OFF-SITE INVESTIGATION

Performed at:
Fife RV Center
3410 Pacific Highway East
Fife, Washington 98404

AEROTECH
Environmental Consulting Inc.

March 24, 2023

Anchorage Seattle Portland

Cost-effective environmental solutions
for the western United States and Alaska

DRAFT

www.AerotechEnvironmental.com

OFF-SITE INVESTIGATION

Performed for:
Fife RV Center
VCP SW1565
3410 Pacific Highway East
Fife, Washington 98424

March 24, 2023

Performed by:

AEROTECH Environmental Consulting Inc.
14247R Ambaum Boulevard Southwest
Burien, Washington 98166
www.AerotechEnvironmental.com

OFF-SITE
INVESTIGATION

performed for:

Fife RV Center
VCP SW1565
3410 Pacific Highway East
Fife, Washington 98424

Clients:	**Fife RV Center** VCP SW1565 3410 Pacific Highway East Fife, Washington 98424
Point of Contact:	**Chris LaVerdiere** Representative of Ownership Group
Property:	**Fife RV Center** 3410 Pacific Highway East Fife, Washington 98424 Department Of Ecology VCP Site SW1565
County:	Pierce County, Washington Parcel Number: 0320111067
Commercial Activity:	RV Retail
Licensed Geologist:	Justin Foslien (Washington State License No. 2540)
UST Site Assessor:	Nicholas Gerkin
Report Date:	March 24, 2023

EXECUTIVE SUMMARY

The subject Property consists of one irregularly-shaped 3.76-acre Parcel of commercial land located on the south side of Pacific Highway East in Fife, Washington. One approximately 10,763 square foot, 2- story structure, occupied by *Fife RV Center,* is situated near the southeastern corner of the Property. Asphalt parking areas surround the structure on all sides and are utilized to display RVs. A 0.77-acre gravel parking lot utilized to store RVs, and the subject of this investigation, is situated on the west side of the Property.

Adjoining to the south and west is Washington State Department of Transportation Right-of-Way ("WSDOT ROW") for Interstate 5. The neighboring Parcel to the east includes approximately 5.24 acres, currently leased by the Fife RV Center for use as additional storage. The Puyallup River approaches the Site within 3,000 feet to the southwest, and the Blair Waterway and Commencement Bay are located over 3,500 feet to the north. A Bio-Swale with a seasonal pond occupies the western corner of the Site. Water from the Bio-Swale pond flows southwest to a drainage ditch on the WSDOT ROW via a drainage pipe.

Formerly included within the same Parcel, and now adjoining to the north, is a Tahoma Express Gas Station and a Jack in the Box restaurant followed by Pacific Highway East.. The Tahoma Express Gas Station was listed on Ecology's Site Cleanup List as Site No. 5015. Petroleum hydrocarbons were documented at the Tahoma site prior to remediation, at concentrations above the State Cleanup Levels in soil and groundwater. Ecology issued a No Further Action determination for that site in 1993. This area is the focus of this *Off-Site Investigation*.

From the mid 1960's to the late l980's a *Gasamet* gasoline station occupied the western portion of the western gravel paved lot on the Subject Property and the southern portion of the Jack in the Box Property. Fuel dispenser islands were located south and east of the eastern terminus of the current restaurant drive-thru, with Underground Storage Tank Basins situated both to the east and west, and a station building farther south. In 2014, *Associated Earth Sciences,* Inc. conducted a *Supplemental Phase II Environmental Site Assessment* at the subject Property. Petroleum hydrocarbons were detected at concentrations above the Model Toxic Control Act ("MTCA") Method A Cleanup Levels in soil and groundwater samples in the vicinity of the former *Gasamet* pump islands and UST Basins. Based on these results, *Aerotech* oversaw the removal of 1,685.24 tons of petroleum impacted soil late 2016. The first twelve groundwater monitoring wells were installed during the next 18 months to the south, east and west of the source areas.

In November 2019, Groundwater Monitoring Wells MW2, MW4, and MW10 were decommissioned in preparation for the construction of a subsurface concrete wall, beginning just west of MW1, stretching westward to the bioswale pond. The purpose of the wall is to help prevent contaminated groundwater from entering the Site from the Jack-in-the-Box Property to the north. Aerotech subsequently installed MW13 and MW14 to replace wells MW4 and MW10 respectively. MW15 was installed just north of the midpoint of the subsurface concrete wall to monitor conditions in the upgradient direction. MW16 was installed in the primary source area. Access to the Jack in the Box Property will be required to complete characterization of the Fife RV Center Site.

Prior to agreeing subsurface investigations on the Jack in the Box Property, representatives of *Gasamet* proposed an investigation into whether an early-90s gasoline release on the Tahoma Express property had migrated and possible comingled with the Fife RV Center Property.

On February 2, 2023, Aerotech Environmental Consulting, Inc. entered the Easement associated with *Tahoma Express* and the *Jack in the Box* and advanced four soil borings using direct-push drilling equipment. Each location was advanced on the eastern margin of the easement just west of the Tahoma Express petroleum service station features. Eight soil samples and four grab groundwater samples did not contain detectable hydrocarbon concentrations with the exception of trace detections of ethylbenzene and total xylenes in the water sample collected from location TE1.

Off-Site Investigation: Conclusions & Recommendations:

Based on the data obtained from this Off-Site Investigation and from historical documentation provided by Ecology, our conclusion is that the former release associated with 2408 Pacific Highway East, did not migrate into the Easement or beyond to the Fife RV Center Site.

Aerotech recommends continuing forward with an access agreement with the Jack in the Box Property for the purposes of completing characterization of the Fife RV Center Site as a whole.

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INTRODUCTION

Aerotech Environmental Consulting, Inc., was retained by Mr. Chris LaVerdiere, the Client to conduct environmental work at the subject Site, 3410 Pacific Highway East in Fife, Washington. A gasoline service station, *Gasamet*, operated on-Property from the 1960s to the 1980s. At the time, the two adjoining parcels to the north which include Jack in the Box and Tahoma Express were part of the same parcel as Fife RV Center. The Property was divided up into its current state in the late 1980s.

In October 2016, over 1,600 tons of petroleum contaminated soil was removed from the Fife RV Center Site. Fourteen groundwater monitoring wells have been installed at the Site, to the east, west and south of the source area, as well as in the source area.

In pursuit of completing characterization activities, Aerotech recommended mobilizing onto the adjoining property to the north, *Jack in the Box,* to install a series of soil borings and groundwater monitoring wells. In response, representatives from *Gasamet* first insisted upon collecting data in the vicinity of the current Tahoma Express property to verify that a gasoline release discovered in 1990 did not migrate and comingle with the Fife RV Center Site. Washington Department of Ecology did issue a No Further Action determination for the Tahoma Express property in August 1993, which was known as the Former Unocal 7343 at the time.

SECTION I.

SITE DESCRIPTION

Property Exterior Description:

The subject Property consists of one irregularly-shaped 3.76-acre Parcel of commercial land located on the south side of Pacific Highway East in Fife, Washington. One approximately 10,763 square foot, 2-story structure, occupied by *Fife RV Center,* is situated near the southeastern corner of the Property. An approximately 1,000 square foot, 1-story structure is situated northeast of the main building along the eastern Property boundary. Asphalt parking areas surround the structure on all sides and are utilized for the storage and display of the RV inventory. An approximately 0.77 acre gravel parking lot, the subject of this investigation, and utilized to store RV inventory, is situated on the west side of the Property.

Adjoining to the south is a drainage that appears to discharge to the east and then south, followed by Interstate 5. The neighboring Parcel to the east includes approximately 5.24 acres, currently leased by the Fife RV Center for use as additional storage. The Puyallup River is approaches the Site within 3,000 feet to the southwest, and the Blair Waterway and Commencement Bay are located over 3,500 feet to the north. Wapato Creek is situated 2,000 feet to the east and Hylebos Creek is located two miles to the east.

Formerly included within the same Parcel, and now adjoining to the north, is a *Tahoma Express* Gas Station and a *Jack in the Box* restaurant followed by Pacific Highway East and an Ecolodge. The Tahoma Express Gas Station, Former Unocal 4373 was listed on Ecology's Site Cleanup List as Site No. 5015. Petroleum hydrocarbons were documented historically at the Tahoma site prior to remediation at concentrations above the State Cleanup Levels in soil and groundwater. Ecology issued a No Further Action determination in 1993.

Numerous utilities were located at the Site by private and public locators, included a water main oriented southeast to northwest, then north at the Jack in the Box property boundary. Parallel and to the northeast, nearer the Tahoma building, are electrical and natural gas conduits, as well as a storm sewer line. Electrical lines also extend from a power pole along the southern perimeter of the Site toward both the

restaurant and the Tahoma building. A storm sewer pipe also extends toward the southwestern corner of the gravel lot, from the vicinity of the Tahoma building. Refer to the attached figures. Updated maps will be available in the April 2018 Groundwater Monitoring Report. A fenced and wooded water retention pond, known as a bioswale, is situated on the subject property, west of the area of this investigation.

Recognized Environmental Conditions

Fife RV Center (3410 Pacific Highway East, Fife, WA, CSID 13173)

Site Discovery and Regulatory Status:

From the mid 1960's to the late 1980's a *Gasamet* gasoline station occupied the western portion of the western gravel paved lot on the Subject Property and the southern portion of the Jack in the Box Property. Fuel dispenser islands were located south and east of the eastern terminus of the current restaurant drive-thru, with Underground Storage Tank Basins situated both to the east and west, and a building farther south. A triangular-shaped wooded water retention area (Bio-Swale) is located at the west side of the Site. In 2014, *Associated Earth Sciences,* Inc. conducted a *Supplemental Phase II Environmental Site Assessment* at the subject Property. Petroleum hydrocarbons were detected at concentrations above the Model Toxic Control Act ("MTCA") Method A Cleanup Levels in soil and groundwater samples in the vicinity of the former Gasamet pump islands and UST Basins. Ecology accepted Fife RV Center into Voluntary Cleanup Program ("VCP") with the designation SW1565.

Previously Identified Contaminants of Concern:

Conclusions derived from previous investigations at the Site identified gasoline range petroleum constituents, benzene, ethyl benzene, toluene, and xylenes as Contaminants of Concern at the subject Property. Samples from the subject Site have also been analyzed for: Diesel fuel, Motor Oil, Fuel Additives, Chlorinated Solvents, PCB's, PAHs, and metals and all were either not detected above Laboratory Reporting Limits or were present at concentrations well below the MTCA Method A Cleanup Levels.

Site Observations and Reported Conditions:

With the exception of the above referenced environmental concern. There were not additional Recognized Environmental Conditions or concerns identified as potential impacts to the Site.

Former Unocal 7343 (3408 Pacific Highway East, Fife, WA, CSID 5015)

Site Discovery and Regulatory Status:

Sometime between 1980 and 1990, when the original parcel was divided into its current state, a gasoline service station, known as Unocal Station 7343, was constructed at 3408 Pacific Highway East. In early 1990, a gasoline release into the UST Basin was discovered by GeoEngineers, who had installed and sampled three ground water monitoring wells.

In August 1992, Two - 12,000-Gallon gasoline USTs were removed from the Site. Soil & UST Basin fill containing petroleum hydrocarbon concentrations were also removed at the time. Additional groundwater monitoring wells were installed (MW1 & MW2 were destroyed to allow for the 1992 excavation. GeoEngineers installed a groundwater remediation system which cycled groundwater into a polyethylene tank, where it was then aerated and stripped of petroleum hydrocarbons.

By May 1993, consecutive quarters of groundwater not containing petroleum hydrocarbons above the MTCA Method A Cleanup Levels had been achieved. Ecology issued a No Further Action determination on

August 16, 2023. Final groundwater monitoring well locations can be found on Figure 5 (they have since been decommissioned).

Previously Identified Contaminants of Concern:

Conclusions derived from previous investigations at the Site identified gasoline range petroleum constituents, benzene, ethyl benzene, toluene, and xylenes as Contaminants of Concern at the subject Property.

Site Observations and Reported Conditions:

With the exception of the above-referenced environmental concern. There were not additional Recognized Environmental Conditions or concerns identified as potential impacts to the Site.

SECTION II.

FIELD WORK

Notifications – "Public Utilities":

A public utilities locate notification was performed prior to the start of work. Aerotech Environmental Consulting, Inc. Performed the "public" utilities notification on January 30, 2023, and was issued Ticket Number 23033943 by the Utilities Underground Location Center.

According to the Utilities Underground Location Center the utilities necessary for notification included:

District	Company	Marking Concerns	Customer Service	Repair
CCWAU01	COMCAST CABLE	(800)778-9140	(800)934-6489	(855)537-6296
FIFE01	CITY OF FIFE	(253)922-9315	(253)922-9315	(253)922-9315
MTRMED01	ZAYO BANDWIDTH	(800)961-6500	(443)403-2023	(801)364-1063
PUGE07	PUGET SOUND ENERGY ELECTRIC	(888)728-9343	(888)225-5773	(888)225-5773
PUGG07	PUGET SOUND ENERGY GAS	(888)728-9343	(888)225-5773	(888)225-5773
QLNWA16	CTLQL-CENTURYLINK	(800)778-9140	(800)283-4237	(800)573-1311
RCON01	RAINIER CONNECT NORTH	(253)262-3211	(360)832-6161	(253)262-3211
TACPWR01	TACOMA PWR & CLICK NETWORK	(253)502-8263	(253)502-8600	(253)383-0982
CCWAU01	COMCAST CABLE	(800)778-9140	(800)934-6489	(855)537-6296

Private Utilities Location:

Additionally, Aerotech engaged personnel of Mountain View Locating Services of Bonney Lake, Washington to locate building and site utilities on February 2, 2023, prior to the start of the on Site drilling activities. No unanticipated or unexpected situations were discovered or encountered during the "private" locating activities.

Based in part upon pavement markings made by utility location technicians; the location of utility fixtures such as water, electrical, or manholes, and the presence of anomalies detected by induction or ground radar methodologies, monitoring well locations were chosen.

Ground Penetrating Radar Survey:

A Ground Penetrating Radar ("GPR") Survey conducted by Mountain View Locating Services staff on February 2, 2023 in order to augment the induced current methodology, and to verify the presence of utility trenches such as sewer and water main trenches. Mr. Dave Schaff of Mountain View Locating Services, LLC employed Radar equipment utilizing Dual Frequency Antennae (300 MHz/800 MHz) manufactured by Geophysical Survey Systems. The locations of the water main and storm sewers were confirmed by means of GPR activities.

Site Activities:

Four soil borings were advanced on February 2, 2023, under contract with Aerotech Environmental Consulting, Inc. All the work was performed during normal business hours. No unusual or unforeseen circumstances occurred during the Site activities.

Drilling Activities:

Drilling operations for Soil Borings TE1 through TE4 occurred on February 2, 2023 via direct-push drilling technology to advance soil borings for the collection of soil and 'grab' groundwater samples for laboratory analysis. The soil borings were advanced by equipment owned and operated by a Licensed Driller from B&W Standard Probe of Spanaway, Washington.

All subsurface work was overseen by State of Washington Licensed Geologists, Mr. Justin Foslien (State of Washington License No. 2540). The laboratory analytical services were performed by a State of Washington accredited laboratory, Fremont Analytical located in Seattle, Washington.

Soil Borings:

Soil borings were advanced at four (4) locations on Site in the vicinity of the former gasoline UST Basin and associated remedial excavation extent at the *Tahoma Express* property. The soil borings were located in positions in the Easement downgradient of the former Basin that would provide data between the Tahoma Express and the Fife RV Center Site.

- Soil Boring TE1 was advanced southwest of the Tahoma Express diesel UST. It represents the most-downgradient location to capture the most extreme flow direction, south-southwest.
- Soil Boring TE2 was advanced at a location that captures downgradient in the south and south-southwest direction
- Soil Boring TE3 was advanced near the southwestern corner of the 1992 Remedial Excavation, downgradient of the decommissioned well, MW1. As MW1A captures the due west gradient while TE3 captures southwest to south-southwest gradient.
- Soil Boring TE4 was advanced due west of the northern portion of the 1992 Remedial Excavation. The purpose of this location was to capture the potential westward gradient and to confirm GeoEngineers' groundwater results from RW1 & RW2.

Soil Sample Collection:

A total of eight (8) discrete soil samples and four (4) 'grab' groundwater samples were collected and submitted for analyses from four (4) soil boring locations.

Soils from each location were visually inspected for color quality and evidence of discoloration, and physically observed for the purpose of recording composition and noting color, where distinctive. Each sample was handled with a fresh pair of clean nitrile gloves. Samples were then placed into sterile four-ounce glass jars and/or 40cc glass vials preserved with 5 ml of methanol in accordance with procedures specified for United States Environmental Protection Agency ("USEPA") Method 5035A.

Groundwater was extracted from temporary decontaminated polyvinyl chloride ("PVC") well casings that were inserted to total depth of each soil boring. Groundwater samples were only collected after a visual reduction in groundwater turbidity.

Each soil or groundwater sample was given a unique identifier number and placed into an iced cooler for preservation. Samples were held in the custody of Aerotech until delivery to Fremont Analytical.

Equipment Decontamination:

All sample acquisition equipment was decontaminated before and after the completion of each borehole to eliminate the potential for cross-contamination between borings, as required. All reusable

sampling equipment for soil sampling, drive rods, and probes were decontaminated after each sampling point by washing with an Alconox-distilled water solution and rinsing with distilled water.

Site Restoration:

Each borehole was complete as a groundwater monitoring well. No landscape restoration was necessary.

SECTION III.

GEOLOGY AND HYDROGEOLOGY

Surface Characteristics:

The precise Property location is N 47 14' 34.44" / W 122 22' 58.80" as determined by DeLorme mapping data. The Site is located in Universal Transverse Mercator Zone 11, and has an elevation of approximately 9 to 12 feet above mean sea level. As observed during Site reconnaissance and confirmed on the USGS topographic map, the subject Property is relatively flat, with graded gravel or adjoining paved surfaces in the study area sloping toward two storm water catch basins located near the north fence line. The surface within five to ten feet of the southern Property margin slopes markedly to the level of the ditch to the south, which may perhaps as much as 6 to 8 feet below the average grade of the gravel lot.

Similarly, adjoining to the west is a triangular-shaped bioswale in which a pond exists near its center. The water level in this pond appears to be situated at depths of approaching 6 to 8 feet below the elevation of the gravel lot, consistent with groundwater depths documented onsite. The bioswale appears to be hydraulicly connected to the Site groundwater.

As is commonly the case in low-lying areas near sea level, many roads and properties appear to be elevated as much as four or more feet above the original grade. Evidence of the original grade may be seen in the decrease in elevation evident north of Pacific Highway East, north of the subject Property. The 1897 USGS 15-Minute Topographic Map depicts Commencement Bay estuaries and tidelands as they existed prior to development with fill.

A ditch is located a few tens of feet south of the Property. A second tributary ditch is located east of the property adjoining to the east. Pacific Avenue East is elevated approximately four feet above the Site. A Storm Water Systems Map update, published by the city of Fife, suggests that the adjoining ditch to the south discharges to the east, and is subsequently directed via pipe to the south, underneath Interstate 5, and ultimately to a ditch system parallel to the east side of the Puyallup River levee system, and to Commencement Bay.

Geology:

The Puget Sound lies within a tectonic trough situated between the Olympic Mountains to the west, and the northern Cascade Mountains to the east. This trough is characterized by fault zones accommodating north-south compressional rotation, commonly resulting in predominant north-south and northwest-southeast oriented faults and fault zones. Elliott Bay lies north of the Seattle Fault Zone while Tacoma's Commencement Bay lies south of the northernmost Tacoma Fault zone rupture. A major fault is mapped below the bluffs on which central Tacoma was developed, along the western margin of Commencement Bay. Commencement Bay and the Puyallup River Basin lie on the down dropped side of the fault. The original surface within Commencement Bay intertidal zone has been elevated by the emplacement of fill throughout the early 20th century. The uppermost soils in the Puyallup River Valley are dominated by alluvial and fluvial sediments.

The subject Property and vicinity, south of the Blair Waterway, are mapped as Quaternary Alluvium. These soils are characterized as:

> "Gravel, sand, silt, and clay. Deposited chiefly by modem streams, but includes some swamp deposits. Includes marine deposits near the mouth of the Puyallup river.... thickness ranges from a few feet to as much as 600 feet. Yields small to moderate quantities of water to wells. Locally capable of large yields."

Hydrogeologic Framework, Groundwater Movement, and Water Budget in the Puyallup River Watershed and Vicinity, Pierce and King Counties, Washington, U.S. Geological Survey Scientific lnvestigations Report 2015-5068, Wendy B. Welch, et al, 2015.

Ground-Water Occurrence and Stratigraphy of Unconsolidated Deposits, Central Pierce County, Washington, Water Supply Bulletin No. 22, State of Washington, Department of Water Resources, Kenneth L. Walters and Grant E. Kimmel, 1968

Geologic Map of the Tacoma North 7.5' Quadrangle, King and Pierce Counties, Washington, US Geological Survey, unpublished draft.

Geologic Map of the City of Tacoma, Pierce County Washington, Mackey Smith, 1977, and unpublished maps on topographic base by Timothy J Walsh, Washington State Department of Natural Resources, circa 1987.

Groundwater Hydrology of the Tacoma-Puyallup Area, Pierce Country, Washington, USGS Water Resources Investigation 99-4013, M.A. Jones, L.A. Orr, J.C. Ebbert, and S.S. Surnioka, 1999.

The following soils were encountered during drilling activities: Approximately 3 to 6 feet of gravelly well-graded sand fill was generally underlain by 7 or more feet of silt or very fine sand and silt.

Subsurface and Hydrogeological Characteristics - Groundwater Flow:

The principal aquifers in the Puget Sound Region occur within a series of units of glacial drift, hydraulically separated by less permeable deposits commonly including interglacial deposits. One exception, the Vashon till, serves as an aquitard as well, restricting the vertical and lateral migration of groundwater and of contaminants. These deposits underlie the Puget Lowlands basin to depths often approaching 2,000 feet or more. Sand and gravel units within the glacial drift form the principle aquifers. These aquifers receive ample recharge from the typically heavy precipitation characteristic of western Washington. The glacial drift in the Puget Sound region varies greatly in composition and water yielding capacity. Typically, wells in glacial drift tapping sand- or gravel-rich glacial deposits or till in the region above depths of 100 feet may have yields of 100 gallons or more per minute. Deeper wells tapping thick, confined aquifers of highly permeable gravel and coarse sand, often at depths greater than 250 feet, can yield over 1,000 gallons per minute.

The calculated groundwater flow direction at the Site is to the west and west southwest. Flow, based upon the potentiometric surface map, consistent with that calculated during previous quarterly sampling events, is toward the bioswale to the west and the ditch to the west-southwest. Groundwater gradients increased markedly in close proximity to the ditch and bioswale areas, within a few tens of feet of the southwest corner of the Site. Surface water and groundwater data is not yet available for either the ditch or bioswale area. However, visual observations of water levels in the bioswale during 2016 and 2017 suggest hydraulic connectivity between groundwater and both the bioswale and ditch are likely.

Static water levels north and east of the subject Property have been recorded by other consultants between depths of three to six feet bgs. During the AESI Phase II, water levels were reported to range from three to seven feet bgs on the subject Property. Ditches in the vicinity are estimated to be as much as four to five feet deep.

Groundwater flow direction has been documented at the property to the north (Former Unocal 7343) as flowing to the west to south-southwest; Topography is not always a reliable basis for predicting groundwater flow direction, and flow may vary considerably from site to site, according to local influences such as the presence of production or irrigation wells and variations in geologic material and the geometry of distinct geologic units.

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SECTION IV.

ANALYTICAL RESULTS

SUMMARY OF SAMPLE ACQUISITION

A total of 4 soil borings were advanced in the Area of Concern to a maximum depth of 10 feet below ground surface ("bgs"). Two soil samples were collected from each of four boreholes (8 soil samples in total). Additionally, a 'grab' groundwater sample was collected from a temporary well installed in each respective boreholes. Detailed descriptions of each soil boring location, observations made during the acquisition, sampling information, and the field screening process are documented in soil boring logs attached to this report.

Total Petroleum Hydrocarbons – Gasoline and BTEX

Gasoline, Benzene, Toluene, Ethylbenzene and Xylenes were not detected at concentrations above the Laboratory Reporting Limits in all eight soil and all four 'grab' groundwater samples with the exception for small detections of Ethylbenzene and Xylenes in the water sample collected from soil boring TE1. A summary of the remaining results may be found in Tables 1 & 2, including results from previous investigations. Analytical results are summarized in **Tables 1 & 2** and **Figure 5**.

APPLICABLE ANALYTICAL METHODOLOGIES AND PARAMETERS

The analytical parameters were chosen based upon the results of previous investigations to provide a comprehensive characterization of the subsurface soils and groundwater present at the Site Areas of Concern and to comply with State of Washington recommendations.

Analytical Methodology:

Soil: **Gasoline Range Organics & Benzene, Ethylbenzene, Toluene, and Xylenes**
State of Washington NWTPH-Gx
USEPA 8260D

Groundwater: **Gasoline Range Organics & Benzene, Ethylbenzene, Toluene, and Xylenes**
State of Washington NWTPH-Gx
USEPA 8260D

Laboratory analysis was provided by:

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103

Tel: 206.352.3790
Fax: 206.352.7178

www.FremontAnalytical.com

STATEMENT OF THE UST SITE ASSESSOR/ENVIRONMENTAL PROFESSIONAL

I have performed this *Off-Site Investigation* with the degree of care and skill ordinarily exercised under similar circumstances by reputable environmental professionals practicing in this area.

I declare that, to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in § 312.10 of this part. I have the specific qualifications based upon education, training, and experience necessary to conduct Remedial Investigations.

Signature of Washington Certified UST Site Assessor:

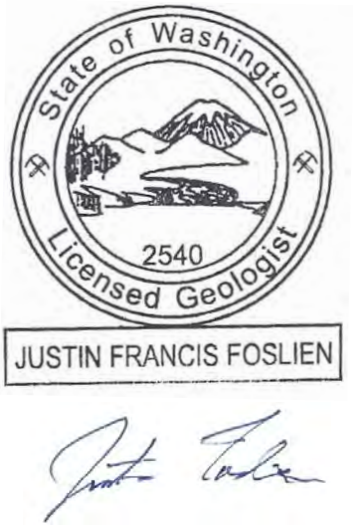
Signature – Nicholas Gerkin (Certificate No. 8452487)

STATEMENT OF THE LICENSED GEOLOGIST

As stipulated in the Regulatory Code of the State of Washington Title 18, Chapter 18.220, the undersigned is a licensed Geologist in the State of Washington, and has met the statutory requirements of RCW § 18.220.060 for such licensing including, but not limited to, educational requirements, work and field experience, examination proficiency, and acceptance by the State Licensing Board.

The undersigned Licensed Geologist has supervised the geological work performed as described in attached Report – a majority of said work being performed by employees of the firm which employs undersigned Licensed Geologist – as delineated in RCW Title 18, Chapter 18.220, Paragraph 190.

Signature of Licensed Washington Geologist: Signature of Licensed Washington Geologist:



Signature – Justin Francis Foslien (License No. 2540)

APPENDIX

- Analytical Results Tables & Figures
- Laboratory Analytical Reports
- Boring Logs
- Photographs
- Standard Operating Procedures
- Supplemental Documentation

- Analytical Results Tables & Figures

TABLE 1
SOIL ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

Associated Earth Sciences, Inc. - Supplemental Phase II Environmental Site Assessment - January 24, 2014

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Total Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EB 1 2.5-3.5'	EB1	12/19/13	2.5 - 3.5	<20	<50[5]	<250[5]	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 1 9.5-10'	EB1	12/19/13	9.5 - 10	<20	<50[5]	<250[5]	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 2 8.5'	EB2	12/19/13	9	<20	<50[5]	<250[5]	<0.02[4]	<0.02[4]	<0.02[4]	<0.06[4]	--	--	--	--	--	--	--	--	--
EB 3 4-5'	EB3	12/19/13	4 - 5	<20	<50[5]	<250[5]	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 4 4-5'[1]	EB4	12/19/13	4 - 5	2,000	660[3,5]	<250[5]	1.8	9.6	41	120	--	--	--	--	--	--	--	--	12.3
EB 4 6.5-7.5'	EB4	12/19/13	6.5 - 7.5	3.9	<50[5]	<250[5]	<0.02	0.031	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 5 4-5'	EB5	12/19/13	4 - 5	730	220[3,5]	<250[5]	1.4	4.3	12	50	--	--	--	--	--	--	--	--	--
EB 5 5.5-6.5'	EB5	12/19/13	5.5 - 6.5	100	<50[3,5]	<250[5]	0.27	0.75	0.27	0.89	--	--	--	--	--	--	--	--	7.08
EB 5 6.5-7.5'	EB5	12/19/13	6.5 - 7.5	22	<50[5]	<250[5]	0.41	0.25	0.038	<0.06	--	--	--	--	--	--	--	--	--
EB 5 9-10'	EB5	12/19/13	9 - 10	1,300	560[3,5]	--	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 6 7-7.5'	EB6	12/19/13	7 - 7.5	--	--	<250[5]	<0.4	8	16	5.1	--	--	--	--	--	--	--	--	9
EB 6 9.5-10'	EB6	12/19/13	9.5 - 10	5.7	<50[5]	<250[5]	0.66	<0.02	0.035	0.2	--	--	--	--	--	--	--	--	--
EB 6 10-11'	EB6	12/19/13	10 - 11	--	--	--	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 7 5.5-6'	EB7	12/19/13	5.5 - 6	<2	<50[5]	<250[5]	0.027	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 8 4-5'	EB8	12/19/13	4 - 5	<20	<50[5]	<250[5]	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 8 8-9'	EB8	12/19/13	8 - 9	<20	<50[5]	<250[5]	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 9 3-4'	EB9	12/19/13	3 - 4	4	--	--	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
EB 10 4-4.5'	EB10	12/19/13	4 - 4.5	<2	<50[5]	<250[5]	<0.02	<0.02	<0.02	<0.06	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

Aerotech Environmental Consulting, Inc. - Site Remedial Excavation Report - November 1, 2016

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
P1(10')	P1	10/03/16	10	9.0	<20	<50	0.096	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P2(5')	P2	10/03/16	5	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P3(10')	P3	10/03/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P4(5')	P4	10/03/16	5	8.5	<20	<50	<0.020	<0.050	0.10	<0.050	--	--	--	--	--	--	--	--	--
P5(5')	P5	10/03/16	5	53	<20	<50	0.16	0.071	0.84	0.15	<0.005	<0.02	<0.1	<0.02	<0.02	--	--	--	7.8
P5(10')	P5	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P6(10')	P6	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P7(3')	P7	10/04/16	3	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P8(10')	P8	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	
P9(5')	P9	10/04/16	5	110	<20	<50	0.15	<0.050	5.1	<0.050	--	--	--	--	--	--	--	--	5.2
P9(10')	P9	10/04/16	10	23	<20	<50	<0.020	<0.050	0.34	<0.050	--	--	--	--	--	--	--	--	--
P10(10')	P10	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P11(10')	P11	10/04/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P12(5')	P12	10/05/16	5	100	<20	<50	0.42	0.18	1.7	0.54	--	--	--	--	--	--	--	--	--
P12(10')	P12	10/05/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P13(5')	P13	10/05/16	5	6.7	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P13(10')	P13	10/05/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P14(5')	P14	10/05/16	5	60	<20	<50	0.15	0.17	0.096	0.16	--	--	--	--	--	--	--	--	--
P14(10')	P14	10/05/16	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P15(10')	P15	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

TABLE 1
SOIL ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

Aerotech Environmental Consulting, Inc. - Site Remedial Excavation Report - November 1, 2016 (continued)

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
P16(5')	P16	10/06/16	5	**1,100**	<20	<50	**0.72**	0.072	**7.5**	**32**	--	--	--	--	--	--	--	--	7.0
P16(10')	P16	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P17(5')	P17	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P17(10')	P17	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P18(5')	P18	10/06/16	5	**130**	--	--	**0.29**	<0.050	1.5	2.4	--	--	--	--	--	--	--	--	--
P18(10')	P18	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P19(5')	P19	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P19(10')	P19	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP1(5')	TP1	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP2(5')	TP2	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP2(10')	TP2	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP3(3')	TP3	10/06/16	3	**2,500**	--	--	**0.34**	0.35	**15**	**10**	<0.005	<0.02	<0.1	<0.02	<0.02	--	--	--	--
TP3(5')	TP3	10/06/16	5	**650**	--	--	**0.53**	5.3	**7.5**	**7.3**	<0.005	<0.02	<0.1	<0.02	<0.02	--	--	--	--
TP3(10')	TP3	10/06/16	10	27	--	--	<0.020	<0.050	0.18	0.25	--	--	--	--	--	--	--	--	--
TP4(3')	TP4	10/06/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP4(5')	TP4	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP4(10')	TP4	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP5(5')	TP5	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP5(10')	TP5	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP6(5')	TP6	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP6(10')	TP6	10/06/16	10	12	--	--	**0.071**	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP7(5')[1]	TP7	10/06/16	5	**690**	<20	<50	**0.90**	1.9	**32**	0.33	--	--	--	--	--	--	--	--	--
TP8(3')[1]	TP8	10/06/16	3	**60**	--	--	<0.020	<0.050	1.2	<0.050	--	--	--	--	--	--	--	--	--
TP8(5')	TP8	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP9(5')[1]	TP9	10/06/16	5	**6,090**	<20	<50	**4.0**	4.0	**66**	**130**	<0.005	<0.02	<0.1	<0.02	<0.02	--	--	--	--
TP9(10')[1]	TP9	10/06/16	10	**240**	--	--	**0.59**	1.5	1.6	3.7	--	--	--	--	--	--	--	--	--
TP11(5')	TP11	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP12(5')	TP12	10/06/16	5	18	--	--	<0.020	<0.050	<0.050	0.082	--	--	--	--	--	--	--	--	--
TP13(5')	TP13	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP14(5')	TP14	10/06/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP14(10')	TP14	10/06/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP15(5')	TP15	10/07/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP15(10')	TP15	10/07/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP16(3')	TP16	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP16(5')	TP16	10/07/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP17(3')	TP17	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP17(5')	TP17	10/07/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP18(3')	TP18	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP19(3')	TP19	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP19(5')	TP19	10/07/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P20(5')	P20	10/20/16	5	**57**	--	--	**0.065**	0.101	0.15	0.16	--	--	--	--	--	--	--	--	--
P20(10')	P20	10/20/16	10	20	--	--	**0.24**	<0.050	0.09	0.084	--	--	--	--	--	--	--	--	--
P21(5')	P21	10/20/16	5	**1,200**	--	--	**0.65**	0.59	**8.1**	**24**	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

TABLE 1
SOIL ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

Aerotech Environmental Consulting, Inc. - Site Remedial Excavation Report - November 1, 2016 (continued)

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TP18(3')	TP18	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP19(3')	TP19	10/07/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
TP19(5')	TP19	10/07/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P20(5')	P20	10/20/16	5	**57**	--	--	**0.065**	0.101	0.15	0.16	--	--	--	--	--	--	--	--	--
P20(10')	P20	10/20/16	10	20	--	--	**0.24**	<0.050	0.09	0.084	--	--	--	--	--	--	--	--	--
P21(5')	P21	10/20/16	5	**1,200**	--	--	**0.65**	0.59	**8.1**	**24**	--	--	--	--	--	--	--	--	--
P21(10')	P21	10/20/16	10	**66**	--	--	**0.11**	0.14	0.34	0.74	--	--	--	--	--	--	--	--	--
P22(5')	P22	10/20/16	5	**1,100**	--	--	**0.83**	1.9	**20**	**7.9**	--	--	--	--	--	--	--	--	--
P22(10')	P22	10/20/16	10	**34**	--	--	0.029	<0.050	0.43	0.19	--	--	--	--	--	--	--	--	--
P22(12')	P22	10/20/16	12	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P23(5')	P23	10/20/16	5	**760**	--	--	**0.46**	0.74	4.8	2.4	--	--	--	--	--	--	--	--	--
P23(10')	P23	10/20/16	10	16	--	--	<0.020	<0.050	0.22	0.10	--	--	--	--	--	--	--	--	--
P24(5')	P24	10/20/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P24(10')	P24	10/20/16	10	**50**	--	--	**0.26**	<0.050	1.5	0.86	--	--	--	--	--	--	--	--	--
P25(5')	P25	10/21/16	5	**5,200**	--	--	**4.6**	**25**	**35**	**230**	--	--	--	--	--	--	--	--	--
P25(10')	P25	10/21/16	10	**350**	--	--	**0.16**	3.4	1.6	**16**	--	--	--	--	--	--	--	--	--
P26(10')	P26	10/21/16	10	12	--	--	<0.020	<0.050	<0.050	0.41	--	--	--	--	--	--	--	--	--
P27(5')	P27	10/21/16	5	**58**	--	--	<0.020	<0.050	0.095	0.39	--	--	--	--	--	--	--	--	--
P28(5')	P28	10/21/16	5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P28(10')	P28	10/21/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P29(3')	P29	10/24/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P30(5')	P30	10/24/16	5	**200**	--	--	**0.086**	0.19	0.28	0.40	--	--	--	--	--	--	--	--	--
P30(10')	P30	10/24/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P31(10')	P31	10/24/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P32(3')	P32	10/24/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P33(3')	P33	10/24/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
P34(3')	P34	10/24/16	3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

Aerotech Environmental Consulting, Inc. - Groundwater Monitoring Well Installation Report - November 17, 2016

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MW-1 (4.5')	MW-1	11/10/16	4.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW-1 (10')	MW-1	11/10/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW-2 (4')	MW-2	11/10/16	4	**250**	--	--	**0.53**	0.54	3.8	0.84	--	--	--	--	--	--	--	--	--
MW-2 (9')	MW-2	11/10/16	9	24	--	--	<0.020	0.065	0.6	0.16	--	--	--	--	--	--	--	--	--
MW-3 (4.5')	MW-3	11/10/16	4.5	**13,000**	--	--	**9.3**	2.6	**470**	5.4	--	--	--	--	--	--	--	--	--
MW-3 (9')	MW-3	11/10/16	9	**51**	--	--	<0.020	<0.050	0.27	0.096	--	--	--	--	--	--	--	--	--
MW-3 (14.5')	MW-3	11/10/16	14.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW-4 (5')	MW-4	11/10/16	5	**55**	--	--	**0.061**	0.27	0.22	0.2	--	--	--	--	--	--	--	--	--
MW-4 (10.5)	MW-4	11/10/16	10.5	**150**	--	--	**0.51**	1.2	1.1	1.7	--	--	--	--	--	--	--	--	--
MW-4 (14.5)	MW-4	11/10/16	14.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

TABLE 1
SOIL ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

Aerotech Environmental Consulting, Inc. - Groundwater Monitoring Well Installation Report - November 17, 2016 (continued)

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MW-5 (6')	MW-5	11/10/16	6	**34**	--	--	**0.090**	0.66	0.25	0.31	--	--	--	--	--	--	--	--	--
MW-5 (10')	MW-5	11/10/16	10	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW-6 (9')	MW-6	11/11/16	9	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW-6 (10.5')	MW-6	11/11/16	10.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

Aerotech Environmental Consulting, Inc. - Upgradient Delineation Groundwater Monitoring Well Installation Report - August 16, 2017

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B1(5)	B1	07/13/17	5	**1,200**	350[2]	<50	**2.1**	2.4	**51**	**26**	<0.005	<0.02	<0.1	**0.22**	**0.29**	0.97	0.0068	<0.20	14
B1(9)	B1	07/13/17	9	--	--	--	--	--	--	--	<0.005	<0.02	<0.1	<0.02	<0.02	--	--	--	--
MW7(11)	MW7	07/13/17	11	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW8(5)	MW8	07/13/17	5	--	<20	<50	--	--	--	--	--	--	--	--	--	--	--	--	--
MW8(10)	MW8	07/13/17	10	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	2.9
MW9(3)	MW9	07/13/17	3	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	37
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

Aerotech Environmental Consulting, Inc. - Downgradient Groundwater Monitoring Well Installation Report - April 27, 2018

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
MW10(4)	MW10	02/23/18	4	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	<0.005	<0.02	<0.1	<0.02	<0.02	<0.10	<0.10	<0.20	5.3
MW10(9)	MW10	02/23/18	9	14	<20	<50	<0.020	<0.050	0.110	<0.050	<0.005	<0.02	<0.1	<0.02	<0.02	<0.10	<0.10	<0.20	6.9
MW10(14)	MW10	02/23/18	14	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW11(3.3)	MW11	02/23/18	3.3	<5.0	<20	<50	<0.020	<0.050	<0.050	<0.050	<0.005	<0.02	<0.1	<0.02	<0.02	<0.10	<0.10	<0.20	16
MW11(6.3)	MW11	02/23/18	6.3	6.3	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW11(9.3)	MW11	02/23/18	9.3	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW12(4.5)	MW12	02/23/18	4.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	<0.10	<0.10	--	7.9
MW12(7)	MW12	02/23/18	7	**32**	<20	<50	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MW12(12.5)	MW12	02/23/18	12.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

Aerotech Environmental Consulting, Inc. - Remedial Investigation Report - November 09, 2018

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B2(5.5)	B2	07/03/18	5.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
B3(7)	B3	07/03/18	7	**70**	--	--	**0.070**	0.16	2.4	0.99	--	--	--	--	--	--	--	--	--
B3(12)	B3	07/03/18	12	6.4	--	--	<0.020	<0.050	0.075	<0.050	--	--	--	--	--	--	--	--	--
B4(6)	B4	07/03/18	6	9.2	--	--	<0.020	<0.050	0.075	<0.050	--	--	--	--	--	--	--	--	--
B5(3.5)	B5	07/03/18	3.5	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
B5(6)	B5	07/03/18	6	<5.0	--	--	<0.020	<0.050	<0.050	<0.050	--	--	--	--	--	--	--	--	--
B6(6)	B6	07/03/18	6	**190**	--	--	**0.59**	1.2	3.1	1.1	--	--	--	--	--	--	--	--	--
B6(7)	B6	07/03/18	7	**120**			**0.12**	0.32	4.2	<0.050	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

TABLE 1

SOIL ANALYTICAL RESULTS

Fife RV Center

3410 Pacific Highway East

Fife, Washington

Aerotech Environmental Consulting, Inc. - Remedial Investigation Report - November 09, 2018 (continued)

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B7(5)	B7	07/03/18	5	**2,400**	--	--	**0.48**	1.6	**20**	**34**	--	--	--	--	--	--	--	--	--
B7(7)	B7	07/03/18	7	**920**	--	--	**6.0**	0.86	**14**	**7.0**	--	--	--	--	--	--	--	--	--
B8(4)	B8	07/03/18	4	**350**	--	--	**0.70**	1.4	3.0	1.6	--	--	--	--	--	--	--	--	--
B9(4)	B9	07/03/18	4	**1,200**	--	--	**2.5**	2.8	7.4	1.8	--	--	--	--	--	--	--	--	--
B9(5)	B9	07/03/18	5	**2,800**	--	--	**2.2**	2	**13**	**26**	--	--	--	--	--	--	--	--	--
B9(6)	B9	07/03/18	6	**1,100**	--	--	**3.9**	2.0	**23**	4.4	--	--	--	--	--	--	--	--	--
B9(8)	B9	07/03/18	8	24	--	--	<0.020	<0.050	0.49	0.11									
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

Aerotech Environmental Consulting, Inc. - Remedial Investigation Report - July 31, 2019

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
B11(7)	B11	07/19/19	7	13.5	--	--	**0.0807**	<0.0241	<0.0301	<0.0903	--	--	--	--	--	--	--	--	--
B11(12)	B11	07/19/19	12	<12.1	--	--	<0.0169[6]	<0.0483	<0.0604	<0.1805	--	--	--	--	--	--	--	--	--
B14(7)	B14	07/19/19	7	<6.30	--	--	<0.0252	<0.0252	<0.0315	<0.0945	--	--	--	--	--	--	--	--	--
B14(12)	B14	07/19/19	12	<6.14	--	--	<0.0246	<0.0246	<0.0307	<0.0921	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

Aerotech Environmental Consulting, Inc. - Off-Site Investigation - March 24, 2023

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl-benzene	Total Xylenes	EDB	EDC	MTBE	Methylene Chloride	TCE	Naph-thalene	PAHs	PCBs	Lead
			Feet BGS	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TE1(4)	TE1	02/03/23	4	<5.63	--	--	<0.0197	<0.0338	<0.0282	<0.0845	--	--	--	--	--	--	--	--	--
TE1(9)	TE1	02/03/23	9	<4.62	--	--	<0.0162	<0.0277	<0.0231	<0.0693	--	--	--	--	--	--	--	--	--
TE2(4.5)	TE2	02/03/23	4.5	<6.13	--	--	<0.0214	<0.0368	<0.0306	<0.0845	--	--	--	--	--	--	--	--	--
TE2(9.5)	TE2	02/03/23	9.5	<5.50	--	--	<0.0192	<0.0330	<0.0275	<0.0825	--	--	--	--	--	--	--	--	--
TE3(5)	TE3	02/03/23	5	<6.13	--	--	<0.0215	<0.0368	<0.0307	<0.0920	--	--	--	--	--	--	--	--	--
TE3(9.5)	TE3	02/03/23	9.5	<6.89	--	--	<0.0241	<0.0413	<0.0344	<0.1033	--	--	--	--	--	--	--	--	--
TE(4.5)	TE4	02/03/23	4.5	<6.14	--	--	<0.0215	<0.0368	<0.0307	<0.0921	--	--	--	--	--	--	--	--	--
TE(9.5)	TE4	02/03/23	9.5	<6.88	--	--	<0.0241	<0.0413	<0.0344	<0.1032	--	--	--	--	--	--	--	--	--
MTCA Method A Cleanup Levels				30	2,000	2,000	0.03	7	6	6	0.005	0.0232*	0.1	0.02	0.03	5	0.1^	1	250

EXPLANATION

MTCA = Model Toxic Control Act Cleanup Level (WAC173-340-900)
BGS = Below Ground Surface mg/kg = milligram of analyte per kilogram of soil
< = not detected at indicated Laboratory Detection Limits -- = not analyzed
Benzene , Toluene, Ethylbenzene, Xylenes by EPA Method 8021B or 8260D
TPHg - Total Petroleum Hydrocarbons - Gasoline by NWTPH-Gx
TPHd - Total Petroleum Hydrocarbons - Diesel by NWTPH-Dx
TPHo - Total Petroleum Hydrocarbons - Motor Oil by NWTPH-Dx extended
MTBE = Methyl-tert-butyl-ether EDC = 1,2-Dichloroethane EDB = 1,2-Dibromoethane TCE = Trichloroethene Methylene Chloride; by EPA Method 8260B
Lead by EPA Method 7010
ND = Not Detected (minimum detection limit unknown)
Bolded numbers and red-shaded cells denote concentrations above the MTCA Method A Cleanup Levels for soil
* = Method B Cleanup Level, Ecology does not have a Method A Cleanup Level designated for EDC
1 = Soil from which this sample originated was removed during the Remedial Excavation
2 = Unidentifiable petroleum product in diesel range, possibly creosote (see lab report for further detail and chromatograph)
3 = The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
4 = The sample was received in a container not approved by the method. The value reported should be considered an estimate.
5 = The sample extract was passed through a silica gel column prior to analyses.
6 = The method detection limit was used instead of the reporting limit.
^ = Effective concentration using Toxic Equivalency Factor per WAC 173-340-708{e}: SUM(Benzo(a)pyrene (x1), Benzo(a)anthracine (x0.1),

TABLE 1
SOIL ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

Benzo(b)fluoranthene (x0.1), Benzo(k)fluoranthene (x0.1), Chrysene (x0.01), Dibenz(a,h)anthracene (x0.1), Indeno(1,2,3-cd)pyrene (x0.1)

TABLE 2
GRAB GROUNDWATER ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

Associated Earth Sciences, Inc. - Supplemental Phase II Environmental Site Assessment - January 24, 2014

Sample ID	Soil Boring/Point Well ID	Sampling Date	DTW	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Naphthalene	1,3,5-Trimethylbenze
			Feet BGS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EB 1 W	EB 1	12/19/13	7	<100	--	--	<1	8.8	1	9.2	--	--
EB 2 W	EB 2	12/19/13	7	<100	--	--	<1	6.7	<1	6.4	--	--
EB 3 W	EB 3	12/19/13	7	<100	<50[5]	350[5]	<1	8.9	1.2	9.2	--	--
EB 4 W	EB 4	12/19/13	4	**49,000**	**6000**[1,5]	<250[5]	**1,100**	420	**2,800**	**6,000**	--	--
EB 5 W	EB 5	12/19/13	4	**16,000**	420[1,5]	<250[5]	**430**	200	510	**1,970**	130	**210**
EB 6 W	EB 6	12/19/13	5	**15,000**	**3800**[1,5]	<250[5]	**510**	22	**1,500**	40	**540**	4.4
EB 7 W	EB 7	12/19/13	6	**2,900**	**520**[1,5]	<250[5]	**260**[2]	24	5.1	27	<1	<1
EB 8 W	EB 8	12/19/13	6	<100	--	--	1.9	14	1.6	9.1	--	--
EB 9 W	EB 9	12/19/13	5	110	--	--	1.1	15	2.3	15	--	--
EB 10 W	EB 10	12/19/13	5	<100	<55[5]	<280[5]	<1	9.1	<1	5.1	--	--
MTCA Method A Cleanup Levels				800	500	500	5	1,000	700	1,000	160	--

Aerotech Environmental Consulting, Inc. - Remedial Investigation Report - November 09, 2018

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth*	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Naphthalene	1,3,5-Trimethylbenze
			Feet BGS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
W-B6	B6	07/03/18	4.5	**11,000**	--	--	**84**	52	530	7.6	--	--
W-B7	B7	07/03/18	5	**9,600**	--	--	**200**	11	400	160	--	--
W-B9	B9	07/03/18	5	**95,000**	--	--	**390**	94	**2,000**	**1,800**	--	--
MTCA Method A Cleanup Levels				800	500	500	5	1,000	700	1,000	160	--

Aerotech Environmental Consulting, Inc. - Remedial Investigation Report - July 31, 2019

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth*	TPHg	TPHd	TPHo	Benzene	Toluene	Ethyl- benzene	Total Xylenes	Naphthalene	1,3,5-Trimethylbenze
			Feet BGS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
B11	B11	07/19/19	4.5	<50.0	--	--	<1.00	<1.00	<1.00	<1.00	--	--
B12	B12	07/19/19	5	**2,760**	--	--	**205**	3.85	<1.00	8.78	--	--
MTCA Method A Cleanup Levels				800	500	500	5	1,000	700	1,000	160	--

Aerotech Environmental Consulting, Inc. - Off-Site Investigation - March 24, 2023

Sample ID	Soil Boring/Point Well ID	Sampling Date	Sample Depth*	TPHg	TPHd	TPHo	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	1,3,5-Trimethylbenze
			Feet BGS	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
W-TE1	TE1	02/02/23	10	<50.0	--	--	<0.440	<1.00	0.622	3.611	--	--
W-TE2	TE2	02/02/23	10	<50.0	--	--	<0.440	<1.00	<0.400	<1.50	--	--
W-TE3	TE3	02/02/23	10	<50.0	--	--	<0.440	<1.00	<0.400	<1.50	--	--
W-TE4	TE4	02/02/23	10	<50.0	--	--	<0.440	<1.00	<0.400	<1.50	--	--
MTCA Method A Cleanup Levels				800	500	500	5	1,000	700	1,000	160	--

TABLE 2
GRAB GROUNDWATER ANALYTICAL RESULTS
Fife RV Center
3410 Pacific Highway East
Fife, Washington

EXPLANATION

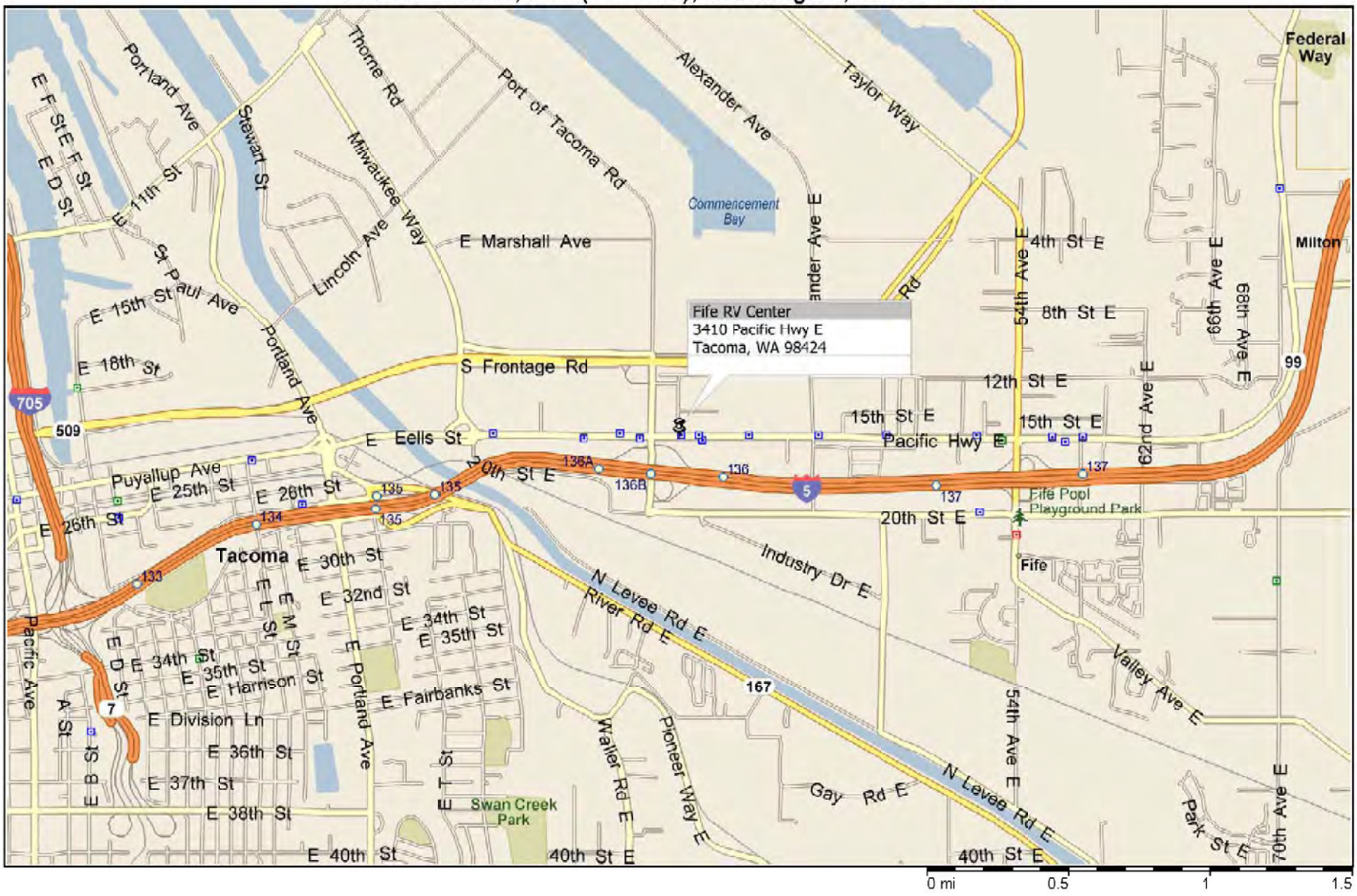
MTCA = Model Toxic Control Act Cleanup Level (WAC173-340-900)
BGS = Below Ground Surface µg/L = microgram of analyte per liter of water
< = not detected at indicated Laboratory Detection Limits -- = not analyzed
Volatile Organic Compounds of Samples EB 5 W though EB 7 W by EPA Method 8260C
Benzene, Toluene, Ethylbenzene, and Total Xylenes of Samples EB 1 W though EB 4 W and EB 8 W through EB 10 W by EPA Method 8021B; of Samples B11 and B12 by 8260D
TPHg - Total Petroleum Hydrocarbons - Gasoline by NWTPH-Gx
TPHd - Total Petroleum Hydrocarbons - Diesel by NWTPH-Dx
TPHo - Total Petroleum Hydrocarbons - Motor Oil by NWTPH-Dx extended
MTBE = Methyl-tert-butyl-ether EDC = 1,2-Dichloroethane EDB = 1,2-Dibromoethane TCE = Trichloroethene Methylene Chloride; by EPA Method 8260B
ND = Not Detected (minimum detection limit unknown)
Bolded numbers and red-shaded cells denote concentrations above the MTCA Method A Cleanup Levels for groundwater
* = Bottom of borehole stated, which represents the bottom of the temporary well screen. Screen length is not written in Associated Earth Sciences, Inc. Phase II report.
1 = The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
2 = Estimated concentration. A dilution is required to obtain an accurate quantification of the analyte.
3 = The presence of the compound indicated is likely due to laboratory contamination.
4 = The current Method B Non-carcinogen Standard Value was used in the table. No Method A or Method B carcinogen values have been established for this parameter.
5 = The sample extract was passed through a silica gel column prior to analyses.

Fife RV Center, Fife (Tacoma), Washington, United States

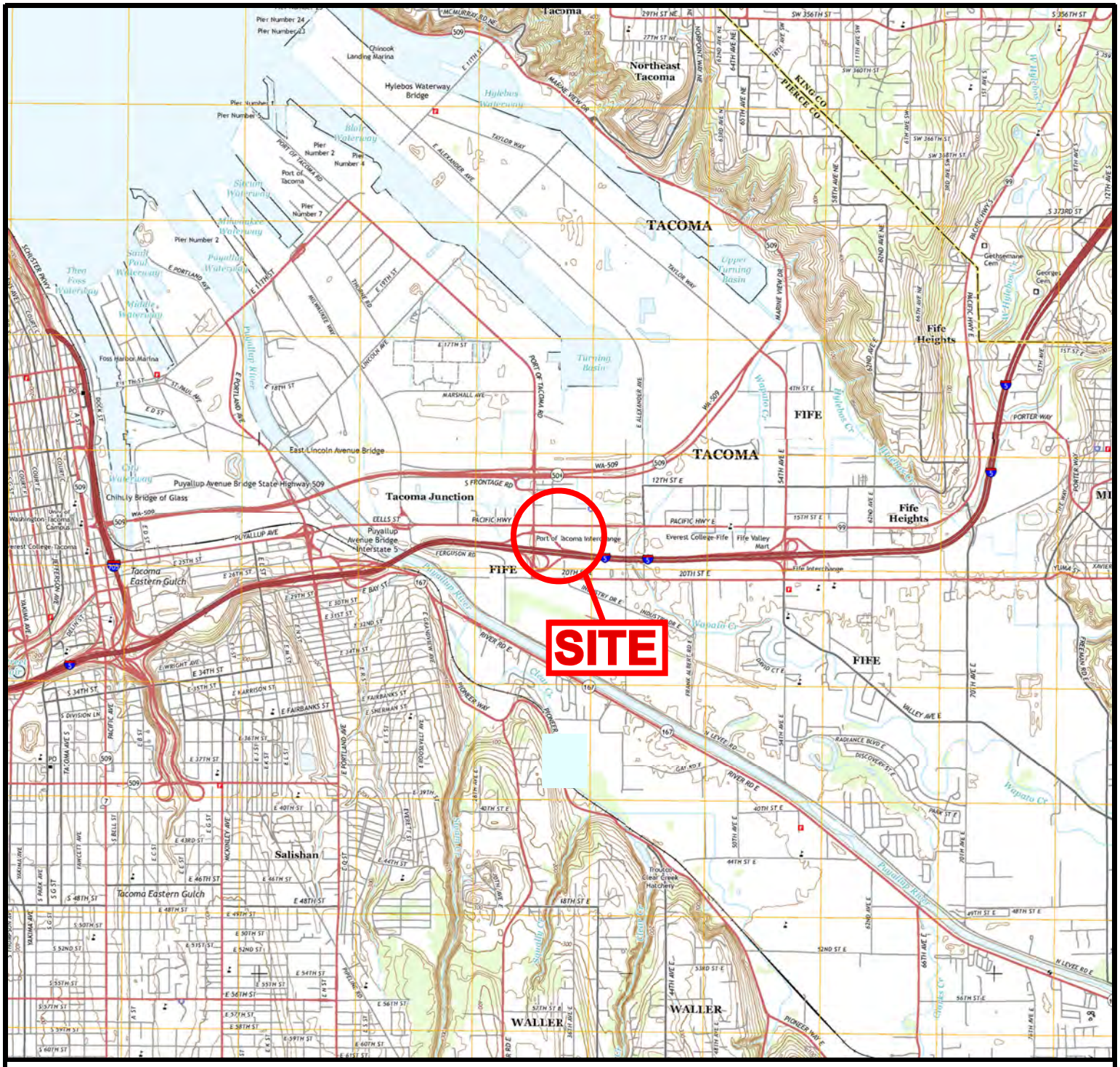
AEROTECH ENVIRONMENTAL CONSULTING	**REGIONAL MAP**	**Fife RV Center** **3410 Pacific Highway East** **Fife, Washington**		**Date:** 12/08/16 **By:** Nick Gerkin **Figure:** 1

N

Fife RV Center, Fife (Tacoma), Washington, United States



AEROTECH ENVIRONMENTAL CONSULTING	**NEIGHBORHOOD STREET MAP**	**Fife RV Center** **3410 Pacific Highway East** **Fife, Washington**		**Date:** 12/08/16 **By:** Nick Gerkin **Figure:** 2



CONTOUR INTERVAL 20 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

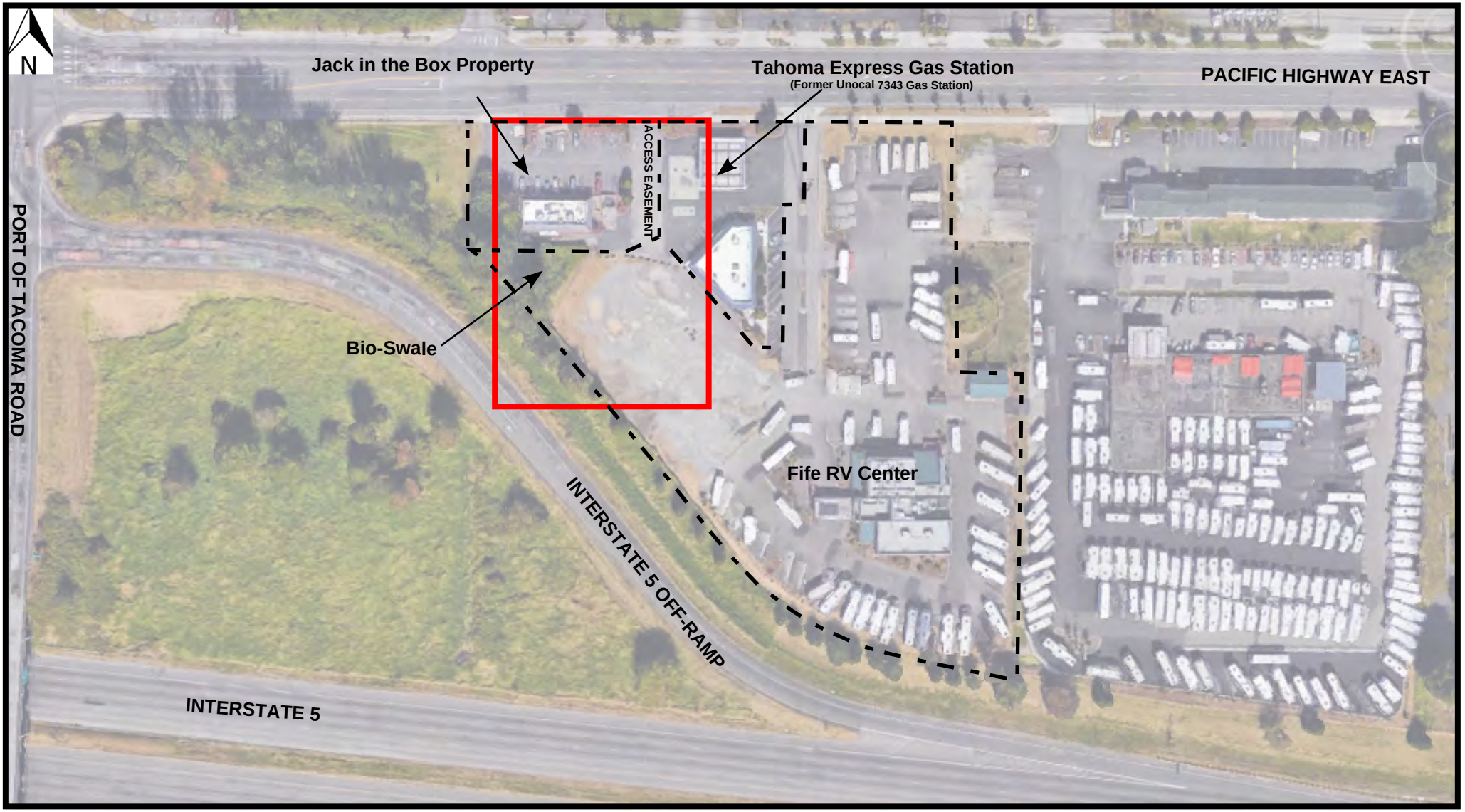
DRAFT

AEROTECH
ENVIRONMENTAL CONSULTING

USGS TOPOGRAPHIC MAP

Fife RV Center
3410 Pacific Highway East
Fife, Washington

Date: 10/30/16
By: Nick Gerkin
Figure: 3



EXPLANATION

Parcel Property Boundary

Extent of Figure 5

AEROTECH ENVIRONMENTAL CONSULTING

SITE VICINITY MAP

Fife RV Center
3410 Pacific Highway East
Fife, Washington

0 150 300
SCALE (feet)

Date: 03/20/23
By: Nick Gerkin
Figure: 4

TE4		TE4
4.5	9.5	Water
<6.14	<6.88	<50.0
<0.0215	<0.0241	<0.440
<0.0368	<0.0413	<1.00
<0.0307	<0.0344	<0.400
<0.0921	<0.1032	<1.50

TE3		TE3
5	9.5	Water
<6.13	<6.89	<50.0
<0.0215	<0.0241	<0.440
<0.0368	<0.0413	<1.00
<0.0307	<0.0344	<0.400
<0.0920	<0.1033	<1.50

TE2		TE2
4.5	9.5	Water
<6.13	<5.50	<50.0
<0.0214	<0.0192	<0.440
<0.0368	<0.0330	<1.00
<0.0306	<0.0275	<0.400
<0.0919	<0.0825	<1.50

TE1		TE1
4	9	Water
<5.63	<4.62	<50.0
<0.0197	<0.0162	<0.440
<0.0338	<0.0277	<1.00
<0.0282	<0.0231	0.622
<0.0845	<0.0693	3.611

Groundwater Flow Direction Range (GeoEngineers)

Extent of 1992 Remedial Excavation & UST Replacement

BIO-SWALE POND

TACOMA EXPRESS

DRAFT

TE1	Location ID
Water	Water
<50.0	TPH-Gasoline
<0.440	Benzene
<1.00	Toluene
0.622	Ethylbenzene
3.611	Total Xylenes

All Concentrations Reported in µg/L

TE1	Location ID
4	Feet BGS
<5.63	TPH-Gasoline
<0.0197	Benzene
<0.0338	Toluene
<0.0282	Ethylbenzene
<0.0845	Total Xylenes

All Concentrations Reported in mg/kg

0 20 40

SCALE (feet)

Red numbers and symbols indicate concentrations above the MTCA Method A Cleanup Levels

Blue numbers and symbols indicate groundwater concentrations below the MTCA Method A Cleanup Levels

AEROTECH ENVIRONMENTAL CONSULTING

EXPLANATION

- MW16 — Groundwater Monitoring Well
- MW-2A — Decommissioned Groundwater Monitoring Well (Unocal 4373)
- B15 — Soil Boring
- MW4 — Decommissioned Groundwater Monitoring Well (Fife RV Center)
- Catch Basin
- TP16 — Test Pit
- Fence
- Property Boundary
- Underground Utility: Electrical (Red); Storm Water / Sanitary (Green); Water (Blue)

SOIL & GROUNDWATER ANALYTICAL RESULTS

Fife RV Center
3410 Pacific Highway East
Fife, Washington

Date: 03/20/23

By: Nick Gerkin

Figure: 5

- Laboratory Analytical Reports

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Aerotech
Nick Gerkin
14220 Interurban Ave S, Ste. 116
Tukwila, WA 98168

RE: Fife RV
Work Order Number: 2302108

February 10, 2023

Attention Nick Gerkin:

Fremont Analytical, Inc. received 8 sample(s) on 2/7/2023 for the analyses presented in the following report.

Gasoline by NWTPH-Gx
Sample Moisture (Percent Moisture)
Volatile Organic Compounds by EPA Method 8260D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/10/2023*

CLIENT: Aerotech
Project: Fife RV
Work Order: 2302108

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2302108-001	TE1(9)	02/03/2023 9:15 AM	02/07/2023 11:46 AM
2302108-002	TE1(4)	02/03/2023 9:10 AM	02/07/2023 11:46 AM
2302108-003	TE2(4.5)	02/03/2023 9:55 AM	02/07/2023 11:46 AM
2302108-004	TE2(9.5)	02/03/2023 10:00 AM	02/07/2023 11:46 AM
2302108-005	TE3(5)	02/03/2023 10:55 AM	02/07/2023 11:46 AM
2302108-006	TE3(9.5)	02/03/2023 11:00 AM	02/07/2023 11:46 AM
2302108-007	TE4(4.5)	02/03/2023 12:10 PM	02/07/2023 11:46 AM
2302108-008	TE4(9.5)	02/03/2023 12:15 PM	02/07/2023 11:46 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2302108**
Date: **2/10/2023**

CLIENT: Aerotech
Project: Fife RV

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2302108**
Date Reported: **2/10/2023**

Client: Aerotech
Collection Date: 2/3/2023 9:15:00 AM
Project: Fife RV
Lab ID: 2302108-001
Matrix: Soil
Client Sample ID: **TE1(9)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39368		Analyst: SH
Gasoline Range Organics	ND	4.62		mg/Kg-dry	1	2/8/2023 3:51:16 PM
Surr: Toluene-d8	105	65 - 135		%Rec	1	2/8/2023 3:51:16 PM
Surr: 4-Bromofluorobenzene	101	65 - 135		%Rec	1	2/8/2023 3:51:16 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39368		Analyst: SH
Benzene	ND	0.0162		mg/Kg-dry	1	2/8/2023 3:51:16 PM
Toluene	ND	0.0277		mg/Kg-dry	1	2/8/2023 3:51:16 PM
Ethylbenzene	ND	0.0231		mg/Kg-dry	1	2/8/2023 3:51:16 PM
m,p-Xylene	ND	0.0462		mg/Kg-dry	1	2/8/2023 3:51:16 PM
o-Xylene	ND	0.0231		mg/Kg-dry	1	2/8/2023 3:51:16 PM
Surr: Dibromofluoromethane	98.5	80 - 120		%Rec	1	2/8/2023 3:51:16 PM
Surr: Toluene-d8	99.7	80 - 120		%Rec	1	2/8/2023 3:51:16 PM
Surr: 1-Bromo-4-fluorobenzene	102	80 - 120		%Rec	1	2/8/2023 3:51:16 PM
Sample Moisture (Percent Moisture)				Batch ID: R81738		Analyst: ET
Percent Moisture	16.5	0.500		wt%	1	2/9/2023 10:53:49 AM

Analytical Report

Work Order: **2302108**
Date Reported: **2/10/2023**

Client: Aerotech
Collection Date: 2/3/2023 9:10:00 AM
Project: Fife RV
Lab ID: 2302108-002
Matrix: Soil
Client Sample ID: **TE1(4)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39368		Analyst: SH
Gasoline Range Organics	ND	5.63		mg/Kg-dry	1	2/8/2023 4:23:40 PM
Surr: Toluene-d8	104	65 - 135		%Rec	1	2/8/2023 4:23:40 PM
Surr: 4-Bromofluorobenzene	102	65 - 135		%Rec	1	2/8/2023 4:23:40 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39368		Analyst: SH
Benzene	ND	0.0197		mg/Kg-dry	1	2/8/2023 4:23:40 PM
Toluene	ND	0.0338		mg/Kg-dry	1	2/8/2023 4:23:40 PM
Ethylbenzene	ND	0.0282		mg/Kg-dry	1	2/8/2023 4:23:40 PM
m,p-Xylene	ND	0.0563		mg/Kg-dry	1	2/8/2023 4:23:40 PM
o-Xylene	ND	0.0282		mg/Kg-dry	1	2/8/2023 4:23:40 PM
Surr: Dibromofluoromethane	101	80 - 120		%Rec	1	2/8/2023 4:23:40 PM
Surr: Toluene-d8	101	80 - 120		%Rec	1	2/8/2023 4:23:40 PM
Surr: 1-Bromo-4-fluorobenzene	102	80 - 120		%Rec	1	2/8/2023 4:23:40 PM
Sample Moisture (Percent Moisture)				Batch ID: R81738		Analyst: ET
Percent Moisture	15.4	0.500		wt%	1	2/9/2023 10:53:49 AM

Analytical Report

Work Order: **2302108**
Date Reported: **2/10/2023**

Client: Aerotech
Collection Date: 2/3/2023 9:55:00 AM
Project: Fife RV
Lab ID: 2302108-003
Matrix: Soil
Client Sample ID: **TE2(4.5)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39368		Analyst: SH
Gasoline Range Organics	ND	6.13		mg/Kg-dry	1	2/8/2023 5:23:56 PM
Surr: Toluene-d8	103	65 - 135		%Rec	1	2/8/2023 5:23:56 PM
Surr: 4-Bromofluorobenzene	97.8	65 - 135		%Rec	1	2/8/2023 5:23:56 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39368		Analyst: SH
Benzene	ND	0.0214		mg/Kg-dry	1	2/8/2023 5:23:56 PM
Toluene	ND	0.0368		mg/Kg-dry	1	2/8/2023 5:23:56 PM
Ethylbenzene	ND	0.0306		mg/Kg-dry	1	2/8/2023 5:23:56 PM
m,p-Xylene	ND	0.0613		mg/Kg-dry	1	2/8/2023 5:23:56 PM
o-Xylene	ND	0.0306		mg/Kg-dry	1	2/8/2023 5:23:56 PM
Surr: Dibromofluoromethane	102	80 - 120		%Rec	1	2/8/2023 5:23:56 PM
Surr: Toluene-d8	100	80 - 120		%Rec	1	2/8/2023 5:23:56 PM
Surr: 1-Bromo-4-fluorobenzene	98.8	80 - 120		%Rec	1	2/8/2023 5:23:56 PM
Sample Moisture (Percent Moisture)				Batch ID: R81738		Analyst: ET
Percent Moisture	24.6	0.500		wt%	1	2/9/2023 10:53:49 AM

Analytical Report

Work Order: **2302108**
Date Reported: **2/10/2023**

Client: Aerotech
Collection Date: 2/3/2023 10:00:00 AM
Project: Fife RV
Lab ID: 2302108-004
Matrix: Soil
Client Sample ID: **TE2(9.5)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39368		Analyst: SH
Gasoline Range Organics	ND	5.50		mg/Kg-dry	1	2/8/2023 5:54:02 PM
Surr: Toluene-d8	101	65 - 135		%Rec	1	2/8/2023 5:54:02 PM
Surr: 4-Bromofluorobenzene	99.9	65 - 135		%Rec	1	2/8/2023 5:54:02 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39368		Analyst: SH
Benzene	ND	0.0192		mg/Kg-dry	1	2/8/2023 5:54:02 PM
Toluene	ND	0.0330		mg/Kg-dry	1	2/8/2023 5:54:02 PM
Ethylbenzene	ND	0.0275		mg/Kg-dry	1	2/8/2023 5:54:02 PM
m,p-Xylene	ND	0.0550		mg/Kg-dry	1	2/8/2023 5:54:02 PM
o-Xylene	ND	0.0275		mg/Kg-dry	1	2/8/2023 5:54:02 PM
Surr: Dibromofluoromethane	98.4	80 - 120		%Rec	1	2/8/2023 5:54:02 PM
Surr: Toluene-d8	98.4	80 - 120		%Rec	1	2/8/2023 5:54:02 PM
Surr: 1-Bromo-4-fluorobenzene	101	80 - 120		%Rec	1	2/8/2023 5:54:02 PM
Sample Moisture (Percent Moisture)				Batch ID: R81738		Analyst: ET
Percent Moisture	26.6	0.500		wt%	1	2/9/2023 10:53:49 AM

Analytical Report

Work Order: **2302108**
Date Reported: **2/10/2023**

Client: Aerotech
Collection Date: 2/3/2023 10:55:00 AM
Project: Fife RV
Lab ID: 2302108-005
Matrix: Soil
Client Sample ID: **TE3(5)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39368		Analyst: SH
Gasoline Range Organics	ND	6.13		mg/Kg-dry	1	2/8/2023 6:24:09 PM
Surr: Toluene-d8	102	65 - 135		%Rec	1	2/8/2023 6:24:09 PM
Surr: 4-Bromofluorobenzene	96.0	65 - 135		%Rec	1	2/8/2023 6:24:09 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39368		Analyst: SH
Benzene	ND	0.0215		mg/Kg-dry	1	2/8/2023 6:24:09 PM
Toluene	ND	0.0368		mg/Kg-dry	1	2/8/2023 6:24:09 PM
Ethylbenzene	ND	0.0307		mg/Kg-dry	1	2/8/2023 6:24:09 PM
m,p-Xylene	ND	0.0613		mg/Kg-dry	1	2/8/2023 6:24:09 PM
o-Xylene	ND	0.0307		mg/Kg-dry	1	2/8/2023 6:24:09 PM
Surr: Dibromofluoromethane	96.9	80 - 120		%Rec	1	2/8/2023 6:24:09 PM
Surr: Toluene-d8	100	80 - 120		%Rec	1	2/8/2023 6:24:09 PM
Surr: 1-Bromo-4-fluorobenzene	96.5	80 - 120		%Rec	1	2/8/2023 6:24:09 PM
Sample Moisture (Percent Moisture)				Batch ID: R81738		Analyst: ET
Percent Moisture	23.1	0.500		wt%	1	2/9/2023 10:53:49 AM

Analytical Report

Work Order: **2302108**
Date Reported: **2/10/2023**

Client: Aerotech
Collection Date: 2/3/2023 11:00:00 AM
Project: Fife RV
Lab ID: 2302108-006
Matrix: Soil
Client Sample ID: **TE3(9.5)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39368		Analyst: SH
Gasoline Range Organics	ND	6.89		mg/Kg-dry	1	2/8/2023 6:54:15 PM
Surr: Toluene-d8	103	65 - 135		%Rec	1	2/8/2023 6:54:15 PM
Surr: 4-Bromofluorobenzene	99.2	65 - 135		%Rec	1	2/8/2023 6:54:15 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39368		Analyst: SH
Benzene	ND	0.0241		mg/Kg-dry	1	2/8/2023 6:54:15 PM
Toluene	ND	0.0413		mg/Kg-dry	1	2/8/2023 6:54:15 PM
Ethylbenzene	ND	0.0344		mg/Kg-dry	1	2/8/2023 6:54:15 PM
m,p-Xylene	ND	0.0689		mg/Kg-dry	1	2/8/2023 6:54:15 PM
o-Xylene	ND	0.0344		mg/Kg-dry	1	2/8/2023 6:54:15 PM
Surr: Dibromofluoromethane	98.7	80 - 120		%Rec	1	2/8/2023 6:54:15 PM
Surr: Toluene-d8	100	80 - 120		%Rec	1	2/8/2023 6:54:15 PM
Surr: 1-Bromo-4-fluorobenzene	99.9	80 - 120		%Rec	1	2/8/2023 6:54:15 PM
Sample Moisture (Percent Moisture)				Batch ID: R81738		Analyst: ET
Percent Moisture	28.5	0.500		wt%	1	2/9/2023 10:53:49 AM

Analytical Report

Work Order: **2302108**
Date Reported: **2/10/2023**

Client: Aerotech
Collection Date: 2/3/2023 12:10:00 PM
Project: Fife RV
Lab ID: 2302108-007
Matrix: Soil
Client Sample ID: **TE4(4.5)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39368		Analyst: SH
Gasoline Range Organics	ND	6.14		mg/Kg-dry	1	2/8/2023 7:24:23 PM
Surr: Toluene-d8	104	65 - 135		%Rec	1	2/8/2023 7:24:23 PM
Surr: 4-Bromofluorobenzene	101	65 - 135		%Rec	1	2/8/2023 7:24:23 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39368		Analyst: SH
Benzene	ND	0.0215		mg/Kg-dry	1	2/8/2023 7:24:23 PM
Toluene	ND	0.0368		mg/Kg-dry	1	2/8/2023 7:24:23 PM
Ethylbenzene	ND	0.0307		mg/Kg-dry	1	2/8/2023 7:24:23 PM
m,p-Xylene	ND	0.0614		mg/Kg-dry	1	2/8/2023 7:24:23 PM
o-Xylene	ND	0.0307		mg/Kg-dry	1	2/8/2023 7:24:23 PM
Surr: Dibromofluoromethane	97.9	80 - 120		%Rec	1	2/8/2023 7:24:23 PM
Surr: Toluene-d8	101	80 - 120		%Rec	1	2/8/2023 7:24:23 PM
Surr: 1-Bromo-4-fluorobenzene	103	80 - 120		%Rec	1	2/8/2023 7:24:23 PM
Sample Moisture (Percent Moisture)				Batch ID: R81738		Analyst: ET
Percent Moisture	22.4	0.500		wt%	1	2/9/2023 10:53:49 AM

Analytical Report

Work Order: **2302108**
Date Reported: **2/10/2023**

Client: Aerotech
Collection Date: 2/3/2023 12:15:00 PM
Project: Fife RV
Lab ID: 2302108-008
Matrix: Soil
Client Sample ID: **TE4(9.5)**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39368		Analyst: SH
Gasoline Range Organics	ND	6.88		mg/Kg-dry	1	2/8/2023 7:54:30 PM
Surr: Toluene-d8	105	65 - 135		%Rec	1	2/8/2023 7:54:30 PM
Surr: 4-Bromofluorobenzene	100	65 - 135		%Rec	1	2/8/2023 7:54:30 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39368		Analyst: SH
Benzene	ND	0.0241		mg/Kg-dry	1	2/8/2023 7:54:30 PM
Toluene	ND	0.0413		mg/Kg-dry	1	2/8/2023 7:54:30 PM
Ethylbenzene	ND	0.0344		mg/Kg-dry	1	2/8/2023 7:54:30 PM
m,p-Xylene	ND	0.0688		mg/Kg-dry	1	2/8/2023 7:54:30 PM
o-Xylene	ND	0.0344		mg/Kg-dry	1	2/8/2023 7:54:30 PM
Surr: Dibromofluoromethane	101	80 - 120		%Rec	1	2/8/2023 7:54:30 PM
Surr: Toluene-d8	102	80 - 120		%Rec	1	2/8/2023 7:54:30 PM
Surr: 1-Bromo-4-fluorobenzene	101	80 - 120		%Rec	1	2/8/2023 7:54:30 PM
Sample Moisture (Percent Moisture)				Batch ID: R81738		Analyst: ET
Percent Moisture	26.8	0.500		wt%	1	2/9/2023 10:53:49 AM

Work Order: 2302108
CLIENT: Aerotech
Project: Fife RV

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID: **LCS-39368**	SampType: **LCS**	Units: **mg/Kg**	Prep Date: **2/8/2023**	RunNo: **81736**
Client ID: **LCSS**	Batch ID: **39368**		Analysis Date: **2/8/2023**	SeqNo: **1694113**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	25.9	5.00	25.00	0	103	65	135				
Surr: Toluene-d8	1.27		1.250		101	65	135				
Surr: 4-Bromofluorobenzene	1.27		1.250		101	65	135				

Sample ID: **MB-39368**	SampType: **MBLK**	Units: **mg/Kg**	Prep Date: **2/8/2023**	RunNo: **81736**
Client ID: **MBLKS**	Batch ID: **39368**		Analysis Date: **2/8/2023**	SeqNo: **1694112**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	5.00									
Surr: Toluene-d8	1.28		1.250		102	65	135				
Surr: 4-Bromofluorobenzene	1.23		1.250		98.4	65	135				

Sample ID: **2302096-002BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **2/8/2023**	RunNo: **81736**
Client ID: **BATCH**	Batch ID: **39368**		Analysis Date: **2/8/2023**	SeqNo: **1694088**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	5.41						0		30	
Surr: Toluene-d8	1.38		1.352		102	65	135		0		
Surr: 4-Bromofluorobenzene	1.32		1.352		97.9	65	135		0		

Sample ID: **2302108-002BDUP**	SampType: **DUP**	Units: **mg/Kg-dry**	Prep Date: **2/8/2023**	RunNo: **81736**
Client ID: **TE1(4)**	Batch ID: **39368**		Analysis Date: **2/8/2023**	SeqNo: **1694093**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	5.63						0		30	
Surr: Toluene-d8	1.42		1.408		101	65	135		0		
Surr: 4-Bromofluorobenzene	1.39		1.408		98.6	65	135		0		

Work Order: 2302108
CLIENT: Aerotech
Project: Fife RV

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID: **2302108-001BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **2/8/2023** RunNo: **81736**
Client ID: **TE1(9)** Batch ID: **39368** Analysis Date: **2/8/2023** SeqNo: **1694091**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	26.6	4.62	23.11	1.857	107	65	135				
Surr: Toluene-d8	1.18		1.155		102	65	135				
Surr: 4-Bromofluorobenzene	1.16		1.155		100	65	135				

Work Order: 2302108
CLIENT: Aerotech
Project: Fife RV

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260D

Sample ID: **LCS-39368** SampType: **LCS** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81734**
Client ID: **LCSS** Batch ID: **39368** Analysis Date: **2/8/2023** SeqNo: **1694076**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	1.08	0.0175	1.000	0	108	80	120				
Toluene	1.14	0.0300	1.000	0	114	80	120				
Ethylbenzene	1.08	0.0250	1.000	0	108	80	120				
m,p-Xylene	2.32	0.0500	2.000	0	116	80	120				
o-Xylene	1.15	0.0250	1.000	0	115	80	120				
Surr: Dibromofluoromethane	1.25		1.250		100	80	120				
Surr: Toluene-d8	1.23		1.250		98.3	80	120				
Surr: 1-Bromo-4-fluorobenzene	1.26		1.250		101	80	120				

Sample ID: **MB-39368** SampType: **MBLK** Units: **mg/Kg** Prep Date: **2/8/2023** RunNo: **81734**
Client ID: **MBLKS** Batch ID: **39368** Analysis Date: **2/8/2023** SeqNo: **1694075**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0175									
Toluene	ND	0.0300									
Ethylbenzene	ND	0.0250									
m,p-Xylene	ND	0.0500									
o-Xylene	ND	0.0250									
Surr: Dibromofluoromethane	1.19		1.250		95.4	80	120				
Surr: Toluene-d8	1.23		1.250		98.4	80	120				
Surr: 1-Bromo-4-fluorobenzene	1.24		1.250		99.3	80	120				

Sample ID: **2302096-002BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **2/8/2023** RunNo: **81734**
Client ID: **BATCH** Batch ID: **39368** Analysis Date: **2/8/2023** SeqNo: **1694052**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0189						0		30	
Toluene	ND	0.0325						0		30	
Ethylbenzene	ND	0.0270						0		30	
m,p-Xylene	ND	0.0541						0		30	
o-Xylene	ND	0.0270						0		30	

Work Order: 2302108
CLIENT: Aerotech
Project: Fife RV

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260D

Sample ID: **2302096-002BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **2/8/2023** RunNo: **81734**
Client ID: **BATCH** Batch ID: **39368** Analysis Date: **2/8/2023** SeqNo: **1694052**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	1.31		1.352		97.2	80	120		0		
Surr: Toluene-d8	1.34		1.352		99.1	80	120		0		
Surr: 1-Bromo-4-fluorobenzene	1.34		1.352		99.2	80	120		0		

Sample ID: **2302108-002BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **2/8/2023** RunNo: **81734**
Client ID: **TE1(4)** Batch ID: **39368** Analysis Date: **2/8/2023** SeqNo: **1694056**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.0197						0		30	
Toluene	ND	0.0338						0		30	
Ethylbenzene	ND	0.0282						0		30	
m,p-Xylene	ND	0.0563						0		30	
o-Xylene	ND	0.0282						0		30	
Surr: Dibromofluoromethane	1.42		1.408		101	80	120		0		
Surr: Toluene-d8	1.42		1.408		101	80	120		0		
Surr: 1-Bromo-4-fluorobenzene	1.39		1.408		99.1	80	120		0		

Sample ID: **2302157-001BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **2/8/2023** RunNo: **81734**
Client ID: **BATCH** Batch ID: **39368** Analysis Date: **2/9/2023** SeqNo: **1694071**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	0.918	0.0167	0.9523	0.2661	68.4	76.2	134				S
Toluene	0.689	0.0286	0.9523	0	72.4	77.9	135				S
Ethylbenzene	0.657	0.0238	0.9523	0	68.9	81.1	138				S
m,p-Xylene	1.43	0.0476	1.905	0	74.9	82.2	135				S
o-Xylene	0.724	0.0238	0.9523	0	76.1	81.3	136				S
Surr: Dibromofluoromethane	1.20		1.190		101	80	120				
Surr: Toluene-d8	1.19		1.190		100	80	120				
Surr: 1-Bromo-4-fluorobenzene	1.22		1.190		102	80	120				

NOTES:
S - Outlying spike recoveries were associated with this sample.

Sample Log-In Check List

Client Name:	**AEROTE**	Work Order Number:	**2302108**
Logged by:	**Matt Langston**	Date Received:	**2/7/2023 11:46:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.4

DRAFT

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2/3/23 Page: 1 of: 1

Laboratory Project No (internal): 2302108

Project Name: Fife RV

Special Remarks:

Project No: —

Client: Aerotech

Collected by: Nick Gerkin

Address: 14247R Ambaum Blvd SW

Location: 3410 Pacific Hwy E, Fife

City, State, Zip: Burien, WA

Report To (PM): Nick Gerkin

Telephone: 206 487 2287

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: nick@drydirt.us

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Comments
1	TE1(9)	2/3/23	0915	S	3	X	X	X									
2	TE1(4)		0910				X	X									
3	TE2(4.5)		0955				X	X									
4	TE2(9.5)		1000				X	X									
5	TE3(5)		1055				X	X									
6	TE3(9.5)		1100				X	X									
7	TE4(4.5)		1210				X	X									
8	TE4(9.5)	↓	1215	↓	↓		X	X									
9																	
10																	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day ☐ _____ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x	Nick Gerkin	2/7/23 1145	x		02/7/23 11:46
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Aerotech
Nick Gerkin
14220 Interurban Ave S, Ste. 116
Tukwila, WA 98168

RE: Fife RV
Work Order Number: 2302109

February 14, 2023

Attention Nick Gerkin:

Fremont Analytical, Inc. received 4 sample(s) on 2/7/2023 for the analyses presented in the following report.

Gasoline by NWTPH-Gx
Volatile Organic Compounds by EPA Method 8260D

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *02/14/2023*

CLIENT: Aerotech
Project: Fife RV
Work Order: 2302109

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2302109-001	W-TE1	02/03/2023 9:30 AM	02/07/2023 11:46 AM
2302109-002	W-TE2	02/03/2023 10:15 AM	02/07/2023 11:46 AM
2302109-003	W-TE3	02/03/2023 11:15 AM	02/07/2023 11:46 AM
2302109-004	W-TE4	02/03/2023 12:30 PM	02/07/2023 11:46 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2302109**
Date: **2/14/2023**

CLIENT: Aerotech
Project: Fife RV

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MCL - Maximum Contaminant Level
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

CLIENT: Aerotech
Project: Fife RV

Lab ID: 2302109-001 **Collection Date:** 2/3/2023 9:30:00 AM
Client Sample ID: **W-TE1** **Matrix:** Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39370		Analyst: SH
Gasoline Range Organics	ND	50.0		µg/L	1	2/13/2023 11:49:52 AM
Surr: Toluene-d8	101	65 - 135		%Rec	1	2/13/2023 11:49:52 AM
Surr: 4-Bromofluorobenzene	102	65 - 135		%Rec	1	2/13/2023 11:49:52 AM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39370		Analyst: SH
Benzene	ND	0.440		µg/L	1	2/9/2023 7:18:54 PM
Toluene	ND	1.00		µg/L	1	2/9/2023 7:18:54 PM
Ethylbenzene	0.622	0.400		µg/L	1	2/9/2023 7:18:54 PM
m,p-Xylene	2.68	1.00		µg/L	1	2/9/2023 7:18:54 PM
o-Xylene	0.931	0.500		µg/L	1	2/9/2023 7:18:54 PM
Surr: Dibromofluoromethane	98.6	80 - 120		%Rec	1	2/9/2023 7:18:54 PM
Surr: Toluene-d8	101	80 - 120		%Rec	1	2/9/2023 7:18:54 PM
Surr: 1-Bromo-4-fluorobenzene	99.5	80 - 120		%Rec	1	2/9/2023 7:18:54 PM

Lab ID: 2302109-002 **Collection Date:** 2/3/2023 10:15:00 AM
Client Sample ID: **W-TE2** **Matrix:** Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39370		Analyst: SH
Gasoline Range Organics	ND	50.0		µg/L	1	2/13/2023 12:20:02 PM
Surr: Toluene-d8	99.8	65 - 135		%Rec	1	2/13/2023 12:20:02 PM
Surr: 4-Bromofluorobenzene	97.5	65 - 135		%Rec	1	2/13/2023 12:20:02 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39370		Analyst: SH
Benzene	ND	0.440		µg/L	1	2/9/2023 7:49:01 PM
Toluene	ND	1.00		µg/L	1	2/9/2023 7:49:01 PM
Ethylbenzene	ND	0.400		µg/L	1	2/9/2023 7:49:01 PM
m,p-Xylene	ND	1.00		µg/L	1	2/9/2023 7:49:01 PM
o-Xylene	ND	0.500		µg/L	1	2/9/2023 7:49:01 PM
Surr: Dibromofluoromethane	101	80 - 120		%Rec	1	2/9/2023 7:49:01 PM
Surr: Toluene-d8	100	80 - 120		%Rec	1	2/9/2023 7:49:01 PM
Surr: 1-Bromo-4-fluorobenzene	99.9	80 - 120		%Rec	1	2/9/2023 7:49:01 PM

CLIENT: Aerotech
Project: Fife RV

Lab ID: 2302109-003 **Collection Date:** 2/3/2023 11:15:00 AM
Client Sample ID: **W-TE3** **Matrix:** Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39370		Analyst: SH
Gasoline Range Organics	ND	50.0		µg/L	1	2/13/2023 12:50:11 PM
Surr: Toluene-d8	102	65 - 135		%Rec	1	2/13/2023 12:50:11 PM
Surr: 4-Bromofluorobenzene	101	65 - 135		%Rec	1	2/13/2023 12:50:11 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39370		Analyst: SH
Benzene	ND	0.440		µg/L	1	2/9/2023 8:19:10 PM
Toluene	ND	1.00		µg/L	1	2/9/2023 8:19:10 PM
Ethylbenzene	ND	0.400		µg/L	1	2/9/2023 8:19:10 PM
m,p-Xylene	ND	1.00		µg/L	1	2/9/2023 8:19:10 PM
o-Xylene	ND	0.500		µg/L	1	2/9/2023 8:19:10 PM
Surr: Dibromofluoromethane	100	80 - 120		%Rec	1	2/9/2023 8:19:10 PM
Surr: Toluene-d8	102	80 - 120		%Rec	1	2/9/2023 8:19:10 PM
Surr: 1-Bromo-4-fluorobenzene	102	80 - 120		%Rec	1	2/9/2023 8:19:10 PM

Lab ID: 2302109-004 **Collection Date:** 2/3/2023 12:30:00 PM
Client Sample ID: **W-TE4** **Matrix:** Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Gasoline by NWTPH-Gx				Batch ID: 39370		Analyst: SH
Gasoline Range Organics	ND	50.0		µg/L	1	2/13/2023 1:20:19 PM
Surr: Toluene-d8	101	65 - 135		%Rec	1	2/13/2023 1:20:19 PM
Surr: 4-Bromofluorobenzene	97.8	65 - 135		%Rec	1	2/13/2023 1:20:19 PM
Volatile Organic Compounds by EPA Method 8260D				Batch ID: 39370		Analyst: SH
Benzene	ND	0.440		µg/L	1	2/9/2023 8:49:20 PM
Toluene	ND	1.00		µg/L	1	2/9/2023 8:49:20 PM
Ethylbenzene	ND	0.400		µg/L	1	2/9/2023 8:49:20 PM
m,p-Xylene	ND	1.00		µg/L	1	2/9/2023 8:49:20 PM
o-Xylene	ND	0.500		µg/L	1	2/9/2023 8:49:20 PM
Surr: Dibromofluoromethane	102	80 - 120		%Rec	1	2/9/2023 8:49:20 PM
Surr: Toluene-d8	102	80 - 120		%Rec	1	2/9/2023 8:49:20 PM
Surr: 1-Bromo-4-fluorobenzene	99.3	80 - 120		%Rec	1	2/9/2023 8:49:20 PM

Work Order: 2302109
CLIENT: Aerotech
Project: Fife RV

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID: **LCS-39370** SampType: **LCS** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81751**
Client ID: **LCSW** Batch ID: **39370** Analysis Date: **2/9/2023** SeqNo: **1694533**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	465	50.0	500.0	0	93.0	65	135				
Surr: Toluene-d8	24.9		25.00		99.6	65	135				
Surr: 4-Bromofluorobenzene	25.8		25.00		103	65	135				

Sample ID: **MB-39370** SampType: **MBLK** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81751**
Client ID: **MBLKW** Batch ID: **39370** Analysis Date: **2/9/2023** SeqNo: **1694532**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	50.0									
Surr: Toluene-d8	25.7		25.00		103	65	135				
Surr: 4-Bromofluorobenzene	25.1		25.00		101	65	135				

Sample ID: **2302099-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81751**
Client ID: **BATCH** Batch ID: **39370** Analysis Date: **2/9/2023** SeqNo: **1694938**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	288	50.0	500.0	0	57.6	65	135				S
Surr: Toluene-d8	24.6		25.00		98.5	65	135				
Surr: 4-Bromofluorobenzene	25.6		25.00		102	65	135				

NOTES:
S - Outlying spike recoveries were associated with this sample.

Sample ID: **2302081-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81751**
Client ID: **BATCH** Batch ID: **39370** Analysis Date: **2/13/2023** SeqNo: **1696690**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	50.0						0		30	
Surr: Toluene-d8	25.8		25.00		103	65	135		0		
Surr: 4-Bromofluorobenzene	25.5		25.00		102	65	135		0		

Work Order: 2302109
CLIENT: Aerotech
Project: Fife RV

QC SUMMARY REPORT

Gasoline by NWTPH-Gx

Sample ID: **2302113-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81751**
Client ID: **BATCH** Batch ID: **39370** Analysis Date: **2/13/2023** SeqNo: **1696695**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline Range Organics	ND	50.0						0		30	
Surr: Toluene-d8	26.2		25.00		105	65	135		0		
Surr: 4-Bromofluorobenzene	25.8		25.00		103	65	135		0		

Work Order: 2302109
CLIENT: Aerotech
Project: Fife RV

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260D

Sample ID: **LCS-39370** SampType: **LCS** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81749**
Client ID: **LCSW** Batch ID: **39370** Analysis Date: **2/9/2023** SeqNo: **1694514**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	18.6	0.440	20.00	0	93.0	80	120				
Toluene	18.9	1.00	20.00	0	94.5	80	120				
Ethylbenzene	18.5	0.400	20.00	0	92.4	80	120				
m,p-Xylene	38.0	1.00	40.00	0	94.9	80	120				
o-Xylene	18.7	0.500	20.00	0	93.4	80	120				
Surr: Dibromofluoromethane	24.2		25.00		96.6	80	120				
Surr: Toluene-d8	25.0		25.00		100	80	120				
Surr: 1-Bromo-4-fluorobenzene	25.6		25.00		102	80	120				

Sample ID: **MB-39370** SampType: **MBLK** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81749**
Client ID: **MBLKW** Batch ID: **39370** Analysis Date: **2/9/2023** SeqNo: **1694513**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.440									
Toluene	ND	1.00									
Ethylbenzene	ND	0.400									
m,p-Xylene	ND	1.00									
o-Xylene	ND	0.500									
Surr: Dibromofluoromethane	25.2		25.00		101	80	120				
Surr: Toluene-d8	25.3		25.00		101	80	120				
Surr: 1-Bromo-4-fluorobenzene	24.8		25.00		99.1	80	120				

Sample ID: **2302093-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81749**
Client ID: **BATCH** Batch ID: **39370** Analysis Date: **2/9/2023** SeqNo: **1696290**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	14.2	0.440	20.00	0	71.0	78.5	133				S
Toluene	14.7	1.00	20.00	0	73.7	77	133				S
Ethylbenzene	14.9	0.400	20.00	0	74.4	77.9	133				S
m,p-Xylene	29.6	1.00	40.00	0	73.9	74.8	133				S
o-Xylene	15.2	0.500	20.00	0	76.0	81.2	126				S

Work Order: 2302109
CLIENT: Aerotech
Project: Fife RV

QC SUMMARY REPORT

Volatile Organic Compounds by EPA Method 8260D

Sample ID: **2302093-001AMS** SampType: **MS** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81749**
Client ID: **BATCH** Batch ID: **39370** Analysis Date: **2/9/2023** SeqNo: **1696290**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Dibromofluoromethane	24.7		25.00		98.9	80	120				
Surr: Toluene-d8	25.1		25.00		100	80	120				
Surr: 1-Bromo-4-fluorobenzene	25.9		25.00		103	80	120				

NOTES:
S - Outlying spike recoveries were associated with this sample.

Sample ID: **2302081-001ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81749**
Client ID: **BATCH** Batch ID: **39370** Analysis Date: **2/9/2023** SeqNo: **1696287**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.440						0		30	
Toluene	ND	1.00						0		30	
Ethylbenzene	ND	0.400						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	0.500						0		30	
Surr: Dibromofluoromethane	25.9		25.00		104	80	120		0		
Surr: Toluene-d8	25.7		25.00		103	80	120		0		
Surr: 1-Bromo-4-fluorobenzene	24.4		25.00		97.7	80	120		0		

Sample ID: **2302113-002ADUP** SampType: **DUP** Units: **µg/L** Prep Date: **2/8/2023** RunNo: **81749**
Client ID: **BATCH** Batch ID: **39370** Analysis Date: **2/9/2023** SeqNo: **1696298**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.440						0		30	
Toluene	ND	1.00						0		30	
Ethylbenzene	ND	0.400						0		30	
m,p-Xylene	ND	1.00						0		30	
o-Xylene	ND	0.500						0		30	
Surr: Dibromofluoromethane	25.4		25.00		102	80	120		0		
Surr: Toluene-d8	25.0		25.00		100	80	120		0		
Surr: 1-Bromo-4-fluorobenzene	24.0		25.00		96.1	80	120		0		

Sample Log-In Check List

Client Name:	**AEROTE**	Work Order Number:	**2302109**
Logged by:	**Matt Langston**	Date Received:	**2/7/2023 11:46:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☐	Not Present ☑
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample	4.4

DRAFT

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 2/3/23 Page: 1 of: 1
Laboratory Project No (internal): 23P2489
Project Name: Fife RV
Special Remarks:
Project No: —
Client: Aerotech
Address: 14247R Ambaum Blvd SW
Collected by: Nick Gerkin
City, State, Zip: Burien, WA
Location: 3410 Pacific Hwy E, Fife
Telephone: 206 482 2287
Report To (PM): Nick Gerkin
Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)
Fax:
PM Email: Nick@dirtydirt.us

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	# of Cont.	VOCs (EPA 8260 / 624)	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8)	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Comments
1	W-TE1	2/3/23	0930	GW	2		X	X										
2	W-TE2		1015				X	X										
3	W-TE3		1115				X	X										
4	W-TE4		1230				X	X										
5																		
6																		
7																		
8																		
9																		
10																		

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
☒ Standard ☐ Next Day
☐ 3 Day ☐ Same Day
☐ 2 Day (specify)

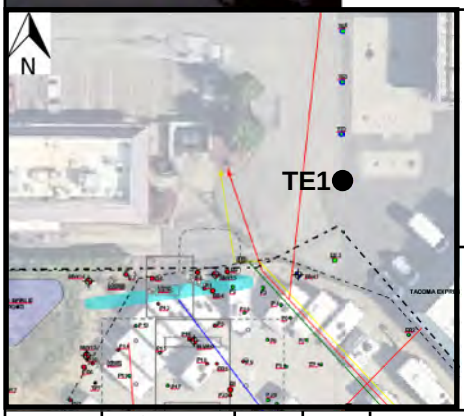
I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above, that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x	Nick Gerkin	2/7/23 1145	x		02/7/23 11:46
Relinquished (Signature)	Print Name	Date/Time	Received (Signature)	Print Name	Date/Time
x			x		

- Boring Logs

AEROTECH
ENVIRONMENTAL CONSULTING

Boring: TE1



Project: Fife RV Center

Ecology Facility Site ID.: 7907

Address: 3410 Pacific Highway E, Fife, WA

Drilling Contractor: B&W Standard Probe

Drilling Method: Direct Push
Borehole Diameter: 2-inch
Sampler Type: Plastic Sleeve

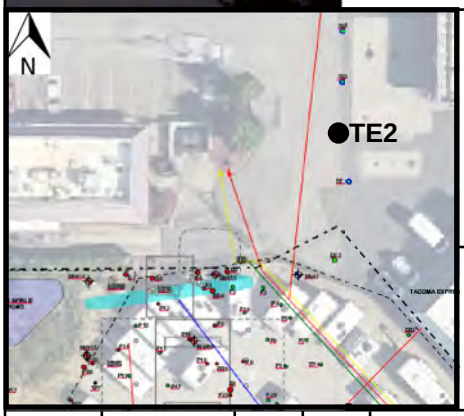
Logged by: Nick Gerkin
Boring Depth: 10 Feet
Groundwater Encountered: 4 Feet
Static Groundwater: 4 Feet

Approximate
Surface Elevation: 10 Feet Above MSL
Start Date: 02/02/23
End Date: 02/02/23

Depth (Ft)	Sample Interval/ Recovery	Blow Counts	PID Reading	USCS Classification	Description	Well Construction
0					Surface: Asphalt	
1–3				GW	**GRAVEL & SAND with Silt:** Orange & brown, fine to coarse-grained sand, fine to coarse gravel, subrounded to subangular gravel; dry; no product odor	Backfilled with bentonite chips
4			0.2			
5–6						
7				SM	**Silty SAND:** Dark brown-gray, saturated, very fine sand; no product odor	
8						
9			0.1			
10					Boring terminated at 10 feet below ground surface	
11–19						

AEROTECH ENVIRONMENTAL CONSULTING

Boring: TE2



Project: Fife RV Center

Ecology Facility Site ID.: 7907

Address: 3410 Pacific Highway E, Fife, WA

Drilling Contractor: B&W Standard Probe

Drilling Method: Direct Push
Borehole Diameter: 2-inch
Sampler Type: Plastic Sleeve

Logged by: Nick Gerkin
Boring Depth: 10 Feet
Groundwater Encountered: 4.5 Feet
Static Groundwater: 4.5 Feet

Approximate
Surface Elevation: 10 Feet Above MSL
Start Date: 02/02/23
End Date: 02/02/23

Depth (Ft)	Sample Interval/ Recovery	Blow Counts	PID Reading	USCS Classification	Description	Well Construction
					Surface: Asphalt	
1–4				GW	**GRAVEL & SAND with Silt:** Orange & brown, fine to coarse-grained sand, fine to coarse gravel, subrounded to subangular gravel; dry; no product odor	Backfilled with bentonite chips
5			0.0			
7				SM	**Silty SAND:** Dark brown-gray, saturated, very fine sand; no product odor	
10			0.2		Boring terminated at 10 feet below ground surface	

AEROTECH
ENVIRONMENTAL CONSULTING

Boring: TE3

Project: Fife RV Center

Ecology Facility Site ID.: 7907

Address: 3410 Pacific Highway E, Fife, WA

Drilling Contractor: B&W Standard Probe

Drilling Method: Direct Push
Borehole Diameter: 2-inch
Sampler Type: Plastic Sleeve

Logged by: Nick Gerkin
Boring Depth: 10 Feet
Groundwater Encountered: 5 Feet
Static Groundwater: 5 Feet

Approximate
Surface Elevation: 10 Feet Above MSL
Start Date: 02/02/23
End Date: 02/02/23

Depth (Ft)	Sample Interval/ Recovery	Blow Counts	PID Reading	USCS Classification	Description	Well Construction
					Surface: Asphalt	
1–4				GW	**GRAVEL & SAND with Silt:** Orange & brown, fine to coarse-grained sand, fine to coarse gravel, subrounded to subangular gravel; dry; no product odor	Backfilled with bentonite chips
5			0.6			
6–9				SM	**Silty SAND:** Dark brown-gray, saturated, very fine sand; no product odor	
10			0.4	ML	**SILT:** Dark brown-gray, dry, trace very fine sand; no product odor	
					Boring terminated at 10 feet below ground surface	

AEROTECH ENVIRONMENTAL CONSULTING

Boring: TE4

Project: Fife RV Center

Ecology Facility Site ID.: 7907

Address: 3410 Pacific Highway E, Fife, WA

Drilling Contractor: B&W Standard Probe

Drilling Method: Direct Push
Borehole Diameter: 2-inch
Sampler Type: Acetylene Sleeve

Logged by: Nick Gerkin
Boring Depth: 10 Feet
Groundwater Encountered: 4.5 Feet
Static Groundwater: 4.5 Feet

Approximate
Surface Elevation: 10 Feet Above MSL
Start Date: 02/02/23
End Date: 02/02/23

Depth (Ft)	Sample Interval/ Recovery	Blow Counts	PID Reading	USCS Classification	Description	Well Construction
					Surface: Asphalt	
1–4				GW	**GRAVEL & SAND with Silt:** Orange & brown, fine to coarse-grained sand, fine to coarse gravel, subrounded to subangular gravel; dry; no product odor	Backfilled with bentonite chips
5			0.4			
7				SM	**Silty SAND:** Dark brown-gray, saturated, very fine sand; no product odor	
10			0.2		Boring terminated at 10 feet below ground surface	

- Photographs

Fife RV Center

Looking East
Soil Boring TE2, located downgradient of the former UST Basin remedial excavation.

Looking East
B&W Standard Probe setup at Soil Boring Location TE2, just outside the Southwest Corner of the Gasoline UST Basin

Groundwater Sampling Setup at a Temporary Well. Groundwater was pumped until
turbidity was minimized, then samples were collected.

Soil Profile for Soil Boring TE2
(0 - 5) Bottom
(5 - 10) Top

Soil Profile for Soil Boring TE2
(0 - 5) Bottom
(5 - 10) Top

Soil Profile for Soil Boring TE3
(0 - 5) Bottom
(5 - 10) Top

- Standard Operating Procedures

AEROTECH
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(360) 710-5899

512 W. International Airport Road, Suite 201
Anchorage, Alaska 99518
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SOIL BORING AND WELL INSTALLATION STANDARD OPERATING PROCEDURE

EQUIPMENT *(Items in italic provided by drilling subcontractor, verify according to the site sampling plan they bring the appropriate equipment and material.)*

- Sampling and Analyses Plan (SAP)
- Site-specific sampling plan
- Sample location map
- Sample table
- Safety equipment, as specified in the Health and Safety Plan
- Permanent pens/marker (e.g. Sharpies®)
- Site logbook, boring log and/or sampling form
- Camera
- Candlestick/cones/barricade
- Caution tape
- Trash bags/plastic sheeting
- Assorted tools (e.g. shovels, wrenches, etc.)
- *Annular materials: silica sand, bentonite pellets and chips, grout*
- *Monitoring well materials: 2-inch schedule 40 PVC riser, well screen and end caps*
- *Completion materials: posts or traffic rated steel monuments, concrete mix, concrete forms*
- *Drilling rig (e.g. hollow stem auger, air/mud rotary, direct push, or sonic)*
- *Disposable acetate liners for direct push*
- *Decontamination equipment such as pressure washer to decontaminate rig and bucket with water and phosphate-free soap (e.g. Alconox®, Liquinox®) for split spoon samplers*

Preliminary Activities

Prior to the onset of field activities at the site, Aerotech obtains the appropriate permit(s) from the governing agency(s). Advance notification is made as required by the agency(s) prior to the start of work. Aerotech marks the borehole locations and contacts the local one call utility locating service at least 2 full business days prior to the start of work to mark buried utilities. Borehole locations may also be checked for buried utilities by a private geophysical surveyor. Additionally, borehole locations may be cleared via air-knife and vacuum operations where proposed locations are in close proximity of buried utilities. Fieldwork is conducted under the advisement of a state registered professional geologist. Monitoring well construction will

comply with Monitoring Well Construction: General, 690-240-100 through Well Seals, WAC 173-160.

Drilling

Aerotech contracts a licensed driller to advance each boring and collect soil samples. The specific drilling method (e.g., hollow-stem auger, direct push method, or sonic drilling), sampling method [e.g., core barrel or California-modified split spoon sampler (CMSSS)] and sampling depths are documented on the boring log and may be specified in a work plan. Soil samples are typically collected at the capillary fringe and at 5-foot intervals to the total depth of the boring. To determine the depth of the capillary fringe prior to drilling, the static groundwater level is measured with a water level indicator in the closest monitoring well to the boring location, if available.

The borehole is advanced to just above the desired sampling depth. For CMSSSs, the sampler is placed inside the auger and driven to a depth of 18 inches past the bit of the auger. The sampler is driven into the soil with a standard 140-pound hammer repeatedly dropped from a height of 30 inches onto the sampler. The number of blows required to drive the sampler each 6-inch increment is recorded on the boring log. For core samplers (e.g., direct push), the core is driven 18 inches using the rig apparatus.

Soil Sampling

Soil is collected according to Aerotech's SOIL SAMPLING STANDARD OPERATING PROCEDURE.

Grab Groundwater Sampling from Soil Boring

In the event that undeveloped grab-groundwater samples are necessary for the scope of work, a temporary well screen is placed across the desired interval of the soil boring. The sample can be collected via disposable bailer or peristaltic pump and disposable tubing. Additionally if direct push technology has been utilized for advancing the soil boring, a groundwater sample, is collected from the boring by using HydropunchTM sampling technology. In the case of using HydropunchTM technology, after collecting the capillary fringe soil sample, the boring is advanced to the top of the soil/groundwater interface and a sampling probe is pushed to approximately 2 feet below the top of the static water level. The probe is opened by partially withdrawing it and thereby exposing the screen. New polyethylene tubing with a peristaltic pump or decontaminated bailer is used to collect a water sample from the probe. The water sample is then emptied into laboratory-supplied containers constructed of the correct material and with the correct volume and preservative to comply with the proposed laboratory test. The container is slowly filled with the retrieved water sample until no headspace remains and then promptly sealed with a Teflon-lined cap, checked for the presence of bubbles, labeled, entered onto a COC record and placed in chilled storage at 4° Celsius. Laboratory-supplied trip blanks accompany the water samples as a quality assurance/quality control procedure. Equipment blanks may be collected as required. The samples are kept in chilled storage and transported under COC protocol to a client-approved, state-certified laboratory for analysis.

Field Screening Procedures

Aerotech staff place the soil from the middle of the sampling interval into a plastic re-sealable bag. The bag is then labeled with the sample number. The tip of a photoionization detector (PID) or similar device is inserted through the plastic bag to measure organic vapor concentrations in the headspace. The highest sustained PID measurement is recorded on the boring log. At a minimum, the PID or organic vapor monitoring device is calibrated on a daily basis in accordance with manufacturer's specifications using a hexane or isobutylene standard. The calibration gas and concentration are recorded on a calibration log. Instruments such as the PID are useful for evaluating relative concentrations of volatilized hydrocarbons, but they do not measure the concentration of petroleum hydrocarbons in the soil matrix with the same precision as laboratory analysis. Aerotech trained personnel describe the soil in the bag according to the Unified Soil Classification System and record the description on the boring log, which is included in the final report.

Backfilling of Soil Boring

If a well is not installed, the boring is backfilled from total depth to approximately 5 feet below ground surface (bgs) with either neat cement or bentonite grout using a tremie pipe. The boring is backfilled from 5 feet bgs to approximately 1 foot bgs with hydrated bentonite chips. The borehole is completed from 1 foot bgs to surface grade with material that best matches existing surface conditions and meets local agency requirements. Site-specific backfilling details are shown on the respective boring log.

Monitoring Well Construction

A well (if constructed) is completed using materials documented on the boring log or specified in a work plan. The well is constructed with slotted casing across the desired groundwater sampling depth(s) and completed with blank casing to within 6 inches of surface grade. No further construction is conducted on temporary wells. For permanent wells, the annular space of the well is backfilled with Monterey sand from the total depth to approximately 2 feet above the top of the screened casing. A hydrated granular bentonite seal is placed on top of the sand filter pack. Grout may be placed on top of the bentonite seal to the desired depth using a tremie pipe. The well may be completed to surface grade with a 1-foot thick concrete pad. A traffic-rated well vault and locking cap for the well casing may be installed to protect against surface-water infiltration and unauthorized entry. Site-specific well construction details including type of well, well depth, casing diameter, slot size, length of screen interval and sand size are documented on the boring log or specified in the work plan.

Monitoring Well Development

Following well construction, each monitoring well is developed and surveyed according to Aerotech's MONITORING WELL DEVELOPMENT AND SURVEYING STANDARD OPERATING PROCEDURE.

Well Sampling

Following development, groundwater is collected according to Aerotech's LOW-FLOW GROUNDWATER SAMPLING STANDARD OPERATING PROCEDURE.

Decontamination Procedures

Aerotech and/or the contracted driller decontaminate soil and water sampling equipment between each sampling event with a non-phosphate solution, followed by a minimum of two tap water rinses. Deionized water may be used for the final rinse. Downhole drilling equipment is steam-cleaned prior to drilling the borehole and at completion of the borehole.

Waste Treatment and Soil Disposal

Soil cuttings and decontamination fluids generated from the drilling or sampling are stored on site in labeled, Department of Transportation-approved, 55-gallon drums or other appropriate storage container. Unless otherwise specified in the contract with Aerotech, the client is responsible for disposal of investigation derived waste. Should Aerotech be contracted to complete disposal for the client, drums containing investigation derived waste are subsequently transported under manifest to a client- and regulatory-approved facility for disposal.

AEROTECH
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(360) 710-5899

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Anchorage, Alaska 99518
(907) 575-6661

SOIL SAMPLING STANDARD OPERATING PROCEDURE

EQUIPMENT

- Sampling and Analyses Plan (SAP)
- Site-specific sampling plan
- Sample location map
- Sample table
- Safety equipment, as specified in the Health and Safety Plan
- Permanent pens/marker (e.g. Sharpies®)
- Site logbook and/or sampling form
- Camera
- Screening equipment (e.g. Photoionization detector (PID))
- Survey stakes or flags
- Tape measure or measuring wheel
- Plastic sheet
- Soil collection device, heavy equipment (e.g. spoons spade shovel, hand auger, hollow stem auger – split spoon sampler, direct push rig – macro core, shelby tube, backhoe)
- Syringes for EPA Method 5035
- Syringe tool for EPA Method 5035 (e.g. En Core® sampler)
- Pre-weighed and preserved sample vials for EPA Method 5035
- Stainless steel and/or plastic bowls (only if homogenizing composite samples)
- Sample containers, precleaned (e.g., I-Chem)
- Chain-of-custody forms, custody seals, sample labels
- Ziploc® Bags
- Insulated cooler
- Ice
- Plastic bags for sample containers and ice
- Decontamination equipment including tap water and/or deionized water and phosphate-free soap (e.g. Alconox®, Liquinox®)

Soil samples are preserved in the metal or plastic sleeve used with the California-modified split spoon sampler (CMSSS) or core sampler, in glass jars or other containers according to the test method and regulatory guidelines (e.g., Environmental Protection Agency Method 5035). Sleeves are removed from the sample barrel, and the lowermost sample sleeve is labeled. Soil is collected from the split spoon sample or direct push core sample into appropriate containers based on the planned test method. Besides the use of a drilling rig, soil may also be collected via hand auger or with a scoop or spoon from the surface or a selected interval from an excavation, trench or test pit.

Soil Sample Collection

Aerotech field personnel are to review the SAP for sample locations and analysis as well as obtain photograph(s) of the material before sampling. If the soil sample is to be a discrete sample, collect soil using a clean/decontaminated stainless-steel (organic analyses) or plastic (inorganic analyses) spoon. If the soil sample is to be a composite, collect soil from all locations to be sampled into one stainless-steel (organic analyses) or plastic (inorganic analyses) bowl and homogenize the soil. If the soil sample is to be a discrete sample for volatile analyses, collect soil using a syringe and place into appropriate pre-weighed sample vial (Volatiles samples may not be composited.).

Next, use the syringe, stainless-steel or plastic spoon to transfer soil sample as appropriate into sample container as specified by the analytical test method. Label and manage sample containers. Decontaminate sampling equipment between each sampling event with a non-phosphate solution, followed by a minimum of two tap water rinses. Deionized water may be used for the final rinse. Ensure activities are well documented in the site logbook or on a designated sampling form. (i.e. collection method, presence of sheen or odor and PID measurement.

Field Screening Procedures

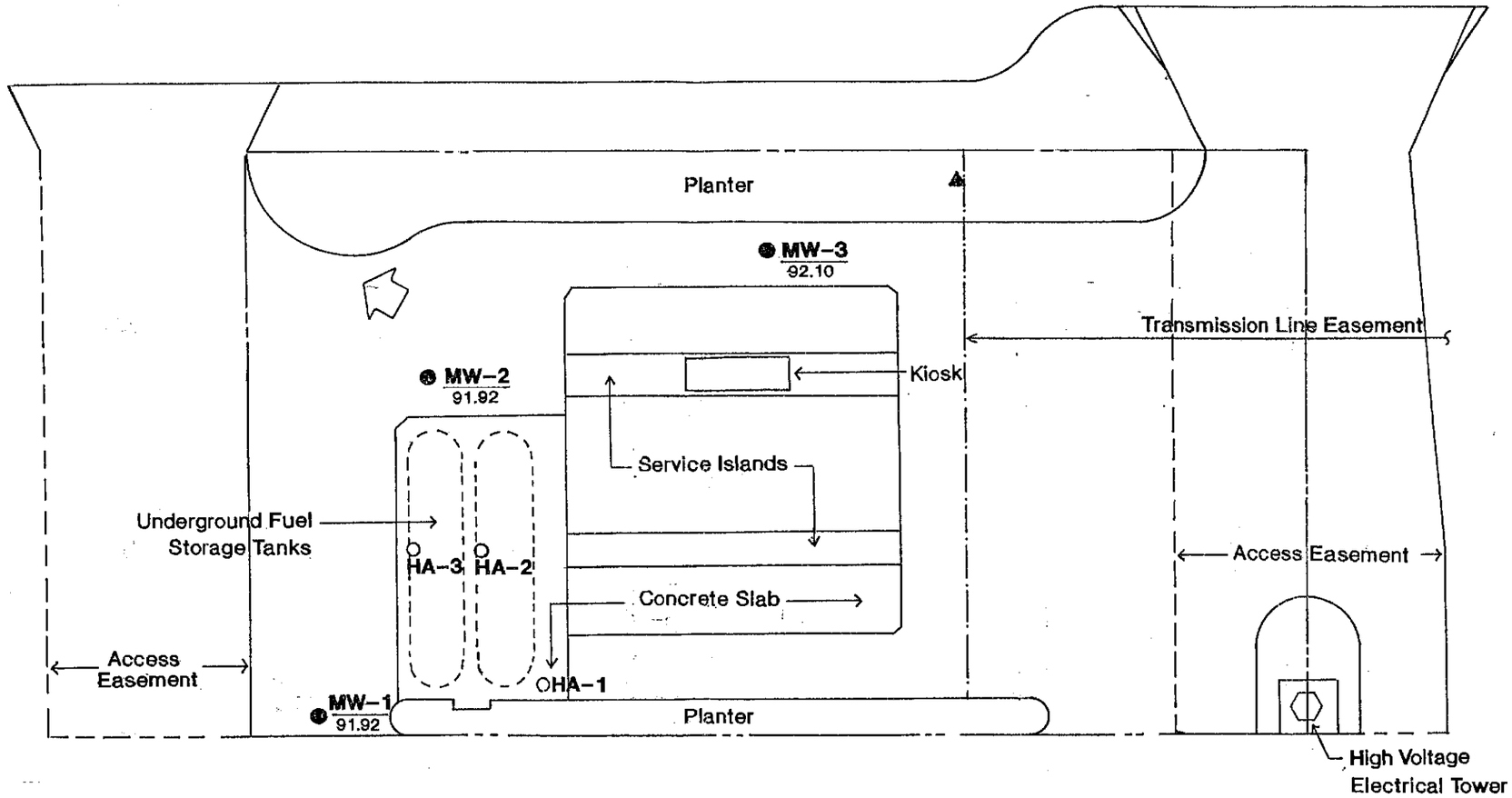
Aerotech field staff place soil from sampling interval into a plastic re-sealable bag. The bag is then labeled with the sample number. The tip of a photoionization detector (PID) or similar device is inserted through the plastic bag to measure organic vapor concentrations in the headspace. The highest sustained PID measurement is recorded on the boring log. At a minimum, the PID or organic vapor monitoring device is calibrated on a daily basis in accordance with manufacturer's specifications using a hexane or isobutylene standard. The calibration gas and concentration are recorded on a calibration log. Instruments such as the PID are useful for evaluating relative concentrations of volatilized hydrocarbons, but they do not measure the concentration of petroleum hydrocarbons in the soil matrix with the same precision as laboratory analysis. Aerotech trained personnel describe the soil in the bag according to the Unified Soil Classification System and record the description on the boring log, sampling form or logbook. Selected soil samples for analysis are then placed Samples are placed in a cooler chilled to 4º Celsius and transported to a state-certified laboratory under chain-of custody (COC) protocol.

Extractable Petroleum Hydrocarbons (EPH)/Volatile Petroleum Hydrocarbons (VPH)

To evaluate the potential utilization of site specific cleanup levels (e.g. Ecology's Method B or Method C cleanup levels), Aerotech field personnel will collect additional sample volume to complete EPH/VPH analysis. This test will be completed on samples that are containing petroleum hydrocarbons only, utilizing the previously discussed field screening procedures as well as contaminant source data from previous investigation work.

- Supplemental Documentation

PACIFIC HIGHWAY 99



SCALE: 1"=20'

EXPLANATION:

- **MW-1** / 91.92 — MONITOR WELL LOCATION AND NUMBER / GROUND WATER ELEVATION ON 3/8/90
- GENERAL DIRECTION OF GROUND WATER FLOW
- BENCHMARK AT TOP OF FIRE HYDRANT ASSUMED ELELVATION OF 100.00 FEET
- O **HA-1** — HAND AUGER LOCATION AND NUMBER

REFERENCE: DRAWING ENTITLED "GENERAL ARRANGEMENT, SERVICE STATION ~~7343~~ PACIFIC HIGHWAY 99 NR PORT OF TACOMA ROAD, FIFE, WASHINGTON," REVISED 8-10-87, BY UNION OIL.

DRAFT

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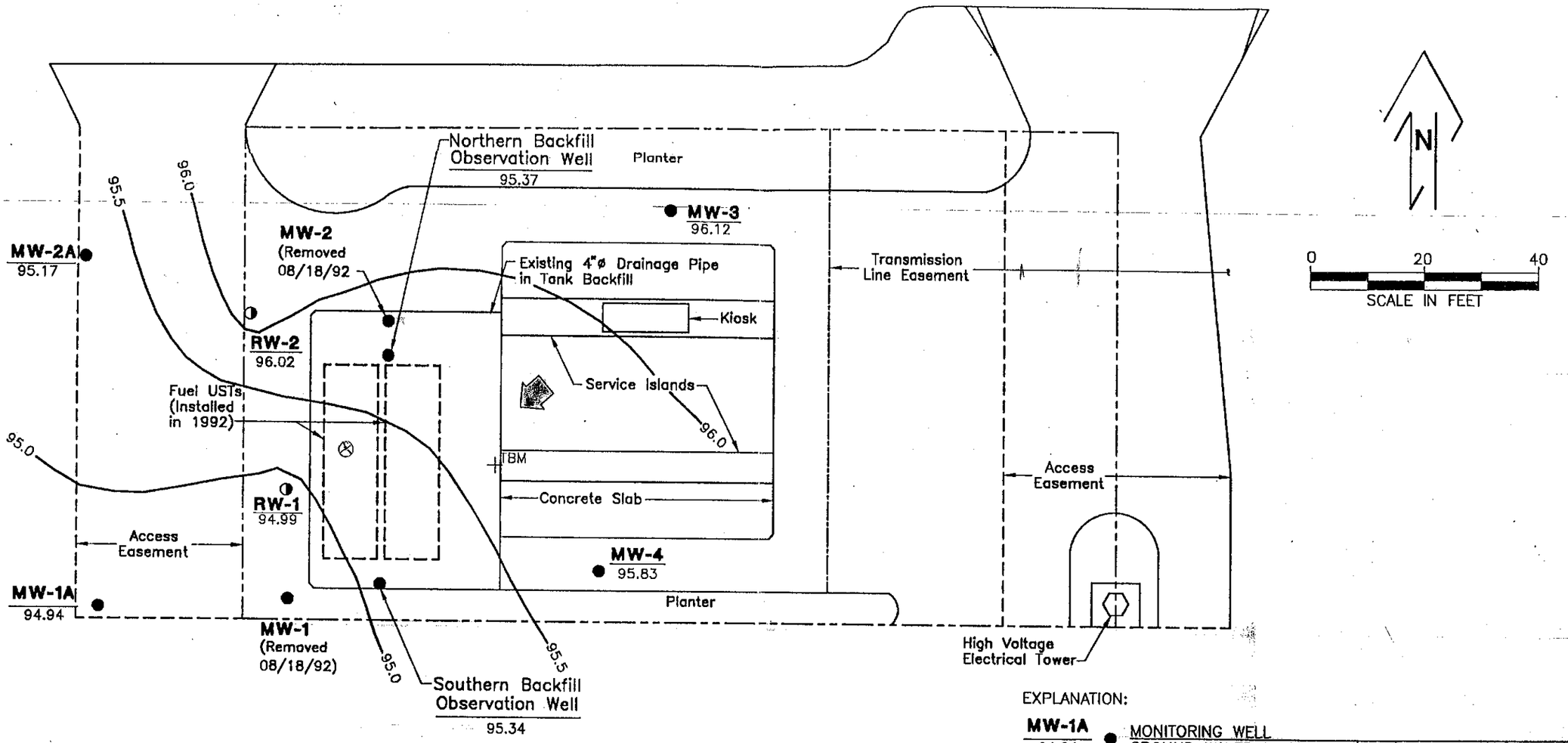
SITE PLAN

FIGURE 1

0161-256 DJK-RRR 3-20-90

PACIFIC HIGHWAY



Distance GW could have Migrated in 1 year

EXPLANATION:

- MW-1A / 94.94 — MONITORING WELL; GROUND WATER ELEVATION (FEET) MEASURED ON 05/03/93
- RW-1 / 94.99 — RECOVERY WELL; GROUND WATER ELEVATION (FEET) MEASURED ON 05/03/93
- 95.0 — GROUND WATER CONTOUR BASED ON 05/03/93 MEASUREMENTS
- UST — UNDERGROUND STORAGE TANK
- GENERAL DIRECTION OF GROUND WATER FLOW
- TBM — TEMPORARY BENCHMARK AT BASE OF SERVICE ISLAND; ASSUMED ELEVATION OF 100.00 FEET

Note: The locations of all features shown are approximate.

Reference: Drawing entitled "General Arrangement, Service Station 7343, Pacific Highway 99 NR Port of Tacoma Road, Fife, Washington," revised 08/10/87, by Union Oil.

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MAY 1993 GROUND WATER ELEVATIONS

FIGURE 2

DDK:ANG:KKT 256F002.DWG 0161256404:052093

TABLE 1 (Page 1 of 2)
SUMMARY OF GROUND WATER ANALYTICAL RESULTS[1]

Well Number[2]	Date Sampled	BETX[3] (µg/l)				Gasoline-range Hydrocarbons[4] (mg/l)
		B	E	T	X	
MW-1	03/08/90	204	150	180	3,650	20
(Removed	08/31/90	190	73	<5.0	1,300	--
08/18/92)	01/22/92	30	41	1.7	240	4
	02/07/92	29	16	0.8	100	--
	02/11/92	36	13	<0.5	110	--
	02/12/92	22	10	<0.5	94	--
	03/05/92	15	5	<0.5	46	--
	05/29/92	44	33	1.9	140	--
MW-1A	01/29/93	<0.5	<0.5	<0.5	2.0	--
	05/03/93	**<0.5**	**<0.5**	**<0.5**	**3.6**	**<0.1**
MW-2	03/08/90	135	453	683	13,600	52
(Removed	08/31/90	570	920	1,700	24,000	--
08/18/92)	01/22/92	14	250	24	3,900	40
	02/07/92	23	120	12	2,600	--
	02/11/92	31	150	38	6,300	--
	02/12/92	36	180	83	4,100	--
	03/05/92	20	93	5.2	2,400	--
	05/29/92	5.4	49	0.86	530	--
MW-2A	01/29/93	<0.5	<0.5	<0.5	1.6	--
	05/03/93	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**
MW-3	03/08/90	<0.01	<0.01	<0.01	<0.01	15
	08/31/90	<0.5	<0.5	<0.5	<0.5	--
	01/22/92	<0.5	<0.5	<0.5	<0.5	<1
	05/29/92	<0.5	<0.5	<0.5	<0.5	--
	01/29/93	<0.5	<0.5	<0.5	<0.5	--
	05/03/93	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**
MW-4	08/31/90	<0.5	<0.5	<0.5	<0.5	--
	01/22/92	<0.5	<0.5	<0.5	<0.5	<1
	05/29/92	<0.5	<0.5	<0.5	<0.5	--
	01/29/93	<0.5	<0.5	<0.5	<0.5	--
	05/03/93	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**
Northern	01/28/92	49	110	15	2,400	16
Backfill	02/07/92	64	90	7.5	1,500	--
Observation	02/11/92	49	66	13	1,900	--
Well	02/12/92	36	61	2.8	1,300	--
	03/05/92	14	23	1.9	570	--
	05/29/92	40	47	1.8	100	--
	09/23/92	210	89	43	370	2.6
	01/29/93	28	180	6.8	67	--
	02/11/93	18	100	10	53	--
	02/18/93	0.5	0.5	1.9	3.6	--
	02/25/93	<0.5	<0.5	<0.5	<0.5	--
	05/03/93	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**

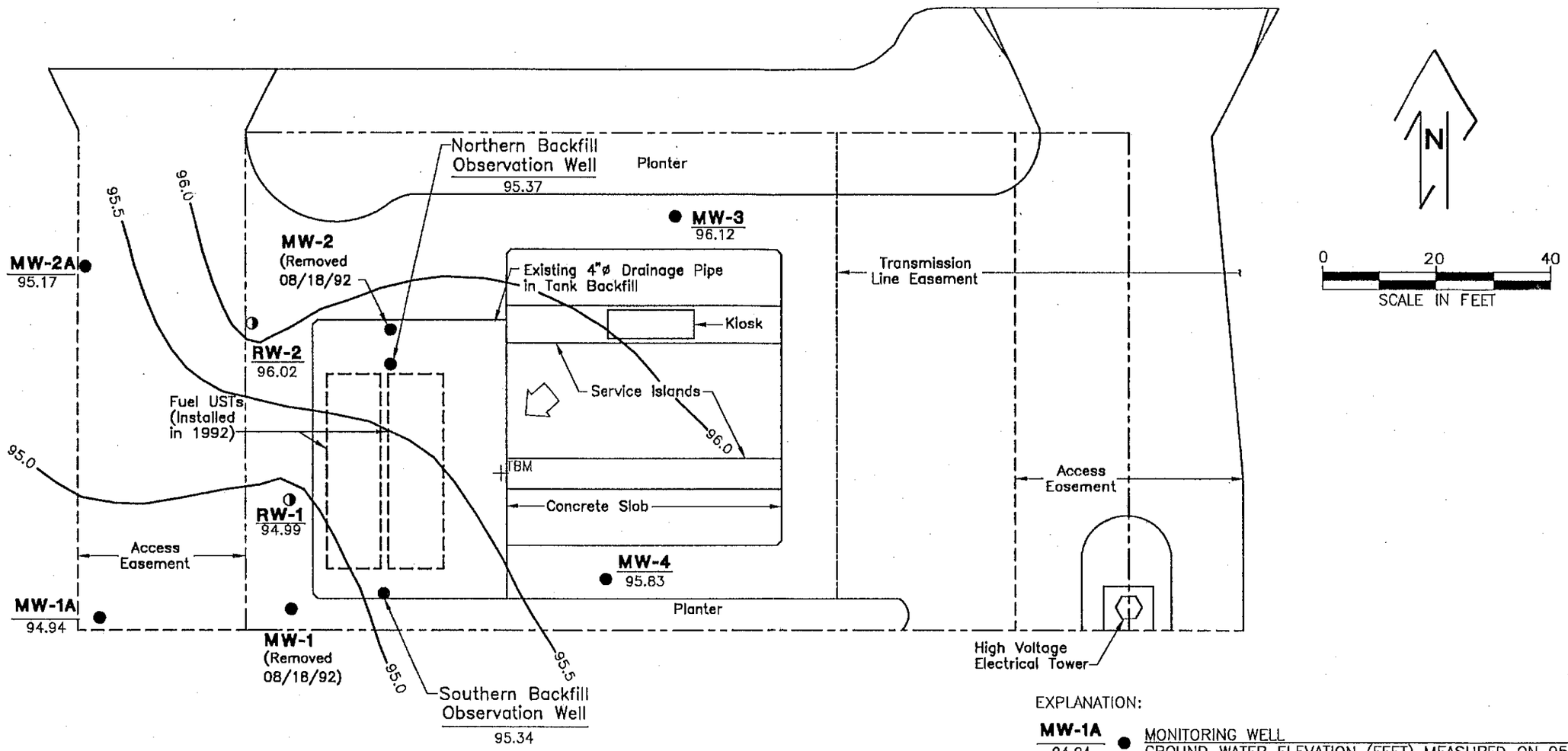
Notes appear on page 2 of 2.

TABLE 1 (Page 2 of 2)

Well Number[2]	Date Sampled	BETX[3] (µg/l)				Gasoline-range Hydrocarbons[4] (mg/l)
		B	E	T	X	
Southern	01/28/92	12	10	0.5	91	16
Backfill	02/07/92	7.9	57	0.5	61	--
Observation	02/11/92	0.7	<0.5	<0.5	4.8	--
Well	02/12/92	<0.5	<0.5	<0.5	<0.5	--
	03/05/92	29	9.9	<0.5	93	--
	05/29/92	39	5.2	0.67	56	--
	09/23/92	14	1.7	<0.5	8.7	0.13
	01/29/93	2.6	2.2	<0.5	<0.5	--
	02/18/93	<0.5	<0.5	<0.5	<0.5	--
	02/25/93	<0.5	<0.5	<0.5	<0.5	<1
	05/03/93	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**
RW-1	01/29/93	<0.5	<0.5	<0.5	<0.5	--
	05/03/93	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**
RW-2	01/29/93	<0.5	<0.5	<0.5	1.1	--
	05/03/93	**<0.5**	**<0.5**	**<0.5**	**<0.5**	**<0.1**
MTCA Method A Cleanup Levels		5	30	40	20	1.0

Notes:

[illegible]



EXPLANATION:

MW-1A 94.94 ●	MONITORING WELL GROUND WATER ELEVATION (FEET) MEASURED ON 05/03/93
RW-1 94.99 ◑	RECOVERY WELL GROUND WATER ELEVATION (FEET) MEASURED ON 05/03/93
95.0 ———	GROUND WATER CONTOUR BASED ON 05/03/93 MEASUREMENTS
UST	UNDERGROUND STORAGE TANK
	GENERAL DIRECTION OF GROUND WATER FLOW
TBM +	TEMPORARY BENCHMARK AT BASE OF SERVICE ISLAND; ASSUMED ELEVATION OF 100.00 FEET

Note: The locations of all features shown are approximate.

Reference: Drawing entitled "General Arrangement, Service Station 7343, Pacific Highway 99 NR Port of Tacoma Road, Fife, Washington," revised 08/10/87, by Union Oil.

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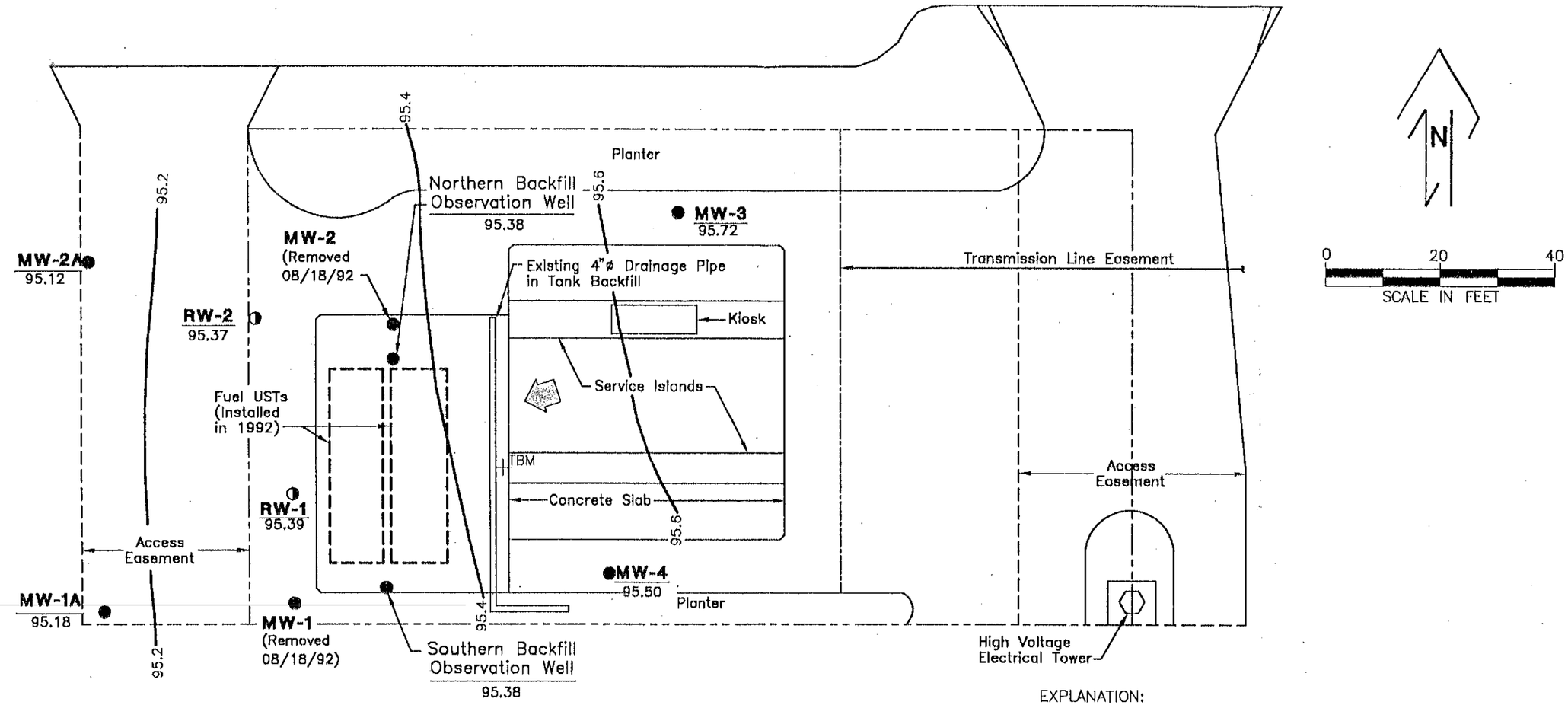
MAY 1993 GROUND WATER ELEVATIONS

FIGURE 2

DDK:ANG:KKT 256F002.DWG 0161256404:052093



EXPLANATION:

- **MW-1A** / 95.18 — MONITORING WELL; GROUND WATER ELEVATION (IN FEET) MEASURED ON 02/02/93
- **RW-1** / 95.39 — RECOVERY WELL; GROUND WATER ELEVATION (IN FEET) MEASURED ON 02/02/93
- 95.2 — GROUND WATER ELEVATION CONTOUR, BASED ON 02/02/93 MEASUREMENTS
- UST — UNDERGROUND STORAGE TANK
- GENERAL DIRECTION OF GROUND WATER FLOW
- TBM — TEMPORARY BENCHMARK AT BASE OF SERVICE ISLAND; ASSUMED ELEVATION OF 100.00 FEET

Note: The locations of all features shown are approximate.

Reference: Drawing entitled "General Arrangement, Service Station 7343, Pacific Highway 99 NR Port of Tacoma Road, Fife, Washington," revised 08/10/87, by Union Oil.

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GROUND WATER CONTOUR MAP

FIGURE 2

DDK:ANG:KKT 256F002.DWG 0161256404:021593

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA[1]
GASOLINE UST EXCAVATION

Sample Number[2]	Date Sampled	General Location	Depth of Sample (feet)	Field Screening Results[3]		Volatile Aromatic Hydrocarbons[4] (EPA Method 8020) (mg/kg)				WTPH-G[5] (mg/kg)	Lead (EPA Method 7420) (mg/kg)
				Headspace Vapors (ppm)	Sheen	B	E	T	X		
G-1	08/18/92	Base	15.0	120	SS	<0.050	<0.050	<0.050	<0.10	8.6	<7.5
G-2	08/18/92	West wall	15.0	<10	NS	<0.050	<0.050	<0.050	<0.10	<1	<7.5
G-3	08/18/92	Base	15.5	950	NS	0.068	<0.050	0.17	0.18	1.8	<7.5
G-4	08/18/92	East wall	5.0	<10	NS	<0.050	<0.050	<0.050	<0.10	<1	<7.5
G-5	08/18/92	South wall	5.0	<10	NS	<0.050	<0.050	<0.050	<0.10	1.7	<7.5
G-6	08/18/92	North wall	14.0	<10	NS	<0.050	<0.050	<0.050	<0.10	<1	<7.5
MTCA Method A Cleanup Levels						0.5	20	40	20	100	250

Notes:

[1]Chemical analyses conducted by North Creek Analytical. Laboratory reports are presented in Appendix B.

[2]Sample locations are shown in Figure 2.

[3]Field screening methods are described in Appendix A. Headspace vapors were measured with a Photovac MicroTIP calibrated to isobutylene. NS = no sheen; SS = slight sheen

[4]B = benzene, E = ethylbenzene, T = toluene, X = total xylenes

[5]WTPH-G = Washington total petroleum hydrocarbons-gasoline by Ecology- (Washington State Department of Ecology) specified method.

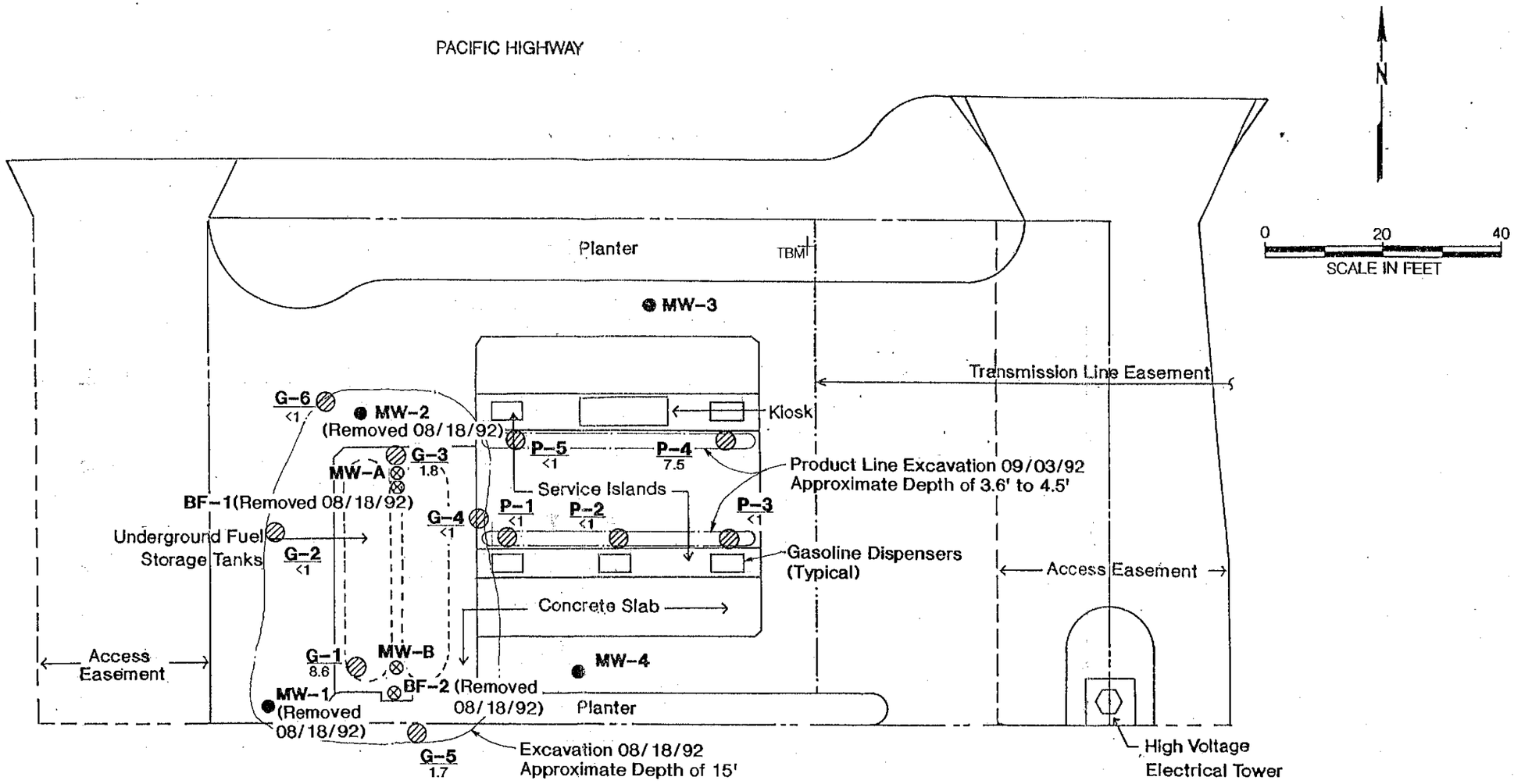
ppm = parts per million

mg/kg = milligrams per kilogram

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA

Soil Sample Location	Date Sampled	Depth of Sample (feet)	TPH (EPA Method 418.1) (mg/kg)	BETX (mg/kg) (EPA Method 8020)				Fuel Hydrocarbons (EPA Method 8015, modified) (mg/kg)	
				Benzene	Ethylbenzene	Toluene	Xylenes	Gasoline	Diesel
MW-1	03/07/90	3	5.4	<0.05	<0.05	<0.05	<0.05	—	—
		8	8.7	<0.05	<0.05	<0.05	<0.05	—	—
MW-2	03/07/90	3	10.9	<0.05	<0.05	<0.05	<0.05	—	—
		8	7.0	<0.05	<0.05	<0.05	0.16	—	—
MW-3	03/07/90	3	21.4	<0.05	<0.05	<0.05	<0.05	—	—
MW-4	08/31/90	3	—	<0.025	<0.025	<0.025	<0.025	<5	<5
HA-1	05/14/90	3.5	24	<0.025	<0.025	<0.025	<0.025	<5	<5
HA-2	05/17/90	3.5	19	<0.025	0.029	<0.025	<0.025	<5	<5
HA-3	05/17/90	3.0	15	1.7	0.72	0.71	0.84	<5	<5

Notes:
"--" indicates "not tested"
mg/kg = milligrams per kilogram



EXPLANATION:

MW-1	●	MONITORING WELL
G-1 / 8.6	⊘	SOIL SAMPLE CONCENTRATION OF VOLATILE HYDROCARBONS DETECTED BY WTPH-G ANALYSIS (mg/kg)
BF-1	⊗	BACKFILL OBSERVATION PORT

0161-256-R4 MAP:KJD 3/25/91
REV. DOK:ANG 7/31/92
Rev. DDK:ANG 10/06/92

REFERENCE: DRAWING ENTITLED "GENERAL ARRANGEMENT, SERVICE STATION 7343 PACIFIC HIGHWAY 99 NR PORT OF TACOMA ROAD, FIFE, WASHINGTON," REVISED 8-10-87, BY UNION OIL.

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SITE PLAN

FIGURE 2