PHASE II ENVIRONMENTAL SITE ASSESSMENT BAY STREET PROPERTY 521 & 525 BAY STREET PORT ORCHARD, WASHINGTON

Project No. 104-21018
April 27, 2021

Prepared for:
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1.0 INTRODUCTION

This report summarizes the results of a Phase II Environmental Site Assessment (ESA) conducted by Krazan & Associates, Inc. (Krazan) on the referenced property. The scope of work (Proposal No. E21026WAP, dated March 30, 2021) was approved by Mr. Jim Rothlin on April 5, 2021.

2.0 SITE LOCATION AND DESCRIPTION

The subject site is located at 521 and 525 Bay Street in Port Orchard, Washington. The site consists of two-tax parcels, tax account numbers 4650-004-005-0002 and 4650-004-004-0102, and encompasses a total of 0.55 acres. The subject site is currently occupied with two commercial buildings, a live-theater and a sheet metal fabrication shop, and has been occupied since at least 1910. The site was previously occupied by a gas/service station at the 525 Bay Street parcel.

3.0 PROJECT BACKGROUND

The following information is summarized from a Phase I ESA prepared by Krazan, dated March 24, 2021, for the subject property. During the course of the assessment, Krazan identified evidence of two recognized environmental conditions (RECs) and one potential are of concern (PAOC). Soil and groundwater contamination was documented in 2000, by GeoScience Management, Inc., on the 525 Bay Street parcel, likely resulting from the prior sale of gasoline on the property. No further assessment or remediation was apparently conducted on the property. Four closed-in-place gasoline underground storage tanks (USTs) remain on the subject site associated with the former gas/service station, which represents an REC. The tanks were reportedly filled with concrete in the mid-1980s. In addition, a subsurface hydraulic lift was observed in the sheet metal shop during the site visit, which represents a PAOC.

In addition, an 800-gallon heating oil UST at 521 Bay Street was removed in 2002. Approximately 25 tons of petroleum-contaminated soil was excavated and disposed of off-site. Final soil and groundwater sampling from the excavation determined that no further assessment or remedial action was warranted at the site.

Two adjacent properties (City of Port Orchard Public Works/Dick Vlist Motors and Marina Mart) are located hydraulically upgradient of the subject property, and have confirmed contamination of multiple contaminants in the groundwater and soil, representing an additional REC. Both sites have started cleanup but it appears that cleanup is not active and the sites have been dropped from the Voluntary

Cleanup Program (VCP) by the Department of Ecology due to inactivity. There is potential that possible vapor intrusion and confirmed groundwater contamination from these properties could impact the subject property and contribute to contamination on the subject site.

It was recommended that a Phase II ESA be performed to determine the impact of the RECs and the POAC on the subject site.

4.0 SCOPE OF SERVICES

This assessment is intended to provide sufficient information to either confirm or eliminate the presence of petroleum hydrocarbons in the soil and groundwater and the presence of vapor intrusion in the soil that may indicate a past release from the prior sale of gasoline on the site and the impact from the adjacent properties. The work done at the subject property consisted of: 1) conducting a ground-penetrating radar (GPR) survey on the property prior to drilling to confirm the location of the closed-in-place USTs and the subsurface hydraulic lift, 2) drilling up to six soil borings with a limited-access direct-push drill rig and the collection of soil, groundwater, and soil vapor samples, 3) scanning each soil sample for the presence of volatile hydrocarbons using a photoionization detector (PID), 4) chemical analysis of selected soil and groundwater samples for Total Petroleum Hydrocarbons in the gasoline range (TPH-G) and diesel-extended range (TPH-Dx), and the constituents benzene, toluene, ethylbenzene, and total xylenes (BTEX), soil samples for polychlorinated biphenyls (PCBs), as well as analysis of two soil vapor samples for volatile organic compounds (VOCs), and 5) preparation of a report documenting the field investigation and findings. This work was conducted as part of a real-estate transaction and not in response to any regulatory requirements.

5.0 SAMPLING METHODS

5.1 Geophysical Survey

A GPR survey was conducted on the property on April 9, 2021, by Applied Professional Services, Inc. (APS) of North Bend, Washington. The GPR survey used a dual frequency GSSI Utility pro locator. GPR survey lines were run in the parking areas on the southern portion of the property adjacent to Bay Street and along the east edge of the property. The survey identified the presence of multiple USTs in front of the sheet metal building at 525 Bay Street. No other USTs were identified.

5.2 Drilling and Soil and Groundwater Sample Collection

A representative of Krazan observed the drilling of the soil borings and obtained soil samples on April 9, 2021. Five soil borings were drilled with an ESN Northwest bobcat-mounted, Direct-Push drill rig, to a maximum depth of 15 feet. Boring B-1 was located adjacent to the subsurface hydraulic lift inside the sheet metal building. Boring B-2 was located adjacent to the closed-in-place USTs; boring B-3 was located near the southeast corner of the property adjacent to Bay Street; boring B-4 was located near the approximate location of the removed heating oil UST in front of the theater building (521 Bay Street); and boring B-5 was located on the east side of the sheet metal building adjacent to one closed-in-place UST. The locations of the soil borings are shown on Figure 2.

During drilling, soil samples were collected in five-foot sections using a 2.0-inch diameter sampler driven into the soil at the head of the probe. The samples were visually described using the Unified Soils Classification System (ASTM D 2487). Geologic logs of the soil probes are attached in Appendix A. The collected soil samples were field-screened using a photo-ionization detector (PID) for the presence of volatile organic compounds. Soil samples were collected from five of the borings and from one of the soil vapor probes for chemical analysis.

Eight soil samples were collected from the borings for analysis of the target compounds. Soil samples selected for analysis were directly placed in clean 4-ounce glass jars and VOC jars provided by the laboratory using disposable stainless-steel spoons. The sample jars were completely filled with no remaining headspace. Each sample jar was labeled with the project name, number, and the sequential sample number. Following labeling, the samples were placed in an ice chest with synthetic ice and maintained at a temperature of approximately 4° Celsius.

Five groundwater samples were collected from the borings for analysis of the target compounds. Groundwater samples were collected using a peristaltic pump and placed directly into clean amber bottles and VOC vials provided by the lab using disposable plastic tubing. Each sample bottle was labeled with the project name, number, and the sequential sample number. Following labeling, the samples were placed in an ice chest with synthetic ice and maintained at a temperature of approximately 4° Celsius.

5.3 Soil Vapor Probes and Collection of Air Samples

A representative of Krazan observed the drilling of the soil vapor probes and obtained soil vapor samples on April 9, 2021. Two soil vapor probes were drilled with an ESN Northwest bobcat-mounted Direct-Push drill rig to a maximum depth of approximately 5.0 feet below ground surface (bgs). A probe was placed adjacent to each building in the parking area on the southern portion of the site. The probe locations are shown on Figure 2.

The soil gas probes were screened between 4 and 5 feet bgs within the boreholes. The boreholes were backfilled with dry, granular bentonite to approximately 6-inches below the desired sampling depth. A new section of ¼-inch diameter polyethylene tubing with a new ¼-inch diameter polypropylene filter at the terminal end was inserted into the borehole to the desired sampling depth. One-inch diameter PVC casing was used as a guide for the tubing to ensure that the desired sampling depth was achieved. Sand was poured into the boring annulus to form an approximately 1-foot-long sand pack around the polypropylene filter, at which time the PVC piping was withdrawn. Approximately 1-foot of dry, granular bentonite was placed atop the sand pack and the remainder of the borehole was backfilled with hydrated bentonite to the ground surface to form a seal. The probes were field-screened using a PID for the presence of volatile organic compounds prior to collecting the soil vapor samples.

Soil gas samples were collected using 1-liter, stainless steel, cylindrical SUMMA canisters. The sampling containers for soil gas collected from borings VP-1 and VP-2 were provided by Friedman & Bruya, Inc., a state-certified laboratory in Seattle, Washington. Krazan received the SUMMA canisters evacuated to approximately minus 30 inches of mercury. The SUMMA canisters were fitted with stainless-steel flow controllers, which were calibrated to maintain constant flow (approximately 0.1 liter per minute) for approximately 5 to 10 minutes of sampling time.

Each probe was allowed to equilibrate for a minimum of 30 minutes after installation prior to sampling. After equilibration, the sample tubing and sampler screen were purged of ambient air using a peristaltic pump. No tracer gas was used to detect ambient air intrusion. Once the purge was complete, the sampling end of the tubing was fitted to the sampling canister and the valve was opened, causing air to enter the sample canister due to the pressure differential. The valves were closed after the canister was evacuated to approximately minus 2 to 3 inches of mercury, with pertinent data (e.g., time, canister vacuum) recorded at the start and end of sampling.

5.4 Laboratory Analysis

The soil and groundwater samples were transported to ESN Northwest Laboratories in Olympia, Washington for analysis. Seven of the soil samples and four of the groundwater samples were analyzed for Total Petroleum Hydrocarbons in the Diesel and Oil Range (method NWTPH-Dx) and in the Gasoline Range with BTEX (methods NWTPH-Gx and 8260). One soil sample and one groundwater sample were analyzed for PCBs (method 8082A).

The soil vapor samples were transported, at ambient temperature, to Friedman & Bruya, Inc. in Seattle, Washington for analysis. The samples were analyzed for Air-phase Petroleum Hydrocarbons (APH) and gasoline range VOCs by EPA Methods MA-APH and TO-15.

6.0 SITE HYDROGEOLOGICAL CHARACTERISTICS

The subject site is located in the Puget Lowland, part of a regional north-south trending trough that extends from southwest British Columbia southward into Oregon. The lowland is filled with glacial and non-glacial sediments consisting of interbedded gravel, sand, silt, clay, till, and peat deposits. The area in the vicinity of the subject property is underlain by Quaternary alluvium.

Quaternary alluvium consists of unconsolidated or semi-consolidated alluvial clay, silt, sand, gravel, and/or cobble deposits; locally includes beach, dune, lacustrine, estuarine, marsh, landslide, lahar, glacial or colluvial deposits; and locally includes modified land and artificial fill.

The borings generally encountered medium-dense, silty sand with gravels and wood debris where it transitioned to medium-dense, silty sand with shell fragments at depths of up to 12.0 feet. The borings were generally terminated in a medium stiff, sandy silt or silty clay at the termination depths of 15.0 feet bgs. Groundwater was encountered in all the borings at approximately 10.0 feet. Groundwater levels fluctuate in the surrounding area due to tidal influences. For a detailed description of the soil conditions encountered, please refer to the soil boring logs in Appendix A. The description of the subsurface conditions provided herein was derived from on-site observations of soil samples collected only from the locations where borings were placed.

7.0 ENVIRONMENTAL MONITORING RESULTS

Analysis and interpretation of the data generated during the field investigation and laboratory testing is presented in the following section. Where appropriate, the results are compared with regulatory limits for the chemicals identified. During the drilling, each soil sample collected was screened using a PID to assess for the presence of volatile organic constituents. Detectable measurements were recorded in vapor

probe VP-1, and borings B-2 and B-4. No detectable measurements were recorded in the remainder of the borings.

Soil

Eight soil samples were collected for analysis. Seven of the eight samples were analyzed for Total Petroleum Hydrocarbons in the diesel-extended range and the gasoline-range with BTEX. One soil sample from B-1, adjacent to the subsurface hydraulic lift, was analyzed for PCBs. The laboratory analytical results for the soil samples are listed in Table 1.

Soil in boring B-2 adjacent to the closed-in-place USTs at 525 Bay Street exceeded the Model Toxics Control Act (MTCA) Method A soil cleanup levels for unrestricted land uses for gasoline-range TPH and benzene at depths of 5 and 9 feet. Soil in the vapor boring VP-1 adjacent to boring B-2 also exceeded the MTCA Method A soil cleanup level for unrestricted land uses for gasoline-range TPH at a depth of 5 feet. Similar conditions were documented adjacent to the tanks during the assessment conducted in 2000. Soil in boring B-4 adjacent to the removed UST at 521 Bay Street exceeded the MTCA Method A soil cleanup levels for unrestricted land uses for gasoline-range and diesel-range TPH at a depth of 5 feet.

Groundwater

Five groundwater samples were collected for analysis. Four of the five samples were analyzed for Total Petroleum Hydrocarbons in the diesel-extended range and the gasoline-range with BTEX. One groundwater sample from B-1, adjacent to the subsurface hydraulic lift, was analyzed for PCBs. The laboratory analytical results for the groundwater samples are listed in Table 2.

Groundwater in boring B-2 adjacent to the closed-in-place USTs at 525 Bay Street exceeded the MTCA Method A cleanup levels for gasoline-range TPH and benzene at a depth of 10 feet. Groundwater in boring B-5 adjacent to the closed-in-place UST east of the building at 525 Bay Street also exceeded the MTCA Method A cleanup level for gasoline-range TPH at a depth of 10 feet. Groundwater in boring B-4 adjacent to the removed UST at 521 Bay Street exceeded the MTCA Method A cleanup levels for gasoline-range and diesel-range TPH at a depth of 10 feet.

Soil Vapor

Two soil vapor samples were collected and analyzed for Air-phase Petroleum Hydrocarbons (APHs) and gasoline range VOCs. The laboratory analytical results for the vapor samples are listed in Table 3. The certified analytical results and Chain-of-Custody Records are included in Appendix B.

Vapor from probe VP-1 located near boring B-2 at 525 Bay Street exceeded the MTCA Method B Sub-Slab Soil Gas Cancer and Noncancer Screening Levels for all APH criteria, as well as for benzene and m.p-xylenes. Vapor from probe VP-2 located at 521 Bay Street exceeded the MTCA Method B Sub-Slab Soil Gas Cancer and Noncancer Screening Levels only for benzene.

TABLE 1. Summary of Soil Hydrocarbon and PCB Results
521 & 525 Bay Street, Port Orchard, Washington

Sample Number	Sample Location and Depth	BTEX and NWTPH-Gx					NWTPH-Dx		PCBs (mg/kg)
		Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline (mg/kg)	Diesel (mg/kg)	Oil (mg/kg)	
KA-BS-S1	VP-1, 5.0 feet bgs.	0.02	<0.05	0.10	<0.15	**120**	<50	<100	N/A
KA-BS-S2	B-1, 8.0 feet bgs.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND
KA-BS-S4	B-2, 5.0 feet bgs.	**0.04**	<0.05	0.13	<0.15	**1,800**	<50	490	N/A
KA-BS-S5	B-2, 9.0 feet bgs.	**0.14**	0.15	1.1	0.53	**1,400**	<50	200	N/A
KA-BS-S7	B-3, 8.0 feet bgs	<0.02	<0.05	<0.05	<0.15	12	<50	690	N/A
KA-BS-S8	B-3, 14.0 feet bgs	<0.02	<0.05	<0.05	<0.15	<10	<50	480	N/A
KA-BS-S10	B-4, 5.0 feet bgs	<0.02	<0.05	<0.05	<0.15	**600**	**4,100**	<100	N/A
KA-BS-S12	B-5, 10.0 feet bgs	<0.02	<0.05	<0.05	<0.15	59	<50	<100	N/A
MTCA Method A Cleanup Levels		**0.03**	**7.**	**6.**	**9.**	**100.**	**2,000.**	**2,000.**	**1.0**

Notes: Concentrations listed in milligrams per kilogram (mg/kg).
MTCA = the Model Toxics Control Act regulation and the regulations promulgated thereunder (Washington Administrative Code, Chapter 173-340).
Bolded results indicate concentration above clean up levels.

TABLE 2. Summary of Groundwater Hydrocarbon and PCB Results
521 & 525 Bay Street, Port Orchard, Washington

Sample Number	Sample Location and Depth	BTEX and NWTPH-Gx					NWTPH-Dx		PCBs (µg/L)
		Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	Gasoline (µg/L)	Diesel (µg/L)	Oil (µg/L)	
KA-BS-GW3	B-1, 10.0 feet bgs.	N/A	N/A	N/A	N/A	N/A	N/A	N/A	ND
KA-BS-GW6	B-2, 10.0 feet bgs.	**50**	33	44	22	**4,000**	<50	<100	N/A
KA-BS-GW9	B-3, 10.0 feet bgs.	<1.0	2.5	<1.0	5.6	630	<50	<100	N/A
KA-BS-GW11	B-4, 10.0 feet bgs.	<1.0	<1.0	<1.0	<3.0	**1,200**	**13,000**	<100	N/A
KA-BS-GW13	B-5, 10.0 feet bgs	<1.0	<1.0	<1.0	<3.0	**1,300**	<50	<100	N/A
MTCA Method A Cleanup Levels		**5.**	**1,000.**	**700.**	**1,000.**	**800.**	**500.**	**500.**	**0.1**

Notes:
Concentrations listed in micrograms per liter (µg/L).
MTCA = the Model Toxics Control Act regulation and the regulations promulgated thereunder (Washington Administrative Code, Chapter 173-340).
Bolded results indicate concentration above clean up levels.

TABLE 3. Summary of Soil Vapor Results
521 & 525 Bay Street, Port Orchard, Washington

Sample Number	Sample Location and Depth	APH			Volatile & Semi-Volatile Compounds					
		APH EC5-8 aliphatics	APH EC9-12 aliphatics	APH EC9-10 aromatics	Benzene	Toluene	Ethylbenzene	m,p-Xylenes	o-Xylenes	Naphthalene
KA-SG-01	VP-1, 5.0 feet bgs.	**43,000,000**	**720,000**	**12,000**	**5,700**	<43,000	4,300	**2,100**	<1,000	<600
KA-SG-02	VP-2, 4.0 feet bgs.	41,000	3,200	<920	**370**	1,200	50	230	56	<9.7
Adopted Criteria*		**90,000**	**4,700**	**6,000**	**10.7**	**76,200**	**15,200**	**1,520**	**1,520**	**2.45**

Notes:
Concentrations listed in micrograms per cubic meters (µg/m^3).
Bolded results indicate results above applicable clean-up values.
*Washington State Department of Ecology's *Guidance for Evaluating Soil Vapor Intrusion in Washington State*: Table B-1 Method B Sub-Slab Soil Gas Screening Levels (adopted value is for soil gas just beneath the building. Adopted value for toxicity as a carcinogen, when available).

8.0 CONCLUSIONS

Based on the results of this assessment, the following conclusions have been developed:

- Diesel & gasoline in the groundwater around the former heating oil UST at 521 Bay Street were a degree of magnitude higher than the results from the 2002 investigation and UST removal, indicating a later impact from a potential gasoline plume. The elevated diesel result indicates that not all of the impacted soil was excavated in 2002.

- Soil adjacent to the closed-in-place USTs at 525 Bay Street exceeded soil cleanup levels for gasoline-range TPH and benzene, similar to conditions that were documented adjacent to the tanks during the assessment conducted in 2000. According to the assessment report conducting by GeoScience Management, the closed-in-place fuel USTs are reported to be filled with concrete with no documentation. The elevated levels of gasoline encountered in the groundwater indicates that there may still an on-site source of gasoline. The status of the USTs should be examined to determine if they could be a continued source.

- Elevated levels of petroleum encountered in the soil vapor samples at both parcels exceeds current health guidelines. Any proposed remediation designs should include addressing vapor intrusion.

9.0 LIMITATIONS

This survey and review of the subject property has been limited in scope to those areas defined by the client. This investigation is undertaken with the risk that visual observations and random sampling alone would not reveal the presence, full nature, and extent of contaminants of concern. Krazan makes no representation as to the content of materials not sampled or that were inaccessible to our inspector. The sample locations are approximate, and are based on field notes and diagrams of sample locations. The opinions presented herein apply to the site condition existing at the time of the investigation. Opinions and recommendations provided herein may not apply to future conditions that may exist at the site.

The findings presented in this report were based on field observations and sampling as defined by the client. Therefore, the data obtained are clear and accurate only to the degree implied by the sources and methods used. The information presented herein is based on professional interpretation using presently accepted methods with a degree of conservatism deemed proper as of the report date. We do not warrant that future technical developments cannot supersede such data.

This report is provided for the exclusive use of the client noted on the cover page and is subject to the terms and conditions in the applicable contract between the client and Krazan. The client is the only party to whom Krazan has explained the risks involved and has been involved in the shaping of the scope of services needed to satisfactorily manage those risks, if any, from the client's point of view. Any third-party use of this report, including use by the Client's lender, prospective purchaser, or lessee will be subject to the terms and conditions governing the contractual work between the Client and Krazan. The unauthorized use of, reliance on, or release of the information contained in this report is strictly prohibited and will be without risk or liability to Krazan.

Laboratory analysis was conducted by a laboratory accredited under the guidance of the EPA. The results of the analyses are accurate only to the degree of care exercised by the independent laboratories and the representative nature of the samples obtained.

Krazan appreciates the opportunity to provide you with this information and trusts that you will find it useful. If you have any questions or if we may be of further assistance, please do not hesitate to contact our office at (360) 598-2126.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

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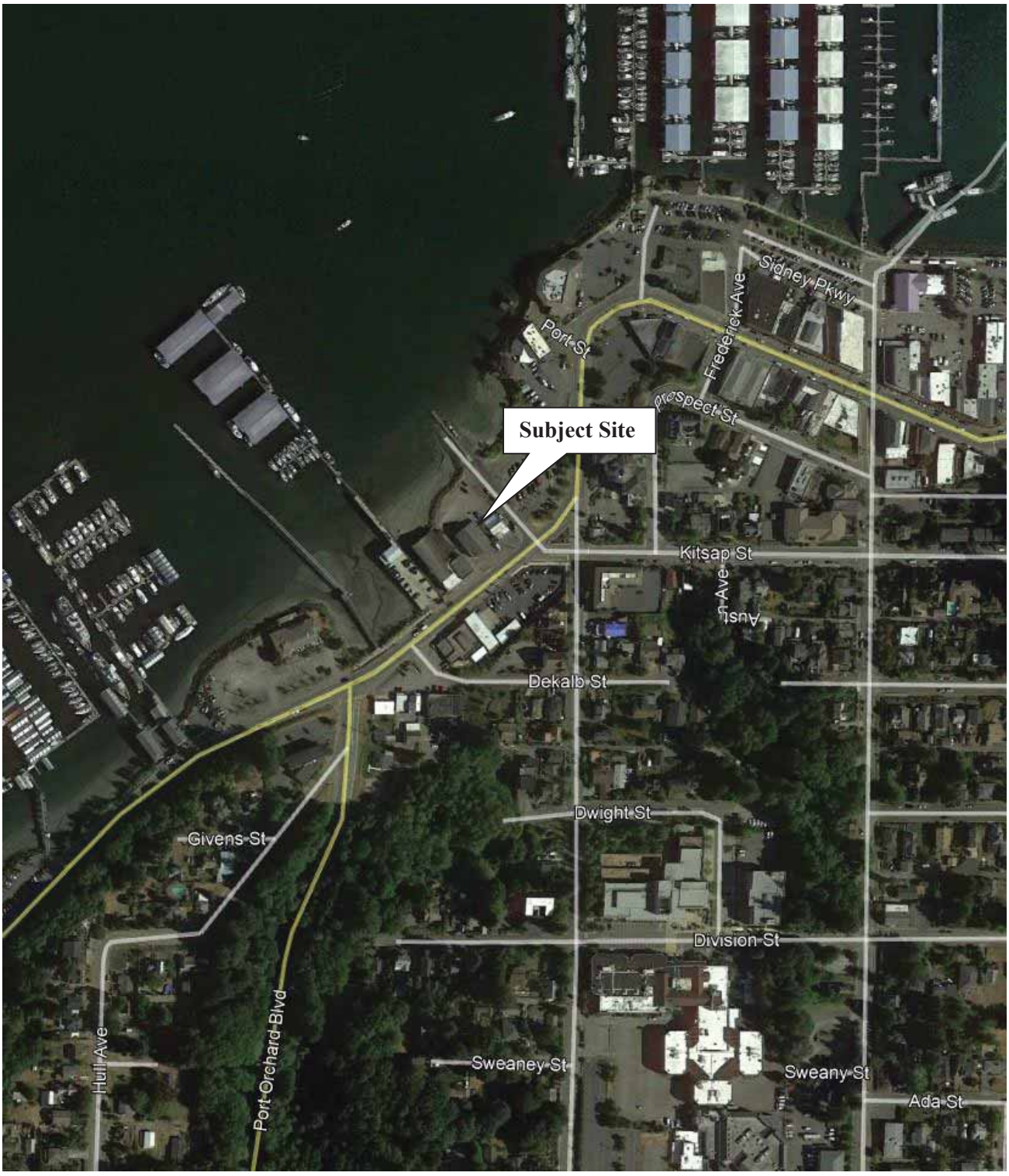
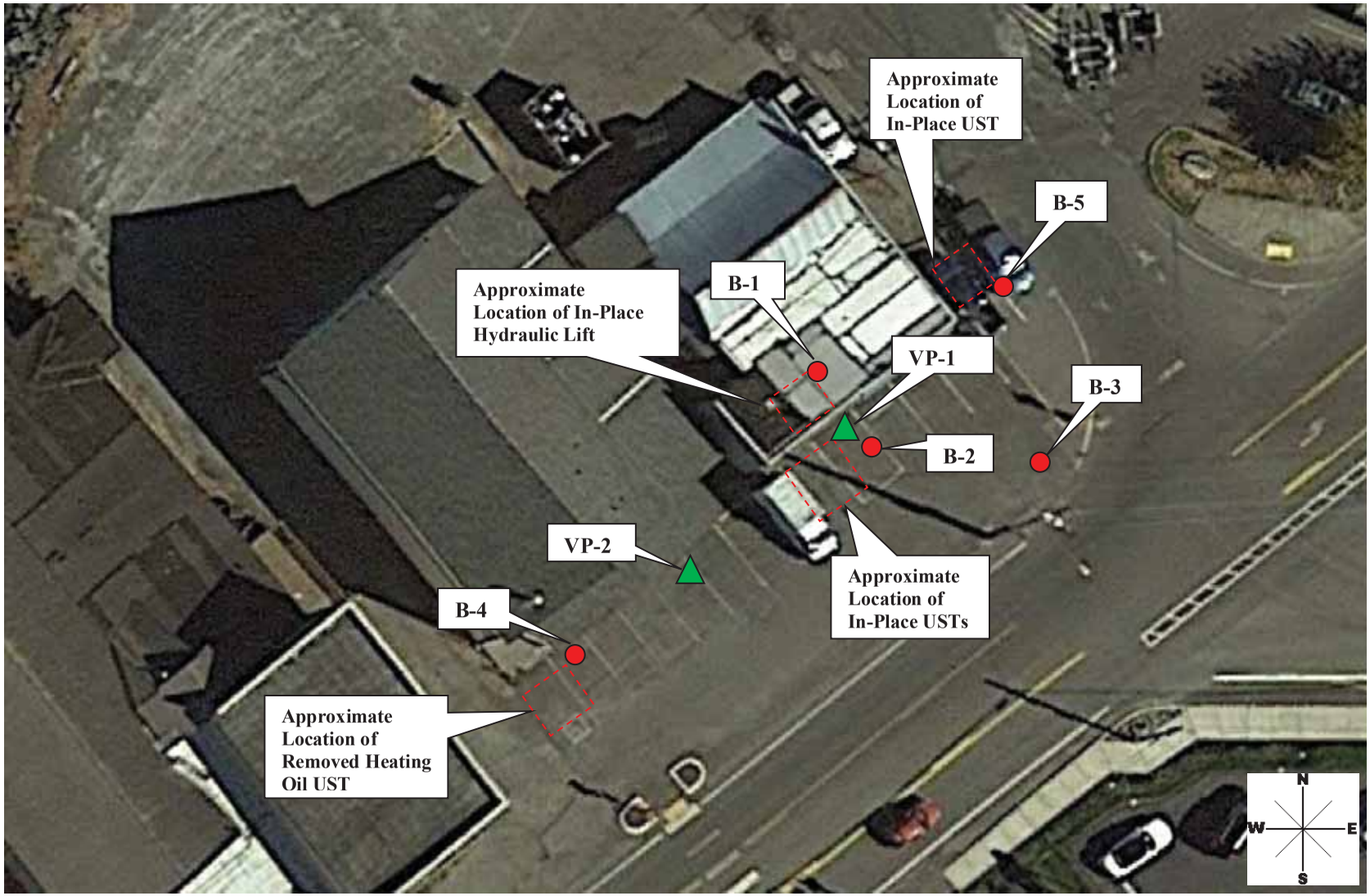


Source: Google Maps

VICINITY MAP	Scale: NTS	Date: April 2021	Krazan SITE DEVELOPMENT ENGINEERS *Conducting Assessments Nationwide*
Bay Street Property Phase II ESA **521 & 525 Bay Street** **Port Orchard, Washington**	**Modified by:** CB	**Approved by:** SEW	
	Project No. 104-21018	**Figure No.** 1	



Source: Google Maps

Approximate Geoprobe Locations

Approximate Soil Vapor Probe Locations

SITE MAP	Scale: NTS	Date: April 2021	Krazan
Bay Street Phase II ESA 521 & 525 Bay Street Port Orchard, Washington	Drawn by: CB	Approved by: SEW	SITE DEVELOPMENT ENGINEERS *Conducting Assessments Nationwide*
	Project No. 104-21018	Figure No. 2	

Photo 1: Subject Site – View showing vapor probe location VP-1 in front of 525 Bay Street. This location is adjacent to in place USTs.

Photo 2: Subject Site – View showing vapor probe location VP-2 in front of 521 Bay Street. This photo shows the sampling set-up.

Photo 3: Subject Site – View showing soil boring location B-1 inside 525 Bay Street. This is located adjacent to the underground lift.

Photo 4: Subject Site – View showing soil boring location B-2 in front of 525 Bay Street. This boring was located near the former pump island and adjacent to previous borings.

Photo 5: Subject Site – View showing soil boring location B-3 adjacent to Bay Street.

Photo 6: Subject Site – View showing soil boring location B-4 in front of 521 Bay Street. This was located near the location of the former heating oil UST.

Photo 7: Subject Site – View showing soil boring location B-5 on the north side of 525 Bay Street. This was located near a potential in-place UST.

Photo 8: Subject Site – View looking south showing soil boring B-5.

Appendix A

Log of Soil Vapor Probe VP-1

Project Name: Bay Street Phase II ESA
Client: Port of Bremerton
Project Number: 104-21018

Boring Elevation: 13 feet
Boring Location: See Figure 1
Depth to Groundwater: None Encountered

DEPTH (FT.)	USCS Classification	VISUAL PHYSICAL DESCRIPTION	SAMPLE NO.	DEPTH (FEET)	SAMPLE TYPE	PID READING (PPM)	TEST(s) PERFORMED	NOTES	LAB TESTING RESULTS FOR SAMPLE
0		0-0.5' Asphalt, gravels							
	SM	0.5'-4.0' Gray-brown, medium dense, silty fine sand; moist.							Benzene: 0.02 Ethylbenzene: 0.10 ~~Gas Range: 120~~
	ML	4.0'-5.0' Gray, medium dense, sandy silt; moist, with gravels, trace organics.	S1 VP1	5.0 5.0	Soil Vapor	424	Dx, Gx, Btex VOCs	Strong Odor	Diesel Range: ND Oil Range: ND
5		Total Depth: 5.0' Groundwater: None Encountered							
10									
15									
20									

Drill Contractor: ESN
Equipment: Bobcat Mounted Drill Rig
Sampling Method: Direct Push
Driller: Cole

Excavation Date: 4-9-2021
Krazan Representative: SEW

Log of Soil Vapor Probe VP-2

Project Name: Bay Street Phase II ESA
Client: Port of Bremerton
Project Number: 104-21018

Boring Elevation: 13 feet
Boring Location: See Figure 1
Depth to Groundwater: None Encountered

DEPTH (FT.)	USCS Classification	VISUAL PHYSICAL DESCRIPTION	SAMPLE NO.	DEPTH (FEET)	SAMPLE TYPE	PID READING (PPM)	TEST(s) PERFORMED	NOTES	LAB TESTING RESULTS FOR SAMPLE
0		0-0.5' Asphalt, gravels							
	CL	0.5'-4.0' Gray, medium stiff, silty clay; moist, wood debris.	VP2	4.0	Vapor	0.0	VOCs		
5		Total Depth: 4.0' Groundwater: None Encountered							
10									
15									
20									

Drill Contractor: ESN
Equipment: Bobcat Mounted Drill Rig
Sampling Method: Direct Push
Driller: Cole

Excavation Date: 4-9-2021
Krazan Representative: SEW

Log of Soil Boring B-1

Project Name: Bay Street Phase II ESA
Client: Port of Bremerton
Project Number: 104-21018

Boring Elevation: 13 feet
Boring Location: See Figure 1
Depth to Groundwater: Approximately 10.0'

DEPTH (FT.)	USCS Classification	VISUAL PHYSICAL DESCRIPTION	SAMPLE NO.	DEPTH (FEET)	SAMPLE TYPE	PID READING (PPM)	TEST(s) PERFORMED	NOTES	LAB TESTING RESULTS FOR SAMPLE
0		0-1.0' Concrete							
	SM/ML	1.0'-6.0' Brown, loose to medium dense, sandy silt/silty sand; moist, some gravels and broken rocks (Fill).							
5									
	SM	6.0'-12.0' Dark gray, loose to medium dense, silty, fine sand; wet, organics in bottom (Beach Deposit).	S2	8.0	Soil	0.0	PCBs		Non-Detect
10			GW3	10.0	Wat.	N/A	PCBs		Non-Detect
	ML	12.0'-15.0' Gray-brown, medium stiff, silt; wet, trace sand, Fe-Ox staining.							
15		Total Depth: 15.0' Groundwater: Approx. 10.0'							
20									

Drill Contractor: ESN
Equipment: Bobcat Mounted Drill Rig
Sampling Method: Direct Push
Driller: Cole

Excavation Date: 4-9-2021
Krazan Representative: SEW

Log of Soil Boring B-2

Project Name: Bay Street Phase II ESA
Client: Port of Bremerton
Project Number: 104-21018

Boring Elevation: 13 feet
Boring Location: See Figure 1
Depth to Groundwater: Approximately 10.0’

DEPTH (FT.)	USCS Classification	VISUAL PHYSICAL DESCRIPTION	SAMPLE NO.	DEPTH (FEET)	SAMPLE TYPE	PID READING (PPM)	TEST(s) PERFORMED	NOTES	LAB TESTING RESULTS FOR SAMPLE
0		0-0.5’ Asphalt				220			
	SM/ML	0.5’-5.0’ Gray, medium dense, silty sand; moist (Fill).	S4	5.0	Soil		Dx, Gx, Btex	Strong Odor	**Benzene: 0.04** Ethylbenzene: 0.13 **Gas Range: 1,800** Diesel Range: ND Oil Range: 480
5	ML	5.0’-9.0’ Gray, medium stiff, sandy silt; wet, wood debris.	S5	9.0	Soil	0.0	Dx, Gx, Btex	Odor/ Sheen	**Benzene: 0.14** Toluene: 0.15 Ethylbenzene: 1.1 Xylenes: 0.53 **Gas Range: 1,400** Diesel Range: ND Oil Range: 200
10	SM	9.0’-12.0’ Dark gray, medium dense, silty, fine sand; organics, saturated (Beach Deposit)	GW6	10.0	Wat.	N/A	Dx, Gx, Btex	No Sheen	**Benzene: 50** Toluene: 33 Ethylbenzene: 44 Xylenes: 22 **Gas Range: 4,000** Diesel Range: ND Oil Range: ND
	ML	12.0’-15.0’ Gray-brown, medium stiff, sandy silt; moist to wet.							
15		Total Depth: 15.0’ Groundwater: Approx. 10.0’							
20									

Drill Contractor: ESN
Equipment: Bobcat Mounted Drill Rig
Sampling Method: Direct Push
Driller: Cole

Excavation Date: 4-9-2021
Krazan Representative: SEW

Log of Soil Boring B-3

Project Name: Bay Street Phase II ESA
Client: Port of Bremerton
Project Number: 104-21018

Boring Elevation: 13 feet
Boring Location: See Figure 1
Depth to Groundwater: Approximately 10.0'

DEPTH (FT.)	USCS Classification	VISUAL PHYSICAL DESCRIPTION	SAMPLE NO.	DEPTH (FEET)	SAMPLE TYPE	PID READING (PPM)	TEST(s) PERFORMED	NOTES	LAB TESTING RESULTS FOR SAMPLE
0		0-0.5' Asphalt				0.0			
	SM/ML	0.5'-4.5' Tan-brown, medium dense, fine to medium sand; moist (Fill).							
5	ML	4.5'-7.0' Gray, medium stiff, sandy silt; moist.							
	SM	7.0'-12.0' Dark gray, medium dense, silty sand; saturated, with gravels, trace organics.	S7	8.0	Soil	0.0	Dx, Gx, Btex	No Odor	BTEX: ND Gas Range: 12 Diesel Range: ND Oil Range: 690
10			GW9	10.0	Wat.	N/A	Dx, Gx, Btex	No Sheen	Toluene: 2.5 Xylenes: 5.6 **Gas Range: 540** Diesel Range: ND Oil Range: ND
	ML	12.0'-15.0' Gray-brown, medium stiff, sandy silt; moist to wet.	S8	14.0	Soil	0.0	Dx, Gx, Btex	No Odor	Benzene: 0.04 Gas Range: ND Diesel Range: ND Oil Range: 480
15		Total Depth: 15.0' Groundwater: Approx. 10.0'							
20									

Drill Contractor: ESN
Equipment: Bobcat Mounted Drill Rig
Sampling Method: Direct Push
Driller: Cole

Excavation Date: 4-9-2021
Krazan Representative: SEW

Log of Soil Boring B-4

Project Name: Bay Street Phase II ESA
Client: Port of Bremerton
Project Number: 104-21018

Boring Elevation: 13 feet
Boring Location: See Figure 1
Depth to Groundwater: Approximately 10.0’

DEPTH (FT.)	USCS Classification	VISUAL PHYSICAL DESCRIPTION	SAMPLE NO.	DEPTH (FEET)	SAMPLE TYPE	PID READING (PPM)	TEST(s) PERFORMED	NOTES	LAB TESTING RESULTS FOR SAMPLE
0		0-0.5’ Asphalt				5.0			
	CL	0.5’-6.0’ Gray, medium stiff, silty clay; moist, some organics.	S10	5.0	Soil	55.0	Dx, Gx, Btex	Odor/ Sheen	BTEX: ND **Gas Range: 600** **Diesel Range: 4,100** Oil Range: ND
5		6.0’-7.0’ Organic layer.							
	SM	7.0’-9.0’ Dark gray, medium dense, silty sand; saturated, with organics (Beach Deposit).							
	SM	9.0’-12.0’ Gray, medium dense, silty sand; saturated.	GW11	10.0	Wat.	N/A	Dx, Gx, Btex	Sheen	BTEX: ND **Gas Range: 1,200** **Diesel Range: 13,000** Oil Range: ND
10	ML	12.0’-14.0’ Gray, stiff, silty clay; wet.							
	SM	14.0’-15.0’ Brown-gray, silty sand; wet.							
15		Total Depth: 15.0’ Groundwater: Approx. 10.0’							
20									

Drill Contractor: ESN
Equipment: Bobcat Mounted Drill Rig
Sampling Method: Direct Push
Driller: Cole

Excavation Date: 4-9-2021
Krazan Representative: SEW

Log of Soil Boring B-5

Project Name: Bay Street Phase II ESA
Client: Port of Bremerton
Project Number: 104-21018

Boring Elevation: 13 feet
Boring Location: See Figure 1
Depth to Groundwater: Approximately 10.0’

DEPTH (FT.)	USCS Classification	VISUAL PHYSICAL DESCRIPTION	SAMPLE NO.	DEPTH (FEET)	SAMPLE TYPE	PID READING (PPM)	TEST(s) PERFORMED	NOTES	LAB TESTING RESULTS FOR SAMPLE
0		0-0.5’ Asphalt				0.0			
	SM	0.5’-5.0’ Brown, medium dense, silty sand; moist, with gravel.							
5	SM	5.0’-10.0’ Dark gray, medium dense, silty, gravelly sand; moist to wet.							BTEX: ND Gas Range: 59 Diesel Range: ND Oil Range: ND
			S12	10.0	Soil	0.0	Dx, Gx, Btex	No Odor or Sheen	BTEX: ND **Gas Range: 1,300**
10			GW13	10.0	Wat.	N/A			Diesel Range: ND Oil Range: ND
		Total Depth: 10.0’ Groundwater: Approx. 10.0’							
15									
20									

Drill Contractor: ESN
Equipment: Bobcat Mounted Drill Rig
Sampling Method: Direct Push
Driller: Cole

Excavation Date: 4-9-2021
Krazan Representative: SEW

Appendix B

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 27, 2021

Shawn Williams, Project Manager
Krazan & Associates
1230 Finn Hill Rd NW, Suite A
Poulsbo, WA 98370

Dear Mr Williams:

Included are the results from the testing of material submitted on April 12, 2021 from the Bay Street Phase II ESA 521 and 525 Bay Street Port Orchard, WA, F&BI 104205 project. There are 10 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
KZP0427R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 12, 2020 by Friedman & Bruya, Inc. from the Krazan & Associates Bay Street Phase II ESA 521 and 525 Bay Street Port Orchard, WA, F&BI 104205 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Krazan & Associates
104205 -01	KA-SG-01
104205 -02	KA-SG02

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

The APH EC5-8 aliphatics concentration for all samples exceeded the calibration range. The data were flagged accordingly.

The toluene concentration in sample KA-SG02 exceeded the calibration range of the instrument. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	KA-SG-01	Client:	Krazan & Associates
Date Received:	04/12/21	Project:	Bay Street Phase II ESA
Date Collected:	04/09/21	Lab ID:	104205-01 1/2300
Date Analyzed:	04/16/21	Data File:	041547.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	43,000,000 ve
APH EC9-12 aliphatics	720,000
APH EC9-10 aromatics	<57,000

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	KA-SG02	Client:	Krazan & Associates
Date Received:	04/12/21	Project:	Bay Street Phase II ESA
Date Collected:	04/09/21	Lab ID:	104205-02 1/7.4
Date Analyzed:	04/16/21	Data File:	041545.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	106	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	34,000 ve
APH EC9-12 aliphatics	3,200
APH EC9-10 aromatics	<180

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Krazan & Associates
Date Received:	Not Applicable	Project:	Bay Street Phase II ESA
Date Collected:	Not Applicable	Lab ID:	01-818 MB
Date Analyzed:	04/15/21	Data File:	041525.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	92	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<75
APH EC9-12 aliphatics	<25
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	KA-SG-01	Client:	Krazan & Associates
Date Received:	04/12/21	Project:	Bay Street Phase II ESA
Date Collected:	04/09/21	Lab ID:	104205-01 1/450
Date Analyzed:	04/16/21	Data File:	041548.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	118	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	4,100	1,300
Toluene	<8,500	<2,200
Ethylbenzene	3,000	680
m,p-Xylene	1,500	330
o-Xylene	<200	<45
Naphthalene	<120	<22

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	KA-SG02	Client:	Krazan & Associates
Date Received:	04/12/21	Project:	Bay Street Phase II ESA
Date Collected:	04/09/21	Lab ID:	104205-02 1/7.4
Date Analyzed:	04/16/21	Data File:	041545.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	360	110
Toluene	1,100 ve	300 ve
Ethylbenzene	47	11
m,p-Xylene	220	51
o-Xylene	56	13
Naphthalene	<1.9	<0.37

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Krazan & Associates
Date Received:	Not Applicable	Project:	Bay Street Phase II ESA
Date Collected:	Not Applicable	Lab ID:	01-818 MB
Date Analyzed:	04/15/21	Data File:	041525.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	93	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	<0.26	<0.05

Date of Report: 04/27/21
Date Received: 04/12/21
Project: Bay Street Phase II ESA 521 and 525 Bay Street Port Orchard, WA, F&BI 104205

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: 104232-01 1/7.3 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	560	600	7
APH EC9-12 aliphatics	ug/m3	<180	<180	nm
APH EC9-10 aromatics	ug/m3	<180	<180	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	100	70-130
APH EC9-12 aliphatics	ug/m3	67	126	70-130
APH EC9-10 aromatics	ug/m3	67	105	70-130

Date of Report: 04/27/21
Date Received: 04/12/21
Project: Bay Street Phase II ESA 521 and 525 Bay Street Port Orchard, WA, F&BI 104205

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 104232-01 1/7.3 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Benzene	ug/m3	<2.3	<2.3	nm
Toluene	ug/m3	<140	<140	nm
Ethylbenzene	ug/m3	<3.2	<3.2	nm
m,p-Xylene	ug/m3	<6.3	<6.3	nm
o-Xylene	ug/m3	<3.2	<3.2	nm
Naphthalene	ug/m3	<1.9	<1.9	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/m3	43	89	70-130
Toluene	ug/m3	51	98	70-130
Ethylbenzene	ug/m3	59	88	70-130
m,p-Xylene	ug/m3	120	91	70-130
o-Xylene	ug/m3	59	93	70-130
Naphthalene	ug/m3	71	100	70-130

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

104205

Report To Shawn Williams
Company Krazan and Associates
Address 1230 Finn Hill Road NW Ste A
City, State, ZIP Poulsbo, WA 98370
Phone 360-598-2126 Email shawnwilliams@krazan.com

SAMPLERS (signature) [signature] ME 04/12/21 Page # 1 of 1

PROJECT NAME & ADDRESS: Bay Street Phase II ES4 521 and 525 Bay Street Port Orchard, WA
PO #:
NOTES:
INVOICE TO:

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Default: Clean after 3 days
☐ Archive (Fee may apply)

SAMPLE INFORMATION

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time
KA-SG-01	01	~~2433~~ 35	35	IA / (SG)	4/9/21	28.5	9:59	3	10:05
KA-SG02	02	~~2246~~ 117	17	IA / (SG)	4/9/21	30	10:16	25	10:22
				IA / SG					
				IA / SG					
				IA / SG					
				IA / SG					
				IA / SG					
				IA / SG					

ANALYSIS REQUESTED

TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		✓ - per SW 4/20 SF Notes
	✓	X	✓			
	✓	X	✓			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COCTO-15.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Chloe Bartlett	Krazan		
Received by:	[signature]	Abbigail Corwen	FBI	4/12	16:33
Relinquished by:					
Received by:					

Samples received at 18 °C

3155 NE Sunset Blvd, Suite A
Renton, WA 98056
Phone: 425.207.8345
Email: lab@esnanalytical.com
Web: www.esnanalytical.com

April 19, 2021

Mr. Shawn Williams
Krazan and Associates
1230 Finhill Rd. NW, Suite A,
Poulsbo, WA

Dear Shawn,

Please find enclosed analytical data report for **PROJECT: Bay Street Phase II, Project Number: 104-21018** located in Port Orchard, WA. Five water samples and eight soil samples were analyzed for Diesel and Oil by EPA Method NWTPH-Dx/Dx-Ext, Gas/BTEX by EPA Method NWTPH-Gx and BTEX by EPA Method 8260D and PCB by EPA Method 8082 on April 12,2021- April 16,2021.

The results of the analyses are summarized and included on this report. Applicable detection limits and QA/QC data are included.

ESN Analytical appreciates the opportunity to have provided services for this project. If you have any further questions about the data report, please give us a call at 425-207-8345.

Thank you so much and it was a pleasure working with your company on this project. We are looking forward to the next opportunity to work together.

Sincerely,

Dely Grace Agoy
Senior Chemist
425-207-8345
delygrace.agoy@esnanalytical.com

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Renton, WA 98056
Phone: 425.207.8345
Email: lab@esnanalytical.com
Web: www.esnanalytical.com

ANALYTICAL DATA REPORT

Project: Bay Street Phase II

Project Number: 104-21018

Location: Port Orchard, WA

Submitted to: **KRAZAN AND ASSOCIATES**

Project Manager: Shawn Williams

Sample Collector: Chloe Bartlett

Sample Matrix: Water, Soil

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CONTENTS

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SAMPLE INFORMATION

SAMPLE ID	ESN Analytical Project Number	SAMPLING DATE	SAMPLING TIME	Depth	Matrix	Analysis
KA-BS-S1	S210409.O1	04/09/21	0855	5.0’	S	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-S2	S210409.O1	04/09/21	1040	8.0’	S	PCB
KA-BS-GW3	S210409.O1	04/09/21	1100	10.0’	W	PCB
KA-BS-S4	S210409.O1	04/09/21	1104	5.0’	S	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-S5	S210409.O1	04/09/21	1111	9.0’	S	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-GW6	S210409.O1	04/09/21	1125	10.0’	W	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-S7	S210409.O1	04/09/21	1141	8.0’	S	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-S8	S210409.O1	04/09/21	1155	14.0’	S	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-GW9	S210409.O1	04/09/21	1200	9.0’	W	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-S10	S210409.O1	04/09/21	1215	5.0’	S	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-GW11	S210409.O1	04/09/21	1240	10.0’	W	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-S12	S210409.O1	04/09/21	1255	10.0’	S	NWTPH-Dx/Dx-Ext, Gas/BTEX
KA-BS-GW13	S210409.O1	04/09/21	1300	10.0’	W	NWTPH-Dx/Dx-Ext, Gas/BTEX

Gas/ BTEX samples were analyzed at ESN Analytical Olympia.
NWTPH-Dx soil samples were analyzed at ESN Analytical Olympia.
NWTPH-Dx water samples were analyzed at ESN Analytical Renton.

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TEST RESULTS

Sampling date: April 09,2021

Analysis of Gasoline Range Organics & BTEX in Soil by Method NWTPH-Gx/8260

Sample Number	Date Prepared	Date Analyzed	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	Gasoline Range Organics (mg/kg)	Surrogate Recovery (%)
Method Blank	4/12/2012	4/12/2012	nd	nd	nd	nd	nd	97
LCS	4/12/2012	4/12/2012	97%	88%	90%	87%	132%	101
LCSD	4/12/2012	4/12/2012	104%	92%	89%	88%	---	99
KA-BS-S1	4/9/2021	4/12/2012	**0.02**	nd	**0.10**	nd	**120**	91
KA-BS-S4	4/9/2021	4/12/2012	**0.04**	nd	**0.13**	nd	**1800**	86
KS-BS-S5	4/9/2021	4/12/2012	**0.14**	**0.15**	**1.1**	**0.53**	**1400**	105
KS-BS-S7	4/9/2021	4/12/2021	nd	nd	nd	nd	**12**	97
KA-BS-S8	4/9/2021	4/16/2021	nd	nd	nd	nd	nd	99
KA-BS-S10	4/9/2021	4/12/2021	nd	nd	nd	nd	**600**	103
KA-BS-S12	4/9/2021	4/12/2012	nd	nd	nd	nd	**59**	101
Reporting Limits			0.02	0.05	0.05	0.15	10	

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromofluorobenzene) & LCS : 65% TO 135%

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	4/12/2021	4/12/2021	111	nd	nd
LCS	4/12/2021	4/12/2021	107	102%	---
KA-BS-S1	4/12/2021	4/12/2021	98	nd	nd
KA-BS-S4	4/12/2021	4/12/2021	114	nd	**480**
KA-BS-S4 Duplicate	4/12/2021	4/12/2021	112	nd	**490**
KS-BS-S5	4/12/2021	4/12/2021	104	nd	**200**
KS-BS-S7	4/12/2021	4/12/2021	114	nd	**690**
KA-BS-S8	4/12/2021	4/12/2021	110	nd	**480**
KA-BS-S10	4/12/2021	4/12/2021	104	**4100**	nd
KA-BS-S12	4/12/2021	4/12/2021	114	nd	nd
Reporting Limits				50	100

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%
Analyst: Jennifer A

3155 NE Sunset Blvd, Suite A
Renton, WA 98056
Phone: 425.207.8345
Email: lab@esnanalytical.com
Web: www.esnanalytical.com

Analysis of Gasoline Range Organics & BTEX in Water by Method NWTPH-Gx/8260

Sample Number	Date Analyzed	Benzene (ug/L)	Toluene (ug/L)	Ethylbenzene (ug/L)	Xylenes (ug/L)	Gasoline Range Organics (ug/L)	Surrogate Recovery (%)
Method Blank	4/15/2021	nd	nd	nd	nd	nd	99
LCS	4/15/2021	100%	86%	89%	87%	96%	97
LCSD	4/15/2021	101%	84%	90%	90%	---	97
KA-BS-GW6	4/16/2021	**50**	**33**	**44**	**22**	**4000**	98
KA-BS-GW9	4/15/2021	nd	**2.2**	nd	**4.5**	**540**	98
KA-BS-GW9 Duplicate	4/15/2021	nd	**2.5**	nd	**5.6**	**630**	97
KA-BS-GW11	4/16/2021	nd	nd	nd	nd	**1200**	103
KA-BS-GW13	4/15/2021	nd	nd	nd	nd	**1300**	99
Reporting Limits		1.0	1.0	1.0	3.0	100	

"nd" Indicates not detected at the listed detection limits.
"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE (Bromoflurorbenzene) & LCS: 65% TO 135%

Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx/Dx Extended

Sample Number	Date Collected	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank		4/13/2021	4/13/2021	85	nd	nd
LCS		4/13/2021	4/13/2021	86	65%	---
KA-BS-GW6	4/9/2021	4/13/2021	4/13/2021	94	nd	nd
KA-BS-GW9	4/9/2021	4/13/2021	4/13/2021	88	nd	nd
KA-BS-GW11	4/9/2021	4/13/2021	4/13/2021	89	**13,000**	nd
KA-BS-GW13	4/9/2021	4/13/2021	4/13/2021	106	nd	nd
Reporting Limits					50	100

"---" Indicates not tested for component.
"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%
Analyst: Loan H.

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THIRD PARTY LABORATORY RESULT

DRAGON ANALYTICAL LABORATORY

627 Durell Road SE, STE B105, Tumwater, WA 98501 (360)866-0543
Customerservice@DragonLaboratory.com

Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water
Mobile Environmental Laboratory

ESN Analytical
3155 NE Sunset Blvd, Suite A
Renton, WA 98056

Sampled By: Unknown

DAL Project No.: 210412-03

Project Name: Bay Street Phase II
Project No.: n/a
P.O. No.: n/a
Date Collected: 4/9/2021; 10:40 - 11:00
Date Received: 4/12/2021; 12:04
Temperature Received (°C): 6
Report Date: 4/15/2021

Preparation Method: US EPA 3510C
Analytical Method: US EPA 8082A
Date Prepared: 4/13/2021
Date Analyzed: 4/14/2021
Analyst: TM

Units: µg/L
Matrix: Non-Potable Water
Reporting Limits: Standard
Injection Volume: 2 µL
Instrument ID: Agilent 9074
Lab Data File: 21041401

PCB's
ANALYTICAL RESULTS

Sample Identification	CAS No.	MRL	Method Blank	KA-BS-GW3
PCB Aroclor 1016	12674-11-2	0.050	nd	nd
PCB Aroclor 1221	1104-28-2	0.050	nd	nd
PCB Aroclor 1232	11141-16-5	0.050	nd	nd
PCB Aroclor 1242	53469-21-9	0.050	nd	nd
PCB Aroclor 1248	12672-29-6	0.050	nd	nd
PCB Aroclor 1254	11097-69-1	0.050	nd	nd
PCB Aroclor 1260	11096-82-5	0.050	nd	nd
PCB Aroclor 1262	37324-23-5	0.050	nd	nd
PCB Aroclor 1268	11100-14-4	0.050	nd	nd
Concentration Factor				250

Data Flags

Comments and Explanations: None.

PCB's
QUALITY CONTROL RESULTS

SURROGATE RECOVERY

Surrogate	Limits (%)	Method Blank	KA-BS-GW3
TCMX	30-150	91.8	106
DCBP	30-150	108	126

LABORATORY CONTROL SAMPLE AND MATRIX SPIKE

QC Batch ID: 210414-PCB | MS/MSD Sample ID: 210414-PCB MS/MSD | LCS Sample ID: 210414-PCB LCS

Analyte	MS/MSD Limits (%)	MS/MSD Level (µg/L)	Sample Conc. (µg/L)	MS Recovery (µg/L)	MS Percent Recovery	MSD Recovery (µg/L)	MSD Percent Recovery	RPD	LCS Limits (%)	LCS Level (µg/L)	LCS Recovery (µg/L)	LCS Percent Recovery
PCB Aroclor 1016	29-135	400	nd	428	107%	481	120%	11.5	50-120	400	415	104%
PCB Aroclor 1260	29-135	400	nd	221	55.2%	456	114%	69.4	50-120	400	420	105%

WA-DOE-Laboratory Certification No.: C890
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: None.

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Mobile Environmental Laboratory

ESN Analytical
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Renton, WA 98056

Sampled By: Unknown

DAL Project No.: 210412-03

Project Name: Bay Street Phase II
Project No.: n/a
P.O. No.: n/a
Date Collected: 4/9/2021, 10:40 - 11:00
Date Received: 4/12/2021, 12:04
Temperature Received (°C): 6
Report Date: 4/15/2021

Preparation Method: US EPA 3550C
Analytical Method: US EPA 8082A
Date Prepared: 4/13/2021
Date Analyzed: 4/14/2021
Analyst: TM

Units: mg/kg
Matrix: Solids
Reporting Limits: Standard
Injection Volume: 2 µL
Instrument ID: Agilent 9074
Lab Data File: 21041401

PCB's
ANALYTICAL RESULTS

Sample Identification	CAS No.	MRL	Method Blank	KA-BS-S2
PCB Aroclor 1016	12674-11-2	0.0050	nd	nd
PCB Aroclor 1221	11104-28-2	0.0050	nd	nd
PCB Aroclor 1232	11141-16-5	0.0050	nd	nd
PCB Aroclor 1242	53469-21-9	0.0050	nd	nd
PCB Aroclor 1248	12672-29-6	0.0050	nd	nd
PCB Aroclor 1254	11097-69-1	0.0050	nd	nd
PCB Aroclor 1260	11096-82-5	0.0050	nd	nd
PCB Aroclor 1262	37324-23-5	0.0050	nd	nd
PCB Aroclor 1268	11100-14-4	0.0050	nd	nd
Dilution Factor				1
Percent Solids				82.1
Data Flags				

Comments and Explanations: None.

PCB's
QUALITY CONTROL RESULTS

SURROGATE RECOVERY

Surrogate	Limits (%)	Method Blank	KA-BS-S2
TCMX	30-150	114	130
DCBP	30-150	93.8	133

LABORATORY CONTROL SAMPLE AND MATRIX SPIKE

QC Batch ID: 210414-PCB | MS/MSD Sample ID: 210414-PCB MS/MSD | LCS Sample ID: 210414-PCB LCS

Analyte	MS/MSD Limits (%)	MS/MSD Level (mg/kg)	Sample Conc. (mg/kg)	MS Recovery (mg/kg)	MS Percent Recovery	MSD Recovery (mg/kg)	MSD Percent Recovery	RPD	LCS Limits (%)	LCS Level (mg/kg)	LCS Recovery (mg/kg)	LCS Percent Recovery
PCB Aroclor 1016	29-135	0.40	nd	0.43	107%	0.48	120%	11.5	50-120	0.40	0.47	119%
PCB Aroclor 1260	29-135	0.40	nd	0.22	55.2%	0.46	114%	69.4	50-120	0.40	0.45	114%

WA-DOE-Laboratory Certification No.: C890
"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.
"n/a" indicates not applicable

Comments and Explanations: None.

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ESN Environmental Services Network

CHAIN-OF-CUSTODY RECORD

CLIENT: Krazan and Associates
ADDRESS: 1230 Finn Hill Road NW, STA, Poulsbo, WA 98370
PHONE: 360-598-2126 EMAIL Shawn.williams@krazan.com
CLIENT PROJECT #: 104-21018 PROJECT MANAGER: Shawn Williams

DATE: 4/9/21 PAGE 1 OF 1
PROJECT NAME: Bay Street Phase II
LOCATION: Port Orchard, WA
COLLECTOR: Chloe Bartlett DATE OF COLLECTION: 4/9/21

Sample Number	Depth	Time	Sample Type	Container Type	TPH-HCID	TPH-DIESEL AND OIL	TPH-GASOLINE	BTEX 8260	VOC 8260CL	VOC 8260	SEMIVOC 8270	PAH's 8270	PCB's 8082	CL PESTICIDES 8081	RCRA 8 Metals	MTCA 5 Metals	Pb	ASBESTOS PLM	GRO Suite 830-1	DRO Suite 830-1	WO Suite 830-1
1. KA-BS-S1	5.0'	855	Soil	Jar vog		X	X	X													
2. KA-BS-S2	8.0'	1040	Soil		CB	X	X						X								
3. KA-BS-GW3	10.0'	1100	water										X								
4. KA-BS-S4	5.0'	1104	Soil			X	X	X													
5. KA-BS-S5	9.0'	1111	Soil			X	X	X													
6. KA-BS-GW6	10.0'	1125	water			X	X	X													
7. KA-BS-S7	8.0'	1141	Soil			X	X	X													
8. KA-BS-S8	14.0'	1155	Soil			X	X	X													
9. KA-BS-GW9	9.0'	1200	water			X	X	X													
10. KA-BS-S10	5.0'	1215	Soil			X	X	X													
11. KA-BS-GW11	10.0'	1240	water			X	X	X													
12. KA-BS-S12	10.0'	1255	Soil			X	X	X													
13. KA-BS-GW13	10.0'	100	water			X	X	X													
14.																					
15.																					
16.																					
17.																					
18.																					

RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME
[signature]	4/9/21 1:38pm	[signature]	4/9/21 1:38pm
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

SAMPLE RECEIPT	
TOTAL NUMBER OF CONTAINERS	
CHAIN OF CUSTODY SEALS Y/N/NA	
SEALS INTACT? Y/N/NA	
RECEIVED GOOD COND./COLD	
NOTES:	

LABORATORY NOTES:

Turn Around Time: 24 HR 48 HR 5 DAY

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