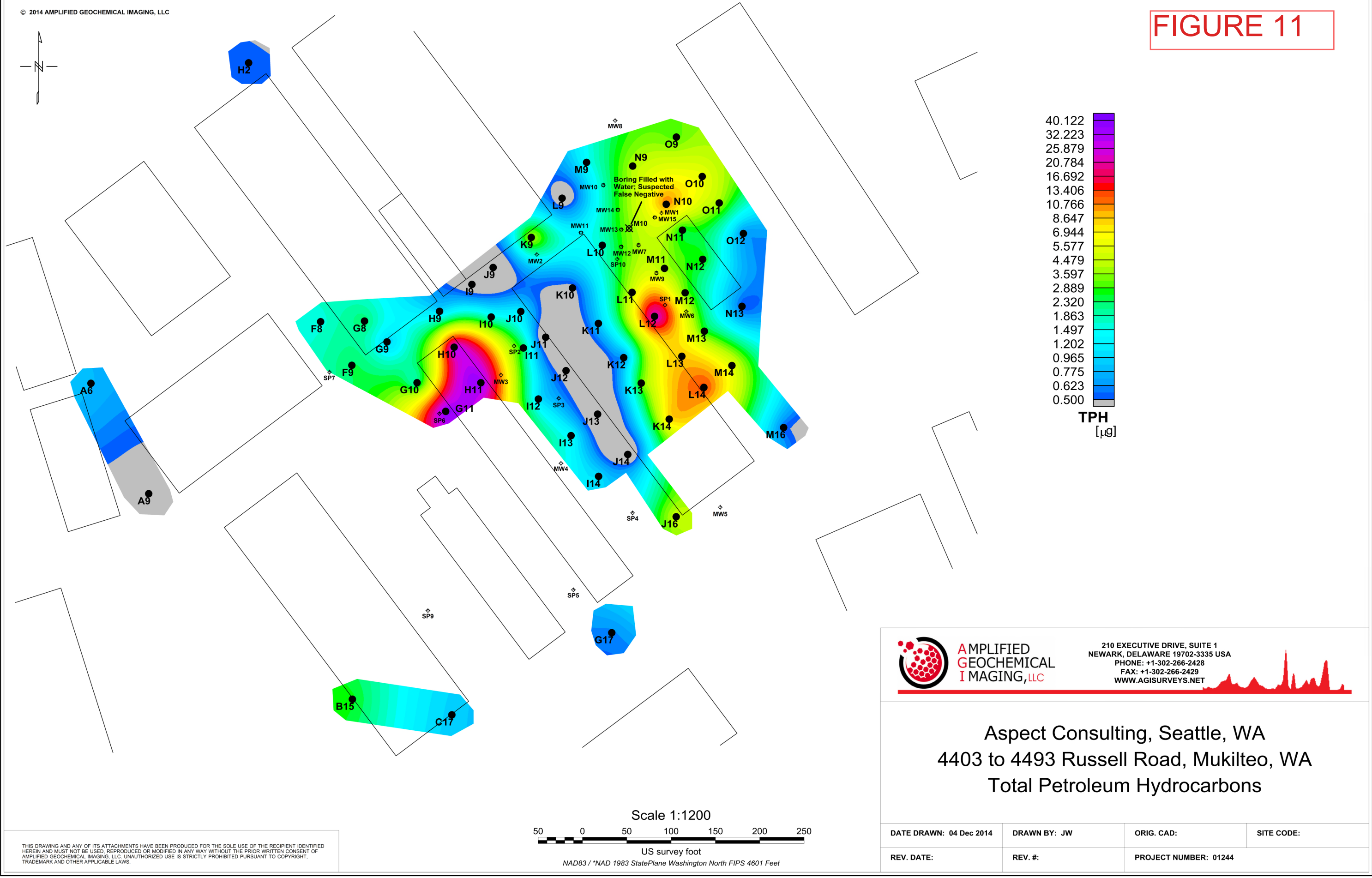


FIGURE 11



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FIGURE 12

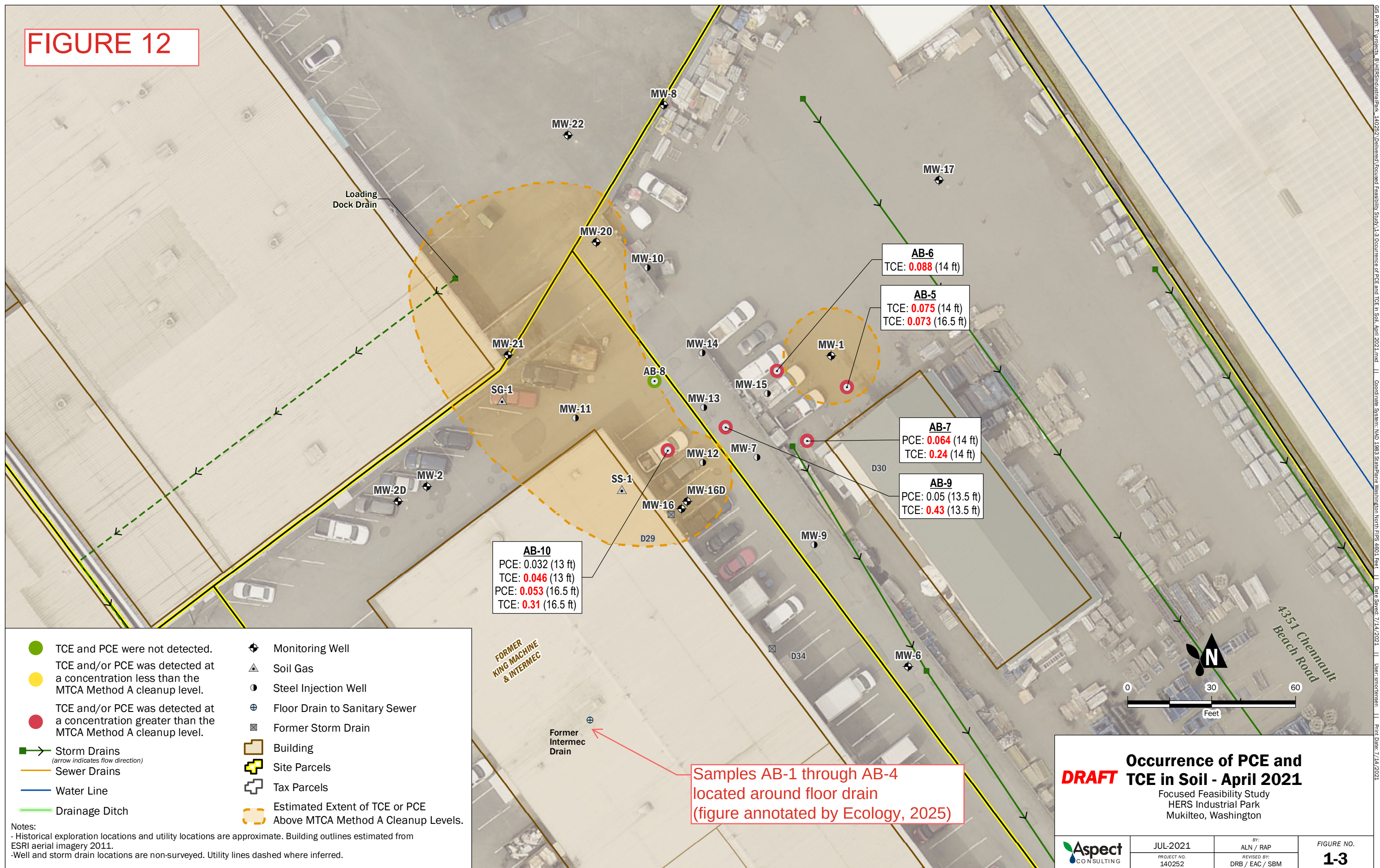


Table 1. MW-16D Groundwater Data Trend Plot

Project No. 140252, HERS Industrial Park, Mukilteo, Washington

Analyte Group		VOCs
Analyte		Trichloroethene (TCE)
Fraction Unit		T ug/L
Screening Levels for Groundwater ¹		5
Location	Date	
MW-16D	04/27/2015	24
	08/11/2015	10
	10/09/2019	2.4
	04/28/2021	30
	05/20/2022	13
	08/16/2022	11
	01/05/2023	11
	03/28/2023	12

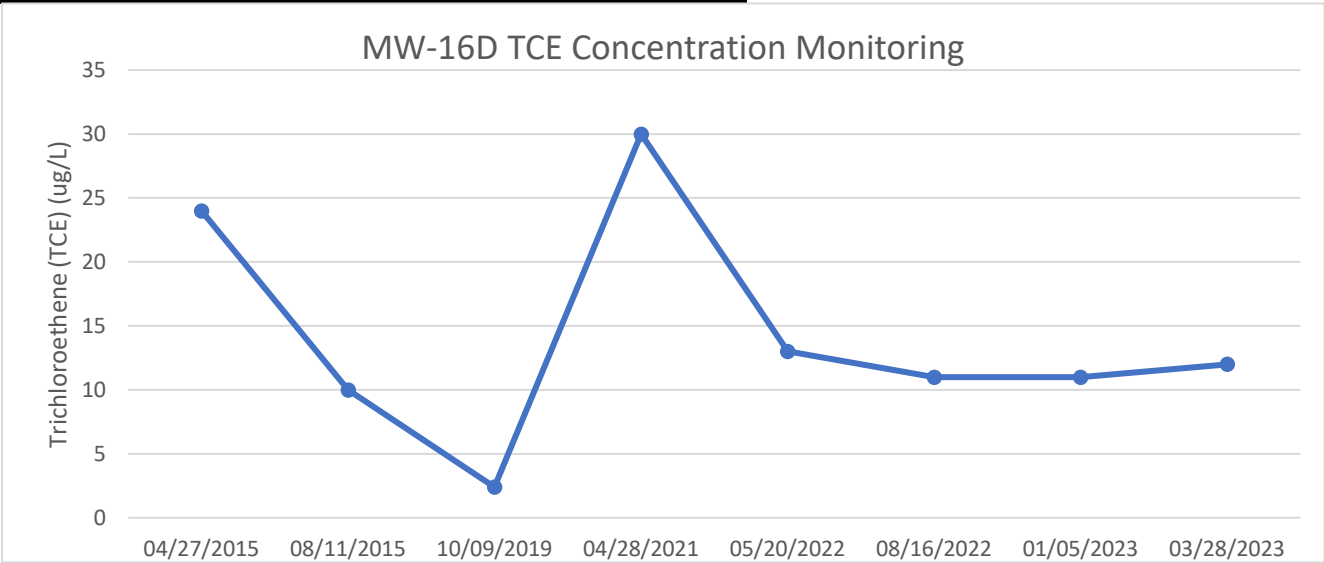
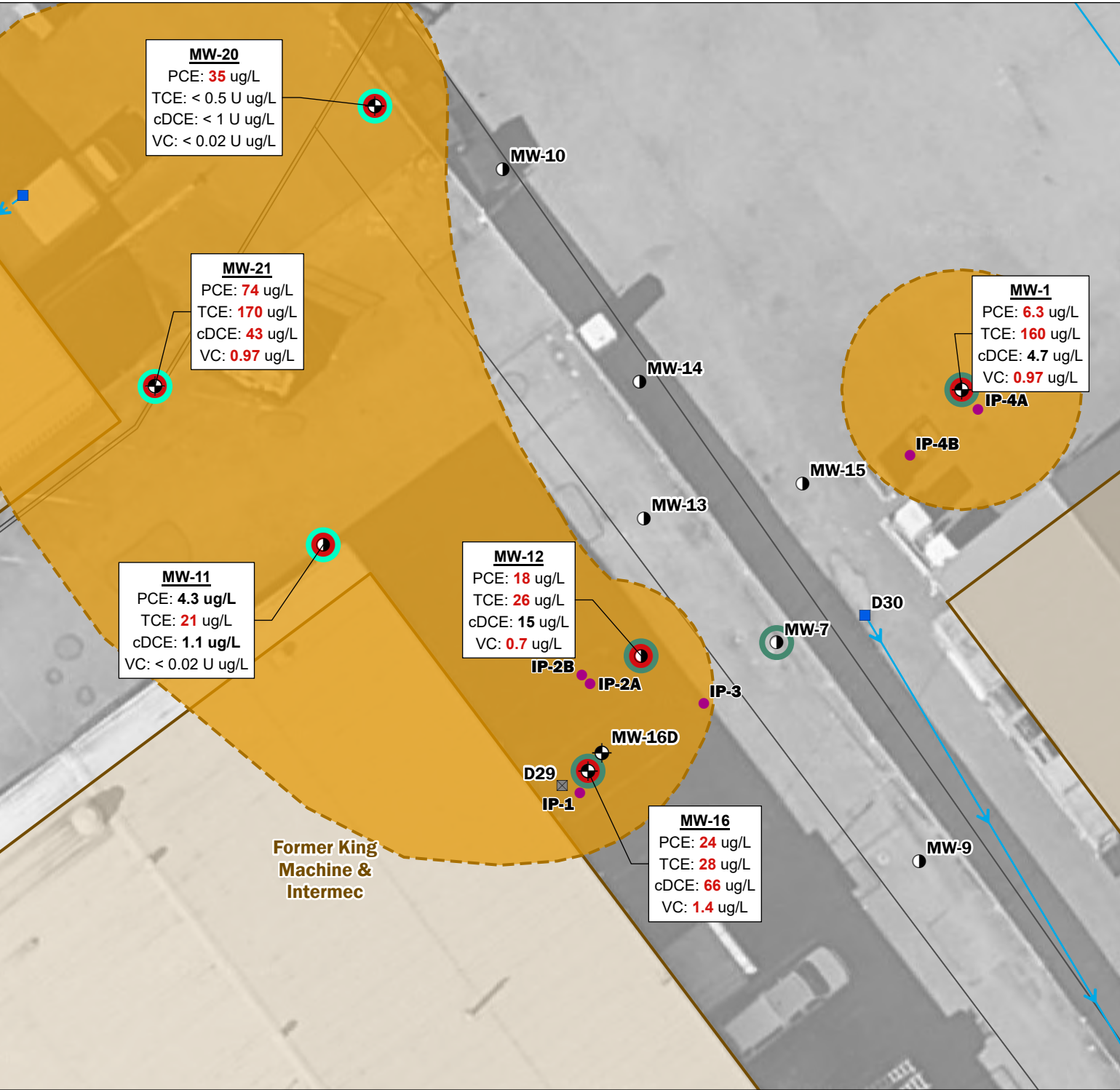
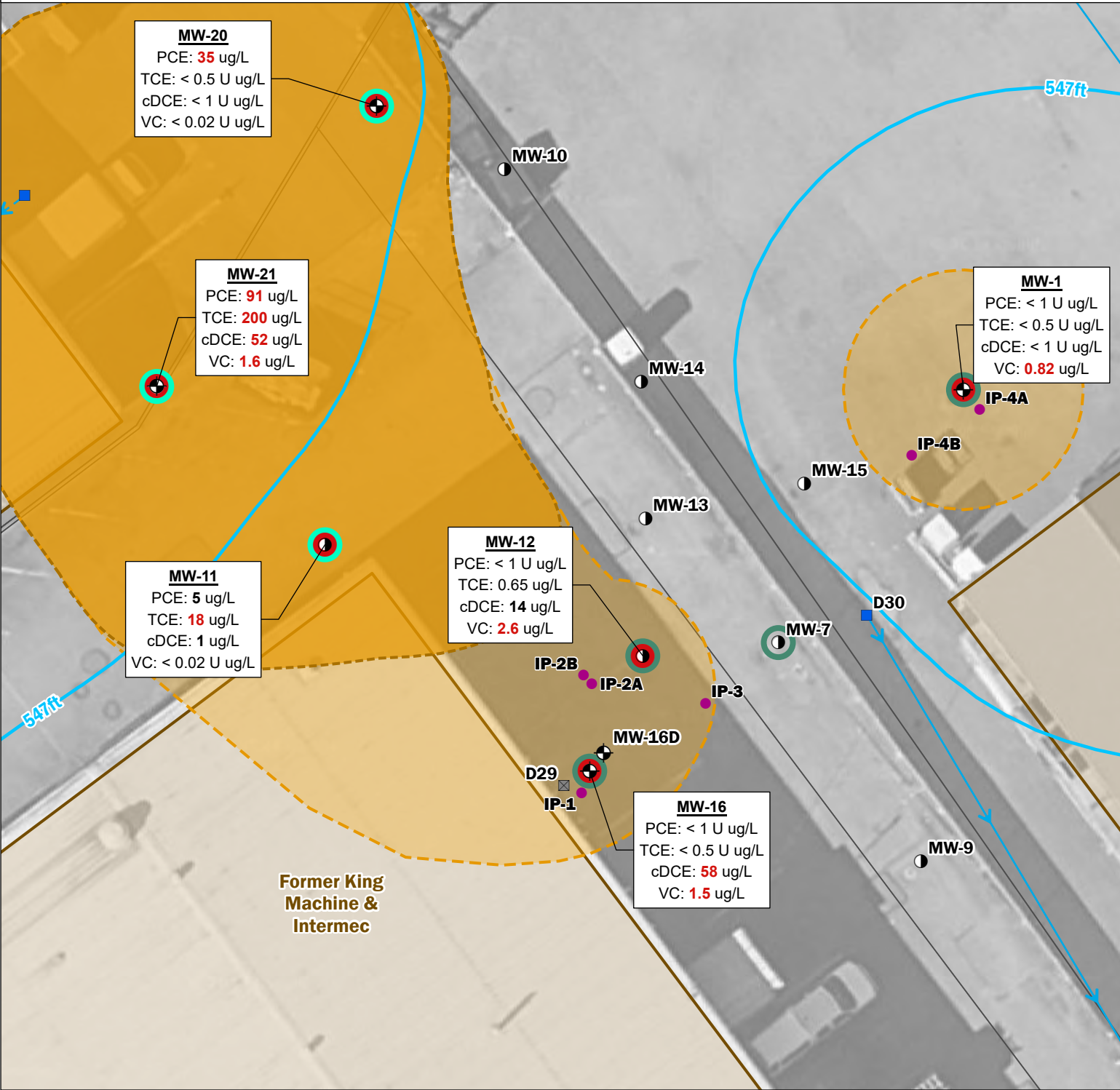


FIGURE 14

BASELINE PERFORMANCE MONITORING



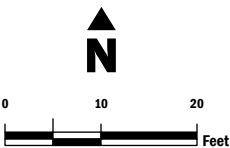
12 MONTH PERFORMANCE MONITORING



- COCs was detected at a concentration greater than the MTCA Method A cleanup level.
- Monitoring Well
- Steel Injection Well
- Completed Injection Point
- Performance and Operational Monitoring Location
- Performance Monitoring Location
- Estimated Extent of TCE and/or PCE above the CUL
- Estimated Extent of one or more CVOCs above CULs
- Groundwater Elevation Contours (Measured on March 28th2023)
- Storm Drain
- Former Storm Drain
- Storm Drain (arrow indicates flow direction)
- Building
- Tax Parcels

MTCA Cleanup Level (CUL)
PCE = 5 ug/L (Method A)
TCE = 5 ug/L (Method A)
cDCE = 16 ug/L (Method B)
VC = 0.2 ug/L (Method A)

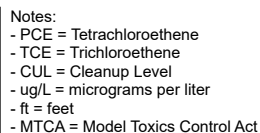
Notes:
- PCE = Tetrachloroethene
- TCE = Trichloroethene
- cDCE = cis-1,2-Dichloroethene
- VC = vinyl chloride
- CVOC = chlorinated volatile organic compound
- CUL = Cleanup Level
- ft = feet
- ug/L = micrograms per liter



Injection Pilot Test Summary
ISCR/EAB Pilot Test Results and Engineering Design
HERS Industrial Park
Mukilteo, Washington

	AUG-2024	DRB / HMD	FIGURE NO. 3
	PROJECT NO. AS140252	REVISED BY: NLK	

- Historical exploration locations and utility locations are approximate. Building outlines estimated from ESRI aerial imagery 2011.
- Well and storm drain locations are non-surveyed. Utility lines dashed where inferred.



Enclosure B

Basis for the Opinion: List of Reference Documents

1. Aspect Consulting, LLC (Aspect), 2024. *ISCR/EAB Pilot Test Results and Engineering Design Report, HERS Industrial Park, Mukilteo, Washington*. August 26.
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3. Aspect, 2021. *Revised Focused Feasibility Study, HERS Industrial Park, Mukilteo, Washington*. July 20.
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5. Department of Ecology (Ecology), 2018. Further Action Opinion (letter), VCP NW1554, HERS Industrial Park. June 28.
6. Aspect, 2018. *Groundwater Classification and Proposed Cleanup Standards, HERS Industrial Park Site, 4403 Russell Road, Mukilteo, Washington*. January 29.
7. Ecology, 2016. Opinion on Remedial Investigation/Feasibility Study (letter), VCP NW1554, HERS Industrial Park. November 8.
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11. The Riley Group (Riley), 2012. *Groundwater Sampling Event, 1st Quarter 2012, Russell Road Industrial Park (aka Hers Industrial Park), 4403 Russell Road, Mukilteo, Washington*. February 23.
12. Riley, 2009. *Groundwater Sampling Event – Third Quarter 2009, Russell Road Industrial Park (aka Hers Industrial Park), 4403 Russell Road, Mukilteo, Washington*. October 2.
13. Riley, 2009. *Groundwater Sampling Event – First Quarter 2009, Russell Road Industrial Park (aka Hers Industrial Park), 4403 Russell Road, Mukilteo, Washington*. March 26.
14. Riley, 2008. *Groundwater Sampling Event – Second Quarter 2008, Russell Road Industrial Park (aka Hers Industrial Park), 4403 Russell Road, Mukilteo, Washington*. August 20.
15. Riley, 2005. *Well Installation and Groundwater Sampling Event – Fourth Quarter 2005, HERS Industrial Park, 4403 Russell Road, Mukilteo, Washington*. December 27.
16. Riley, 2005. *Supplemental Phase II Subsurface Investigation, Hers Industrial Park, 4403 Russell Road, Mukilteo, Washington*. June 22.

17. Riley, 2005. *Phase I Environmental Site Assessment, Hers Industrial Park, 4403 Russell Road, Mukilteo, Washington*. June 20.
18. James P. Hurley Company (Hurley), 1996. *Site Assessment Report, HERS Industrial Park, 4403 to 4493 Russell Road and 4424 to 4480 Chennault Beach Road, Mukilteo, Washington*. September 25.
19. Hurley, 1995. *Phase II Environmental Site Assessment Report, 4403 to 4493 Russell Road and 4424 to 4480 Chennault Beach Road, Mukilteo, Washington*. August 3.
20. Hurley, 1995. *Combined UST Removal and Petroleum Contaminated Soil Cleanup Summary Report, 4493 Russell Road, Mukilteo, Washington*. July 24.
21. ATC Environmental, Inc. 1994. *Phase I Environmental Site Assessment, Hers Industrial Park, Mukilteo, Washington*. October 25.