

# Gustavus Dray Filling Station

ADEC File: 1507.38.015

## Interim Cleanup Report



Prepared by:



August 13, 2016

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## **1. Introduction**

The Gustavus Dray Filling Station was built in 1992 as a pre-WWII replica Mobil gas station with 1937 dispensers featuring a petroleum museum with gift shop. It is the only gas station in Gustavus. Contamination was first documented in 2015 and Corrective Action Plan prepared. This report presents results of interim cleanup action and characterization.

### **1.1 Subject Property**

Gustavus Dray Filling Station is one parcel totaling 4.76-acres located at 58°24'44.72" and 135°43'38.44". Legal description is Lot 1 Blue Heron Subdivision, Section 17 and 18, Township 40 South, Range 59 East, Copper River Meridian. It is located at 1 State Dock Road, Gustavus, AK 99826. The station has three 3,000-gallon aboveground fuel tanks. Surrounding properties include; Gustavus Road and Main Street Junction to the North, State-Dock Road and Kate Boesser-Koschmann residence to the West; empty lot to the East and Sunnyside Market to the South.

### **1.2 Site History**

Phase 1 Environmental Site Assessment was conducted by Nortech June 2015 and identified leaking and weeping fuel fittings leading to Phase 2 characterization in August 2015. Characterization included installation and sampling of 6 monitoring wells, soil screening and 25 soil samples analyzed throughout the potentially impacted area. A Corrective Action Plan was prepared November 2015. May 2016 Layne Parker purchased the subject property and Nortech completed a monitoring well sampling report. Review of discrepancies in fuel inventory by the owner estimate a maximum of 350-gallons gasoline could have leaked in 2015 and 320-gallons in 2016, ending with leak repair in May 2016. It is unknown if significant leaks or spills occurred prior to 2015. Layne met on site June 30, 2016 with ADEC Project Manager, Bruce Wanstall, and Chilkat Environmental Principal Investigator Elijah Donat. Corrective Action Plan Revisions were submitted in a July 1 Memo to ADEC, were approved, and fieldwork performed July 13-16, 2016.

### **1.3 Scope of Work**

The scope of work for this interim cleanup action and characterization included; drinking water well sampling for 4 wells; inspection of the 6 monitoring wells; excavation, screening and sampling for spill site and drain outfall; screening for soil beneath tank farm and extent of excavation at drum storage site.

## **2. Drinking Water Well Sampling**

The well at the station and the three nearest wells (Main Street Junction, Sunnyside Café, Kate Boesser-Koschmann) were sampled on July 14 for; EPA 8260 for VOC, EPA 8270 for SVOC, AK 101 for GRO and AK 102/103 for DRO/RRO. Results were non-detect with no data quality concerns. Separate memos with Laboratory Report and Data Quality Review Checklist were submitted to ADEC and approved.



Figure 1: Drinking water well sampling locations

### 3. Monitoring Well Inspection

Monitoring wells most recently sampled in May 2016 were inspected July 2016. MW-6 was planned for sampling but attempts to purge produced very turbid water dense with suspended sediment. Depth measurement found the well had filled with 0.28 ft. of sediment. 8.5 gallons were purged from the well but water did not clear up. Purge water stored on site by Nortech was inspected and found to be free of sheen and clear with a significant settle able solids layer on the bottom. The highly turbid water is assumed to not be representative of groundwater and appears to be influenced by conditions above the screened interval. These observations were discussed with ADEC and the other monitoring wells purged to determine if they were in a similar condition. Observations are included in Figure 2 and include PID headspace sampling of the well head when cap is removed. Very light sheen was observed at MW 1 and MW 2.

MW	PID (ppm)	Purge (g)	Probe for bentonite (ft)
1	0	4.5	3.5
2	78.2	5	3.5
3	4	8	4
4	0	6	4
5	8.2	4	3
6	0	8.5	4

Figure 2: Observations from monitoring wells

MW-6 produced a PID headspace reading of 0.0. MW's 2,3 and 5 each presented PID readings while the remainder did not. None of the wells were observed to contain bentonite clay seal. The upper well columns were probed but it is unknown if bentonite seal is present deeper where we could not reach.

At the location of MW-4 a bag of playground sand was observed. The current owner theorizes the source of the is from installation of the monitoring wells. While this theory is reasonable it is unknown if play sand was used at the screened interval. If it was used, the condition of the wells could be related to non-specification sand instead of 10/20 Colorado Silica Sand. Sand at the screened interval protects sediment infiltration and assists in drawing representative samples based on its particle size in relation to the screen. Bentonite from the screened interval to the surface deters entry of water from above. Observations of the 6 wells indicate the screened intervals are not stable and that water in the wells is entering from above evidenced by heavy turbidity and solids content. Stable shallow groundwater at 6 to 10 feet below ground is not anticipated to be highly turbid. Resampling the MW's is not recommended. There is a possibility that low water table conditions influenced well productivity and wells could be inspected during high water table conditions. However, the wells were observed in a compromised condition that means they may not be able to produce representative information. On August 12, MW 1 was inspected by Layne to install ORC socks. He discovered the well was dry. Socks were placed in MW-3 and MW-5 and will be added to MW-1 if water returns.



Photo 1: Well bailer demonstrating sediment clogging valve and very turbid water.

Photo 2: After pouring purge there was thick sediment in bucket. Bailer imprint in sediment

Photo 3: Play sand may have been used for screened interval instead of 10/20 Colorado Silica Sand

## 4. Excavation and Sampling

### 4.1 Spill Site

Excavation was advanced at the location of SB5, SB11, SB12 and SB15 with a near vertical headwall because excavation did not encounter adjacent structures. 450yd<sup>3</sup> of contaminated soil from the fuel line leak at the tank farm was excavated and placed at the soil farm site. Excavation was performed to soil saturation level and was directed by ongoing ambient screening during excavation. Twenty- five gallons of gasoline were collected with absorbents. Measurement of weight was used to determine volume. Sampling at the extent of excavation was performed alongside screening using EPA 8260 for VOC and AK 101 for GRO. Other contaminants of concern were discussed with ADEC and RRO, DRO and SVOC were dropped from sampling at the extent based on observation of the primary COC's. After sampling at the extent of excavation the site remained open for a few days. Prior to import of fill the contaminated headwalls adjacent the tank farm were protected with polyurethane liner to avoid re-contamination of the clean fill. Sixty pounds of ORC was broadcast at excavation boundary prior to placement of clean fill. A thirty foot perforated pipe was placed at the floor of the excavation surrounded by drain rock and landscape fabric connected to a vertical solid pipe access point at ground surface. The purpose of the installation is to allow groundwater interface access for further treatment as required.

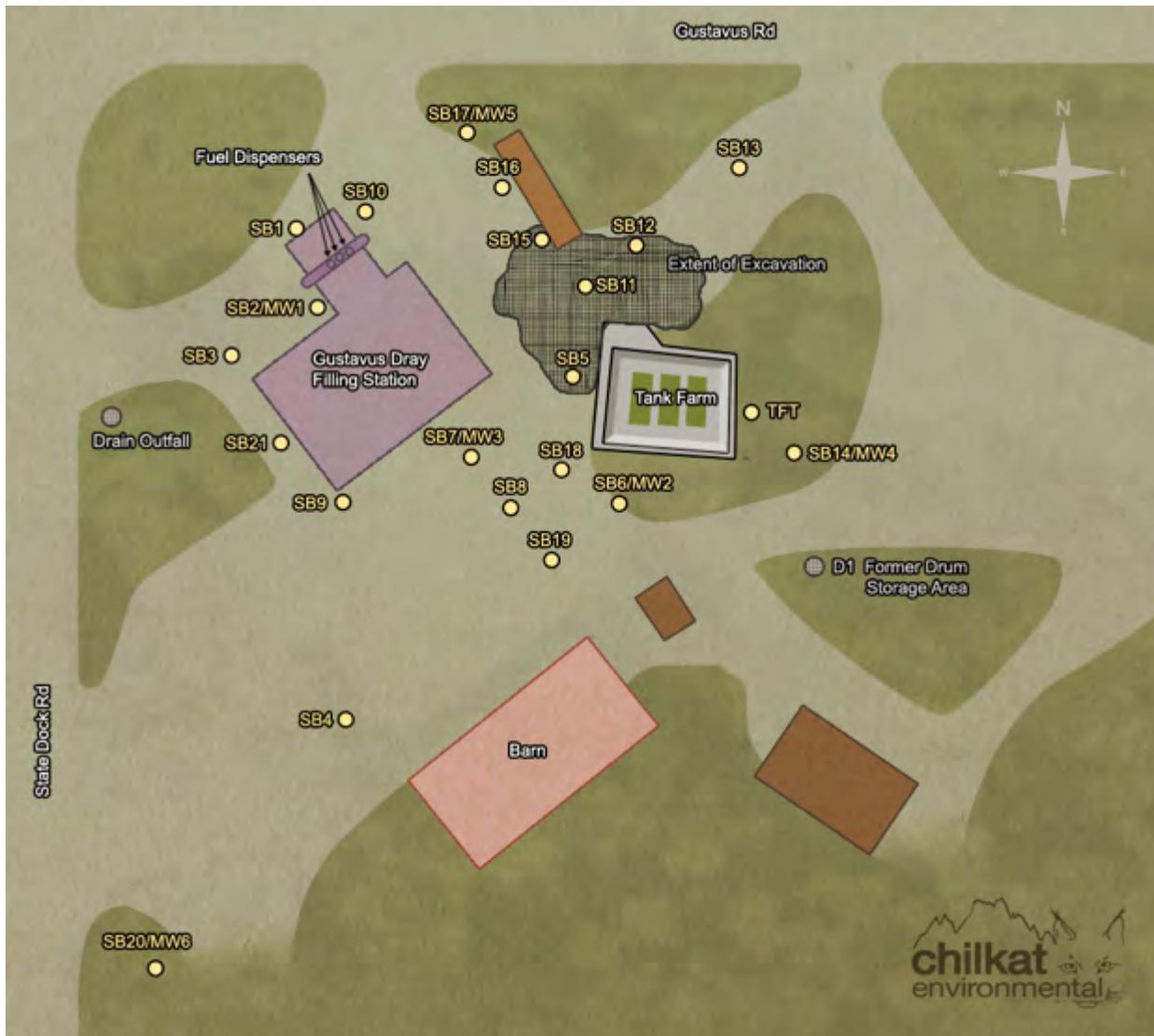


Figure 3: Extent of excavation. Sample locations from Phase II.

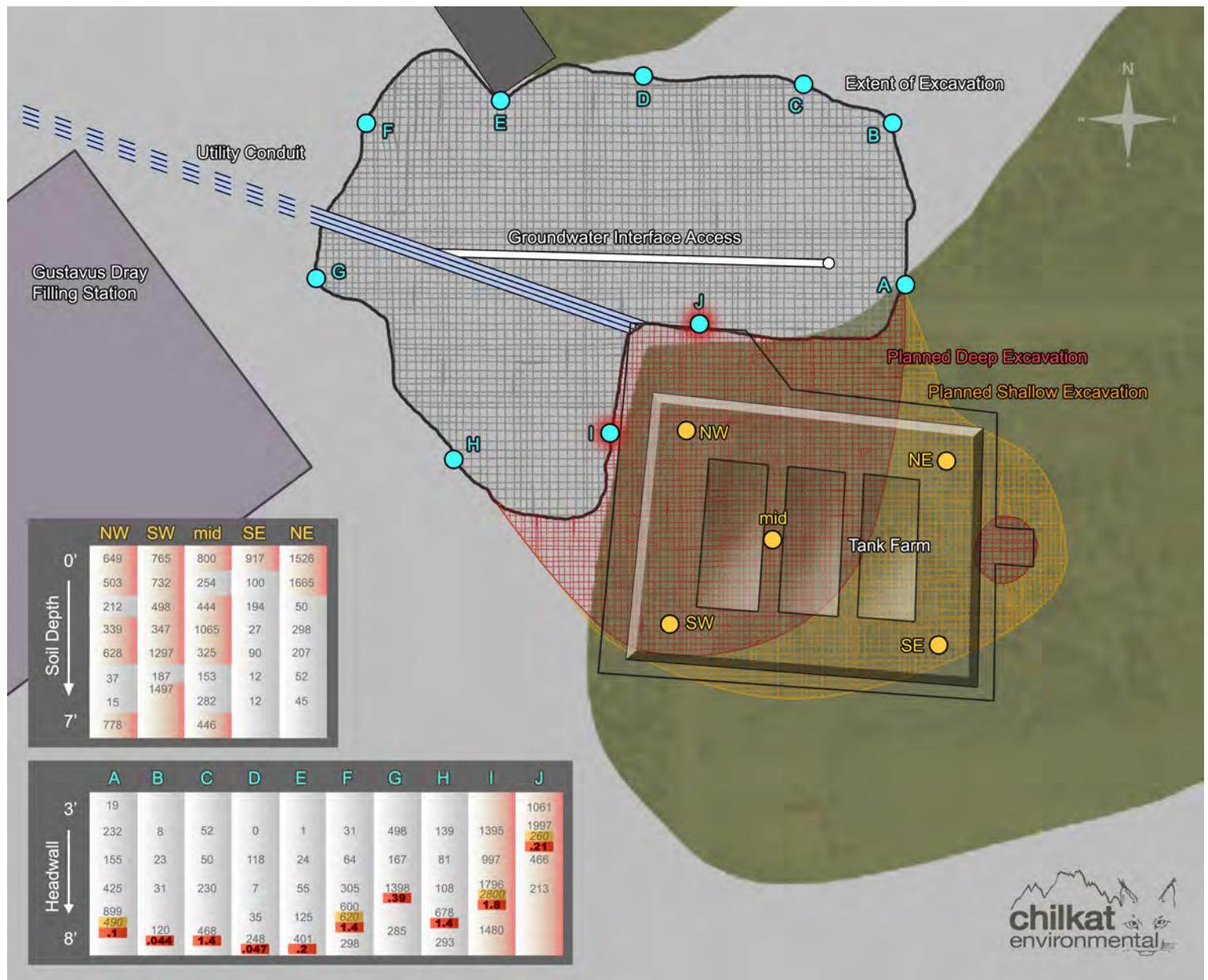


Figure 4: Sampling results for extent of excavation and screening beneath tank farm

Location	Depth	Odor	Sheen	PID Result	GRO	RPD%
A	3	light	no	19.4		
A	4	light	no	232		
A	5	light	no	155		
A	6	light	no	424.5	2.4 ip	
A	7	strong	moderate	898.6	<b>490 d</b>	
B	4	no	no	7.6		
B	5	no	no	23.1		
B	6	no	no	30.9		
B	7.5	light	no	119.6	5.2 ip	
C	4	no	no	51.8		
C	5	light	no	49.9		
C	6	light	no	230		
C	7.5	light	no	468	25ip and 11	78
D	4	no	no	0.4		
D	5	no	no	117.9		
D	6	no	no	7.4		
D	7	no	no	35		
D	8	light	no	248	9.6 ip	
E	4	no	no	0.9		
E	5	no	no	24		
E	6	no	no	55		
E	7	no	no	125		
E	8	light	no	401	8.4	
F	4	no	no	31		
F	5	no	no	64		
F	6	light	no	144		72
F	6 DUP	light	no	305		
F	7	moderate	light	600	<b>620 d</b>	
F	7 DUP	moderate	light	896		40
F	8	moderate	moderate	298		
G	4	moderate	no	498		
G	5	light	no	166.6		
G	6	strong	moderate	1397.6	88 ip	

Figure 5a: Results of screening and sampling extent of excavation.

GRO exceedences are bolded and samples suspected of contamination based on PID are highlighted

Location	Depth	Odor	Sheen	Results	GRO	RPD%
G	7.5	moderate	light	284.7		
H	4	no	no	139		
H	5	no	no	81.4		
H	6	no	no	67.6		
H	6 DUP	no	no	108.3		46
H	7	moderate	moderate	678.2	180 ip	
H	8	moderate	no	292.5		
I	4	strong	strong	1394.8		
I	5	strong	strong	996.5		
I	6	strong	strong	1796.1	2800 ip	12
I	6 DUP	strong	strong	1588		
I	7.5	strong	strong	1480		
J	3	moderate	light	892.7		
J	3 DUP	strong	moderate	1060.6		17
J	4	strong	moderate	1996.5	260 ip	
J	5	moderate	light	465.6		
J	6	light	strong	188.4		
J	6 DUP	light	strong	212.7		12

Figure 5b: Results of screening and sampling extent of excavation.

GRO exceedences are bolded and samples suspected of contamination based on PID are highlighted

Analyte	Drain	A6	A7	B-7.5	C-7.5	C-7.5 DUP	D-8	E-8	F-7	G-6	H-7	I-6	J-4	CLEAN
Hexane	ND	ND	3.2	ND	ND	ND	ND	ND	3.1	0.54	3.4	6.1	ND	NA
Benzene	ND	ND	0.1	0.044	1.4	1.3	0.047	0.2	1.4	0.39	1.4	1.8	0.21	0.025
Toluene	ND	0.15	3.3	0.19	5	4.9	1	0.79	23	4.2	22	74	5	6.5
<u>Ethylebenzene</u>	ND	ND	3.1	ND	0.31	0.33	0.22	0.15	6.9	1.4	7.9	34	2.7	6.9
Total Xylenes	ND	0.12	18.8	0.067	2.04	2.19	0.89	0.75	43	9.1	49	225	21.8	63
<u>Isopropylbenzene</u>	ND	ND	0.46	ND	ND	ND	ND	ND	0.73	0.18	0.73	3.1	0.45	51
<u>n-Propylbenzene</u>	ND	ND	2.3	ND	ND	0.054	0.057	ND	3.1	0.95	3.4	14	2.4	15
1,3,5 TMB	ND	ND	4.6	ND	0.071	0.1	0.1	0.056	6.2	2.2	7	31	6.4	23
1,2,4 TMB	ND	0.075	15	ND	0.35	0.45	0.45	0.27	21	7.7	24	100	19	23
<u>sec-Butylbenzene</u>	ND	ND	0.29	ND	ND	ND	ND	ND	ND	0.13	0.31	1.3	0.32	12
p-Isopropyltoluene	ND	ND	0.15	ND	ND	ND	ND	ND	ND	0.079	0.18	0.79	0.21	NA
Naphthalene	ND	ND	1.1	ND	0.099	0.12	0.08	ND	1.8	0.85	2	9.4	3.2	20
GRO	<2	2.4	490	5.2	25	11	9.6	8.4	620	88	180	2800	260	260
PID Result	3.9	424	898	119	468	468	248	401	896	1397	678	1796	1996	NA

Figure 6: VOC, GRO and PID data. Results above detection included. Results above cleanup highlighted.



Photo 4: Extent of Excavation



Photo 5: Extent of Excavation



Photo 6: Extent of Excavation with groundwater interface access



Photo 7: Extent of Excavation with groundwater interface drain, ORC and side curtain



Photo 8: Aerial view of site



Photo 9: Aerial view of site



Photo 10: Aerial view of site



Photo 11: Filled excavation. Groundwater interface access at white standpipe

## 4.2 Drain Outfall

The surface outfall location of the former O/W separator and dispenser island drain was excavated and about 6 cubic feet of contaminated soil removed. Refer to Figure 4, on Page 7. The outfall was directly atop clay at the clay lined roadside ditch and observable contamination was limited to a very small area directly at the end of the pipe. The pipe itself contained grease and sand and was disposed. The drain pipe was excavated and two pipe junctions inspected for indication of petroleum contamination but none was observed. Laboratory and screening samples were collected at the extent excavation for outfall location. Heated PID headspace was 3.9ppm. GRO was <2ppm, DRO 520ppm and RRO <250ppm. The sample was non-detect for VOC and SVOC. No further action is recommended because the drain outfall site is clay and contamination is de minimis.

## 4.3 Former Drum Storage Area

Former drum storage area Characterized by Phase II report sample D1 was excavated of oily soil constituting half a cubic yard. Screening samples were collected from the extent of excavation with results of; 98ppm, 168ppm and 32ppm. Refer to Figure 4, on Page 7. No odor or sheen was observed in the screening samples. No further action is recommended because the small isolated area of contaminated soil was excavated and screening shows contamination is likely below cleanup levels. The small excavation was filled.

## 4.3 Tank Farm Screening and Sampling

Screening was performed under the tank farm liner as planned using a hand augur in 5 locations to the depth of GW saturation. The liner was later repaired at each location. Refer to Figure 4 on Page 7. Significant contamination was observed but no free product. The soil under the liner is contaminated in a lens that ranges from 8 ft. to 1 ft. and the source appears originate from the fuel line leak that occurs just outside the liner. An estimated 200 yds<sup>3</sup> remain to be excavated from beneath the tank farm.

<b>Location</b>	<b>Depth</b>	<b>Odor</b>	<b>Sheen</b>	<b>Result</b>	<b>RPD%</b>
SW	0	light	light	765.2	
SW	1	light	light	731.5	
SW	2	light	light	497.7	
SW	3	light	light	346.6	
SW	4	light	light	1296.6	
SW	5	no	no	187.2	
SW	5.5	light	light	1496.8	
SE	0	light	moderate	917	
SE	1	light	no	99.9	
SE	2	light	no	193.9	
SE	3	no	no	26.8	31
SE	3 DUP	no	no	19.7	
SE	4	no	no	89.6	
SE	5	no	no	12	
SE	6	no	no	11.5	
NE	0	moderate	no	1526	
NE	1	moderate	no	1664.9	
NE	2	no	no	50	86
NE	2 DUP	no	no	20	
NE	3	light	no	298	
NE	4	light	no	206.9	
NE	5	no	no	52	
NE	6	no	no	45	12
NE	6 DUP	no	no	40	
Middle	0	Moderate	light	799.9	
Middle	1	no	no	253.9	18
Middle	1 DUP	no	no	211.2	
Middle	2	no	no	443.6	
Middle	3	light	light	1064.7	
Middle	4	moderate	light	325	
Middle	5	light	no	152.7	
Middle	6	light	no	282	
Middle	7	light	light	446.1	
NW	0	light	light	648.9	
NW	1	light	light	502.8	
NW	2	no	no	211.8	
NW	3	light	light	338.7	
NW	4	light	light	627.7	
NW	5	no	no	36.8	
NW	6	no	no	14.9	
NW	7	light	light	778	

Figure 7: Screening data from beneath tank farm liner. Suspected contaminated samples highlighted

#### 4.5 Tankfarm Containment Drain

The tank farm containment drain identified as TNT outfall in the Phase II Report was inspected. Plumbing that drains the tank farm liner was identified. Soil there features at least three feet of contamination but was not screened because this site extends under the berm and should be addressed when soil beneath the tank farm is removed. Refer to Figure 4 on Page 7.

#### 4.6 Dispenser Island

No cleanup or characterization was performed for dispenser island.

### 5.0 Land Farm

An estimated 450 yd<sup>3</sup> of contaminated soil was delivered to the landfarm cell. The floor was trenched for water collection system within the liner with drain-rock and drainpipe routed to a poly drum with an extraction point. The liner was long enough to fold back and use as cover. Liner is Dripworks Inc. PDB20 (20 mil) polyethylene material consisting of three layers of high density and low density polyethylene. The stockpile was mixed 15 times between July 16 and August 10. It will continue to be mixed at least once per month from April through October. The soil will be kept uncovered during dry periods as defined by under 0.15 inches of rain per day and will be otherwise covered. The stockpile will remain completely covered November through March and will be inspected once a month to assure cover is intact. Any rips in the material will be repaired. Determination that soil has achieved cleanup goals will be demonstrated by sampling treated soil as presented in recommendations. To test treatment remedy the stockpile composite samples were dried out in a bowl. Once dry, soil was screened with results of 14.2ppm and 13.2ppm.

Location	Depth	Odor	Sheen	Result	GRO
Stockpile 1	Composite	Strong	moderate	3000	1200
Stockpile 2	Composite	Strong	moderate	1654.9	160 ip
Stockpile 3	Composite	Strong	moderate	2540	480 ip
Stockpile 1,2,3	Dried	Very light	no	14.2	NA

Figure 8: Stockpile screening data

Analyte	Stockpile 1	Stockpile 2	Stockpile 3	CLEANUP
Hexane	1.8	ND	ND	NA
Benzene	1.2	0.16	0.3	0.025
Toluene	34	5.2	11	6.5
Ethylebenzene	14	2.2	5.3	6.9
Total Xylenes	96	15.6	40	63
Isopropylbenzene	1.4	0.24	0.56	51
n-Propylbenzene	6.6	1.2	2.7	15
1,3,5 TMB	15	2.7	6.8	23
1,2,4 TMB	50	9.6	25	23
sec-Butylbenzene	0.66	0.12	0.3	12
p-Isopropyltoluene	0.36	0.079	0.21	NA
Naphthalene	4.9	1.4	2.7	20
GRO	1400	160 ip	480 ip	260
PID Result	3000	1655	2540	NA

Figure 9: Stockpile characterization in ppm.



Photo 12: Land farm treatment cell



Photo 13: Land farm treatment cell



Photo 14: The liner was long enough to fold back over and use as cover

## 5. Data Quality

### 6.1 Screening Data Quality

PID instrument was calibrated to fresh air and span calibration to 100ppm isobutylene gas as documented in attached table. PID screening samples were performed in duplicate for 4 of 37 samples collected beneath the tank farm and 6 of 50 samples from the extent of excavation. One sample and a duplicate was also collected from the drain outfall. RPD% results for sampling beneath the tank farm were; 31%, 86%, 12%, 18%, 31% and 0%. Results for remaining samples were 72%, 40%, 46%, 12%, 17%, 12% and 29%.Temperature blank was used to insure sample analyses temperature of 75° to 85°F.

Date	Time	Fresh Air	Span Cal	Activity
7/13/16	1400	0	100	Screen under liner
7/13/16	1500	0	NA	Screen under liner
7/13/16	1700	0	100	Screen under liner
7/14/16	1321	0	100	MW headspace
7/15/16	928	0	100	MW headspace
7/15/16	1020	0	NA	MW headspace
7/16/16	908	0	100	Excavation boundary
7/16/16	1040	0	NA	Excavation boundary
7/16/16	1250	0	NA	Excavation boundary
7/16/16	1400	0	NA	Excavation boundary
7/16/16	1635	0	100	Excavation extent
7/16/16	2200	0	100	Excavation extent
7/16/16	2245	0	NA	Excavation extent
8/12/16	1045	0	100	Composite

Figure 10: PID instrument calibration. No calibration problems encountered.

## 6.2 Laboratory Data Quality

Laboratory samples were collected July 16 and arrived at the lab July 18, 1725 at 2°C. Laboratory Report 607262 was provided August 5. The laboratory report was missing data for stockpile 1, 2 and 3. The laboratory was contacted, determined they had the samples and ran them within the holding time. The report was reissued August 11, 2016 including the data.

One field duplicate was performed for GRO and VOC laboratory analyses. RPD% for GRO was 78%. RPD% for VOC is presented in Figure 11. No duplicate was performed for the single DRO/RRO sample. Quality control requirements were satisfactory for VOC and SVOC. Some GRO data was flagged “ip” – because recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte. Two samples were flagged “d” because the sample was diluted and detection limits were raised so surrogate recoveries may not be meaningful. All data are considered usable. Laboratory Data Quality Review Checklist is included with the attached laboratory report.

Analyte	C-7.5	C-7.5 DUP	RPD%
Benzene	1.4	1.3	7
Toluene	5	4.9	2
Ethylbenzene	0.31	0.33	6
Total Xylenes	2.04	2.19	7
n-Propyl benzene	<.05	0.054	NA
1,3,5 TMB	0.071	0.1	34
1,2,4 TMB	0.35	0.45	25
Naphthalene	0.099	0.12	19

Figure 11: RPD% for detected VOC analytes in soil.

## 6. Recommendations

Chilkat Environmental recommends ADEC consider approval of the following 2-year corrective action objectives to be achieved by August 2018. The plan includes; 1) maintenance, 2) new tank farm, 3) removal of old tank farm and excavation of contaminated soil.

### 6.1 Maintenance

The 450 yd<sup>3</sup> stockpile will continue to be aerated at least once per month from April through October. The stockpile will remain completely covered November through March and will be inspected once a month to assure cover is intact. Any rips in the material will be repaired. We anticipate the currently stockpiled soil will meet requirements for unrestricted use by the time the tank farm soil is excavated. The stockpile will be characterized using 3 composites comprised of 10 samples each from a freshly aerated stockpile analyzed for DRO in water after Synthetic Precipitation Leaching Procedure (SPLP). If results are below 1.5 ppm DRO (water) the soil will be landspread making room for soil from old tank farm excavation. ORC socks will be maintained in two wells. The standpipe at excavation will be inspected with a bailer in Fall and Spring each year to determine if recoverable free product is available. Each spring in May and fall in November a brief memo will be supplied to ADEC to document maintenance activity and site progress.

### 6.2 New Tank Farm

A new tank farm will be constructed to keep the station operational for removal of the old tank farm. The new tank farm is planned to feature concrete spill containment and a roof.

### 6.3 Old Tank Farm

The old tank farm will be removed and soil identified in Figure 4 stockpiled for treatment. Sampling will be performed at the extent of excavation, ORC applied and the site refilled.

## 7. Signature of Qualified Environmental Professional:

Qualified Environmental Professional Elijah Donat MS PMP prepared this 20-page report with attached Laboratory Report 607262 and Data Quality Review Checklist.



Elijah Donat  
August 13, 2016  
Principal Investigator

# 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](mailto:fbi@isomedia.com)  
[www.friedmanandbruya.com](http://www.friedmanandbruya.com)

August 11, 2016

Elijah Donat, Project Manager  
Chilkat Environmental  
PO Box 865  
Haines, AK 99827

Dear Mr. Donat:

Included is the amended report from the testing of material submitted on July 18, 2016 from the GD, F&BI 607262 project. The Stockpile sample data and percent moisture were included.

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  
CHL0805R.DOC

# 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](mailto:fbi@isomedia.com)  
[www.friedmanandbruya.com](http://www.friedmanandbruya.com)

August 5, 2016

Elijah Donat, Project Manager  
Chilkat Environmental  
PO Box 865  
Haines, AK 99827

Dear Mr. Donat:

Included are the results from the testing of material submitted on July 18, 2016 from the GD, F&BI 607262 project. There are 49 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.



Michael Erdahl  
Project Manager

Enclosures  
CHL0805R.DOC

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on July 18, 2016 by Friedman & Bruya, Inc. (ADEC laboratory approval number UST-007) from the Chilkat Environmental GD, F&BI 607262 project. The samples were received at 2°C in good condition and were refrigerated upon receipt. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Chilkat Environmental</u>	<u>Date Sampled</u>
607262 -01	drain outfall	07/16/16
607262 -02	drain outfall	07/16/16
607262 -03	drain outfall	07/16/16
607262 -04	drain outfall	07/16/16
607262 -05	A6	07/16/16
607262 -06	A6	07/16/16
607262 -07	A7	07/16/16
607262 -08	A7	07/16/16
607262 -09	B-7.5	07/16/16
607262 -10	B-7.5	07/16/16
607262 -11	C-7.5	07/16/16
607262 -12	C-7.5	07/16/16
607262 -13	D-8	07/16/16
607262 -14	D-8	07/16/16
607262 -15	E-8	07/16/16
607262 -16	E-8	07/16/16
607262 -17	F-7	07/16/16
607262 -18	F-7	07/16/16
607262 -19	G-6	07/16/16
607262 -20	G-6	07/16/16
607262 -21	H-7	07/16/16
607262 -22	H-7	07/16/16
607262 -23	I-6	07/16/16
607262 -24	I-6	07/16/16
607262 -25	J-4	07/16/16
607262 -26	J-4	07/16/16
607262 -27	C-7.5 dup	07/16/16
607262 -28	C-7.5 dup	07/16/16
607262 -29	Stockpile 1	07/16/16
607262 -30	Stockpile 1	07/16/16
607262 -31	Stockpile 2	07/16/16
607262 -32	Stockpile 2	07/16/16
607262 -33	Stockpile 3	07/16/16
607262 -34	Stockpile 3	07/16/16
607262 -35	Temp Blank	07/16/16
607262 -36	Method Blank	07/16/16

FRIEDMAN & BRUYA, INC.

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ENVIRONMENTAL CHEMISTS

CASE NARRATIVE (continued)

GRO (soil) - Analysis Method AK 101, Extraction Method 5035

All quality control requirements were acceptable.

DRO/RRO (soil) - Analysis Method AK 102/AK 103, Extraction Method 3550B

All quality control requirements were acceptable.

VOCs (soil) - Analysis Method 8260B, Extraction Method 5035

The laboratory control sample and laboratory control sample duplicate failed the relative percent difference for several compounds. The analytes were not detected therefore the data were acceptable. All other quality control requirements were acceptable.

SVOC (soil) - Analysis Method 8270D, Extraction Method 3550B

Several compounds in the matrix spike sample exceeded the acceptance criteria. The analytes were not detected in the sample, therefore the data were acceptable. All other quality control requirements were acceptable.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

Date Extracted: NA

Date Analyzed: 07/22/16

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES  
FOR PERCENT MOISTURE  
USING ASTM D2216-98**

<u>Sample ID</u>	<u>% Moisture</u>
Laboratory ID	
drain outfall 607262-04	21
A6 607262-05	7
B-7.5 607262-09	9
C-7.5 607262-11	19
D-8 607262-13	21
E-8 607262-15	20
F-7 607262-17	5
G-6 607262-19	7
H-7 607262-21	3
I-6 607262-23	3
J-4 607262-25	7
Stockpile 1 607262-29	10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

Date Extracted: NA

Date Analyzed: 07/22/16

**RESULTS FROM THE ANALYSIS OF THE SOIL SAMPLES  
FOR PERCENT MOISTURE  
USING ASTM D2216-98**

<u>Sample ID</u>	<u>% Moisture</u>
Laboratory ID	
Stockpile 2 607262-31	11
Stockpile 3 607262-33	10

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

Date Extracted: 07/19/16

Date Analyzed: 07/19/16, 07/20/16, and 08/09/16

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD AK101**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u> (C <sub>6</sub> -C <sub>10</sub> )	<u>Surrogate</u> (% Recovery) (Limit 60-120)
drain outfall 607262-02	<2	ip
A6 607262-05	2.4	ip
A7 607262-07 1/100	490	d
B-7.5 607262-09	5.2	ip
C-7.5 607262-12	25	ip
D-8 607262-14	9.6	ip
E-8 607262-16	8.4	111
F-7 607262-18 1/100	620	d
G-6 607262-20	88	ip
H-7 607262-22	180	ip
I-6 607262-24 1/10	2,800	ip

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

Date Extracted: 07/19/16

Date Analyzed: 07/19/16, 07/20/16, and 08/09/16

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE  
USING METHOD AK101**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u> (C <sub>6</sub> -C <sub>10</sub> )	Surrogate (% Recovery) (Limit 60-120)
J-4 607262-26	260	ip
C-7.5 dup 607262-28	11	85
Stockpile 1 607262-30 1/10	1,200	90
Stockpile 2 607262-32	160	ip
Stockpile 3 607262-34 1/10	480	ip
Method Blank 06-1425 MB	<2	92
Method Blank 06-1624 MB	<2	102

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

Date Extracted: 07/25/16

Date Analyzed: 07/25/16

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u> Laboratory ID	<u>Diesel Range</u> (C <sub>10</sub> -C <sub>25</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 60-120)
drain outfall 607262-04	520	114
Method Blank 06-1510 MB	<50	112

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

Date Extracted: 07/25/16

Date Analyzed: 07/25/16

**RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL  
USING METHOD AK 103**

Results Reported on a Dry Weight Basis

Results Reported as mg/kg (ppm)

<u>Sample ID</u>	<u>Motor Oil Range</u> (C <sub>25</sub> -C <sub>36</sub> )	<u>Surrogate</u> <u>(% Recovery)</u> (Limit 60-120)
Laboratory ID  drain outfall 607262-04	<250	76
Method Blank  06-1510 MB	<250	100

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: drain outfall  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-01  
 Data File: 071910.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: A6  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-06  
 Data File: 071911.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	108	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	0.12
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.075
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.15	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: A7  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-08  
 Data File: 071912.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	62	142
Toluene-d8	105	55	145
4-Bromofluorobenzene	103	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	3.1
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	14
Hexane	3.2	o-Xylene	4.7
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.46
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	2.3
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	4.6
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	15 ve
Benzene	0.10	sec-Butylbenzene	0.29
Trichloroethene	<0.02	p-Isopropyltoluene	0.15
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	3.2	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	1.0
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: A7  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/20/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-08 1/10  
 Data File: 072028.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<5	Tetrachloroethene	<0.25
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	3.1
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	14
Hexane	3.0	o-Xylene	4.8
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	<0.5
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	2.2
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	4.6
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	15
Benzene	<0.3	sec-Butylbenzene	<0.5
Trichloroethene	<0.2	p-Isopropyltoluene	<0.5
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<2.5
Toluene	3.3	Hexachlorobutadiene	<2.5
trans-1,3-Dichloropropene	<0.5	Naphthalene	1.1
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<2.5
2-Hexanone	<5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: B-7.5  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-10  
 Data File: 071913.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	103	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	0.067
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	0.044	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.19	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: C-7.5  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-11  
 Data File: 071914.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.31
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	1.4
Hexane	<0.25	o-Xylene	0.64
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.071
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.35
Benzene	1.4	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	5.0	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.099
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: D-8  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-13  
 Data File: 071915.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.22
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	0.71
Hexane	<0.25	o-Xylene	0.18
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	0.057
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.10
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.45
Benzene	0.047	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	1.0	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.080
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: E-8  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-15  
 Data File: 071916.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	94	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.15
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	0.44
Hexane	<0.25	o-Xylene	0.31
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.056
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.27
Benzene	0.20	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	0.79	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: F-7  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-17  
 Data File: 071917.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	104	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	6.7
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	30 ve
Hexane	3.6	o-Xylene	11
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.70
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	3.1
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	6.1
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	21 ve
Benzene	1.3	sec-Butylbenzene	0.29
Trichloroethene	<0.02	p-Isopropyltoluene	0.17
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	22 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	1.7
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: F-7  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/20/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-17 1/10  
 Data File: 072029.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<5	Tetrachloroethene	<0.25
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	6.9
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	31
Hexane	3.1	o-Xylene	12
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	0.73
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	3.1
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	6.2
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	21
Benzene	1.4	sec-Butylbenzene	<0.5
Trichloroethene	<0.2	p-Isopropyltoluene	<0.5
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<2.5
Toluene	23	Hexachlorobutadiene	<2.5
trans-1,3-Dichloropropene	<0.5	Naphthalene	1.8
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<2.5
2-Hexanone	<5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: G-6  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-19  
 Data File: 071918.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	104	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	1.4
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	6.6
Hexane	0.54	o-Xylene	2.5
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.18
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	0.95
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	2.2
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	7.7
Benzene	0.39	sec-Butylbenzene	0.13
Trichloroethene	<0.02	p-Isopropyltoluene	0.079
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	4.2	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.85
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: H-7  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-21  
 Data File: 071919.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	62	142
Toluene-d8	102	55	145
4-Bromofluorobenzene	108	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	7.8
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	36 ve
Hexane	3.6	o-Xylene	14
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.75
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	3.4
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	7.1
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	24 ve
Benzene	1.3	sec-Butylbenzene	0.31
Trichloroethene	<0.02	p-Isopropyltoluene	0.18
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	22 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	2.0
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: H-7  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/20/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-21 1/10  
 Data File: 072030.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	105	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<5	Tetrachloroethene	<0.25
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	7.9
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	36
Hexane	3.4	o-Xylene	13
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	0.73
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	3.4
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	7.0
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	24
Benzene	1.4	sec-Butylbenzene	<0.5
Trichloroethene	<0.2	p-Isopropyltoluene	<0.5
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<2.5
Toluene	22	Hexachlorobutadiene	<2.5
trans-1,3-Dichloropropene	<0.5	Naphthalene	2.0
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<2.5
2-Hexanone	<5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: I-6  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-23  
 Data File: 071920.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	105	55	145
4-Bromofluorobenzene	111	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	33 ve
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	140 ve
Hexane	6.1	o-Xylene	63 ve
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	3.0
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	14
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	31 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	73 ve
Benzene	1.8	sec-Butylbenzene	1.3
Trichloroethene	<0.02	p-Isopropyltoluene	0.78
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	71 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	9.2
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: I-6  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/20/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-23 1/10  
 Data File: 072031.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	106	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<5	Tetrachloroethene	<0.25
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	34
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	160
Hexane	5.9	o-Xylene	65
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	3.1
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	14
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	31
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	100
Benzene	1.8	sec-Butylbenzene	1.2
Trichloroethene	<0.2	p-Isopropyltoluene	0.79
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<2.5
Toluene	74	Hexachlorobutadiene	<2.5
trans-1,3-Dichloropropene	<0.5	Naphthalene	9.4
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<2.5
2-Hexanone	<5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: J-4  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-25  
 Data File: 071921.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	104	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	2.7
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	15
Hexane	<0.25	o-Xylene	6.8
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.45
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	2.4
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	6.4
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	23 ve
Benzene	0.21	sec-Butylbenzene	0.32
Trichloroethene	<0.02	p-Isopropyltoluene	0.21
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	5.0	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	3.2
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: J-4  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/20/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-25 1/10  
 Data File: 072032.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	105	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<5	Tetrachloroethene	<0.25
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	2.2
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	13
Hexane	<2.5	o-Xylene	5.6
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	<0.5
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	2.0
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	5.4
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	19
Benzene	<0.3	sec-Butylbenzene	<0.5
Trichloroethene	<0.2	p-Isopropyltoluene	<0.5
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<2.5
Toluene	4.2	Hexachlorobutadiene	<2.5
trans-1,3-Dichloropropene	<0.5	Naphthalene	2.6
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<2.5
2-Hexanone	<5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: C-7.5 dup  
 Date Received: 07/18/16  
 Date Extracted: 07/19/16  
 Date Analyzed: 07/19/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-27  
 Data File: 071922.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	0.33
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	1.5
Hexane	<0.25	o-Xylene	0.69
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	0.054
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	0.10
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	0.45
Benzene	1.3	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	4.9	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	0.12
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: Stockpile 1  
 Date Received: 07/16/16  
 Date Extracted: 07/16/16  
 Date Analyzed: 08/09/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-30  
 Data File: 080909.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	97	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm) Dry Weight	Compounds:	Concentration mg/kg (ppm) Dry Weight
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	12 ve
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	57 ve
Hexane	1.8	o-Xylene	24 ve
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	1.2
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	6.0
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	13 ve
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	40 ve
Benzene	1.2	sec-Butylbenzene	0.58
Trichloroethene	<0.02	p-Isopropyltoluene	0.36
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	31 ve	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	4.6
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: Stockpile 1  
 Date Received: 07/16/16  
 Date Extracted: 07/16/16  
 Date Analyzed: 08/09/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-30 1/10  
 Data File: 080915.D  
 Instrument: GCMS4  
 Operator: JS

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

Compounds:	Concentration mg/kg (ppm) Dry Weight	Compounds:	Concentration mg/kg (ppm) Dry Weight
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<5	Tetrachloroethene	<0.25
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	14
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	68
Hexane	<2.5	o-Xylene	28
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	1.4
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	6.6
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	15
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	50
Benzene	1.2	sec-Butylbenzene	0.66
Trichloroethene	<0.2	p-Isopropyltoluene	<0.5
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<2.5
Toluene	34	Hexachlorobutadiene	<2.5
trans-1,3-Dichloropropene	<0.5	Naphthalene	4.9
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<2.5
2-Hexanone	<5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: Stockpile 2  
 Date Received: 07/16/16  
 Date Extracted: 07/16/16  
 Date Analyzed: 08/09/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-32  
 Data File: 080913.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm) Dry Weight	Compounds:	Concentration mg/kg (ppm) Dry Weight
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	2.2
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	11
Hexane	<0.25	o-Xylene	4.6
Methylene chloride	0.87 lc	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.24
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	1.2
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	2.7
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	9.6
Benzene	0.16	sec-Butylbenzene	0.12
Trichloroethene	<0.02	p-Isopropyltoluene	0.079
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	5.2	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	1.4
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: Stockpile 3  
 Date Received: 07/16/16  
 Date Extracted: 08/09/16  
 Date Analyzed: 08/09/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-34  
 Data File: 080911.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	62	142
Toluene-d8	99	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm) Dry Weight	Compounds:	Concentration mg/kg (ppm) Dry Weight
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	5.0
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	26 ve
Hexane	<0.25	o-Xylene	11
Methylene chloride	0.58 lc	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	0.56
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	2.7
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	6.8
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	23 ve
Benzene	0.30	sec-Butylbenzene	0.30
Trichloroethene	<0.02	p-Isopropyltoluene	0.21
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	11	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	2.5
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID: Stockpile 3  
 Date Received: 07/16/16  
 Date Extracted: 08/09/16  
 Date Analyzed: 08/09/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-34 1/10  
 Data File: 080914.D  
 Instrument: GCMS4  
 Operator: JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm) Dry Weight	Compounds:	Concentration mg/kg (ppm) Dry Weight
Dichlorodifluoromethane	<5	1,3-Dichloropropane	<0.5
Chloromethane	<5	Tetrachloroethene	<0.25
Vinyl chloride	<0.5	Dibromochloromethane	<0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	<0.5
Chloroethane	<5	Chlorobenzene	<0.5
Trichlorofluoromethane	<5	Ethylbenzene	5.3
Acetone	<5	1,1,1,2-Tetrachloroethane	<0.5
1,1-Dichloroethene	<0.5	m,p-Xylene	28
Hexane	<2.5	o-Xylene	12
Methylene chloride	<5	Styrene	<0.5
Methyl t-butyl ether (MTBE)	<0.5	Isopropylbenzene	0.60
trans-1,2-Dichloroethene	<0.5	Bromoform	<0.5
1,1-Dichloroethane	<0.5	n-Propylbenzene	2.8
2,2-Dichloropropane	<0.5	Bromobenzene	<0.5
cis-1,2-Dichloroethene	<0.5	1,3,5-Trimethylbenzene	7.2
Chloroform	<0.5	1,1,2,2-Tetrachloroethane	<0.5
2-Butanone (MEK)	<5	1,2,3-Trichloropropane	<0.5
1,2-Dichloroethane (EDC)	<0.5	2-Chlorotoluene	<0.5
1,1,1-Trichloroethane	<0.5	4-Chlorotoluene	<0.5
1,1-Dichloropropene	<0.5	tert-Butylbenzene	<0.5
Carbon tetrachloride	<0.5	1,2,4-Trimethylbenzene	25
Benzene	0.30	sec-Butylbenzene	<0.5
Trichloroethene	<0.2	p-Isopropyltoluene	<0.5
1,2-Dichloropropane	<0.5	1,3-Dichlorobenzene	<0.5
Bromodichloromethane	<0.5	1,4-Dichlorobenzene	<0.5
Dibromomethane	<0.5	1,2-Dichlorobenzene	<0.5
4-Methyl-2-pentanone	<5	1,2-Dibromo-3-chloropropane	<5
cis-1,3-Dichloropropene	<0.5	1,2,4-Trichlorobenzene	<2.5
Toluene	11	Hexachlorobutadiene	<2.5
trans-1,3-Dichloropropene	<0.5	Naphthalene	2.7
1,1,2-Trichloroethane	<0.5	1,2,3-Trichlorobenzene	<2.5
2-Hexanone	<5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Chilkat Environmental
Date Received:	Not Applicable	Project:	GD, F&BI 607262
Date Extracted:	08/09/16	Lab ID:	06-1586 mb2
Date Analyzed:	08/09/16	Data File:	080905.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	101	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm) Dry Weight	Compounds:	Concentration mg/kg (ppm) Dry Weight
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Chilkat Environmental
Date Received:	Not Applicable	Project:	GD, F&BI 607262
Date Extracted:	07/19/16	Lab ID:	06-1436 mb
Date Analyzed:	07/19/16	Data File:	071907.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	142
Toluene-d8	103	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.5	1,3-Dichloropropane	<0.05
Chloromethane	<0.5	Tetrachloroethene	<0.025
Vinyl chloride	<0.05	Dibromochloromethane	<0.05
Bromomethane	<0.5	1,2-Dibromoethane (EDB)	<0.05
Chloroethane	<0.5	Chlorobenzene	<0.05
Trichlorofluoromethane	<0.5	Ethylbenzene	<0.05
Acetone	<0.5	1,1,1,2-Tetrachloroethane	<0.05
1,1-Dichloroethene	<0.05	m,p-Xylene	<0.1
Hexane	<0.25	o-Xylene	<0.05
Methylene chloride	<0.5	Styrene	<0.05
Methyl t-butyl ether (MTBE)	<0.05	Isopropylbenzene	<0.05
trans-1,2-Dichloroethene	<0.05	Bromoform	<0.05
1,1-Dichloroethane	<0.05	n-Propylbenzene	<0.05
2,2-Dichloropropane	<0.05	Bromobenzene	<0.05
cis-1,2-Dichloroethene	<0.05	1,3,5-Trimethylbenzene	<0.05
Chloroform	<0.05	1,1,2,2-Tetrachloroethane	<0.05
2-Butanone (MEK)	<0.5	1,2,3-Trichloropropane	<0.05
1,2-Dichloroethane (EDC)	<0.05	2-Chlorotoluene	<0.05
1,1,1-Trichloroethane	<0.05	4-Chlorotoluene	<0.05
1,1-Dichloropropene	<0.05	tert-Butylbenzene	<0.05
Carbon tetrachloride	<0.05	1,2,4-Trimethylbenzene	<0.05
Benzene	<0.03	sec-Butylbenzene	<0.05
Trichloroethene	<0.02	p-Isopropyltoluene	<0.05
1,2-Dichloropropane	<0.05	1,3-Dichlorobenzene	<0.05
Bromodichloromethane	<0.05	1,4-Dichlorobenzene	<0.05
Dibromomethane	<0.05	1,2-Dichlorobenzene	<0.05
4-Methyl-2-pentanone	<0.5	1,2-Dibromo-3-chloropropane	<0.5
cis-1,3-Dichloropropene	<0.05	1,2,4-Trichlorobenzene	<0.25
Toluene	<0.05	Hexachlorobutadiene	<0.25
trans-1,3-Dichloropropene	<0.05	Naphthalene	<0.05
1,1,2-Trichloroethane	<0.05	1,2,3-Trichlorobenzene	<0.25
2-Hexanone	<0.5		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID: drain outfall  
 Date Received: 07/18/16  
 Date Extracted: 07/25/16  
 Date Analyzed: 07/27/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 607262-04  
 Data File: 072706.D  
 Instrument: GCMS8  
 Operator: ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	81	56	115
Phenol-d6	82	54	113
Nitrobenzene-d5	79	31	164
2-Fluorobiphenyl	84	47	133
2,4,6-Tribromophenol	91	35	141
Terphenyl-d14	85	24	188

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	Hexachlorocyclopentadiene	<0.03
Bis(2-chloroethyl) ether	<0.01	2,4,6-Trichlorophenol	<0.1
2-Chlorophenol	<0.1	2,4,5-Trichlorophenol	<0.1
1,3-Dichlorobenzene	<0.01	2-Chloronaphthalene	<0.01
1,4-Dichlorobenzene	<0.01	2-Nitroaniline	<0.05
1,2-Dichlorobenzene	<0.01	Dimethyl phthalate	<0.1
Benzyl alcohol	<0.1	2,6-Dinitrotoluene	<0.05
Bis(2-chloroisopropyl) ether	<0.01	3-Nitroaniline	<1
2-Methylphenol	<0.1	2,4-Dinitrophenol	<0.3
Hexachloroethane	<0.01	Dibenzofuran	<0.01
N-Nitroso-di-n-propylamine	<0.01	2,4-Dinitrotoluene	<0.05
3-Methylphenol + 4-Methylphenol	<0.2	4-Nitrophenol	<0.3
Nitrobenzene	<0.01	Diethyl phthalate	<0.1
Isophorone	<0.01	4-Chlorophenyl phenyl ether	<0.01
2-Nitrophenol	<0.1	N-Nitrosodiphenylamine	<0.01
2,4-Dimethylphenol	<0.1	4-Nitroaniline	<1
Benzoic acid	<0.5	4,6-Dinitro-2-methylphenol	<0.3
Bis(2-chloroethoxy)methane	<0.01	4-Bromophenyl phenyl ether	<0.01
2,4-Dichlorophenol	<0.1	Hexachlorobenzene	<0.01
1,2,4-Trichlorobenzene	<0.01	Pentachlorophenol	<0.1
Hexachlorobutadiene	<0.01	Carbazole	<0.1
4-Chloroaniline	<1	Di-n-butyl phthalate	<0.1
4-Chloro-3-methylphenol	<0.1	Benzyl butyl phthalate	<0.1
2-Methylnaphthalene	<0.01	Bis(2-ethylhexyl) phthalate	0.43 fc
1-Methylnaphthalene	<0.01	Di-n-octyl phthalate	<0.1 J

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID: Method Blank  
 Date Received: Not Applicable  
 Date Extracted: 07/25/16  
 Date Analyzed: 07/27/16  
 Matrix: Soil  
 Units: mg/kg (ppm) Dry Weight

Client: Chilkat Environmental  
 Project: GD, F&BI 607262  
 Lab ID: 06-1511 mb  
 Data File: 072705.D  
 Instrument: GCMS8  
 Operator: ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	85	56	115
Phenol-d6	87	54	113
Nitrobenzene-d5	84	31	164
2-Fluorobiphenyl	92	47	133
2,4,6-Tribromophenol	93	35	141
Terphenyl-d14	95	24	188

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.1	Hexachlorocyclopentadiene	<0.03
Bis(2-chloroethyl) ether	<0.01	2,4,6-Trichlorophenol	<0.1
2-Chlorophenol	<0.1	2,4,5-Trichlorophenol	<0.1
1,3-Dichlorobenzene	<0.01	2-Chloronaphthalene	<0.01
1,4-Dichlorobenzene	<0.01	2-Nitroaniline	<0.05
1,2-Dichlorobenzene	<0.01	Dimethyl phthalate	<0.1
Benzyl alcohol	<0.1	2,6-Dinitrotoluene	<0.05
Bis(2-chloroisopropyl) ether	<0.01	3-Nitroaniline	<1
2-Methylphenol	<0.1	2,4-Dinitrophenol	<0.3
Hexachloroethane	<0.01	Dibenzofuran	<0.01
N-Nitroso-di-n-propylamine	<0.01	2,4-Dinitrotoluene	<0.05
3-Methylphenol + 4-Methylphenol	<0.2	4-Nitrophenol	<0.3
Nitrobenzene	<0.01	Diethyl phthalate	<0.1
Isophorone	<0.01	4-Chlorophenyl phenyl ether	<0.01
2-Nitrophenol	<0.1	N-Nitrosodiphenylamine	<0.01
2,4-Dimethylphenol	<0.1	4-Nitroaniline	<1
Benzoic acid	<0.5	4,6-Dinitro-2-methylphenol	<0.3
Bis(2-chloroethoxy)methane	<0.01	4-Bromophenyl phenyl ether	<0.01
2,4-Dichlorophenol	<0.1	Hexachlorobenzene	<0.01
1,2,4-Trichlorobenzene	<0.01	Pentachlorophenol	<0.1
Hexachlorobutadiene	<0.01	Carbazole	<0.1
4-Chloroaniline	<1	Di-n-butyl phthalate	<0.1
4-Chloro-3-methylphenol	<0.1	Benzyl butyl phthalate	<0.1
2-Methylnaphthalene	<0.01	Bis(2-ethylhexyl) phthalate	<0.16
1-Methylnaphthalene	<0.01	Di-n-octyl phthalate	<0.1

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	drain outfall	Client:	Chilkat Environmental
Date Received:	07/18/16	Project:	GD, F&BI 607262
Date Extracted:	07/25/16	Lab ID:	607262-04 1/5
Date Analyzed:	07/28/16	Data File:	072809.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	101 d	31	163
Benzo(a)anthracene-d12	98 d	24	168

Compounds:	Concentration mg/kg (ppm)
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Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	<0.05
Phenanthrene	<0.05
Anthracene	<0.05
Fluoranthene	<0.05
Pyrene	<0.05
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Chilkat Environmental
Date Received:	Not Applicable	Project:	GD, F&BI 607262
Date Extracted:	07/25/16	Lab ID:	06-1507 mb2
Date Analyzed:	07/28/16	Data File:	072807.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	96	31	163
Benzo(a)anthracene-d12	112	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.002
Acenaphthylene	<0.002
Acenaphthene	<0.002
Fluorene	<0.002
Phenanthrene	<0.002
Anthracene	<0.002
Fluoranthene	<0.002
Pyrene	<0.002
Benz(a)anthracene	<0.002
Chrysene	<0.002
Benzo(a)pyrene	<0.002
Benzo(b)fluoranthene	<0.002
Benzo(k)fluoranthene	<0.002
Indeno(1,2,3-cd)pyrene	<0.002
Dibenz(a,h)anthracene	<0.002
Benzo(g,h,i)perylene	<0.002

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD AK101**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	20	105	105	60-120	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR TPH AS GASOLINE  
USING METHOD AK 101**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	20	100	100	60-120	0

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
USING METHOD AK 102**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel	mg/kg (ppm)	5,000	94	92	75-125	2

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

**QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES  
FOR TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL  
USING METHOD AK 103**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Motor Oil	mg/kg (ppm)	2,500	91	84	60-120	8

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

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

Laboratory Code: 607263-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	22	10-142
Chloromethane	mg/kg (ppm)	2.5	<0.5	41	10-126
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	45	10-138
Bromomethane	mg/kg (ppm)	2.5	<0.5	58	10-163
Chloroethane	mg/kg (ppm)	2.5	<0.5	60	10-176
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	49	10-176
Acetone	mg/kg (ppm)	12.5	<0.5	76	10-163
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	70	10-160
Hexane	mg/kg (ppm)	2.5	<0.25	44	10-137
Methylene chloride	mg/kg (ppm)	2.5	<0.5	80	10-156
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	87	21-145
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	80	14-137
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	82	19-140
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	72	10-158
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	91	25-135
Chloroform	mg/kg (ppm)	2.5	<0.05	89	21-145
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	87	19-147
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	82	12-160
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	84	10-156
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	85	17-140
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	79	9-164
Benzene	mg/kg (ppm)	2.5	<0.03	85	29-129
Trichloroethene	mg/kg (ppm)	2.5	<0.02	92	21-139
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	90	30-135
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	91	23-155
Dibromomethane	mg/kg (ppm)	2.5	<0.05	100	23-145
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	100	24-155
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	92	28-144
Toluene	mg/kg (ppm)	2.5	<0.05	86	35-130
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	86	26-149
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	96	10-205
2-Hexanone	mg/kg (ppm)	12.5	<0.5	79	15-166
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	87	31-137
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	89	20-133
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	90	28-150
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	90	28-142
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	88	32-129
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	86	32-137
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	91	31-143
m,p-Xylene	mg/kg (ppm)	5	<0.1	87	34-136
o-Xylene	mg/kg (ppm)	2.5	<0.05	89	33-134
Styrene	mg/kg (ppm)	2.5	<0.05	92	35-137
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	90	31-142
Bromoform	mg/kg (ppm)	2.5	<0.05	82	21-156
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	85	23-146
Bromobenzene	mg/kg (ppm)	2.5	<0.05	89	34-130
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	88	18-149
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	79	28-140
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	83	25-144
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	82	31-134
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	84	31-136
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	86	30-137
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	87	10-182
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	87	23-145
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	88	21-149
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	90	30-131
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	88	29-129
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	89	31-132
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	79	11-161
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	89	22-142
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	85	10-142
Naphthalene	mg/kg (ppm)	2.5	<0.05	85	14-157
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	89	20-144

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	47	34	10-146	32 vo
Chloromethane	mg/kg (ppm)	2.5	62	51	27-133	19
Vinyl chloride	mg/kg (ppm)	2.5	75	63	22-139	17
Bromomethane	mg/kg (ppm)	2.5	79	75	38-114	5
Chloroethane	mg/kg (ppm)	2.5	88	75	10-163	16
Trichlorofluoromethane	mg/kg (ppm)	2.5	82	76	10-196	8
Acetone	mg/kg (ppm)	12.5	89	85	52-141	5
1,1-Dichloroethene	mg/kg (ppm)	2.5	100	95	47-128	5
Hexane	mg/kg (ppm)	2.5	96	80	43-142	18
Methylene chloride	mg/kg (ppm)	2.5	105	102	42-132	3
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	99	102	60-123	3
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	106	99	67-127	7
1,1-Dichloroethane	mg/kg (ppm)	2.5	103	100	68-115	3
2,2-Dichloropropane	mg/kg (ppm)	2.5	108	84	52-170	25 vo
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	108	105	72-113	3
Chloroform	mg/kg (ppm)	2.5	104	104	66-120	0
2-Butanone (MEK)	mg/kg (ppm)	12.5	108	109	57-123	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	93	96	56-135	3
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	104	101	62-131	3
1,1-Dichloropropene	mg/kg (ppm)	2.5	107	101	69-128	6
Carbon tetrachloride	mg/kg (ppm)	2.5	100	97	60-139	3
Benzene	mg/kg (ppm)	2.5	105	100	68-114	5
Trichloroethene	mg/kg (ppm)	2.5	106	106	64-117	0
1,2-Dichloropropane	mg/kg (ppm)	2.5	107	104	72-127	3
Bromodichloromethane	mg/kg (ppm)	2.5	105	104	72-130	1
Dibromomethane	mg/kg (ppm)	2.5	115	114	70-120	1
4-Methyl-1-pentanone	mg/kg (ppm)	12.5	111	115	45-145	4
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	109	105	75-136	4
Toluene	mg/kg (ppm)	2.5	104	98	66-126	6
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	102	99	72-132	3
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	110	107	75-113	3
2-Hexanone	mg/kg (ppm)	12.5	95	90	33-152	5
1,3-Dichloropropane	mg/kg (ppm)	2.5	102	98	72-130	4
Tetrachloroethene	mg/kg (ppm)	2.5	105	101	72-114	4
Dibromochloromethane	mg/kg (ppm)	2.5	103	102	74-125	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	105	103	74-132	2
Chlorobenzene	mg/kg (ppm)	2.5	101	98	76-111	3
Ethylbenzene	mg/kg (ppm)	2.5	99	96	64-123	3
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	103	102	69-135	1
m,p-Xylene	mg/kg (ppm)	5	102	98	78-122	4
o-Xylene	mg/kg (ppm)	2.5	102	99	77-124	3
Styrene	mg/kg (ppm)	2.5	105	101	74-126	4
Isopropylbenzene	mg/kg (ppm)	2.5	104	100	76-127	4
Bromoform	mg/kg (ppm)	2.5	96	96	56-132	0
n-Propylbenzene	mg/kg (ppm)	2.5	102	96	74-124	6
Bromobenzene	mg/kg (ppm)	2.5	102	100	72-122	2
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	103	98	76-126	5
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	103	90	56-143	13
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	100	97	61-137	3
2-Chlorotoluene	mg/kg (ppm)	2.5	97	94	74-121	3
4-Chlorotoluene	mg/kg (ppm)	2.5	97	93	75-122	4
tert-Butylbenzene	mg/kg (ppm)	2.5	100	98	73-130	2
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	102	98	76-125	4
sec-Butylbenzene	mg/kg (ppm)	2.5	105	98	71-130	7
p-Isopropyltoluene	mg/kg (ppm)	2.5	103	98	70-132	5
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	104	100	75-121	4
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	102	98	74-117	4
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	104	101	76-121	3
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	93	90	58-138	3
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	101	101	64-135	0
Hexachlorobutadiene	mg/kg (ppm)	2.5	101	97	50-153	4
Naphthalene	mg/kg (ppm)	2.5	97	96	63-140	1
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	102	102	63-138	0

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

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

Laboratory Code: 608133-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	9 vo	10	10-142	11
Chloromethane	mg/kg (ppm)	2.5	<0.5	33	31	10-126	6
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	30	31	10-138	3
Bromomethane	mg/kg (ppm)	2.5	<0.5	49	49	10-163	0
Chloroethane	mg/kg (ppm)	2.5	<0.5	49	48	10-176	2
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	34	36	10-176	6
Acetone	mg/kg (ppm)	12.5	<0.5	69	68	10-163	1
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	49	48	10-160	2
Hexane	mg/kg (ppm)	2.5	<0.25	24	25	10-137	4
Methylene chloride	mg/kg (ppm)	2.5	<0.5	75	70	10-156	7
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	70	67	21-145	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	57	55	14-137	4
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	63	60	19-140	5
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	68	64	10-158	6
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	65	61	25-135	6
Chloroform	mg/kg (ppm)	2.5	<0.05	68	64	21-145	6
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	76	71	19-147	7
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	66	63	12-160	5
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	61	59	10-156	3
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	59	57	17-140	3
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	62	59	9-164	5
Benzene	mg/kg (ppm)	2.5	0.036	63	60	29-129	5
Trichloroethene	mg/kg (ppm)	2.5	<0.02	63	60	21-139	5
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	69	65	30-135	6
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	70	66	23-155	6
Dibromomethane	mg/kg (ppm)	2.5	<0.05	70	67	23-145	4
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	74	70	24-155	6
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	69	66	28-144	4
Toluene	mg/kg (ppm)	2.5	0.25	58	55	35-130	5
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	69	65	26-149	6
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	70	66	10-205	6
2-Hexanone	mg/kg (ppm)	12.5	<0.5	73	69	15-166	6
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	71	67	31-137	6
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	64	62	20-133	3
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	70	67	28-150	4
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	70	66	28-142	6
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	69	66	32-129	4
Ethylbenzene	mg/kg (ppm)	2.5	0.044	65	62	32-137	5
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	73	69	31-143	6
m,p-Xylene	mg/kg (ppm)	5	0.20	66	64	34-136	3
o-Xylene	mg/kg (ppm)	2.5	0.093	68	64	33-134	6
Styrene	mg/kg (ppm)	2.5	<0.05	70	66	35-137	6
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	67	64	31-142	5
Bromoform	mg/kg (ppm)	2.5	<0.05	65	61	21-156	6
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	65	62	23-146	5
Bromobenzene	mg/kg (ppm)	2.5	<0.05	71	66	34-130	7
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	64	61	18-149	5
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	71	66	28-140	7
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	72	67	25-144	7
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	67	62	31-134	8
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	65	61	31-136	6
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	65	62	30-137	5
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	0.041	64	61	10-182	5
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	62	60	23-145	3
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	62	60	21-149	3
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	68	65	30-131	5
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	68	65	29-129	5
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	70	66	31-132	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	68	65	11-161	5
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	65	62	22-142	5
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	59	58	10-142	2
Naphthalene	mg/kg (ppm)	2.5	<0.05	69	65	14-157	6
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	66	64	20-144	3

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

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

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	39	10-146
Chloromethane	mg/kg (ppm)	2.5	57	27-133
Vinyl chloride	mg/kg (ppm)	2.5	68	22-139
Bromomethane	mg/kg (ppm)	2.5	75	38-114
Chloroethane	mg/kg (ppm)	2.5	80	10-163
Trichlorofluoromethane	mg/kg (ppm)	2.5	78	10-196
Acetone	mg/kg (ppm)	12.5	97	52-141
1,1-Dichloroethene	mg/kg (ppm)	2.5	86	47-128
Hexane	mg/kg (ppm)	2.5	86	43-142
Methylene chloride	mg/kg (ppm)	2.5	106	42-132
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	91	60-123
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	87	67-127
1,1-Dichloroethane	mg/kg (ppm)	2.5	90	68-115
2,2-Dichloropropane	mg/kg (ppm)	2.5	101	52-170
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	88	72-113
Chloroform	mg/kg (ppm)	2.5	92	66-120
2-Butanone (MEK)	mg/kg (ppm)	12.5	104	57-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	89	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	88	62-131
1,1-Dichloropropene	mg/kg (ppm)	2.5	90	69-128
Carbon tetrachloride	mg/kg (ppm)	2.5	93	60-139
Benzene	mg/kg (ppm)	2.5	90	68-114
Trichloroethene	mg/kg (ppm)	2.5	88	64-117
1,2-Dichloropropane	mg/kg (ppm)	2.5	93	72-127
Bromodichloromethane	mg/kg (ppm)	2.5	95	72-130
Dibromomethane	mg/kg (ppm)	2.5	94	70-120
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	97	45-145
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	95	75-136
Toluene	mg/kg (ppm)	2.5	89	66-126
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	95	72-132
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	93	75-113
2-Hexanone	mg/kg (ppm)	12.5	94	33-152
1,3-Dichloropropane	mg/kg (ppm)	2.5	95	72-130
Tetrachloroethene	mg/kg (ppm)	2.5	95	72-114
Dibromochloromethane	mg/kg (ppm)	2.5	99	74-125
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	94	74-132
Chlorobenzene	mg/kg (ppm)	2.5	93	76-111
Ethylbenzene	mg/kg (ppm)	2.5	90	64-123
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	97	69-135
m,p-Xylene	mg/kg (ppm)	5	94	78-122
o-Xylene	mg/kg (ppm)	2.5	93	77-124
Styrene	mg/kg (ppm)	2.5	93	74-126
Isopropylbenzene	mg/kg (ppm)	2.5	92	76-127
Bromoform	mg/kg (ppm)	2.5	94	56-132
n-Propylbenzene	mg/kg (ppm)	2.5	91	74-124
Bromobenzene	mg/kg (ppm)	2.5	94	72-122
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	92	76-126
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	91	56-143
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	93	61-137
2-Chlorotoluene	mg/kg (ppm)	2.5	91	74-121
4-Chlorotoluene	mg/kg (ppm)	2.5	89	75-122
tert-Butylbenzene	mg/kg (ppm)	2.5	91	73-130
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	90	76-125
sec-Butylbenzene	mg/kg (ppm)	2.5	89	71-130
p-Isopropyltoluene	mg/kg (ppm)	2.5	91	70-132
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	93	75-121
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	93	74-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	94	76-121
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	97	58-138
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	93	64-135
Hexachlorobutadiene	mg/kg (ppm)	2.5	94	50-153
Naphthalene	mg/kg (ppm)	2.5	93	63-140
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	93	63-138

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR SEMIVOLATILES BY EPA METHOD 8270D**

Laboratory Code: 607262-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Phenol	mg/kg (ppm)	0.33	<0.1	81	50-150
Bis(2-chloroethyl) ether	mg/kg (ppm)	0.33	<0.01	79	50-150
2-Chlorophenol	mg/kg (ppm)	0.33	<0.1	87	44-133
1,3-Dichlorobenzene	mg/kg (ppm)	0.33	<0.01	84	50-150
1,4-Dichlorobenzene	mg/kg (ppm)	0.33	<0.01	85	50-150
1,2-Dichlorobenzene	mg/kg (ppm)	0.33	<0.01	86	50-150
Benzyl alcohol	mg/kg (ppm)	0.33	<0.1	87	50-150
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	0.33	<0.01	73	50-150
2-Methylphenol	mg/kg (ppm)	0.33	<0.1	85	42-143
Hexachloroethane	mg/kg (ppm)	0.33	<0.01	80	31-132
N-Nitroso-di-n-propylamine	mg/kg (ppm)	0.33	<0.01	103	50-150
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	0.33	<0.2	91	10-250
Nitrobenzene	mg/kg (ppm)	0.33	<0.01	79	50-150
Iso phorone	mg/kg (ppm)	0.33	<0.01	94	50-150
2-Nitrophenol	mg/kg (ppm)	0.33	<0.1	103	29-152
2,4-Dimethylphenol	mg/kg (ppm)	0.33	<0.1	83	16-163
Benzoic acid	mg/kg (ppm)	0.5	<0.5	91	10-250
Bis(2-chloroethoxy)methane	mg/kg (ppm)	0.33	<0.01	85	50-150
2,4-Dichlorophenol	mg/kg (ppm)	0.33	<0.1	96	39-145
1,2,4-Trichlorobenzene	mg/kg (ppm)	0.33	<0.01	90	50-150
Hexachlorobutadiene	mg/kg (ppm)	0.33	<0.01	88	50-150
4-Chloroaniline	mg/kg (ppm)	0.66	<1	61	23-110
4-Chloro-3-methylphenol	mg/kg (ppm)	0.33	<0.1	113	50-150
2-Methylnaphthalene	mg/kg (ppm)	0.33	<0.01	94	50-150
1-Methylnaphthalene	mg/kg (ppm)	0.33	<0.01	96	50-150
Hexachlorocyclopentadiene	mg/kg (ppm)	0.33	<0.03	50	10-151
2,4,6-Trichlorophenol	mg/kg (ppm)	0.33	<0.1	80	38-149
2,4,5-Trichlorophenol	mg/kg (ppm)	0.33	<0.1	80	50-150
2-Chloronaphthalene	mg/kg (ppm)	0.33	<0.01	70	50-150
2-Nitroaniline	mg/kg (ppm)	0.33	<0.05	120	50-150
Dimethyl phthalate	mg/kg (ppm)	0.33	<0.1	86	50-150
2,6-Dinitrotoluene	mg/kg (ppm)	0.33	<0.05	143	50-150
3-Nitroaniline	mg/kg (ppm)	0.66	<1	52	23-119
2,4-Dinitrophenol	mg/kg (ppm)	0.33	<0.3	35	10-162
Dibenzo-furan	mg/kg (ppm)	0.33	<0.01	67	47-149
2,4-Dinitrotoluene	mg/kg (ppm)	0.33	<0.05	116	50-150
4-Nitrophenol	mg/kg (ppm)	0.33	<0.3	79	10-179
Diethyl phthalate	mg/kg (ppm)	0.33	<0.1	77	50-150
4-Chlorophenyl phenyl ether	mg/kg (ppm)	0.33	<0.01	70	50-150
N-Nitrosodiphenylamine	mg/kg (ppm)	0.33	<0.01	120	50-150
4-Nitroaniline	mg/kg (ppm)	0.66	<1	74	32-135
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	0.33	<0.3	50	10-170
4-Bromophenyl phenyl ether	mg/kg (ppm)	0.33	<0.01	110	50-150
Hexachlorobenzene	mg/kg (ppm)	0.33	<0.01	88	50-150
Pentachlorophenol	mg/kg (ppm)	0.33	<0.1	98	12-160
Carbazole	mg/kg (ppm)	0.33	<0.1	88	50-150
Di-n-butyl phthalate	mg/kg (ppm)	0.33	<0.1	101	50-150
Benzyl butyl phthalate	mg/kg (ppm)	0.33	<0.1	165 vo	50-150
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	0.33	0.34	151 b	10-250
Di-n-octyl phthalate	mg/kg (ppm)	0.33	<0.1 J	207 vo	54-161

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES  
FOR SEMIVOLATILES BY EPA METHOD 8270D**

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	0.33	84	83	51-119	1
Bis(2-chloroethyl) ether	mg/kg (ppm)	0.33	79	78	60-112	0
2-Chlorophenol	mg/kg (ppm)	0.33	89	90	59-114	1
1,3-Dichlorobenzene	mg/kg (ppm)	0.33	88	88	62-113	0
1,4-Dichlorobenzene	mg/kg (ppm)	0.33	88	89	61-114	0
1,2-Dichlorobenzene	mg/kg (ppm)	0.33	89	90	61-113	1
Benzyl alcohol	mg/kg (ppm)	0.33	92	90	50-119	3
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	0.33	75	75	59-113	1
2-Methylphenol	mg/kg (ppm)	0.33	84	84	58-115	2
Hexachloroethane	mg/kg (ppm)	0.33	83	83	63-114	1
N-Nitroso-di-n-propylamine	mg/kg (ppm)	0.33	90	88	62-114	4
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	0.33	90	89	54-120	3
Nitrobenzene	mg/kg (ppm)	0.33	81	80	59-114	1
Iso phorone	mg/kg (ppm)	0.33	93	90	61-113	2
2-Nitrophenol	mg/kg (ppm)	0.33	97	97	59-114	2
2,4-Dimethylphenol	mg/kg (ppm)	0.33	66	68	54-107	1
Benzoic acid	mg/kg (ppm)	0.5	99	96	43-150	0
Bis(2-chloroethoxy)methane	mg/kg (ppm)	0.33	86	84	60-114	2
2,4-Dichlorophenol	mg/kg (ppm)	0.33	99	96	57-118	2
1,2,4-Trichlorobenzene	mg/kg (ppm)	0.33	90	90	56-112	1
Hexachlorobutadiene	mg/kg (ppm)	0.33	90	88	60-116	1
4-Chloroaniline	mg/kg (ppm)	0.66	73	68	10-126	5
4-Chloro-3-methylphenol	mg/kg (ppm)	0.33	101	97	59-115	0
2-Methylnaphthalene	mg/kg (ppm)	0.33	96	94	60-115	0
1-Methylnaphthalene	mg/kg (ppm)	0.33	97	95	70-130	0
Hexachlorocyclopentadiene	mg/kg (ppm)	0.33	94	90	41-107	2
2,4,6-Trichlorophenol	mg/kg (ppm)	0.33	96	95	47-119	4
2,4,5-Trichlorophenol	mg/kg (ppm)	0.33	100	99	61-121	3
2-Chloronaphthalene	mg/kg (ppm)	0.33	86	85	58-114	1
2-Nitroaniline	mg/kg (ppm)	0.33	92	89	55-119	1
Dimethyl phthalate	mg/kg (ppm)	0.33	100	98	58-116	2
2,6-Dinitrotoluene	mg/kg (ppm)	0.33	103	101	57-119	0
3-Nitroaniline	mg/kg (ppm)	0.66	82	80	10-143	1
2,4-Dinitrophenol	mg/kg (ppm)	0.33	112	107	40-122	1
Dibenzofuran	mg/kg (ppm)	0.33	92	91	56-115	0
2,4-Dinitrotoluene	mg/kg (ppm)	0.33	103	99	53-126	1
4-Nitrophenol	mg/kg (ppm)	0.33	96	88	40-124	0
Diethyl phthalate	mg/kg (ppm)	0.33	97	96	57-116	0
4-Chlorophenyl phenyl ether	mg/kg (ppm)	0.33	92	90	54-119	0
N-Nitrosodiphenylamine	mg/kg (ppm)	0.33	85	86	54-113	1
4-Nitroaniline	mg/kg (ppm)	0.66	81	79	47-109	2
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	0.33	103	102	55-147	2
4-Bromophenyl phenyl ether	mg/kg (ppm)	0.33	89	89	56-116	0
Hexachlorobenzene	mg/kg (ppm)	0.33	89	90	57-115	0
Pentachlorophenol	mg/kg (ppm)	0.33	100	98	45-123	3
Carbazole	mg/kg (ppm)	0.33	86	86	57-116	1
Di-n-butyl phthalate	mg/kg (ppm)	0.33	94	92	56-118	2
Benzyl butyl phthalate	mg/kg (ppm)	0.33	95	92	56-122	2
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	0.33	109	105	56-155	1
Di-n-octyl phthalate	mg/kg (ppm)	0.33	109	106	58-120	4

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/05/16

Date Received: 07/18/16

Project: GD, F&BI 607262

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL  
SAMPLES FOR PAHS BY EPA METHOD 8270D SIM**

Laboratory Code: 607398-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	88	44-129
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	79	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	77	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	78	37-137
Phenanthrene	mg/kg (ppm)	0.17	<0.01	92	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	88	32-124
Fluoranthene	mg/kg (ppm)	0.17	<0.01	87	16-160
Pyrene	mg/kg (ppm)	0.17	<0.01	110	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	99	23-144
Chrysene	mg/kg (ppm)	0.17	<0.01	90	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	0.011	115	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	108	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	96	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	42	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	44	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	33 vo	37-133

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	89	90	58-121	1
Acenaphthylene	mg/kg (ppm)	0.17	80	80	54-121	0
Acenaphthene	mg/kg (ppm)	0.17	78	78	54-123	0
Fluorene	mg/kg (ppm)	0.17	81	80	56-127	1
Phenanthrene	mg/kg (ppm)	0.17	88	90	55-122	2
Anthracene	mg/kg (ppm)	0.17	88	88	50-120	0
Fluoranthene	mg/kg (ppm)	0.17	90	87	54-129	3
Pyrene	mg/kg (ppm)	0.17	88	92	53-127	4
Benz(a)anthracene	mg/kg (ppm)	0.17	91	92	51-115	1
Chrysene	mg/kg (ppm)	0.17	92	92	55-129	0
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	95	98	56-123	3
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	94	89	54-131	5
Benzo(a)pyrene	mg/kg (ppm)	0.17	91	89	51-118	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	103	90	49-148	13
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	98	88	50-141	11
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	94	85	52-131	10

# FRIEDMAN & BRUYA, INC.

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## ENVIRONMENTAL CHEMISTS

### **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 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. 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. Compounds in the sample matrix interfered with the quantitation of the analyte.
- 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.

607262

## SAMPLE CHAIN OF CUSTODY ME 07-18-16 Ci3

Report To Elijah Donat  
 Company Chilkat Environmental  
 Address PO Box 965  
 City, State, ZIP Haines, AK 99827  
 Phone 907.303.7899 Email chilkatenvironmental.com

SAMPLERS (signature)		Page # <u>1</u> of <u>4</u>
PROJECT NAME <u>GD</u>		TURNAROUND TIME
		<input checked="" type="checkbox"/> Standard Turnaround <input type="checkbox"/> RUSH <small>Rush charges authorized by:</small>
REMARKS		SAMPLE DISPOSAL
		<input checked="" type="checkbox"/> Dispose after 30 days <input type="checkbox"/> Archive Samples <input type="checkbox"/> Other
ANALYSES REQUESTED		

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HC1D	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	AK 101 GRC	AK 020	AK 021-KS R20	Notes	
drain outfall	01	7.16.16	2:50	soil	1			X									Meas
drain outfall	02	7.16.16	2:51	soil	1								X				Meas
drain outfall	03	7.16.16	2:52	soil	1								X				
drain outfall	04	7.16.16	2:53	soil	1					X							
A6	05	"	15:00										X				
A6	06	"	15:00							X							
A7	07	"	15:01									X					
A7	08	"	15:01							X							
B-7.5	09	"	15:02										X				
B-7.5	10	"	15:02							X						✓	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <i>Elijah Donat</i>	Elijah Donat	Chilkat Environmental	7.16.16	2320
Received by: <i>James Broys</i>	James Broys	F&B	7/18	1725
Relinquished by: <i>James Broys</i>				
Received by: <i></i>		Samples received at	2	°C

Friedman & Bruya, Inc.  
 3012 16<sup>th</sup> Avenue West  
 Seattle, WA 98119-2029  
 Ph. (206) 285-8282

## SAMPLE CHAIN OF CUSTODY

ME 07-18-16

CIB

607263  
 Send Report To Elijah Donat  
 Company Chilkat Environmental  
 Address P.O. Box 865  
 City, State, ZIP Haines, AK 99827  
 Phone # 907-303-7899 Fax # Chilkatenviro  
nmental.com

SAMPLERS (signature)		PROJECT NAME/NO.		PO#
<u>Jessie Eoe</u>		<u>6D</u>		
REMARKS				SAMPLE DISPOSAL
				<input checked="" type="checkbox"/> Dispose after 30 days <input type="checkbox"/> Return samples <input type="checkbox"/> Will call with instructions

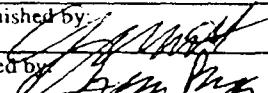
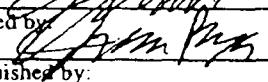
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED					Notes	
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	
C-7.5	11	7-16-16	15:13	90oil	1		X					Meth
C-7.5	12	"	15:13		1					X		
D-8	13	"	15:19		1		X					
D-8	14	"	15:19		1					X		
E-8	15	"	15:26		1		X					
E-8	16	"	15:26		1					X		
F-7	17	"	15:34		1		X					
F-7	18	"	15:34		1					X		
G-6	19	"	15:50		1		X					
G-6	20	"	15:50	W	1					X		

Friedman & Bruya, Inc.  
 3012 16th Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: 	Elijah Donat	Chilkat Enviro	7/16/16	2321
Received by: 	James Bruya	FBB	7/18	1725
Relinquished by:				
Received by:		Samples received at	2	°C

607262

## SAMPLE CHAIN OF CUSTODY

ME 07-18-16

CIB

Send Report To Elijah Donat

Company Chilkat Environmental

Address PO Box 8165

City, State, ZIP Haines, AK 99827

Phone # Fax #

SAMPLERS (signature) Knott

PROJECT NAME/NO.

PO#

GD

REMARKS

Page # 3 of 4

## TURNAROUND TIME

 Standard (2 Weeks) RUSH

Rush charges authorized by \_\_\_\_\_

## SAMPLE DISPOSAL

 Dispose after 30 days Return samples Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED						Notes	
						TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Akzo 5RD	
H-7	21	7.16.16	15:57				X						MeOH
H-7	22	"	15:57							X			
I-6	23	"	16:03					X					
I-6	24	"	16:03							X			
J-4	25	"	16:08					X					
J-4	26	"	16:08							X			
C-7.5 DUP	27	"	15:13					X					
C-7.5 DUP	28	"	15:13							X			

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Seattle, WA 98119-2029

Ph. (206) 285-8282

Fax (206) 283-5044

FORMS\COA\COC DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <i>Elijah Donat</i>	Elijah Donat	Chilkat Environmental	9/16/16	2322
Received by: <i>James Bruges</i>	James Bruges	F&B	9/18	1725
Relinquished by: <i>James Bruges</i>				
Received by: <i></i>		Samples received at	7 °C	

607262Report To Elijah DonatCompany Chilkat EnvironmentalAddress PO Box 865City, State, ZIP Haines, AK 99827Phone 907 303 7899 Email chilkatenviro  
mental.com

## SAMPLE CHAIN OF CUSTODY ME 07-18-16

CJ3

SAMPLERS (signature)		Page # <u>4</u> of <u>4</u>
PROJECT NAME <u>GD</u>		TURNAROUND TIME
		<input checked="" type="checkbox"/> Standard Turnaround
		<input type="checkbox"/> RUSH
		Rush charges authorized by:
REMARKS		SAMPLE DISPOSAL
		<input checked="" type="checkbox"/> Dispose after 30 days
		<input type="checkbox"/> Archive Samples
		<input type="checkbox"/> Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED							Notes	
						TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	AT-401 GPC	
Stockpile 1	27	7/16/16	17:45	Soil	1				X					
Stockpile 1	30		17:45		1									X
Stockpile 2	31		1801		1				X					
Stockpile 2	32		1801		1									X
Stockpile 3	33		1820		1				X					
Stockpile 3	34	↓	1820	↓	1									X
Temp Blank	35													
Methed Blank	36													

Friedman &amp; Bruya, Inc.

3012 16<sup>th</sup> Avenue West

Seattle, WA 98119-2029

Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <i>J. Bruya</i>	Elijah D. D.	Chilkat Environmental	7/16/16	2323
Received by: <i>J. Bruya</i>	James Bruya	F&B	7/18	1725
Relinquished by: <i>J. Bruya</i>				
Received by: <i>J. Bruya</i>		Samples received at		'C

## Laboratory Data Review Checklist

Completed by:	Elijah Donat		
Title:	Principal Investigator	Date:	Aug 9,16
CS Report Name:	GD	Report Date:	Aug 11, 16
Consultant Firm:	Chilkat Environmental		
Laboratory Name:	Friedman and Bruya	Laboratory Report Number:	607262
ADEC File Number:	1507.38.015	ADEC RecKey Number:	

### 1. Laboratory

a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?

Yes       No       NA (Please explain.)

Comments:

b. If the samples were transferred to another "network" laboratory or sub-contracted to an alternate laboratory, was the laboratory performing the analyses ADEC CS approved?

Yes       No       NA (Please explain)

Comments:

### 2. Chain of Custody (COC)

a. COC information completed, signed, and dated (including released/received by)?

Yes       No       NA (Please explain)

Comments:

b. Correct analyses requested?

Yes       No       NA (Please explain)

Comments:

### 3. Laboratory Sample Receipt Documentation

a. Sample/cooler temperature documented and within range at receipt ( $4^{\circ} \pm 2^{\circ}$  C)?

Yes       No       NA (Please explain)

Comments:

b. Sample preservation acceptable - acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?

Yes       No       NA (Please explain)

Comments:

GRO and VOC samples were preserved in methanol. Non-preserved soil used for dry weight.

c. Sample condition documented - broken, leaking (Methanol), zero headspace (VOC vials)?

Yes       No       NA (Please explain)

Comments:

d. If there were any discrepancies, were they documented? - For example, incorrect sample containers/preservation, sample temperature outside of acceptance range, insufficient or missing samples, etc.?

Yes       No       NA (Please explain)

Comments:

e. Data quality or usability affected? (Please explain)

Comments:

No

#### 4. Case Narrative

a. Present and understandable?

Yes       No       NA (Please explain)

Comments:

b. Discrepancies, errors or QC failures identified by the lab?

Yes       No       NA (Please explain)

Comments:

c. Were all corrective actions documented?

Yes       No       NA (Please explain)

Comments:

d. What is the effect on data quality/usability according to the case narrative?

Comments:

None

## 5. Samples Results

a. Correct analyses performed/reported as requested on COC?

Yes     No     NA (Please explain)

Comments:

b. All applicable holding times met?

Yes     No     NA (Please explain)

Comments:

c. All soils reported on a dry weight basis?

Yes     No     NA (Please explain)

Comments:

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

Yes     No     NA (Please explain)

Comments:

e. Data quality or usability affected? (Please explain)

Comments:

Data Usable

## 6. QC Samples

a. Method Blank

i. One method blank reported per matrix, analysis and 20 samples?

Yes     No     NA (Please explain)

Comments:

No duplicate performed for single DRO/RRO sample. All other duplicates performed.

ii. All method blank results less than PQL?

Yes     No     NA (Please explain)

Comments:

iii. If above PQL, what samples are affected?

Comments:

no affected samples

iv. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?

Yes       No       NA (Please explain)

Comments:

v. Data quality or usability affected? (Please explain)

Comments:

No

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

i. Organics - One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)

Yes       No       NA (Please explain)

Comments:

ii. Metals/Inorganics - One LCS and one sample duplicate reported per matrix, analysis and 20 samples?

Yes       No       NA (Please explain)

Comments:

iii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)

Yes       No       NA (Please explain)

Comments:

Some GRO data was flagged for “ip” – because recovery fell outside of control limits.

iv. Precision - All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/DMSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Yes       No       NA (Please explain)

Comments:

v. If %R or RPD is outside of acceptable limits, what samples are affected?

Comments:

RPD% acceptable for laboratory and field methods

vi. Do the affected samples(s) have data flags? If so, are the data flags clearly defined?

Yes     No     NA (Please explain)

Comments:

[Redacted]

vii. Data quality or usability affected? (Please explain)

Comments:

No affect

c. Surrogates - Organics Only

i. Are surrogate recoveries reported for organic analyses - field, QC and laboratory samples?

Yes     No     NA (Please explain)

Comments:

[Redacted]

ii. Accuracy - All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

Yes     No     NA (Please explain)

Comments:

Some GRO data was flagged for "ip" – because recovery fell outside of control limits.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes     No     NA (Please explain)

Comments:

[Redacted]

iv. Data quality or usability affected? (Use the comment box to explain.).

Comments:

No affect

d. Trip Blank - Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes     No     NA (Please explain.)

Comments:

Methanol Blank was analyzed and is included in report

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

Yes     No     NA (Please explain.)

Comments:

No the cooler was not indicated on the COC but the same cooler traveled with the Blank from the lab.

iii. All results less than PQL?

Yes       No

NA (Please explain.)

Comments:

iv. If above PQL, what samples are affected?

Comments:

None

v. Data quality or usability affected? (Please explain.)

Comments:

No

e. Field Duplicate

i. One field duplicate submitted per matrix, analysis and 10 project samples?

Yes       No

NA (Please explain.)

Comments:

Field Duplicate performed for GRO and VOC but not for the single DRO/RRO sample

ii. Submitted blind to lab?

Yes

No

NA (Please explain.)

Comments:

iii. Precision - All relative percent differences (RPD) less than specified DQOs?

(Recommended: 30% water, 50% soil)

$$\text{RPD (\%)} = \text{Absolute Value of: } \frac{(R_1 - R_2)}{((R_1 + R_2)/2)} \times 100$$

Where  $R_1$  = Sample Concentration

$R_2$  = Field Duplicate Concentration

Yes

No

NA (Please explain.)

Comments:

RPD% for GRO was 78% and under 7% for VOC's above detection

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Yes

No

NA (Please explain.)

Comments:

f. Decontamination or Equipment Blank (if applicable)

Yes

No

NA (Please explain)

Comments:

i. All results less than PQL?

Yes

No

NA (Please explain)

Comments:

none

ii. If above PQL, what samples are affected?

Comments:

none

iii. Data quality or usability affected? (Please explain.)

Comments:

none

7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a. Defined and appropriate?

Yes

No

NA (Please explain)

Comments:

Two samples were flagged "d" because the sample was diluted

Reset Form