REMOVAL ACTION AND CONFIRMATION SAMPLING QUALITY 4x4 TRUCK SUPPLY 2509 E EDDY LANE PORT ANGELES, WASHINGTON

Project No. 104-22002
July 25, 2022

Prepared for:
Estate of Burt Senf
1120 West 6th Street
Port Angeles, Washington 98363

Prepared by:
Krazan & Associates, Inc.
1230 Finn Hill Road NW, Ste A
Poulsbo, Washington 98370
(360) 598-2126

Krazan & ASSOCIATES, INC.
SITE DEVELOPMENT ENGINEERS

TABLE OF CONTENTS
Project No. 104-22002

July 25, 2022 Project No. 104-22002

REMOVAL ACTION AND CONFIRMATION SAMPLING
QUALITY 4X4 TRUCK SUPPLY
2509 E EDDY LANE
PORT ANGELES, WASHINGTON

1.0 INTRODUCTION

This report summarizes the results of a Remedial Action and Confirmation Sampling conducted by Krazan & Associates, Inc. (Krazan) on the referenced property. The scope of work (Proposal No. E21085WAP, dated December 23, 2021) was approved by Mr. Greg Senf, a personal representative to the estate of Mr. Burt Senf on January 14, 2022.

2.0 SITE LOCATION AND DESCRIPTION

The subject site known as Quality 4x4 is an automotive repair shop located at 2509 E Eddy Lane in Port Angeles, Washington (Figure 1). The site consists of one tax parcel, tax account number 063012571330, and encompasses a total of 0.42 acres. The site is currently occupied with one commercial building that includes an attached garage on the east side, with a door on the eastern wall leading to a 4.5 foot-wide, outdoor walkway along the eastern wall with a slight downslope to the north. The current building on the site has reportedly been used as an automotive repair shop with a machine shop since the 1970s. The machine shop was shut down in 2012. Full service auto repair was stopped in 2017. The facility use as an auto parts store started in November, 2021.

3.0 PROJECT BACKGROUND

The Washington State Department of Ecology (Ecology) received a complaint about the site in 1990, alleging engine block degreaser housed in a cold dip tank was being disposed of directly into the ground outside the eastern door of the building. Soil sampling conducted by Clallam County Environmental Health Division (CCEHD) staff in July 2002 indicated elevated levels of oil, lead, chromium, and cadmium in the near surface soils along the east side of the Quality 4x4 site. The site was given a Ranking of 3 by Ecology, with 5 being the lowest ranking.

In December, 2021, additional shallow subsurface samples were collected along the east side of the building by Zenovic & Associates. The results showed similar concentrations of metals and hydrocarbons documented by CCEHD and warrented conducting a Phase II Environmental Site Assessment (ESA) to fully determine the extent of contamination and make any necessary recommendations pertaining to clean-up.

A Phase II ESA to assess the extent and nature of soil contamination was conducted by Krazan in February 2022, documented in a report dated February 21, 2022. The ESA involved the drilling of four 6.0 to 6.5-foot deep soil borings with a direct-push drill rig, shown on Figure 3. The borings generally encountered medium-dense to dense, gravelly coarse sand. The borings were generally terminated in a medium stiff, sandy gravel at the termination depths of up to 6.5 feet bgs. Groundwater was not encountered in any of the borings. Seven soil samples were collected for analysis of Total Petroleum Hydrocarbons (TPH) in the diesel-extended range (NWTPH-Dx), polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), and MTCA 5 metals: mercury, lead, cadmium, chromium, and arsenic).

The conclusions of the Phase II ESA were:

- Soil samples collected and analyzed at boring B-2, located 28 feet south from the northeast corner of the building at a depth of 1 foot, contained concentrations of contaminants exceeding MTCA Method A Industrial Land Use Cleanup Levels, including TPH in the heavy oil range, lead, cadmium, and arsenic. Samples from all other boring sites (B-1, B-3, and B-4) did not contain concentrations exceeding MTCA Method A Cleanup Levels, although the near-surface sample from boring B-3 did contain detectable concentrations of diesel and oil.

- Clean soils at Boring B-1, B-3, and B-4 indicate the shallow, dense soils encountered in the vicinity of the site limited the extent of the both lateral and vertical contaminant migration.

The following recommendations were made:

- We recommend excavation of near surface soils for remediation of the contaminated area (Figure 3). The contaminated area is approximately 100 square feet in size and should be excavated to a depth of at least 1.5 feet. The total volume of material to be excavated is estimated to be approximately 5.5 cubic yards.

- At the time of the excavation of contaminated soils, confirmation samples will be collected to confirm all contamination has been removed. The proposed locations of these additional samples can be found on Figure 3.

4.0 REMEDIAL ACTION

The near surface soil in the deignated area on the east side of the Quality 4x4 building was excavated to at least 1.5 feet below ground surface on May 22, 2022. A total of 5.83 tons of soil was excavated and transported to the City of Port Angeles Transfer Station in Port Angeles, Washington. The excavation area was 4.5 by 30 feet (Figure 3). Three confirmation soil samples were collected by Krazan within the excavation bottom (1.5 feet below ground surface [bgs]) on June 15, 2022. During the confirmation sampling, each soil sample collected was screened using a photoionization detector (PID) to assess for the presence of volatile organic constituents. No detectable PID measurements were recorded from samples from any of the sampling locations. The excavation was not backfilled.

Soil samples were directly placed in clean 4-ounce glass 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, the sequential sample number and the time of collection. Following labeling, the samples were placed in an ice chest with synthetic ice and maintained at a temperature of approximately 4° Celsius. Photographs of the sample collection are attached following Figure 3. The soil samples were transported to Friedman & Bruya, Inc. in Seattle for analysis of TPH in the Diesel and Oil Ranges (method NWTPH-Dx) and the MTCA 5 metals.

See Table 1 for confirmation sample results. Confirmation sample KA-CS-02-SL from the center of the excavation contained cadmium and lead concentrations exceeding the MTCA Method A Industrial Land Use Cleanup Levels. Confirmation sample KA-CS-03-SL from the north end of the excavation contained TPH in the oil range, cadmium, and lead concentrations exceeding the MTCA Method A Industrial Land Use Cleanup Levels. Analysis results of the remaining target compounds in Sample-02 and Sample-03 were either below the MTCA Method A Industrial Land Use cleanup levels or were below laboratory detection levels. All concentrations of the target compounds from Sample-01, sampled discretely from the bottom of the south end of the excavation area, were either below the MTCA Method A Industrial Land Use cleanup levels or were below laboratory detection levels.

A second excavation was conducted on July 8, 2022. An additional foot of material was removed in the areas of the excavation with elevated levels of metals. A total of 2.57 tons of soil was transported to the City of Port Angeles Transfer Station (Appendix B). The excavation was not backfilled.

On July 11, 2022, following the second excavation, two soil samples from the bottom of the excavated area (2.5 feet bgs), were collected for analysis of the target compounds. The sampling and analytical procedures utilized during during the June 15, 2022, confirmation sampling were used during the July 8, 2022 sampling. Samples were taken from approximately the same location as Sample-01 and Sample-02 during the June 15, 2022, confirmation sampling. Sample-04 and Sample-05, discretely sampled from the center and north end of the pit respectively, were submitted for analysis of the target compounds. Concentrations of all the target compounds were reported either below the MTCA Method A Industrial Land Use cleanup levels or were below laboratory detection levels. See Figure 3 and Table 1 for all sampling locations and a summary of the results. The laboratory reports are provided in Appendix A and photo copies of the transfer station receipts are provided in Appendix B.

TABLE 1. Summary of Soil Hydrocarbon and MTCA 5 Metals Results
2509 E Eddy Lane, Port Angeles, Washington

Sample Number	Sample Location and Depth	NWTPH-Dx (mg/kg)		MTCA 5 Metals (mg/kg)				
		Diesel	Oil	Mercury	Lead	Cadmium	Chromium	Arsenic
Confirmation Sampling following initial excavation, June 15, 2022.								
KA-CS-01-SL	1.5	<50	<250	<1	301	1.78	35.6	4.98
KA-CS-02-SL	1.5	<50	300	<1	**1,650**	**2.38**	54.1	5.60
KA-CS-03-SL	1.5	480	**2,500**	<1	**1,710**	**3.24**	76.7	8.85
Confirmation Sampling following second excavation, July 11, 2022.								
KA-CS-04-SL	2.5	<50	<250	<1	9.48	<1	30.2	2.26
KA-CS-05-SL	2.5	<50	<250	<1	6.69	<1	33.2	2.59
MTCA Method A Industrial Land Use Cleanup Levels		**2,000.**	**2,000.**	**2.**	**1,000**	**2.**	**2,000.**	**20.**

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.

5.0 CONCLUSIONS

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

- Approximately 8.4 tons of soil were excavated from the impacted area identified by the Phase II ESA during two separate events. Confirmation samples collected following the second soil excavation on July 11, 2022 indicated that all impacted soil had been removed, with the soil disposed of at City of Port Angeles transfer station. Following the second excavation, no target complounds were detected in concentrations above MTCA Method A Industrial Land Use Cleanup Levels. Former operations which were the source of the contamination have stopped. No further action appears to be necessary.

6.0 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 certified by the State of Washington, Department of Ecology. 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.

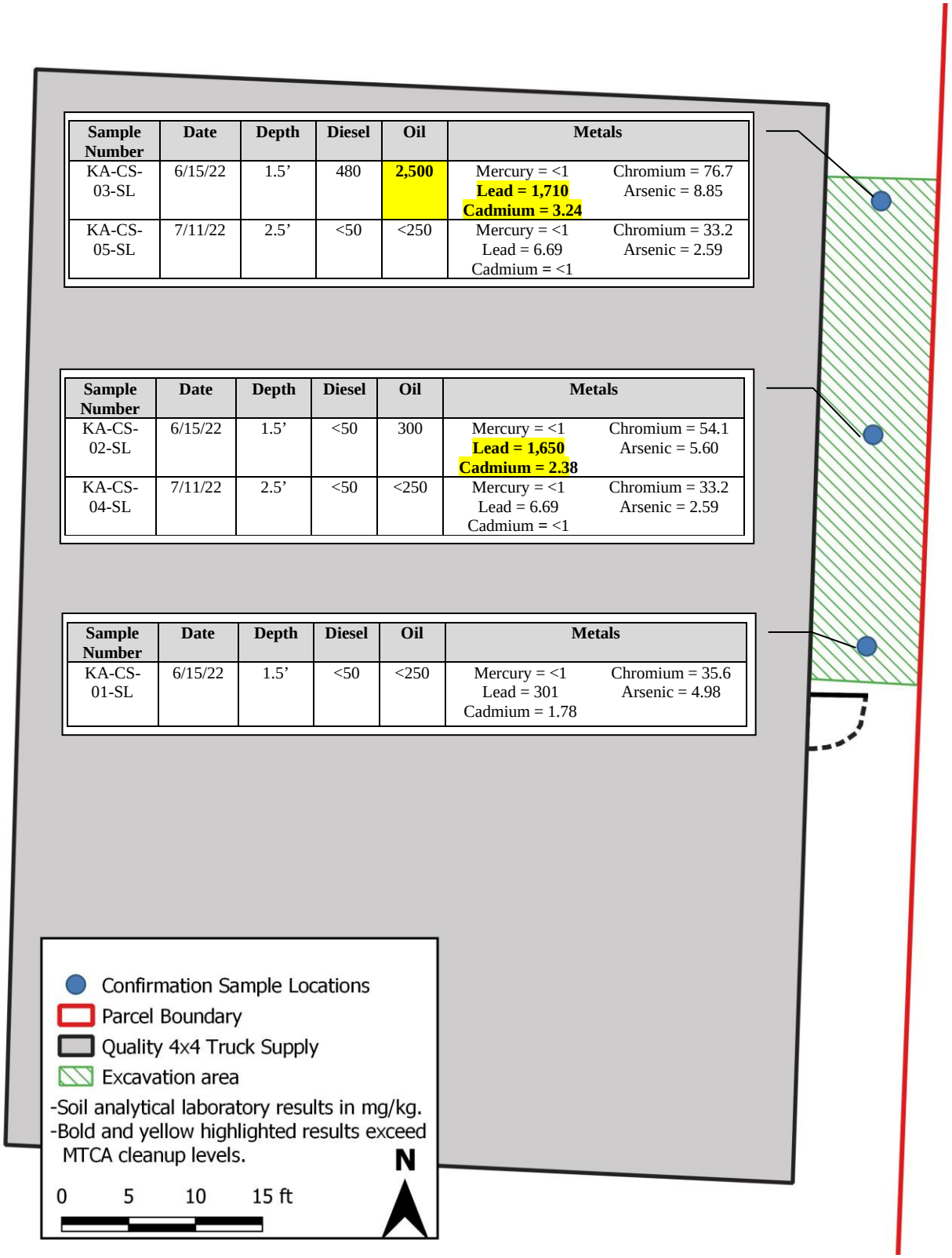
Andrew Glenn
Staff Geologist

07/25/2022

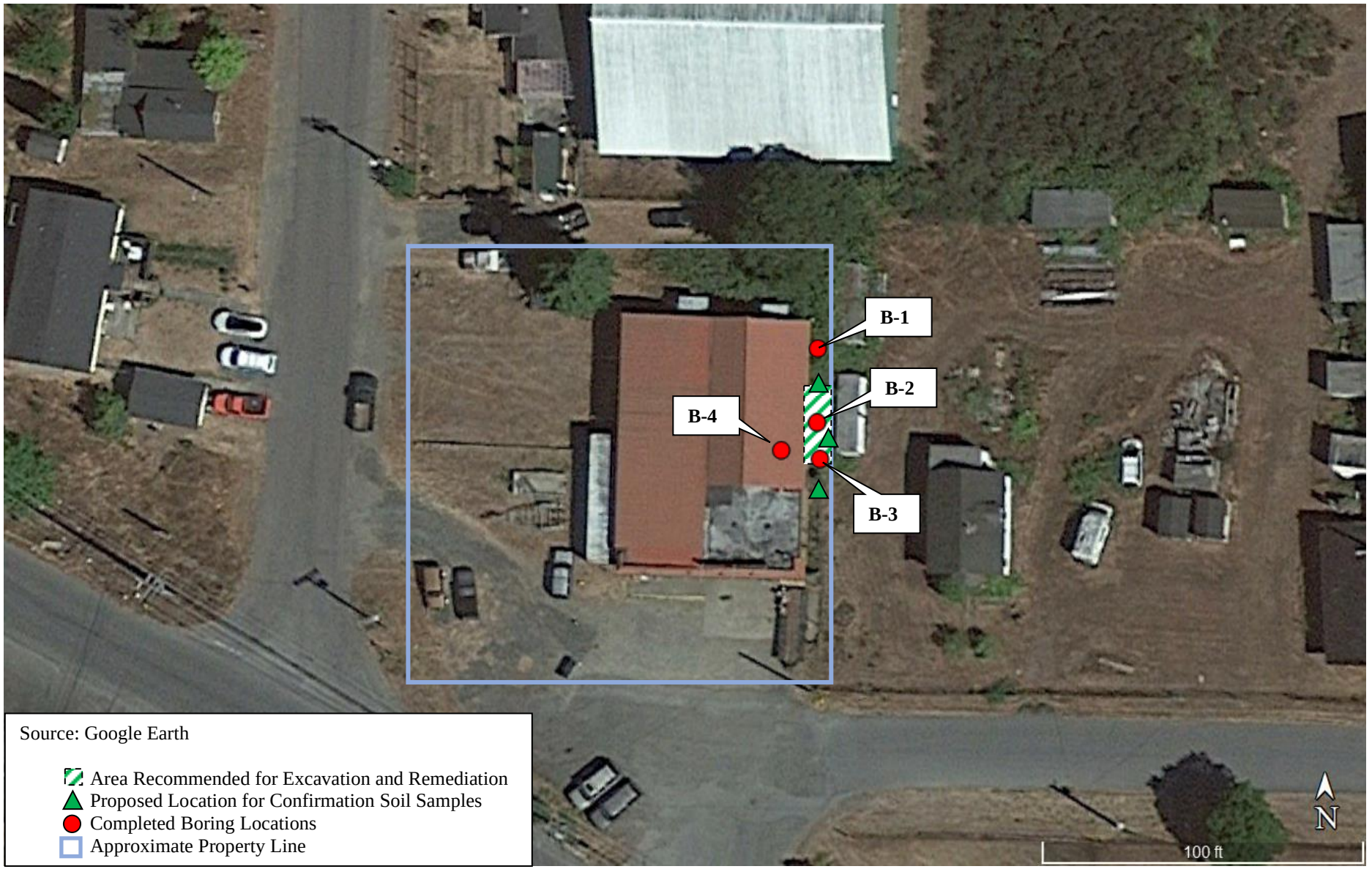
Shawn E. Williams, L.G.
Regional Environmental Manager

Source: Google Earth

VICINITY MAP	Scale: NTS	Date: July 2022	Krazan SITE DEVELOPMENT ENGINEERS *Offices Serving the Western United States*
Quality 4x4 Truck Supply **Removal Action and Confirmation Sampling** **2509 E. Eddy Lane** **Port Angeles, Washington**	**Modified by:** AG	**Approved by:** SEW	
	Project No. 104-22002	**Figure No.** 1	



Confirmation Sample Locations **Quality 4x4 Truck Supply** **Removal Action and Confirmation Sampling** **2509 E Eddy Lane** **Port Angeles, Washington**	**Scale:** NTS	**Date:** July-2022	Krazan **SITE DEVELOPMENT ENGINEERS** ***Offices Serving the Western United States***
	Modified by: AG	**Approved by:** SEW	
	Project No. 104-22002	**Figure No.** 2	



Source: Google Earth

- Area Recommended for Excavation and Remediation
- Proposed Location for Confirmation Soil Samples
- Completed Boring Locations
- Approximate Property Line

Recommendations for Excavation and Remediation

Quality 4x4 Truck Supply
Removal Action and Confirmation Sampling
2509 E. Eddy Lane
Port Angeles, Washington

Scale:	Date:
NTS	July 2022
Drawn by:	**Approved by:**
AG	SEW
Project No.	**Figure No.**
104-22002	3

Krazan

SITE DEVELOPMENT ENGINEERS
Offices Serving the Western United States

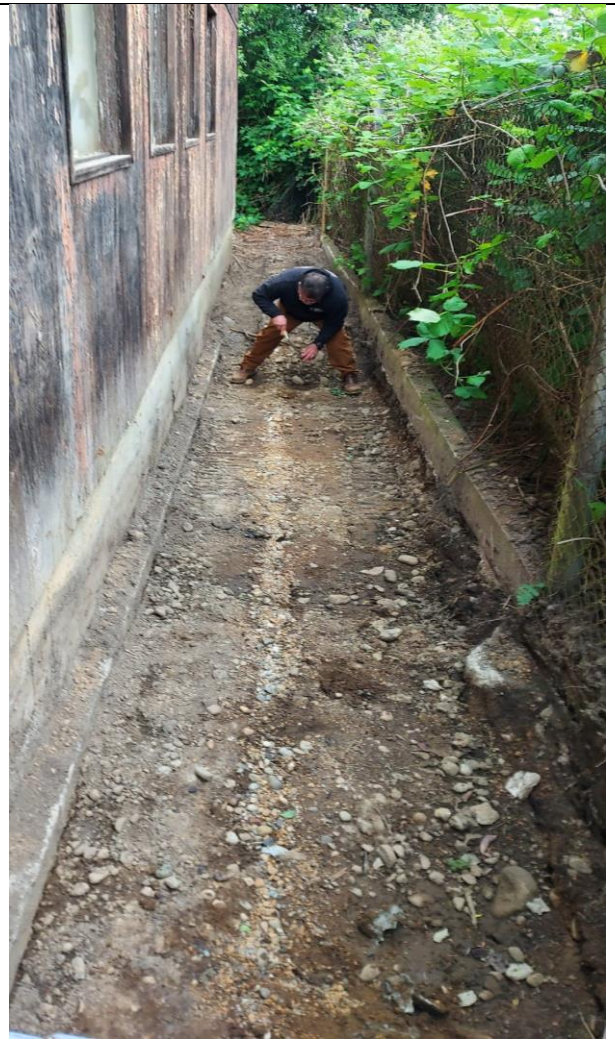


Photo 1: Image showing confirmation sampling after initial excavation.

Photo 2: Image showing confirmation sampling after second excavation.

Quality 4x4 Truck Supply
Removal Action and Confirmation Sampling
2509 E. Eddy Lane
Port Angeles, Washington

Project No.
104-22002

Date:
July 2022

Approved By:
SEW

Krazan
SITE DEVELOPMENT ENGINEERS
Offices Serving the Western United States

Appendix A

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

June 23, 2022

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

Dear Mr Williams:

Included are the results from the testing of material submitted on June 17, 2022 from the Quality 4X4 Phase II 104-22002, F&BI 206313 project. There are 12 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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
KZP0623R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 17, 2022 by Friedman & Bruya, Inc. from the Krazan & Associates (Poulsbo) Quality 4X4 Phase II 104-22002, F&BI 206313 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Krazan & Associates (Poulsbo)
206313 -01	KA-CS-01-SL
206313 -02	KA-CS-02-SL
206313 -03	KA-CS-03-SL

All quality control requirements were acceptable.

Date of Report: 06/23/22
Date Received: 06/17/22
Project: Quality 4X4 Phase II 104-22002, F&BI 206313
Date Extracted: 06/17/22
Date Analyzed: 06/17/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 56-165)
KA-CS-01-SL 206313-01	<50	<250	105
KA-CS-02-SL 206313-02	<50	300	95
KA-CS-03-SL 206313-03	480 x	2,500	101
Method Blank 02-1444 MB	<50	<250	107

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-01-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	06/17/22	Project:	Quality 4X4 Phase II 104-22002
Date Extracted:	06/20/22	Lab ID:	206313-01
Date Analyzed:	06/20/22	Data File:	206313-01.042
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	4.98
Cadmium	1.78
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-01-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	06/17/22	Project:	Quality 4X4 Phase II 104-22002
Date Extracted:	06/20/22	Lab ID:	206313-01 x5
Date Analyzed:	06/20/22	Data File:	206313-01 x5.111
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	35.6
Lead	301

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-02-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	06/17/22	Project:	Quality 4X4 Phase II 104-22002
Date Extracted:	06/20/22	Lab ID:	206313-02
Date Analyzed:	06/20/22	Data File:	206313-02.045
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	5.60
Cadmium	2.38
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-02-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	06/17/22	Project:	Quality 4X4 Phase II 104-22002
Date Extracted:	06/20/22	Lab ID:	206313-02 x25
Date Analyzed:	06/21/22	Data File:	206313-02 x25.085
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	54.1
Lead	1,650

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-03-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	06/17/22	Project:	Quality 4X4 Phase II 104-22002
Date Extracted:	06/20/22	Lab ID:	206313-03
Date Analyzed:	06/20/22	Data File:	206313-03.046
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	8.85
Cadmium	3.24
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-03-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	06/17/22	Project:	Quality 4X4 Phase II 104-22002
Date Extracted:	06/20/22	Lab ID:	206313-03 x25
Date Analyzed:	06/21/22	Data File:	206313-03 x25.086
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	76.7
Lead	1,710

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Krazan & Associates (Poulsbo)
Date Received:	NA	Project:	Quality 4X4 Phase II 104-22002
Date Extracted:	06/20/22	Lab ID:	I2-432 mb
Date Analyzed:	06/20/22	Data File:	I2-432 mb.040
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Date of Report: 06/23/22
Date Received: 06/17/22
Project: Quality 4X4 Phase II 104-22002, F&BI 206313

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 206307-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	106	118	63-146	11

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	110	79-144

Date of Report: 06/23/22
Date Received: 06/17/22
Project: Quality 4X4 Phase II 104-22002, F&BI 206313

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 206313-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	83	81	75-125	2
Cadmium	mg/kg (ppm)	10	<5	88	96	75-125	9
Chromium	mg/kg (ppm)	50	32.0	86	92	75-125	7
Lead	mg/kg (ppm)	50	271	0 b	146 b	75-125	200 b
Mercury	mg/kg (ppm	5	<5	92	92	75-125	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	96	80-120
Cadmium	mg/kg (ppm)	10	100	80-120
Chromium	mg/kg (ppm)	50	98	80-120
Lead	mg/kg (ppm)	50	96	80-120
Mercury	mg/kg (ppm)	5	100	80-120

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.

206313

SAMPLE CHAIN OF CUSTODY

6/17/22

1301

Page # 1 of 1

Report To SHAWN WILLIAMS

Company KRAZAN & ASSOCIATES, INC.

Address 1230 FINN HILL ROAD NW, STE A

City, State, ZIP POULSBO, WA 98370

Phone (360) 598-2126 Email SHAWNGWILLIAMS@KRAZAN.COM

SAMPLERS (*signature*)

PROJECT NAME: QUALITY 4×4 PHASE II

PO #: 104-22002

REMARKS: Project specific RLs? - Yes / No

INVOICE TO: KRAZAN

TURNAROUND TIME
- ☑ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 METALS				Notes
KA-CS-01-SL	01	6-15-22	1400	Soil	1	1							1				
KA-CS-02-SL	02	6-15-22	1410	Soil	1	1							1				
KA-CS-03-SL	03	6-15-22	1415	Soil	1	1							1				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Shawn E Williams	Krazan	6/16/22	8:00
Received by:	Windy Madden	F+BI	6/17/22	10:10
Relinquished by:		Samples received at 17°C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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

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

July 21, 2022

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

Dear Mr Williams:

Included are the results from the testing of material submitted on July 13, 2022 from the Quality 4x4 104-22002, F&BI 207177 project. There are 10 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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
KZP0721R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 13, 2022 by Friedman & Bruya, Inc. from the Krazan & Associates (Poulsbo) Quality 4x4 104-22002, F&BI 207177 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Krazan & Associates (Poulsbo)
207177 -01	KA-CS-04-SL
207177 -02	KA-CS-05-SL

All quality control requirements were acceptable.

Date of Report: 07/21/22
Date Received: 07/13/22
Project: Quality 4x4 104-22002, F&BI 207177
Date Extracted: 07/14/22
Date Analyzed: 07/14/22

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
KA-CS-04-SL 207177-01	<50	<250	98
KA-CS-05-SL 207177-02	<50	<250	99
Method Blank 02-1672 MB	<50	<250	99

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-04-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	07/13/22	Project:	Quality 4x4 104-22002, F&BI 207177
Date Extracted:	07/14/22	Lab ID:	207177-01
Date Analyzed:	07/14/22	Data File:	207177-01.122
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.26
Cadmium	<1
Lead	9.48
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-04-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	07/13/22	Project:	Quality 4x4 104-22002, F&BI 207177
Date Extracted:	07/14/22	Lab ID:	207177-01 x5
Date Analyzed:	07/14/22	Data File:	207177-01 x5.126
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	30.2

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-05-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	07/13/22	Project:	Quality 4x4 104-22002, F&BI 207177
Date Extracted:	07/14/22	Lab ID:	207177-02
Date Analyzed:	07/14/22	Data File:	207177-02.125
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	2.59
Cadmium	<1
Lead	6.69
Mercury	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	KA-CS-05-SL	Client:	Krazan & Associates (Poulsbo)
Date Received:	07/13/22	Project:	Quality 4x4 104-22002, F&BI 207177
Date Extracted:	07/14/22	Lab ID:	207177-02 x10
Date Analyzed:	07/15/22	Data File:	207177-02 x10.049
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Chromium	33.2

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Krazan & Associates (Poulsbo)
Date Received:	NA	Project:	Quality 4x4 104-22002, F&BI 207177
Date Extracted:	07/14/22	Lab ID:	I2-482 mb
Date Analyzed:	07/14/22	Data File:	I2-482 mb.086
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

Date of Report: 07/21/22
Date Received: 07/13/22
Project: Quality 4x4 104-22002, F&BI 207177

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 207176-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	57	109	109	73-135	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	110	74-139

Date of Report: 07/21/22
Date Received: 07/13/22
Project: Quality 4x4 104-22002, F&BI 207177

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 207177-01 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	mg/kg (ppm)	10	<5	98	85	75-125	14
Cadmium	mg/kg (ppm)	10	<5	102	93	75-125	9
Chromium	mg/kg (ppm)	50	27.8	96	87	75-125	10
Lead	mg/kg (ppm)	50	9.53	98	89	75-125	10
Mercury	mg/kg (ppm	5	<5	99	95	75-125	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	mg/kg (ppm)	10	91	80-120
Cadmium	mg/kg (ppm)	10	96	80-120
Chromium	mg/kg (ppm)	50	94	80-120
Lead	mg/kg (ppm)	50	103	80-120
Mercury	mg/kg (ppm)	5	102	80-120

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.

207177

SAMPLE CHAIN OF CUSTODY

7/13/22

BI

Page # 1 of 1

Report To Shawn Williams

Company Krazan & Associates

Address 1230 Finn Hill Rd NW, Suite A

City, State, ZIP Poulsbo, WA 98370

Phone (360) 598-2126 Email shawnwilliams@krazan.com

SAMPLERS (*signature*)

PROJECT NAME: Quality 4x4

PO #: 104-22002

REMARKS

Project specific RLs? - Yes / No

INVOICE TO: Krazan

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	MTCA 5 Metals				Notes
KA-CS-04-SL	01	7-11-22	~~14~~ 14:55	Soil	1	1							1				
KA-CS-05-SL	02	7-11-22	15:00	Soil	1	1							1				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Andrew Glenn	Krazan & Associates	7-12-22	15:00
Received by: W. Madden	W. Madden	F+BJ	7/13/22	12:07
Relinquished by:		Samples received at 9 °C		
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

Appendix B

City of Port Angeles
321 E 5TH ST
Port Angeles, WA 98362

PHONE: 360-417-4872

SCALE TICKET

Ticket #: **1041231**

	DATE	TIME	OpID
IN:	05/27/22	01:20 PM	SH
OUT:	05/27/22	01:46 PM	SH

Truck#: COUNTYRES10

Customer
Acct #: 0000
CASH / Non-Account Holder

Port Angeles, WA

Gross:	26060 lb	13.03 tn
Tare:	14400 lb	7.20 tn
Net:	11660 lb	5.83 tn

Material

1620 - CS - CONTAMINATED SO $1273.97
5.83 TN @ $218.52/TN

Subtotal: $1273.97
Tax: $0.00

Total: **$1273.97**

Payment Method(s):
CREDIT CARD $1273.97
AUTH#: 68619C
CARD#: XXXXXXXXXXX
REF#:

Change: $0.00

Customer Signature

WDA 22-6

Safe Driving!

SOLID WASTE TIPPING FEES INCLUDE A SURCHARGE RATE OF $30.99 PER TON FOR THE LANDFILL BLUFF STABILIZATION PROJECT.

ANGELES

GTON, U. S. A.

ilities Department

ansfer Waste Disposal Application, WDA #22-6

cation for demolition debris from the referenced site
test results Clallam County Environmental Health Ser
ons of demolition debris from 2509 E Eddy Ln, Port A

lication is attached. This approved application must b
ant at the time of disposal.

isposal application is only for the materials and quanti
ted or in excess of the quantities noted may be requir

Waste Superintendent at 360-417-4872 or e-mail bdo

rintendent/Operations Manager, Port Angeles Transfe
endant, City of PA.

City of Port Angeles
321 E 5TH ST
Port Angeles, WA 98362

PHONE: 360-417-4872

SCALE TICKET

Ticket #: **1053639**

	DATE	TIME	OpID
IN:	07/08/22	10:27 AM	SH
OUT:	07/08/22	10:46 AM	SH

Truck#: COUNTYRES11

Customer
Acct #: 0000
CASH / Non-Account Holder

Port Angeles, WA

Gross:	15620 lb	7.81 tn
Tare:	10480 lb	5.24 tn
Net:	5140 lb	2.57 tn

Material

1620 - CS - CONTAMINATED SO $561.60
2.57 TN @ $218.52/TN

Subtotal: $561.60
Tax: $0.00

Total: **$561.60**

Payment Method(s):
CREDIT CARD $561.60
AUTH#: 27366D
CARD#: XXXXXXXXXXX
REF#:

Change: $0.00

Customer Signature
wda 22-6

Safe Driving!

SOLID WASTE TIPPING FEES INCLUDE
A SURCHARGE RATE OF $30.99 PER TON
FOR THE LANDFILL BLUFF STABILIZATION
PROJECT.