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DEPARTMENT OF ECOLOGY
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April 27, 2021

Jin Shin
West View Mart
971 Ault Field Road
Oak Harbor, WA 98277-3619
(jinyoung-dj@comcast.net)

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

- **Site Name:** West View Mart
- **Site Address:** 971 Ault Field Road, Oak Harbor, WA 98277
- **Facility/Site No.:** 53233419
- **Cleanup Site ID No.:** 9580
- **VCP Project No.:** NW2373

Dear Jin Shin:

The Washington State Department of Ecology (Ecology) received your request for an opinion on the *Remedial Action Report* dated January 27, 2021 for the **West View Mart** 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. This opinion applies only to the Site described below.

Description of the Site

The Site is defined by the nature and extent of contamination associated with the following release:

- Gasoline-range petroleum hydrocarbons (TPH-G) and associated compounds of benzene, toluene, ethylbenzene, xylenes (BTEX) into the Soil and the Air.

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 associated with this Site is affected by other sites.

Basis for the Opinion

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

1. Zipper Geo Associates, LLC, 2021. *Remedial Action Report, West View Mart, 971 Ault Field Road, Oak Harbor, Island County, Washington*. January 27.

2. Zipper Geo Associates, LLC, 2020. *Cleanup Action Plan, West View Mart, 971 Ault Field Road, Oak Harbor, Island County, Washington*. January 10.

3. Zipper Geo Associates, LLC, 2018. *Remedial Investigation and Recommended Model Remedy Report, West View Mart, 971 Ault Field Road, Oak Harbor, Island County, Washington*. December 19.

4. Zipper Geo Associates, LLC, 2013. *Limited Remedial Investigation, West View Mart, 971 Ault Field Road, Oak Harbor, Island County, Washington*. December 5.

5. Associated Environmental Group, LLC (AEG), 2013. *Work Plan for Supplemental Remedial Investigation, West View Mart, 971 Ault Field Road, Oak Harbor, Washington*. April 16.

6. AEG, 2011. *Quarterly Groundwater Events – October 2010/February 2011 Report, West View Mart, 971 Ault Field Road, Oak Harbor, Washington*. February 28.

7. AEG, 2010. *Supplemental Remedial Investigation conducted on West View Mart, 971 Ault Field Road, Oak Harbor, Washington*. August 6.

8. AEG, 2009. *Subsurface Investigation, conducted on West View Mart, 971 Ault Field Road, Oak Harbor, Washington.* December 22.

9. AEG, 2007. *Phase I Environmental Site Assessment, conducted on West View Mart, 971 Ault Field Road, Oak Harbor, Washington.* December 28.

10. AEG, 2007. *Vapor Extraction System/Sampling and Analysis, West View Mart, 971 Ault Field Road, Oak Harbor, Washington.* August 8.

11. Slotta Design and Construction, 2004. *Results of Vapor Extraction System Monitoring, West View Mart Inc., 971 Ault Field Road, Oak Harbor, Washington 98277.* August 8.

12. Edge Analytical, 1996. *Independent Remedial Action Report for West View Mart, Ault Field Road, Oak Harbor, WA.* December 10.

13. Edge Analytical, 1995. *Status Report of Petroleum Cleanup – West View Mart, 971 Ault Field Road, Oak Harbor, WA.*

14. Materials Testing and Consulting, Inc., 1992. *Results of the UST Site Assessment, West View Mart, 971 Ault Field Road, Oak Harbor, Washington, 98277*. June.

In addition to the above documents, Ecology previously issued opinion letters dated July 13, 2013 and March 18, 2019.

A number of these documents are accessible in electronic format 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 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.

The following reference was also used:

Dragovich, J.D., Petro, G.T., Thorsen, G.W., Larson, S.L. Foster, G.R. and Norman, D.K., 2005. *Geologic Map of the Oak Harbor, Crescent Harbor and Part of the Smith Island 7.5-minute Quadrangles, Island County, Washington.* Washington Department of Natural Resources, Geologic Map No. 59. June.

Analysis and Opinion

Based on a review of the above documents, Ecology has determined:

- Excavations conducted in 2020 removed petroleum-contaminated soil on the Property to the maximum extent practicable to a depth of 15 feet below the ground surface (bgs).

  Based on confirmation soil samples collected in excavation sidewalls, soil containing TPH-G at concentrations exceeding the Site-specific Method B soil cleanup level of 2,561 milligrams per kilogram (mg/kg) remain on the Site. Soil containing TPH-G and benzene at concentrations exceeding Method B cleanup levels extends off the Property to the west at a depth of 15 feet bgs. Based on the results of the excavations, a Property-specific No Further Action determination with an Environmental Covenant can be issued by Ecology once the potential for vapor intrusion is investigated as requested below.
- Based on the confirmation soil sampling, TPH-G remains in soil adjacent to the west side

[1] https://apps.ecology.wa.gov/gsp/Sitepage.aspx?csid=9580
[2] https://ecology.wa.gov/publicrecords

of the Property building at concentrations of 7,300 mg/kg (depth = 3 feet) and 3,300 mg/kg (depth = 12 feet). Previous soil vapor sampling data on the north side of the building in 2017 and 2018 suggested that soil contaminated with benzene may extend beneath the building in that location. Because it is likely that the contamination extends beneath the building on the north and west sides, there is a potential for vapor intrusion. Ecology requested that sub-slab vapor be sampled in a previous opinion letter dated March 18, 2019. Please conduct sub-slab and/or indoor air sampling to investigate the potential vapor pathway.

- Ecology's opinion letter dated March 18, 2019 requested confirmation and investigation of the presence of two in-ground hydraulic hoists in the former automobile repair shop located south of the station building. The repair shop is labeled as 'mechanic' and 'garage' on report figures. A response to Ecology's opinion letter dated July 9, 2019 stated the repair shop would be inspected for the presence of the hoists and potentially use ground-penetrating radar in accessible portions of the building. Please conduct an inspection as indicated previously.

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) 649-7064 or by email at heather.vick@ecy.wa.gov.

Sincerely,

Heather Vick, LHg
Toxics Cleanup Program, NWRO

Enclosure (1): A – Description and Diagrams of the Site

cc: Holly Stafford, Chmelik, Sitkin & Davis P.S. (**hstafford@chmelik.com**)
Jon Einarsen, Zipper Geo Associates, LLC (**jeinarsen@zippergeo.com**)

Enclosure A

Description and Diagrams of the Site

Site Description

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

Site: The Site is defined as petroleum hydrocarbons released to soil located at 971 Ault Field Road in Oak Harbor, Washington (Property) (**Figure 1**). Total petroleum hydrocarbons in the gasoline range (TPH-G), benzene, toluene, ethylbenzene and xylenes (BTEX) in soil comprise the Site. The Property corresponds to Island County tax parcel number 13327-502-2990 and is 1.05 acres in size.

Area Description: Commercial and residential land uses surround the Property. The Property is bounded by Ault Field Road and undeveloped forested land to the north. Whidbey Island Naval Air Station occupies much of the area north of Ault Field Road. An auto rental office and a restaurant are located to the east, and Northwest Fog, a vaping lounge is to the west. Single family homes are located south and southeast of the Property.

Property History and Current Use: The Property was originally developed in the late 1940s and has been operated as a gasoline station since 1951. An automobile repair shop operated on the Property from 1951 until 1988, when the repair shop building was converted to a convenience store which has been in operation to the present.

The station building used oil for heating until approximately 1968 when it was converted to electric heat. From the 1980s to the present, the building has been heated with propane which is stored in a 150-gallon aboveground storage tank located on the south side of the convenience store.

The Property is currently occupied by a gasoline service station on the northern portion, an auto paint shop located adjacent to and south of the convenience store building, and a warehouse building on the far southern end of the Property (**Figure 2**).

Sources of Contamination: Potential contamination sources on the Site consist of leaks and spills associated with the former underground storage tanks (USTs, fuel product pipelines and dispenser islands).

Originally, there were five underground storage tanks (USTs) on the west side of the station building, including two 1,000-gallon diesel USTs, two 2,000-gallon gasoline USTs, and one 500-gallon heating oil or waste oil tank. In the late 1970s, an 8,000-gallon unleaded gasoline UST was added on the east side of the store building. In addition, there were two in-ground hydraulic hoists and a sump in association with the automobile repair shop.

In 1991, the five USTs located west of the convenience store building were removed as was the UST on the east side of the building. Petroleum-contaminated soil at concentrations exceeding MTCA cleanup levels was left in place in both locations. Releases from the former USTs and resulting petroleum-contaminated soil are sources on the Site. Subsequent to decommissioning of the previous USTs in 1991, a new UST system was installed in the northern portion of the Site adjacent to the south side of Ault Field Road (**Figure 2**).

Physiographic Setting: The Site is located within the Puget Sound Lowland Physiographic Province, a north-south trending structural and topographic depression 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 glacial and non-glacial sediments. The land surface of Whidbey Island is covered with recent glacial and interglacial deposits which reach several thousand feet in thickness.

The Site and surrounding area are located at the south edge of the Clover Valley. The elevation of the Property is approximately 155 feet above mean sea level. The land surface in the vicinity of the Property slopes to the north toward Clover Valley; however, the Property is relatively flat.

Surface/Storm Water System: Surface water runoff in the area is generally collected in drainage ditches and likely discharges to the Strait of Juan de Fuca, the closest surface water body, located approximately 1½ miles west of the Property.

Ecological Setting: There is extensive undeveloped forest land in the vicinity of the Site, which most likely provides terrestrial habitat in the area.

Geology: Geologic materials directly underlying the Site are mapped as stratified ice contact deposits (diamicton or glacial till) of the Fraser glaciation overlying the Whidbey Formation, an interglacial deposit. On the Property, fill materials were encountered in the areas excavated for the former USTs located on the west and east sides of the convenience store. The fill consists of silty, gravelly sand and extends to depths of approximately 9 to 12 feet below the ground surface (bgs) in those areas. Glacial till occurs on the Property beneath the fill to depths of about 20 feet bgs. A dense, well-sorted sand (Whidbey Formation) underlies the till to a depth of at least 56.5 feet bgs which is the maximum depth explored on the Site.

Groundwater: Groundwater was only encountered within the UST backfill at boring B-1 located east of the convenience store. This localized water most likely collected within sand used to backfill the excavation pit following previous tank removal activities. Due to up to 20 feet of glacial till on the Property, there is limited groundwater recharge. Observations from the borings on the Property, which extended to a maximum depth of 56.5 feet bgs, indicated little or no groundwater within this depth range. Groundwater most likely occurs deeper in the Whidbey Formation. Based on topographic contours, the groundwater flow direction on the Property is most likely to the north-northwest.

In addition, monitoring wells MW-1 through MW-4, installed in June 2010 during the Supplemental Remedial Investigation and screened from 10 to 30 feet bgs, were all found to be dry in July and October, 2010 and February 2011. A fifth monitoring well, MW-5, drilled in 2017 to a depth of 56.5 feet bgs and screened from 45 to 55 feet bgs, also did not encounter groundwater. Locations of the monitoring wells are shown on Figure 2.

A drinking water well drilled to a depth of 159 feet bgs in 1959, in the same quarter-quarter section as the Site, encountered gravel to 9 feet bgs, hardpan to 16 feet bgs and dry sand to 55 feet bgs. The static water level in the borehole occurred at a depth of 123.5 feet bgs. Two other

domestic water supply wells within 700 feet of the Property encountered groundwater during drilling at depths of 80 and 167.5 feet bgs.

Based on the above conditions, it is likely that the soil to groundwater pathway on the Site is incomplete.

Release and Extent of Contamination - Soil: The six original USTs were decommissioned in November 1991. The tanks were located in two basins, five USTs were in a basin on the west side of the West View Mart station building and one UST in a basin on the east side. The basin on the west side of the building contained two 1,000-gallon diesel USTs, two 2,000-gallon gasoline USTs, and one 500-gallon heating oil or waste oil tank. The basin on the east side of the building contained an 8,000-gallon gasoline UST.

Soil encountered during removal of the tanks had a heavy petroleum sheen and odor. Petroleum-contaminated soil was over-excavated to an undocumented depth and stockpiled on the Site. Excavation was limited due to close proximity of the convenience store and an off-Property building to the west. As a result, petroleum-contaminated soil was left in place; however, no drawings showing the excavated area and locations of soil samples collected are available. No groundwater was reportedly encountered in the excavation.

A Site Assessment was conducted by Materials Testing and Consulting, Inc. at the time of the tank decommissioning and a report was produced in 1992. Ecology has not yet obtained a copy of the report. Partial information from the report indicates that soil samples were collected from excavation pits and soil borings drilled for the vapor extraction system (VES) extraction wells. Two of the borings, TH-5 and TH-6, drilled at the northeast and southeast corners respectively of the new pump island, yielded samples containing TPH-G at concentrations ranging from 486 to 1,125 mg/kg and benzene ranging from 16.5 to 29.3 mg/kg at depths of 23 feet bgs. These concentrations exceeded Method A cleanup levels.

The sixth UST, an 8,000-gallon gasoline tank, was removed from the east side of the building, also in 1991. Soil encountered during removal reportedly smelled of petroleum. The excavation pit of the tank was structurally limited to the east and west by the West View Mart station building and the Property boundary. However, the pit was reportedly over-excavated and soil confirmation samples were collected that indicated the contaminated soil had been removed. In total, approximately 300 cubic yards of contaminated soil were removed from the Site following the removal of the six USTs.

Contaminated soil was also encountered during excavation of the new tank basin in the north portion of the Property, constructed in the area north of the pump island in 1991. Four new USTs were installed, including three 6,000-gallon gasoline USTs (regular, plus and super grade tanks) and one 2,000-gallon diesel UST. All of the new USTs were single-walled steel tanks with an epoxy resin coating. The associated product lines were single-walled suction style piping. Contaminated soil reportedly still remained in the basin.

A Subsurface Investigation was conducted in 2009 to determine if petroleum-contaminated soil remained on the Site in concentrations exceeding MTCA cleanup levels following the VES remedial effort. Soil samples from five out of six soil borings advanced contained TPH-G and BTEX exceeding Method A cleanup levels with maximum concentrations of TPH-G of 7,720 mg/kg and benzene of 2.8 mg/kg.

A Supplemental Remedial Investigation (RI) conducted in 2010 consisted of the advancement of four soil borings and installation of four monitoring wells (MW-1 through MW-4) in the borings. Data collected in 2010 indicated petroleum-contaminated soil containing TPH-G and BTEX above Method A cleanup levels remained primarily within the upper 15 to 20 feet bgs in the areas described above. No other petroleum-associated compounds were detected in soil at levels exceeding cleanup levels. No groundwater was observed in the monitoring wells.

A Limited RI conducted in 2013 included the advancement of four soil borings (GP-1 through GP-4) in areas previously investigated on the Site (**Figure 4**). Two soil samples were collected from each boring. Concentrations of TPH-G exceeded Method A in seven of the eight samples. Four of the eight soil samples collected from the borings were analyzed for volatile organic compounds and volatile petroleum hydrocarbons (VPH) in order to calculate a Site-specific, direct contact pathway Method B cleanup level for total petroleum hydrocarbons. However, no extractible petroleum hydrocarbons (EPH) were analyzed in the samples. A Method B cleanup level for direct contact of 2,707 mg/kg was calculated using the VPH fractions. A Site-specific Method B soil to groundwater pathway cleanup level of 35.5 mg/kg was also calculated using the data.

An RI report dated December 19, 2018 recommended a Site-specific Method B soil cleanup level for TPH of 2,561 mg/kg and a Method B soil cleanup level of 18.2 mg/kg for benzene. The Site-specific TPH cleanup level was recalculated in 2017 using the results of three additional soil samples.

Extent of Contamination – Groundwater: Groundwater impacts from the Site are unlikely as no groundwater has been encountered to the maximum depth explored of 56.5 feet bgs. No groundwater was encountered in four monitoring wells (MW-1 through MW-4) installed on the Site in 2010, screened from 25 to 30 feet bgs. As described above, the monitoring wells were checked for the presence of water on 2 occasions in 2010 and 2011, with none observed.

In 2017, a fifth monitoring well (MW-5) was drilled to 56.5 feet bgs and screened from 45 to 55 feet bgs with no groundwater encountered during drilling or in subsequent measurements. In August 2020, all five monitoring wells were again checked for the presence of groundwater prior to decommissioning and found to be dry.

The distance between the deepest soil contamination encountered (25 feet bgs) and the estimated minimum depth to saturation (greater than 56.5 feet bgs) is 31.5 feet. This vertical separation and the limited permeability of shallow subsurface materials consisting of glacial till present at the Site indicate that groundwater below the Property is most likely unimpacted by contaminant sources identified on the Site.

Extent of Contamination – Air: Soil vapor explorations were conducted using six 'deep' temporary soil gas probes (SV-1A/SV-1B through SV-5) advanced in August 2017 and five 'shallow' temporary soil vapor explorations (SSV-1 through SSV-5) advanced in September 2018 (**Figures 5 and 6**).

Soil vapor probe samples were collected using the post-run tubing method and a direct-push drilling device. Soil gas samples were collected in 1-liter summa canisters that were confirmed to maintain a minimum vacuum of 25 inches of mercury prior to use. The integrity of each summa canister was confirmed with a shut-in test. In addition, as a tracer test, clean rags doused with 2-propanol (rubbing alcohol) were wrapped around the sample train fittings, and around the top of the probe where it penetrated the ground surface. The purpose of the tracer test was to verify the effectiveness of the seals and confirm that the soil sample was not diluted or otherwise impacted by atmospheric air.

The deep soil gas probes SV-1A/SV-1B through SV-5 were advanced to a depth of 15 feet bgs, except for SV-1B which was advanced to 8 feet bgs. No sample was collected in probe SV-1A due to a failed sampling device or in SV-1B which encountered refusal prior to reaching sample collection depth. Soil vapor samples were collected in probes SV-2 through SV-5. Benzene was detected at concentrations exceeding the CLARC deep soil gas screening level, ranging from 51 to 31,000 micrograms per cubic meter (g/m^3). Ethylene and APH EC5-8 aliphatics were also detected at concentrations exceeding deep soil gas screening levels.

Shallow soil gas probes SSV-1 through SSV-5 were each advanced to a depth of 5 feet bgs. The locations of SSV-1 through SSV-5 were not sited to confirm the results of SV-2 through SV-5. The shallow soil gas probes contained benzene up to 35 g/m^3 which is below the modified soil gas (commercial) screening level of 35.61 g/m^3.

Interim Action: In 1991, a vapor extraction system (VES) was installed and operated on the Property shortly after the UST removal and soil excavation were completed. The VES was installed to address remaining petroleum-contaminated soil which was not accessible for excavation. The VES consisted of nine 4-inch diameter soil vapor extraction wells installed west, north and east of the West View Mart station building and connected by horizontal piping. The horizontal piping was connected to an air compressor located west of the building. By 1995, readings from the VES had decreased from 2,000 ppm to 25 ppm indicating that the system, after affecting the area of influence, had reached diminishing returns.

A 2004 evaluation of the VES concluded that the system was continuing to remove concentrations of petroleum hydrocarbon constituents and that concentrations continued to decrease. However, the evaluation also concluded that a residual volume of petroleum hydrocarbon-impacted soil was likely still present in all of the VES well locations. The evaluation report stated that there was likely soil remaining on the Site containing petroleum hydrocarbons that exceeded MTCA cleanup levels.

The evaluation report recommended that the maintenance be performed on the VES and that an air sparging system be installed to enhance the recovery. It is unclear how long the VES system

was in operation after 2004. Vapor samples collected in 2007 from four of the nine VES wells indicated that one of the wells contained TPH-G and BTEX which suggested that soil contamination was still present in the area influenced by the VES. The VES was determined to be in need of maintenance and repair at that time and was likely not operated after 2007.

Eight (EW-1 through EW-8) of the nine VES wells were decommissioned in 2020. One of the VES wells, EW-9, could not be located. Locations of the VES wells are shown on **Figure 2**.

Remedial Excavation: Remedial excavations were conducted on the Site in August and September 2020.

A temporary shoring design plan using custom-made trench boxes to facilitate digging the excavations was prepared by a Washington-state registered professional engineer and approved by Island County. The trench boxes were designed to allow excavation to a maximum depth of 15 feet bgs in each of the excavations.

Use of the trench boxes required dewatering if groundwater was encountered at depths less than 15 feet bgs. No groundwater was encountered during excavation activities except minimal isolated pockets of water accumulated in tank backfill.

Four excavations (A through D) were conducted on the Site. The work and results in each area is described below. Soil left in place and described below as inaccessible was due to overhang of building limiting backhoe access and also to prevent undermining of the building foundation.

Area A located west of the gas station building (**Figure 7**) consisted of Zones 1 through 4. In Zone 1, contaminated soil was removed with inaccessible soil containing TPH-G concentrations (2,600 to 7,300 mg/kg) above the Method B cleanup level in the north, east and west sidewalls at depths of 3 to 15 feet bgs. In Zone 2, contaminated soil was removed with inaccessible soil containing TPH-G concentrations (3,300 to 4,500 mg/kg) and benzene above the Method B cleanup level in the east and west sidewalls at depths of 12 to 15 feet bgs. All soil in Zones 3 and 4 contaminated with TPH-G and BTEX was removed to below Method B cleanup levels.

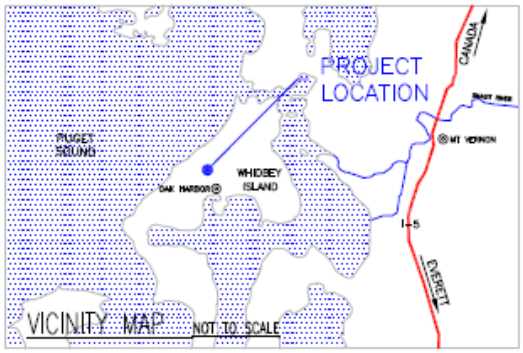
Area B located east of the station building (**Figure 7**) consisted of Zones 1 through 3. All soil in Zones 1 through 3 contaminated with TPH-G and BTEX was removed to below Method B cleanup levels.

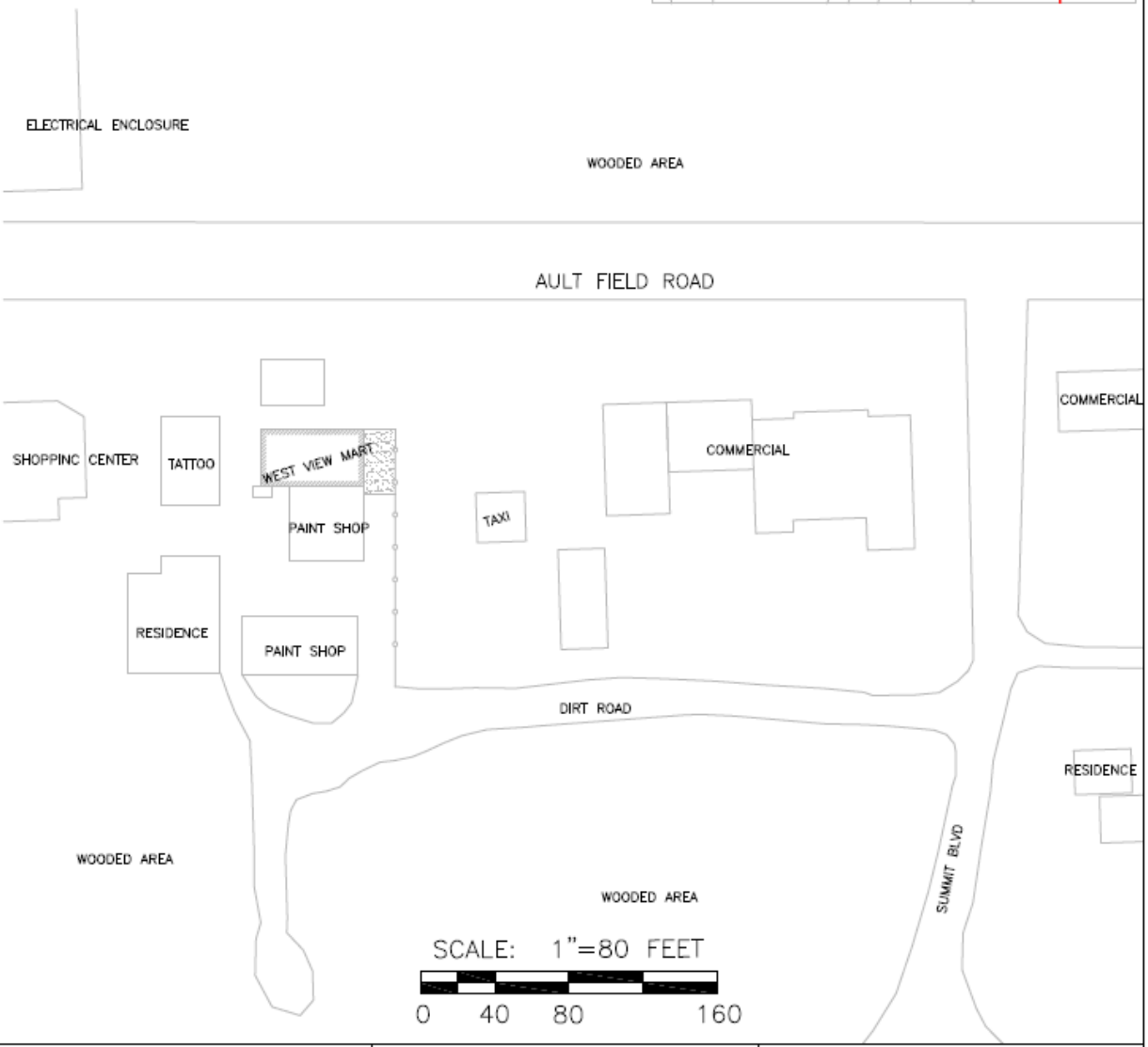
Area C was located northwest the station building and the fuel island (**Figure 8**). Contaminated soil was removed, with inaccessible soil containing TPH-G concentrations (3,400 to 4,400 mg/kg) above the Method B cleanup level remaining in the east and south sidewalls at depths of 3 and 10 feet bgs.

Area D was located north of the station building and east of the fuel island (**Figure 8**). All soil in Area D contaminated with TPH-G and BTEX was removed to below Method B cleanup levels.

Site Diagrams

Notes: (a) The locations of all features shown are approximate.
(b) This drawing is for information purposes.
It is intended to assist in showing features discussed in an attached document.
Reference: Drawing created from sketch provided by AEGs' personnel.





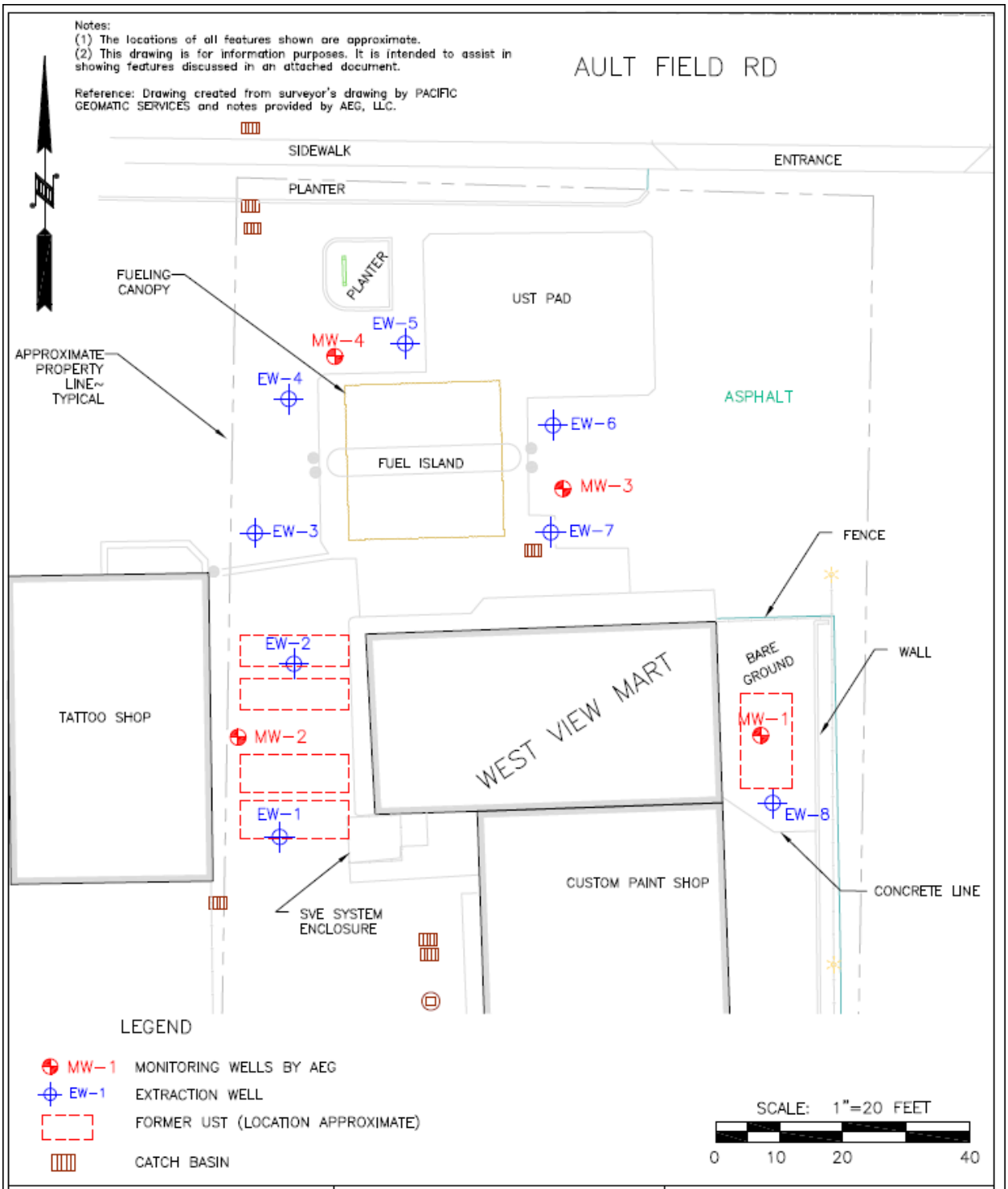
ASSOCIATED ENVIRONMENTAL GROUP, LLC
1016 CAPITOL WAY S, Suite 201
Olympia, WA 98501
(360) 352-9835 Fax (360) 352-8164

FIGURE 1

SITE & VICINITY MAP

WEST VIEW MART
971 AULT FIELD RD
OAK HARBOR, WA

Project# 07-199	Date: 12/01/2009
File: WEST VIEW MART	Sheet 1 OF 2



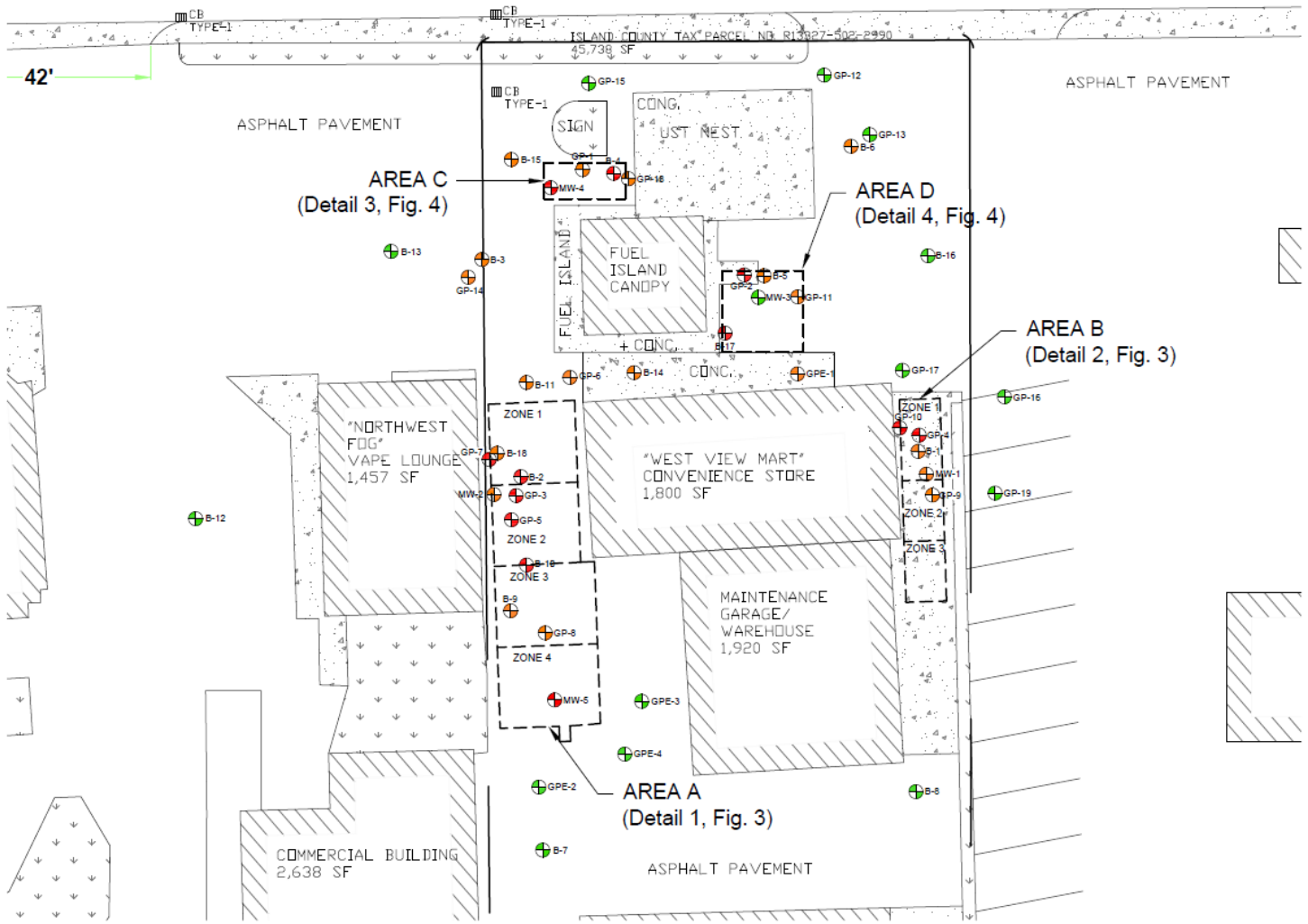
ASSOCIATED ENVIRONMENTAL GROUP, LLC
1016 CAPITOL WAY S, Suite 201
Olympia, WA 98501
(360) 352-9835 Fax (360) 352-8164

FIGURE 2

SITE PLAN

WEST VIEW MART
971 AULT FIELD RD
OAK HARBOR, WA

Project# 07-199	Date: 8/2/2010
File: WEST VIEW MART	Sheet 2 OF 2



LEGEND

- B-1 — Soil boring ID and approximate location. GREEN indicates TPH not reported above laboratory MRLs in any samples from borehole.
- B-1 — Soil boring ID and approximate location. ORANGE indicates TPH reported above laboratory MRLs but below MTCA Method B CULs in an at least one sample from borehole.
- B-1 — Soil boring ID and approximate location. RED indicates TPH reported above MTCA Method B CULs in an at least one sample from borehole.
- Approximate location and lateral extent of remedial excavation.

N

20 0 10 20
SCALE IN FEET

REFERENCE: GOOGLE EARTH SATELLITE IMAGE, 2018. ALL LOCATIONS ARE APPROXIMATE.

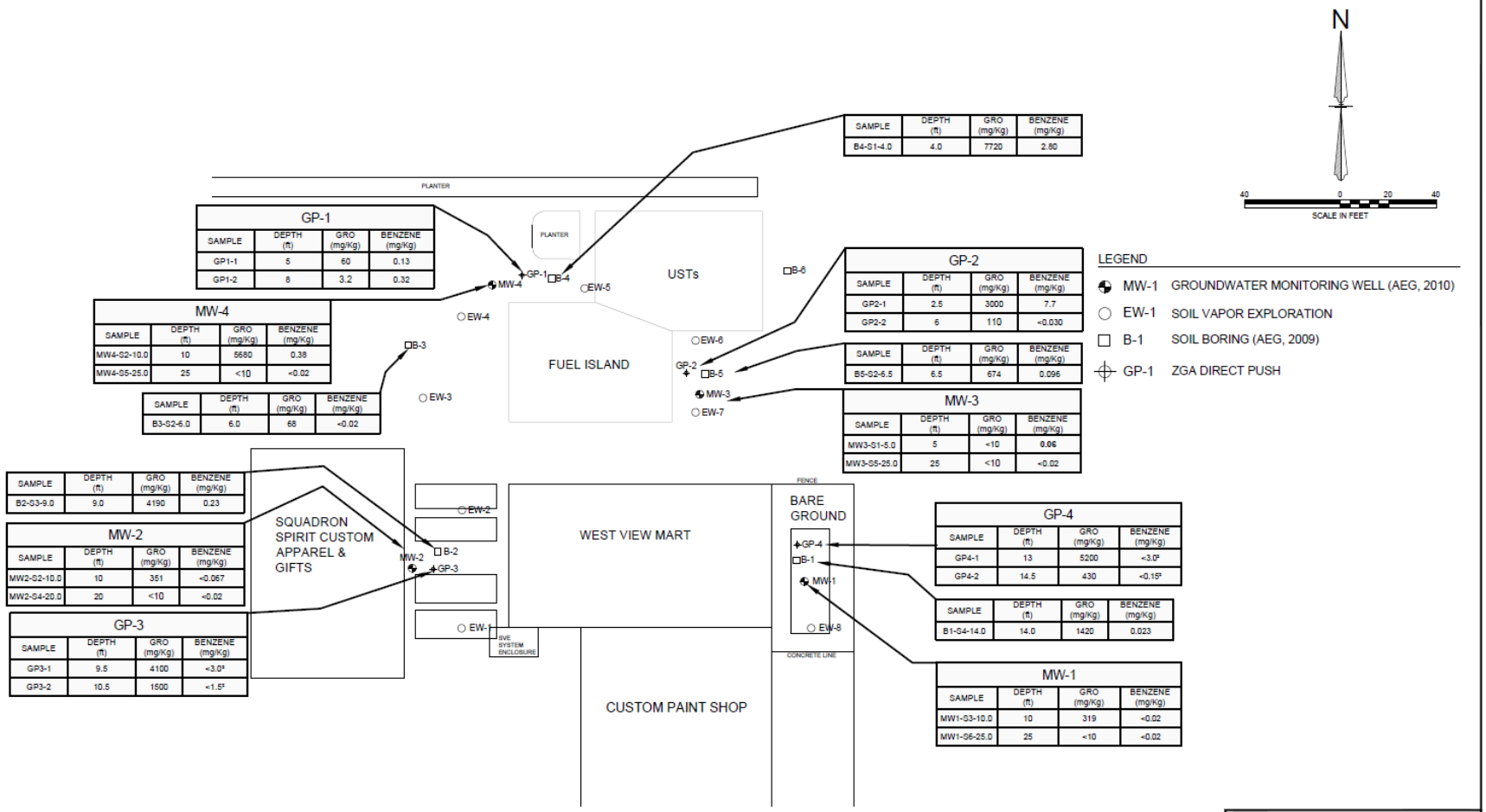
WEST VIEW MART REMEDIAL ACTION
971 Ault Field Rd.
Oak Harbor, Washington

PRE-REMEDIATION SOIL CHARACTERIZATION

DATE: NOVEMBER 2020 | Job No. 1195.25

Zipper Geo Associates, LLC
19019 36th Ave. W.,Suite E
Lynnwood, WA

FIGURE 3
SHT. 1 of 1



GP-1			
SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
GP1-1	5	60	0.13
GP1-2	8	3.2	0.32

SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
B4-S1-4.0	4.0	7720	2.80

MW-4			
SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
MW4-S2-10.0	10	5680	0.38
MW4-S5-25.0	25	<10	<0.02

SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
B3-S2-6.0	6.0	68	<0.02

GP-2			
SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
GP2-1	2.5	3000	7.7
GP2-2	6	110	<0.030

SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
B5-S2-6.5	6.5	674	0.096

MW-3			
SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
MW3-S1-5.0	5	<10	0.06
MW3-S5-25.0	25	<10	<0.02

SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
B2-S3-9.0	9.0	4190	0.23

MW-2			
SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
MW2-S2-10.0	10	351	<0.067
MW2-S4-20.0	20	<10	<0.02

GP-3			
SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
GP3-1	9.5	4100	<3.0[3]
GP3-2	10.5	1500	<1.5[3]

GP-4			
SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
GP4-1	13	5200	<3.0[3]
GP4-2	14.5	430	<0.15[3]

SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
B1-S4-14.0	14.0	1420	0.023

MW-1			
SAMPLE	DEPTH (ft)	GRO (mg/Kg)	BENZENE (mg/Kg)
MW1-S3-10.0	10	319	<0.02
MW1-S6-25.0	25	<10	<0.02

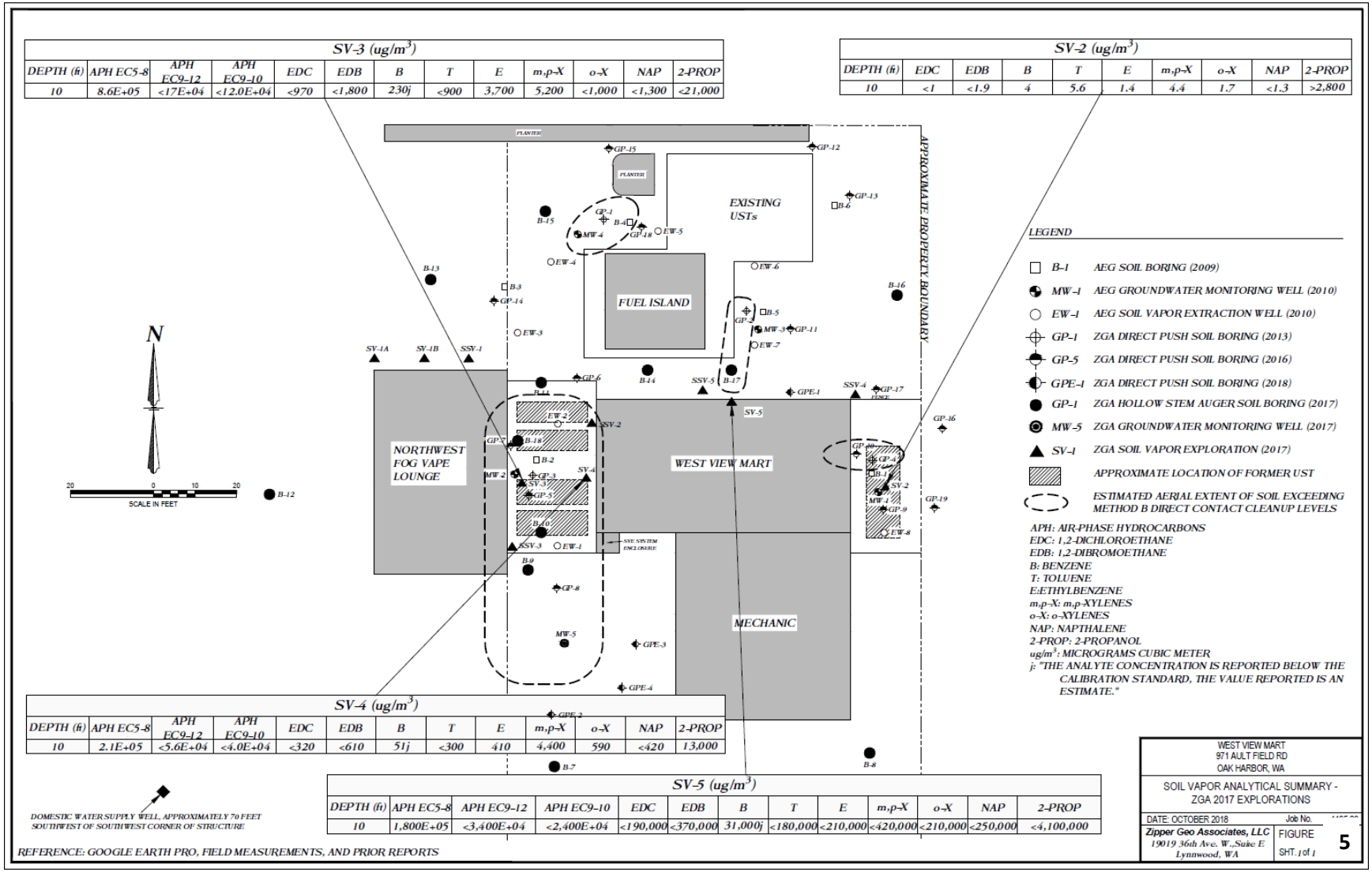
WEST VIEW MART
971 AULT FIELD RD
OAK HARBOR, WA

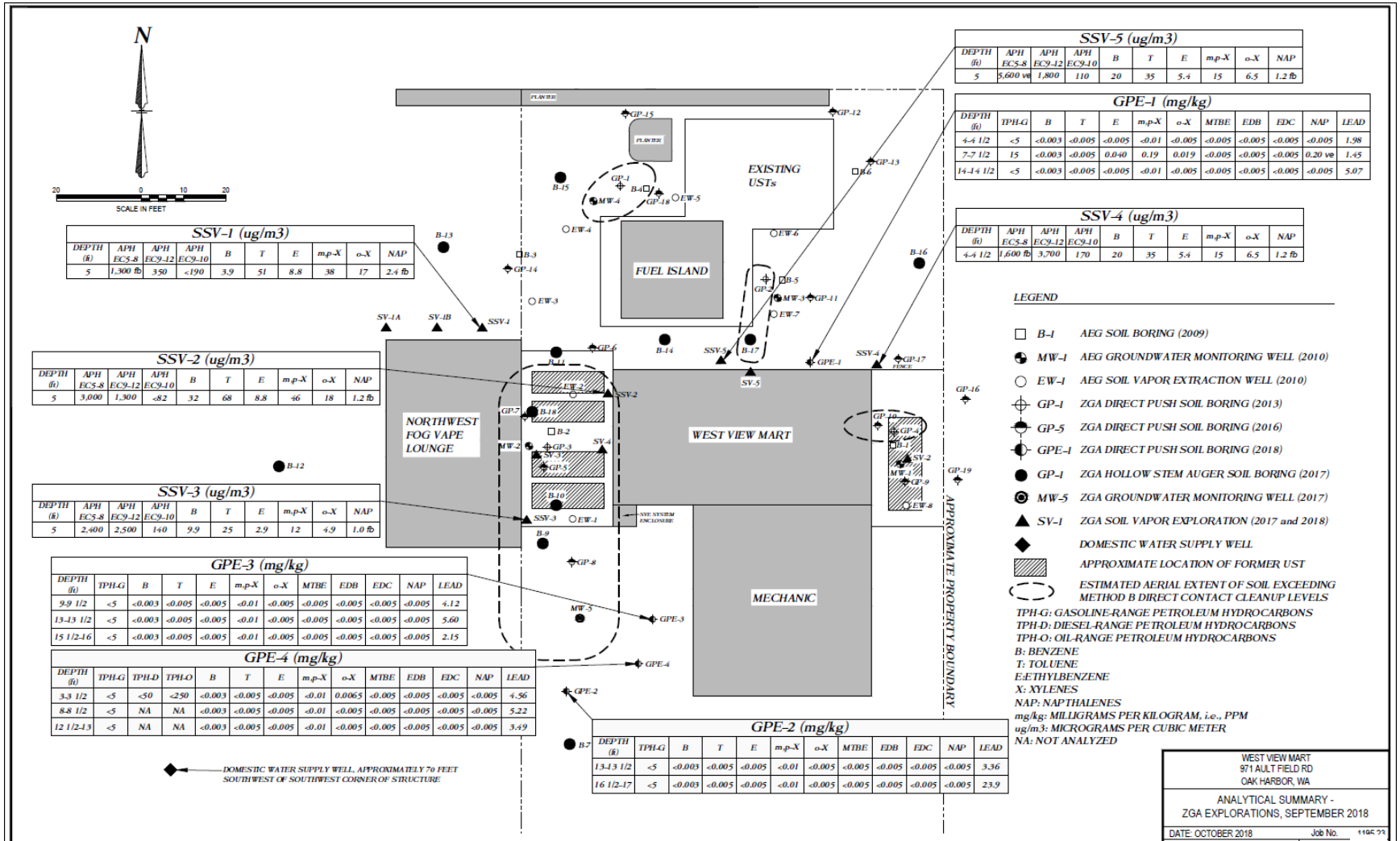
SOIL ANALYTICAL RESULTS
(ALL INVESTIGATIONS)

DATE: OCTOBER 2013 Job No. 1195.22

Zipper Geo Associates, LLC
19023 36th Ave. W.,Suite D
Lynnwood, WA

FIGURE 4
SHT. 1 of


SV-3 (ug/m3)
DEPTH (ft) | APH EC5-8 | APH EC9-12 | APH EC9-10 | EDC | EDB | B | T | E | m,p-X | o-X | NAP | 2-PROP
10 | 8.6E+05 | <17E+04 | <12.0E+04 | <970 | <1,800 | 230j | <900 | 3,700 | 5,200 | <1,000 | <1,300 | <21,000
SV-2 (ug/m3)
DEPTH (ft) | EDC | EDB | B | T | E | m,p-X | o-X | NAP | 2-PROP
10 | <1 | <1.9 | 4 | 5.6 | 1.4 | 4.4 | 1.7 | <1.3 | >2,800
APPROXIMATE PROPERTY BOUNDARY
EXISTING USTs
FUEL ISLAND
NORTHWEST FOG VAPE LOUNGE
WEST VIEW MART
MECHANIC
PLANTER
SVE SYSTEM ENCLOSURE
FENCE
N
SCALE IN FEET
LEGEND
B-1 AEG SOIL BORING (2009)
MW-1 AEG GROUNDWATER MONITORING WELL (2010)
EW-1 AEG SOIL VAPOR EXTRACTION WELL (2010)
GP-1 ZGA DIRECT PUSH SOIL BORING (2013)
GP-5 ZGA DIRECT PUSH SOIL BORING (2016)
GPE-1 ZGA DIRECT PUSH SOIL BORING (2018)
GP-1 ZGA HOLLOW STEM AUGER SOIL BORING (2017)
MW-5 ZGA GROUNDWATER MONITORING WELL (2017)
SV-1 ZGA SOIL VAPOR EXPLORATION (2017)
APPROXIMATE LOCATION OF FORMER UST
ESTIMATED AERIAL EXTENT OF SOIL EXCEEDING METHOD B DIRECT CONTACT CLEANUP LEVELS
APH: AIR-PHASE HYDROCARBONS
EDC: 1,2-DICHLOROETHANE
EDB: 1,2-DIBROMOETHANE
B: BENZENE
T: TOLUENE
E:ETHYLBENZENE
m,p-X: m,p-XYLENES
o-X: o-XYLENES
NAP: NAPTHALENE
2-PROP: 2-PROPANOL
ug/m3: MICROGRAMS CUBIC METER
j: "THE ANALYTE CONCENTRATION IS REPORTED BELOW THE CALIBRATION STANDARD, THE VALUE REPORTED IS AN ESTIMATE."
SV-4 (ug/m3)
DEPTH (ft) | APH EC5-8 | APH EC9-12 | APH EC9-10 | EDC | EDB | B | T | E | m,p-X | o-X | NAP | 2-PROP
10 | 2.1E+05 | <5.6E+04 | <4.0E+04 | <320 | <610 | 51j | <300 | 410 | 4,400 | 590 | <420 | 13,000
SV-5 (ug/m3)
DEPTH (ft) | APH EC5-8 | APH EC9-12 | APH EC9-10 | EDC | EDB | B | T | E | m,p-X | o-X | NAP | 2-PROP
10 | 1,800E+05 | <3,400E+04 | <2,400E+04 | <190,000 | <370,000 | 31,000j | <180,000 | <210,000 | <420,000 | <210,000 | <250,000 | <4,100,000
DOMESTIC WATER SUPPLY WELL, APPROXIMATELY 70 FEET SOUTHWEST OF SOUTHWEST CORNER OF STRUCTURE
REFERENCE: GOOGLE EARTH PRO, FIELD MEASUREMENTS, AND PRIOR REPORTS
WEST VIEW MART
971 AULT FIELD RD
OAK HARBOR, WA
SOIL VAPOR ANALYTICAL SUMMARY - ZGA 2017 EXPLORATIONS
DATE: OCTOBER 2018
Job No.
Zipper Geo Associates, LLC
19019 36th Ave. W.,Suite E
Lynnwood, WA
FIGURE
SHT. 1 of 1
5



SSV-1 (ug/m3)

DEPTH (ft)	APH EC5-8	APH EC9-12	APH EC9-10	B	T	E	m,p-X	o-X	NAP
5	1,300 fb	350	<190	3.9	51	8.8	38	17	2.4 fb

SSV-2 (ug/m3)

DEPTH (ft)	APH EC5-8	APH EC9-12	APH EC9-10	B	T	E	m,p-X	o-X	NAP
5	3,000	1,300	<82	32	68	8.8	46	18	1.2 fb

SSV-3 (ug/m3)

DEPTH (ft)	APH EC5-8	APH EC9-12	APH EC9-10	B	T	E	m,p-X	o-X	NAP
5	2,400	2,500	140	9.9	25	2.9	12	4.9	1.0 fb

GPE-3 (mg/kg)

DEPTH (ft)	TPH-G	B	T	E	m,p-X	o-X	MTBE	EDB	EDC	NAP	LEAD
9-9 1/2	<5	<0.003	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	4.12
13-13 1/2	<5	<0.003	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	5.60
15 1/2-16	<5	<0.003	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	2.15

GPE-4 (mg/kg)

DEPTH (ft)	TPH-G	TPH-D	TPH-O	B	T	E	m,p-X	o-X	MTBE	EDB	EDC	NAP	LEAD
3-3 1/2	<5	<50	<250	<0.003	<0.005	<0.005	<0.01	0.0065	<0.005	<0.005	<0.005	<0.005	4.56
8-8 1/2	<5	NA	NA	<0.003	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	5.22
12 1/2-13	<5	NA	NA	<0.003	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	3.49

DOMESTIC WATER SUPPLY WELL, APPROXIMATELY 70 FEET SOUTHWEST OF SOUTHWEST CORNER OF STRUCTURE

GPE-2 (mg/kg)

DEPTH (ft)	TPH-G	B	T	E	m,p-X	o-X	MTBE	EDB	EDC	NAP	LEAD
13-13 1/2	<5	<0.003	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	3.36
16 1/2-17	<5	<0.003	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	23.9

SSV-5 (ug/m3)

DEPTH (ft)	APH EC5-8	APH EC9-12	APH EC9-10	B	T	E	m,p-X	o-X	NAP
5	5,600 ve	1,800	110	20	35	5.4	15	6.5	1.2 fb

GPE-1 (mg/kg)

DEPTH (ft)	TPH-G	B	T	E	m,p-X	o-X	MTBE	EDB	EDC	NAP	LEAD
4-4 1/2	<5	<0.003	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	1.98
7-7 1/2	15	<0.003	<0.005	0.040	0.19	0.019	<0.005	<0.005	<0.005	0.20 ve	1.45
14-14 1/2	<5	<0.003	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	5.07

SSV-4 (ug/m3)

DEPTH (ft)	APH EC5-8	APH EC9-12	APH EC9-10	B	T	E	m,p-X	o-X	NAP
4-4 1/2	1,600 fb	3,700	170	20	35	5.4	15	6.5	1.2 fb

LEGEND

- B-1 AEG SOIL BORING (2009)
- MW-1 AEG GROUNDWATER MONITORING WELL (2010)
- EW-1 AEG SOIL VAPOR EXTRACTION WELL (2010)
- GP-1 ZGA DIRECT PUSH SOIL BORING (2013)
- GP-5 ZGA DIRECT PUSH SOIL BORING (2016)
- GPE-1 ZGA DIRECT PUSH SOIL BORING (2018)
- GP-1 ZGA HOLLOW STEM AUGER SOIL BORING (2017)
- MW-5 ZGA GROUNDWATER MONITORING WELL (2017)
- SV-1 ZGA SOIL VAPOR EXPLORATION (2017 and 2018)
- DOMESTIC WATER SUPPLY WELL
- APPROXIMATE LOCATION OF FORMER UST
- ESTIMATED AERIAL EXTENT OF SOIL EXCEEDING METHOD B DIRECT CONTACT CLEANUP LEVELS

TPH-G: GASOLINE-RANGE PETROLEUM HYDROCARBONS
TPH-D: DIESEL-RANGE PETROLEUM HYDROCARBONS
TPH-O: OIL-RANGE PETROLEUM HYDROCARBONS
B: BENZENE
T: TOLUENE
E:ETHYLBENZENE
X: XYLENES
NAP: NAPTHALENES
mg/kg: MILLIGRAMS PER KILOGRAM, i.e., PPM
ug/m3: MICROGRAMS PER CUBIC METER
NA: NOT ANALYZED

REFERENCE: GOOGLE EARTH PRO, FIELD MEASUREMENTS, AND PRIOR REPORTS

WEST VIEW MART
971 AULT FIELD RD
OAK HARBOR, WA

ANALYTICAL SUMMARY -
ZGA EXPLORATIONS, SEPTEMBER 2018

DATE: OCTOBER 2018 Job No. 1105.23

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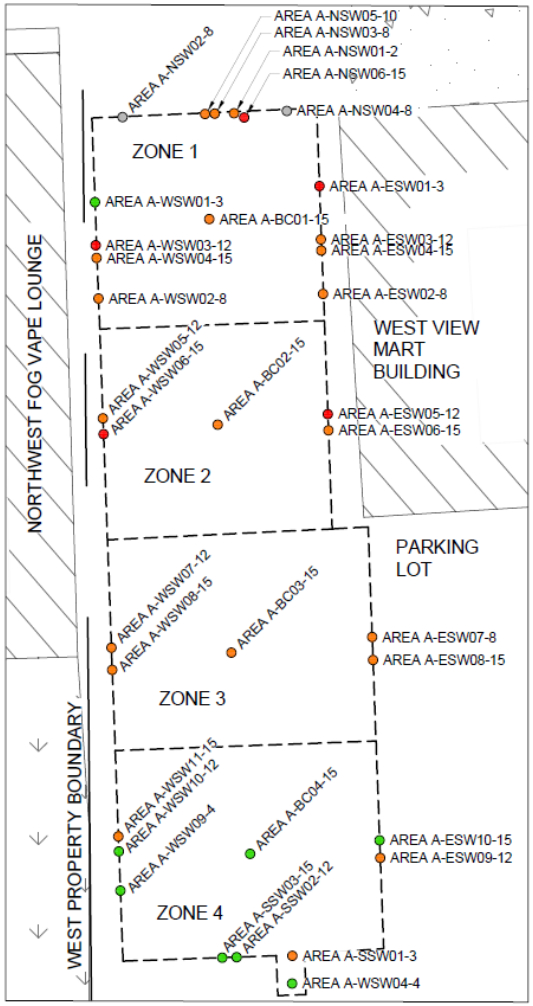
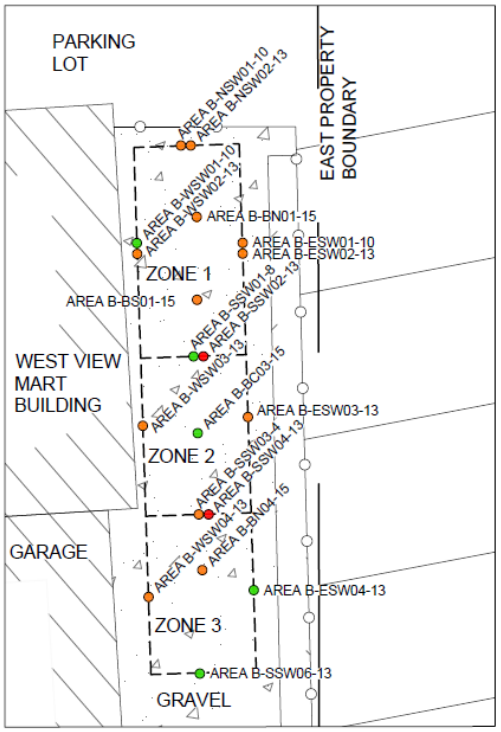
Lynnwood, WA

FIGURE 6
SHT. 1 of 1



1 Remedial Excavation of Area A



2 Remedial Excavation of Area B

LEGEND

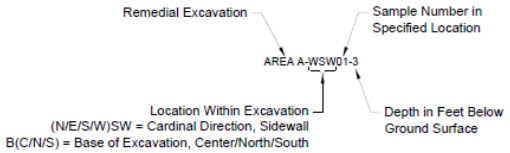
AREA A-WSW01-3 — Soil sample ID and approximate location. GREEN indicates TPH-G not reported above laboratory MRL.

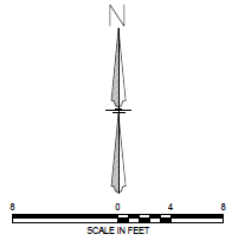
AREA A-WSW01-3 — Soil sample ID and approximate location. ORANGE indicates TPH-G reported above laboratory MRL but below MTCA Method B CUL.

AREA A-WSW01-3 — Soil boring ID and approximate location. RED indicates TPH-G reported above MTCA Method B CUL.

AREA A-WSW01-3 — Soil boring ID and approximate location. GRAY indicates sample was collected and placed on-hold at laboratory. No analytical results.

Approximate location and lateral extent of remedial excavation.





WEST VIEW MART REMEDIAL ACTION
971 Ault Field Rd.
Oak Harbor, Washington

REMEDIAL EXCAVATION DETAILS: AREAS A AND B

DATE: NOVEMBER 2020 | Job No.

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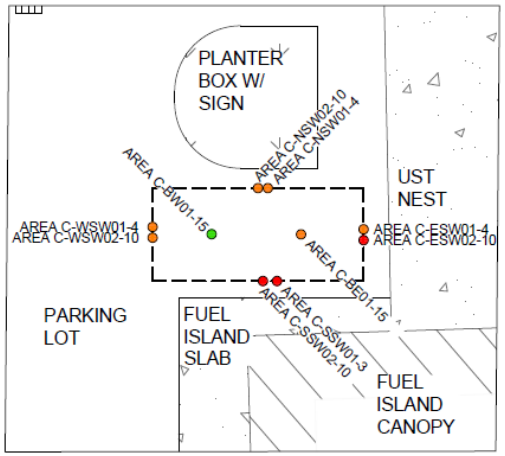
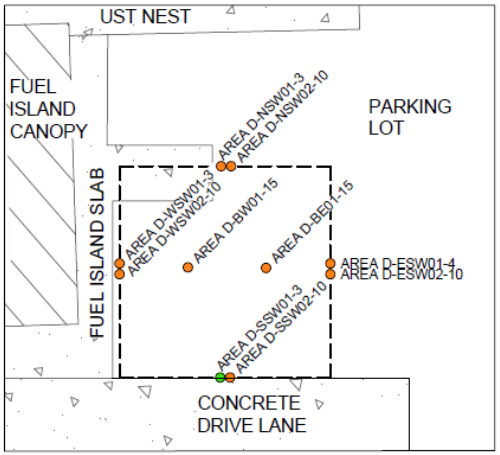
Lynnwood, WA

FIGURE 7
SHT. 1 of 1



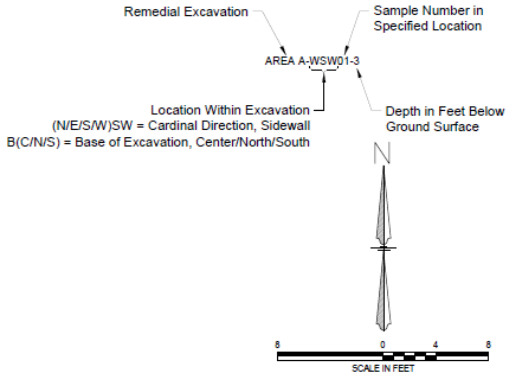
3 Remedial Excavation of Area C



4 Remedial Excavation of Area D

LEGEND

- AREA A-WSW01-3 — Soil sample ID and approximate location. GREEN indicates TPH-G not reported above laboratory MRL.
- AREA A-WSW01-3 — Soil sample ID and approximate location. ORANGE indicates TPH-G reported above laboratory MRL but below MTCA Method B CUL.
- AREA A-WSW01-3 — Soil boring ID and approximate location. RED indicates TPH-G reported above MTCA Method B CUL.
- AREA A-WSW01-3 — Soil boring ID and approximate location. GRAY indicates sample was collected and placed on-hold at laboratory. No analytical results.
- Approximate location and lateral extent of remedial excavation.



WEST VIEW MART REMEDIAL ACTION
971 Ault Field Rd.
Oak Harbor, Washington

REMEDIAL EXCAVATION DETAILS: AREAS C AND D

DATE: NOVEMBER 2020 | Job No.

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FIGURE 8
SHT. 1 of 1