

Site Assessment Report

Dills Property – 701 Buena Loop Road, Buena, WA
AEC Project Number 12-061

Prepared for:

Washington State Department of Ecology
15 West Yakima Avenue, #200
Yakima, Washington 98901

October 23, 2012

Prepared by:



Anderson Environmental Contracting, LLC
705 Colorado Street Kelso, Washington 98626
p: (360) 577-9194 f: (360) 577-9198
www.aecllc.net

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I. Introduction

Anderson Environmental Contracting, LLC (AEC) has prepared this report to document site assessment and underground storage tank (UST) decommissioning activities at the above referenced site shown on Figure 1. Work is being conducted under a signed contract with the Washington State Department of Ecology (Ecology).

II. Description of Property

AEC was unable to obtain information on historic land use of the property. Buena Loop Road is one of the main roads through the small farming community of Buena, Washington. Anecdotal information indicates that several retail gas stations were constructed along this road. It's possible that the subject site was the location of a former retail gas station. Traffic patterns likely changed after the construction of State Route 82 (I-82) in the 1980's and may have resulted in the closure of these stations.

The site is currently a single family residence located in a mixed residential and agricultural setting. There was no historic gas station or fueling architecture on the property when AEC arrived at the site. The topography of the site is relatively flat with a slight slope to the southwest. The nearest prominent surface water body is the Yakima River located approximately one mile southwest of the site (Figure 1). A groundwater monitoring well is located near the southern property boundary as is currently being monitored by Ecology.

A geophysical survey was performed at the site for GeoEngineers to locate potential USTs. Three magnetic anomalies were identified at the site. The approximate location of these anomalies is shown on Figure 2.

III. Regional Geology and Hydrogeology

The site is located within the Yakima River basin which encompasses approximately 6,000 square miles in south-central Washington. The basin is separated into several broad valleys by east-west trending anticlinal ridges. The valley floors slope gently towards the Yakima River. Few perennial tributary streams traverse these valleys. Groundwater generally flows towards these systems.

Based on review of geologic maps, the local geology within the Yakima River basin is comprised of Pleistocene glacial outburst flood deposits and loess/dune sand deposits. Irrigated agriculture is the principal economic activity in the basin.

IV. Fieldwork

A. UST Decommissioning Activities

On September 17-19, 2012, AEC performed tank decommissioning and site assessment work was performed at the site. Decommissioning activities involved the following tasks:

- Performed exploratory excavations in the areas where the 3 magnetic anomalies were identified in the GeoEngineer's report.
- Excavated the overburden soil overlying the USTs.
- Removed two USTs from a single excavation.
- Stockpiled the excavated soil in an area located on the eastern end of the property.
- Collected confirmation soil samples from the sidewalls and floor of the UST excavation.
- Collected three soil samples from the stockpile.
- Recycled the tank at a licensed metal recycling facility (Pacific Steel and Recycling) in Yakima, Washington.

AEC used a Cat 320 tracked excavator to perform soil excavation work at the site. Exploratory test pits were performed in the areas of the three magnetic anomalies discussed above. AEC discovered two USTs in the area of the two magnetic anomalies on the eastern portion of the property and buried rebar and metal reinforced concrete in the area of the western magnetic anomaly.

Once the USTs were located, AEC removed the overburden soil and two USTs from the ground. AEC observed that both tanks were partially crushed (assumed to have occurred during previous excavation work at the site). Once the USTs were removed from the ground they were observed for signs of holes/corrosion/pitting. The northern-most tank measured approximately 8 feet in length and 4 feet in diameter and had an estimated capacity of 675 gallons. The southern-most UST measured approximately 8 feet in length and 3 feet in diameter and had an estimated capacity of 500 gallons. The bottom of both tanks was heavily corroded with multiple holes. Both tanks were partially filled with water. The water in the tanks drained back into the excavation during the removal process. The tanks were placed on a trailer and secured for transportation to Pacific Steel and Recycling in Yakima, Washington for recycling. UST recycling documentation is included in Appendix A.

B. Subsurface Conditions

The upper six feet of soil encountered in the excavation consisted of brown colored sand and gravel. The sand consists of fine to coarse grain sand with less than 10% low plastic fines. Up to 33% of this soil layer consists of fine to coarse subrounded gravel. At approximately 5 feet bgs a dark gray colored stained soil layer was encountered under the northern most UST. The soil exhibited a strong hydrocarbon odor. Groundwater was present in the excavation at a depth of approximately 4.5 feet bgs.

C. Field Screening and Sample Collection

Field screening consisted of volatile organic vapor measurements using a photoionization detector (PID), sheen testing, visual observations (staining, etc.), and

olfactory observations. A portion of each soil sample was placed in a sealed Zip-Lock baggie. The tip of the PID was inserted into the zip-lock bag in the airspace above the soil sample and the PID measurement was recorded. The PID was calibrated before use at the site to a test gas standard consisting of 100 ppmv isobutylene. Sheen testing consisted of placing a small portion of soil in clear water and observing the water for the presence of hydrocarbon sheen. Because several factors can affect PID readings (e.g. moisture, temperature, and background conditions), AEC determined that a value of 1 ppm or greater may indicate the presence of organic vapors originating from contaminants at the site.

The dark gray colored soil located under the northern most UST had a PID reading of up to 830 ppm. All other confirmation sample locations had organic vapor measurements less than 1 ppm. It should be noted that blebs of petroleum product was visible on the surface of the water in the excavation cavity near the northern most UST.

At the conclusion of excavation, AEC collected four confirmation soil samples from the excavation and three stockpile samples at locations shown on Figure 2. Two sidewall samples were collected from the excavation at a depth above the water table at approximately 3.5 and 4 feet bgs. A floor sample was collected below the bottom of each UST at a depth of 5 to 6 feet bgs. The soil samples were placed in a cooler packed with ice along with chain-of-custody documentation. The cooler was shipped to Friedman & Bruya Laboratory in Seattle, Washington for analysis.

V. Analytical Results

The soil samples were analyzed for hydrocarbon identification using Northwest Method NWTPH-HCID. Follow up quantification analyses included TPH as gasoline using Northwest Method NWTPH-Gx, volatile organic compounds (VOCs) using EPA Method 8260C, and total lead using EPA Method 200.8. A copy of the laboratory report along with the chain-of-custody documentation is included in Appendix B.

A. Confirmation Soil Samples

Soil analytical results are reported as milligrams per kilograms (mg/kg) and are summarized in Table 1. Analytical results of the HCID analysis performed on the confirmation samples indicated that only one sample (sample X1-5 collected under the northern most UST) had a detection of gasoline. There was no detection of petroleum hydrocarbon fuel in any of the other samples above the respective laboratory method reporting limit (MRL). AEC requested that quantification analyses listed above were performed on the X1-5 sample. Results indicated that five constituents were detected in the sample above the laboratory's respective MRL including TPH as gasoline (1,600 mg/kg), ethylbenzene (0.75 mg/kg), total xylenes (0.73 mg/kg), naphthalene (0.56 mg/kg), and total lead (8.02 mg/kg).

Laboratory results of the soil stockpile confirmation samples indicated that there was no detection of petroleum hydrocarbon fuel in any of the samples above the respective MRLs.

B. Discussion

Results of the soil sampling performed at the site by AEC indicate that a release of gasoline has occurred at the site. The concentration of TPH as gasoline in the X1-5 sample is 1,600 mg/kg. The MTCA Method A cleanup level for TPH as gasoline is either 30 mg/kg when there is benzene present at the site or 100 mg/kg when there is no benzene. The concentration of TPH as gasoline in the confirmation sample exceeds both of these values.

VI. Recommendations

Based on the results of this site assessment AEC makes the following recommendations:

- AEC recommends that remediation and further characterization of the extent of the gasoline impacted soil and groundwater should be performed at the site. The vertical extent of soil contamination appears to be limited to a depth of 6 feet bgs. The lateral extent of the contamination is unknown. AEC observed localized blebs of free product on the surface of the water in the UST excavation cavity. The extent of free product and groundwater contamination is currently unknown.
- Once soil remediation is completed the excavation should be backfilled with clean granular soil. The soil in the stockpile is clean and consists primarily of sand and gravel which is suitable for use as backfill at the site.



CRAIG HULTGREN

A handwritten signature in black ink, appearing to read "Craig Hultgren".

Craig Hultgren, LHG
WA Site Assessor 879655

Table 1
Soil Analytical Results Summary (mg/kg)
Dills Property

Sample Identification	MTCA Method A	X1-5	X2-6	X3-3.5	X4-4	Stock-1	Stock-2	Stock-3	Stock-4
Sample Depth (feet bgs)	Cleanup Level	5	6	3.5	4	0.5	0.5	0.5	0.5
Collecton Date		9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012	9/18/2012
TPH-Gas	30/100 ¹	1,600	20 U	20 U	20 U	20 U	20 U	20 U	20 U
TPH-Diesel	2,000	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
TPH-Heavy Oil	2,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Benzene	0.03	0.03 U	---	---	---	---	---	---	---
Toluene	7	0.05 U	---	---	---	---	---	---	---
Ethylbenzene	6	0.75	---	---	---	---	---	---	---
Total Xylenes	9	0.73	---	---	---	---	---	---	---
MTBE	0.01	0.05 U	---	---	---	---	---	---	---
EDB	0.005	0.05 U	---	---	---	---	---	---	---
EDC		0.05 U	---	---	---	---	---	---	---
Naphthalene	5	0.56	---	---	---	---	---	---	---
Total Lead	250	8.02	---	---	---	---	---	---	---

Notes:

--- = Not analyzed for this constituent

U = Undetected at laboratory method reporing limit (MRL) shown

Bold = Concentration exceeds MTCA Method A cleanup level

¹ = Cleanup Level when benzene is present is 30 mg/kg and 100 mg/kg when benzene is not detected in all samples collected from the site

Total Petroleum Hydrocarbons (TPH) as gasoline by Northwest Method NWTPH-HCID and NWTPH-Gx

TPH as diesel and oil by Northwest Method NWTPH-HCID

Volatile organic compounds (VOCs) by EPA Method 8260C

Total lead by EPA Method 200.8

mg/kg = milligrams per kilogram (ppm)

bgs = below ground surface

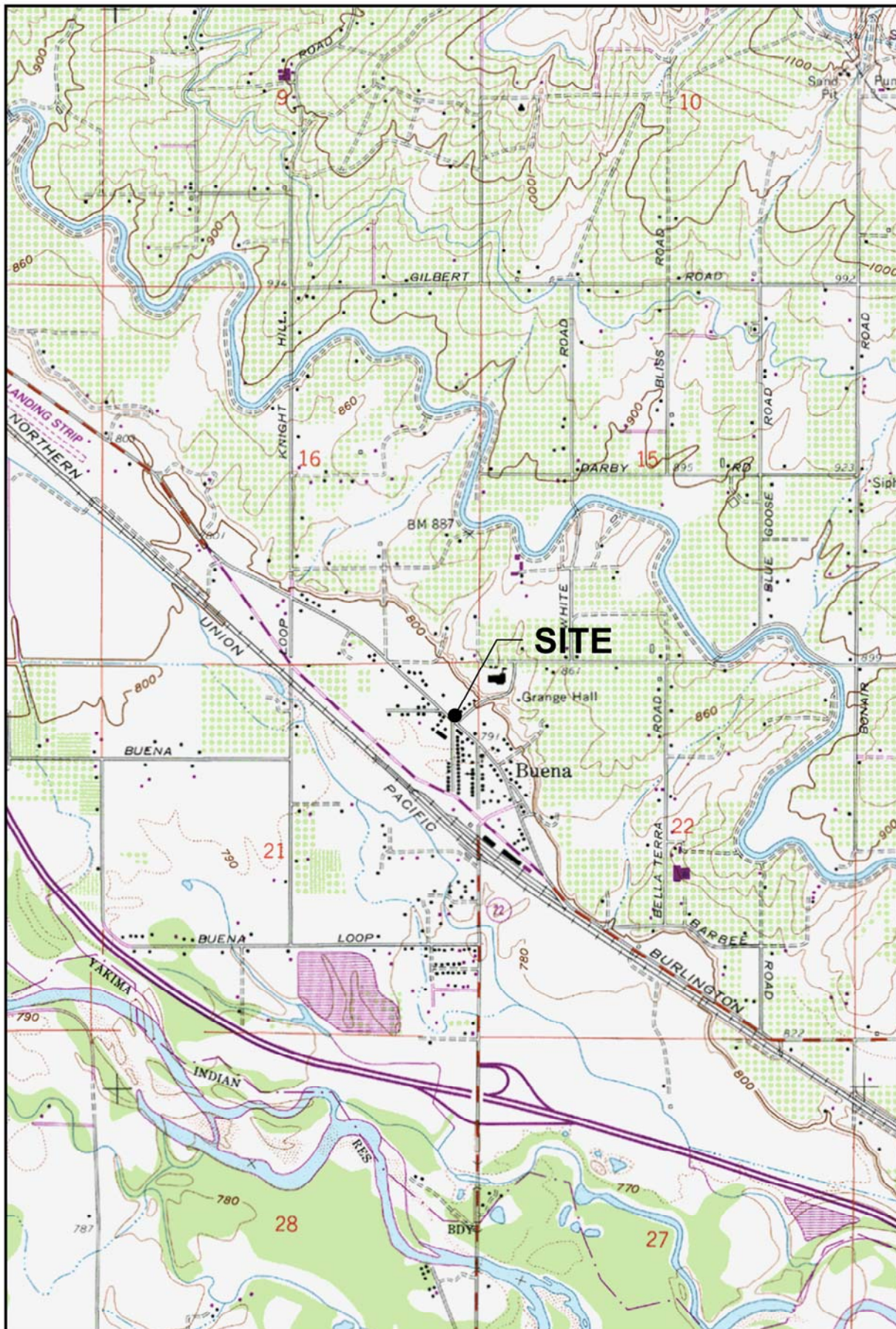
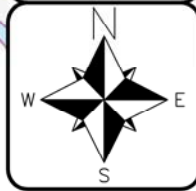


Figure 1
SITE LOCATION MAP

Dills Site
701 Buena Loop Road
Zillah, WA 98953

DATE: 10/12/12
DWN: BCB
CHK:
APPROVED:
PRJ. MGR: CH
PROJECT NO: 12-061



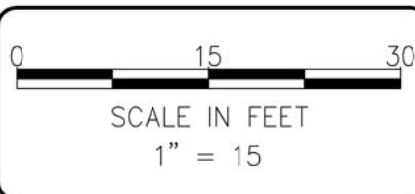
NOTE(S):

1. USGS, TOPPENISH QUADRANGLE
WASHINGTON - OREGON
7.5 MINUTE SERIES (TOPOGRAPHIC)



NOTE(S):

1. Aerial photograph (2011) provided by Google Earth™.



DATE: 1/3/12
DWN: BCB
CHK:
APPROVED:
PRJ. MGR: CH
PROJECT NO:
12-061

Figure 2
SOIL SAMPLE LOCATIONS

Dills Site
701 Buena Loop Road
Zillah, WA 98953

APPENDIX A

UST RECYCLING DOCUMENTATION



PACIFIC

STEEL & RECYCLING™

409 Butterfield Road PO Box 407 Yakima, WA 98907 (509) 453-1652

PURCHASE TICKET		2167370
PURCHASE DATE	09/18/12	
PURCHASE TYPE	CASH / CHECK	
CHECK NUMBER	1496277	
CHECK AMOUNT	\$64.60	
CASH AMOUNT	\$0.00	
LUCAS K		42

PURCHASED FROM	42360
ANDERSON ENVIRONMENTAL CONTRACTING 705 COLORADO STREET KELSO, WA 98626	

Recycling hours Monday-Friday: 8am to 5pm / Saturday 8am to 12pm
Please verify your mailing address...an incorrect mailing address will delay
your payment and may also incur a \$25 re-issuing fee.

QUANTITY		Description	PRICING		Amount
Purchased	UOM		UOM	Per Unit	
680	LB	UNPREP IRON	LB	0.0950	64.60
<i>12-061 Fred Dillis Property</i>					
		TOTAL QUANTITY	680	TOTAL AMOUNT	\$64.60

TRANSACTION DATE AND TIME: 09/18/12 12:49 PM

I, the undersigned, affirm under the penalty of law that the property that is subject to this transaction is not to the best of my knowledge stolen property.

SELLER SIGNATURE

Frank Kelly

WITNESS SIGNATURE (REQUIRED)

APPENDIX B

LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Bradley T. Benson, B.S.
Kurt Johnson, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
TEL: (206) 285-8282
e-mail: fbi@isomedia.com

October 2, 2012

Craig Hultgren, Project Manager
Anderson Environmental
705 Colorado Street
Kelso, WA 98626

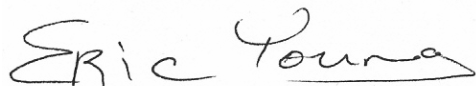
Dear Mr. Hultgren:

Included are the results from the testing of material submitted on September 19, 2012 from the Yakima Dills 12-061, F&BI 209288 project. There are 11 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. 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.

A handwritten signature in black ink that reads "Eric Young". The signature is written in a cursive, flowing style.

Eric Young
Chemist

Enclosures
AEN1002R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on September 19, 2012 by Friedman & Bruya, Inc. from the Anderson Environmental Yakima Dills 12-061, F&BI 209288 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Anderson Environmental</u>
209288-01	X1-5
209288-02	X2-6
209288-03	X3-3.5
209288-04	X4-4
209288-05	Stock-1
209288-06	Stock-2
209288-07	Stock-3

All quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/02/12

Date Received: 09/19/12

Project: Yakima Dills 12-061, F&BI 209288

Date Extracted: 09/20/12 and 09/21/12

Date Analyzed: 09/20/12, 09/21/12, and 09/22/12

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID
Results Reported as Not Detected (ND) or Detected (D)**

**THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE
WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION
WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT**

<u>Sample ID</u> Laboratory ID	<u>Gasoline</u>	<u>Diesel</u>	<u>Heavy Oil</u>	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 50-150)
X1-5 209288-01	D	ND	ND	111
X2-6 209288-02	ND	ND	ND	104
X3-3.5 209288-03	ND	ND	ND	111
X4-4 209288-04	ND	ND	ND	110
Stock-1 209288-05	ND	ND	ND	105
Stock-2 209288-06	ND	ND	ND	103
Stock-3 209288-07	ND	ND	ND	102
Method Blank 02-1741 MB	ND	ND	ND	114
Method Blank 02-1750 MB	ND	ND	ND	104

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/02/12

Date Received: 09/19/12

Project: Yakima Dills 12-061, F&BI 209288

Date Extracted: 09/21/12

Date Analyzed: 09/22/12 and 09/26/12

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
USING METHOD NWTPH-Gx**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u>	<u>Gasoline Range</u>	Surrogate (% Recovery)
Laboratory ID		(Limit 58-139)
X1-5 209288-01 1/50	1,600	97
Method Blank	<2	91

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	X1-5	Client:	Anderson Environmental
Date Received:	09/19/12	Project:	Yakima Dills 12-061, F&BI 209288
Date Extracted:	09/24/12	Lab ID:	209288-01
Date Analyzed:	09/24/12	Data File:	209288-01.097
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	86	60	125

Analyte:	Concentration mg/kg (ppm)
Lead	8.02

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	Anderson Environmental
Date Received:	NA	Project:	Yakima Dills 12-061, F&BI 209288
Date Extracted:	09/24/12	Lab ID:	I2-646 mb
Date Analyzed:	09/24/12	Data File:	I2-646 mb.081
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Holmium	82	60	125

Analyte:	Concentration mg/kg (ppm)
----------	------------------------------

Lead	<1
------	----

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	X1-5	Client:	Anderson Environmental
Date Received:	09/19/12	Project:	Yakima Dills 12-061, F&BI 209288
Date Extracted:	09/21/12	Lab ID:	209288-01
Date Analyzed:	09/22/12	Data File:	092143.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	150 ip	65	139

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,2-Dibromoethane (EDB)	<0.05
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	0.75
m,p-Xylene	0.73
o-Xylene	<0.05
Naphthalene	0.56

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Anderson Environmental
Date Received:	NA	Project:	Yakima Dills 12-061, F&BI 209288
Date Extracted:	09/21/12	Lab ID:	02-1700 mb
Date Analyzed:	09/21/12	Data File:	092110.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	100	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
1,2-Dibromoethane (EDB)	<0.05
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/02/12

Date Received: 09/19/12

Project: Yakima Dills 12-061, F&BI 209288

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR TPH AS GASOLINE
USING METHOD NWTPH-Gx**

Laboratory Code: 209319-09 (Duplicate)

Analyte	Reporting Units	(Wet Wt) Sample Result	(Wet Wt) Duplicate Result	Relative Percent Difference (Limit 20)
Gasoline	mg/kg (ppm)	<2	<2	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	95	61-153

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/02/12

Date Received: 09/19/12

Project: Yakima Dills 12-061, F&BI 209288

**QUALITY ASSURANCE RESULTS
FOR THE ANALYSIS OF SOIL SAMPLES
FOR TOTAL METALS USING EPA METHOD 200.8**

Laboratory Code: 209236-14 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	50	1.08	106	106	64-139	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	50	104	83-118

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 10/02/12

Date Received: 09/19/12

Project: Yakima Dills 12-061, F&BI 209288

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES
FOR VOLATILES BY EPA METHOD 8260C**

Laboratory Code: 209316-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	82	21-145
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	88	12-160
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	85	28-142
Benzene	mg/kg (ppm)	2.5	<0.03	78	29-129
Toluene	mg/kg (ppm)	2.5	<0.05	84	35-130
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	87	32-137
m,p-Xylene	mg/kg (ppm)	5	<0.1	88	34-136
o-Xylene	mg/kg (ppm)	2.5	<0.05	86	33-134
Naphthalene	mg/kg (ppm)	2.5	0.097	82	14-157

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	96	97	60-123	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	104	104	56-135	0
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	102	101	74-132	1
Benzene	mg/kg (ppm)	2.5	94	93	68-114	1
Toluene	mg/kg (ppm)	2.5	101	100	66-126	1
Ethylbenzene	mg/kg (ppm)	2.5	102	101	64-123	1
m,p-Xylene	mg/kg (ppm)	5	103	102	78-122	1
o-Xylene	mg/kg (ppm)	2.5	100	100	77-124	0
Naphthalene	mg/kg (ppm)	2.5	95	94	60-125	1

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.

A1 - More than one compound of similar molecule structure was identified with equal probability.

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 this range fell outside of acceptance criteria. The value reported is an estimate.

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

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

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

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

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The result is below normal reporting limits. 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 analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is 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 compound indicated 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 in a container not approved by the method. The value reported should be considered an estimate.

pr - The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

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.

209288

SAMPLE CHAIN OF CUSTODY

ME 09-19-12

B04/182

Send Report To Carol A. HultgrenCompany AECAddress 305 Colorado StreetCity, State, ZIP Kelso, WA 98626Phone # (360) 977-9199 Fax # 577-9198Page # 1 of 1

TURNAROUND TIME

☒ Standard (2 Weeks)☐ RUSH

Rush charges authorized by

SAMPLE DISPOSAL

☐ Dispose after 30 days☐ Return samples☐ Will call with instructionsSAMPLERS (signature) [Signature]PROJECT NAME/NO. Yakima - 01115PO# 12061

REMARKS

ANALYSES REQUESTED

TPH-Diesel
TPH-Gasoline
BTEX by 8021B
VOCs by 8260
SVOCs by 8270

HFS

HCB
Lead
BTEX, MTBE, EBS
ED, Methylene

Notes

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	HCB	Lead	BTEX, MTBE, EBS	ED, Methylene	Notes
X1-5	01	9/19/12	11:40	Soil	5	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	10-ppm CH
X2-6	02	9/19/12	11:45	Soil	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9/24/12
X3-3.5	03	9/19/12	12:05	Soil	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ms
X4-4	04	9/19/12	10:15	Soil	5	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stock-1	05	9/19/12	10:30	Soil	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stock-2	06	9/19/12	10:40	Soil	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Stock-3	07	9/19/12	10:50	Soil	4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

SIGNATURE

PRINT NAME

COMPANY

DATE

TIME

Reinforced by:

PRINT NAME

COMPANY

DATE

TIME

Received by:

PRINT NAME

COMPANY

DATE

TIME

Reinforced by:

PRINT NAME

COMPANY

DATE

TIME

Received by:

PRINT NAME

COMPANY

DATE

TIME

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