



December 4, 2018

- *Engineering*
- *Remediation*
- *Consulting*

RE: PHASE II ENVIRONMENTAL SITE ASSESSMENT REPORT

**THE BARN AT LAKE ANNA
2800 LEWISTON RD
BUMPASS, VIRGINIA**

Environmental Alliance, Inc. (Alliance) is pleased to present the findings of the recent Phase II Environmental Site Assessment (Phase II) for the property located at 2800 Lewiston Rd Bumpass, Virginia (the Site).

Background

Alliance completed a Phase I Environmental Site Assessment for the above-reference Site. The Phase I report was submitted on October 24, 2018, and identified the following *recognized environmental condition* (REC) in connection with the Site:

- The Site has historically operated as a gasoline fill-up station. One out-of-service 12,000-gallon underground storage tank (UST) system is currently installed at the Site, including associated piping and one dispenser island. The UST was installed in March of 1997. Virginia DEQ records indicate three former gasoline USTs were in use at the Site from April 1982 through March 1997, which were removed in March 1997. Current and historical use as a gas station represent RECs for the Site.

Based on the result of the Phase I, Alliance recommended completion of a Phase II to assess whether a release had occurred at the Site resulting from operation of the Site as a gasoline fill-

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up station. The Phase II work plan consisted of the installation of five soil borings surrounding the Site UST system for the collection of soil and groundwater samples.

Subsurface Investigation Activities

On November 9, 2018, a subsurface investigation was conducted at the Site consisting of six soil borings (SB01, SB01A, SB02, SB03, SB04, SB05), four of which (SB01A, SB02, SB04, and SB05) were advanced for the collection of soil and groundwater samples, using a direct push drill rig. Soil boring SB01 was relocated due to refusal of the original location by gravel fill material. Soil boring SB03 was not completed due to refusal of the original location by gravel fill material and was not relocated due to underground utility concerns in the area. Drilling activities were conducted under the supervision of an Alliance geologist. Soil borings were logged continuously by an Alliance geologist for grain size, texture, color, and for indications of petroleum impact such as odor or staining. Soil borings were advanced to a maximum depth of 20 feet below ground surface (bgs), as determined by the depth of drill rod refusal.

Soils were screened using a photo-ionization detector (PID) calibrated to 100-part per million by volume (ppm-v) isobutylene to evaluate the presence (if any) of volatile organic compounds (VOCs) and to aid in selecting soil samples. PID readings were non-detect (0.0 ppm-v) across four of the six borings (SB01, SB01A, SB02, and SB03), and PID detections were recorded in two borings (SB04 and SB05). The highest PID reading for SB04 was 1.0 ppm-v, and the highest PID reading for SB05 was 7.0 ppm-v. The lithology of each soil boring is outlined on the soil boring logs included in **Attachment I**, and the soil boring locations are included on the Sample Location Map as **Figure 1**.

Soil samples were collected from the four completed soil borings (SB01A, SB02, SB04, and SB05). Samples were selected for analysis from either the interval of the highest PID reading, or directly above the groundwater table interface if no PID readings were detected. If no PID readings or groundwater were detected, the soil samples were collected from the boring completion depth. Groundwater was not encountered in any of the Site soil borings. Soil samples were placed in an iced cooler and submitted to Eurofins Lancaster Laboratories (Eurofins) of Lancaster, Pennsylvania under Chain of Custody protocols for analysis of volatile organic compounds (VOCs) in accordance with EPA Method 8260 and lead in accordance with EPA Method 6010.

Laboratory analysis indicated that gasoline constituent toluene was detected from the soil samples from each boring at a maximum concentration of 0.002 milligrams per kilogram

(mg/kg) in soil boring SB05. Toluene was also detected within the laboratory-supplied trip blank at a concentration of 0.002 mg/kg, indicating potential sample contamination from the laboratory. Potential leaded gasoline constituent lead was also detected in each soil boring at a maximum concentration of 39.7 mg/kg in SB02. Gasoline constituents methyl tert-butyl ether (MTBE, 0.13 mg/kg) and xylenes (0.001 mg/kg) were detected in the soil sample collected from boring SB05. Acetone, 2-butanone, and methyl acetate were detected in Site soil samples. However, these analytes are not typically associated with gasoline and are considered frequent laboratory contaminants and so they are not considered representative of gasoline-impacted soils at the Site. Soil analytical results are summarized in **Table 1** and the laboratory analytical report is presented in **Attachment II**.

Upon completion of the boreholes, a single one-inch diameter temporary monitoring well was set within the SB05 boring. The temporary monitoring well was set to the boring completion depth of approximately 20-feet and was constructed with 15 feet of 1-inch slotted PVC well screen and 5 feet of 1-inch schedule-40 PVC riser. Groundwater did not collect within the temporary monitoring well, so no groundwater sample was collected.

Conclusions

The locations of the soil borings/temporary monitoring wells were strategically placed around the Site to evaluate the RECs identified in the October 2018 Phase I.

The soil screening and analytical results from the Phase II subsurface investigation activities indicate that low concentrations of gasoline constituents were detected in each of the four soil boring samples. However, detection of toluene in the laboratory-supplied trip blank indicate that these observed detections may be the result of sample contamination at the laboratory. The detections of lead are within the expected background concentration range for Virginia, and so do not themselves indicate a release of leaded gasoline at the Site (<https://www.epa.gov/superfund/usgs-background-soil-lead-survey-state-data#VA>). The detection of MTBE in soil boring SB05 does indicate historic gasoline impact prior to the phase-out of MTBE in gasoline in the mid-2000s. However, the detection of MTBE in only a single boring, the relatively low concentration, and lack of other associated gasoline constituents (e.g., benzene and ethylbenzene), indicate that the release is limited in extent and not indicative of an ongoing release.

Based on the soil analytical detections described above, Alliance recommended that the results be reported to the Virginia Department of Environmental Quality (VADEQ) in accordance with

the VADEQ Petroleum Program reporting requirements. This report was completed by the Site owner, and Alliance provided additional information at VADEQ's request on November 28, 2018.

Should you have any questions or comments, please contact the undersigned at 877-234-1141.

Sincerely,
ENVIRONMENTAL ALLIANCE, INC.



Aaron Siegel, P.G.
Project Manager



Joshua J. White
Staff Geologist

ATTACHMENTS:

- | | |
|-----------------------|---------------------------------------|
| Figure 1: | Sample Location Map, November 9, 2018 |
| Table 1: | Soil Analytical Results Summary |
| Attachment I: | Soil Boring Logs |
| Attachment II: | Laboratory Analytical Report |



Co Rd 601 Lewiston Rd

Carlton Dr

SB04

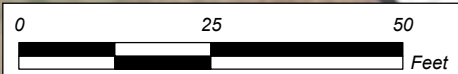
SB03

SB05

SB02





SB01

SB01A



11/26/2018 11:25:38 AM • G:\EAI\Projects\Non-PCG Projects\4642-Lake Anna Gas Station_VA\4642-Maps\4642-Sample Location Map.mxd

Legend

-  Soil Sample Location
-  Location Refusal
-  Site
-  Virginia Parcels



Environmental Alliance, Inc.
8215 Hermitage Road - Henrico, Virginia 23228
Phone: (877) 234-1141 - Fax: (302) 234-1535

2800 Lewiston Road
Bumpass, Virginia 23024

Sample Location Map

DESIGNED BY: ----	DRAWN BY: SKJ	UPDATED BY: ----	FIGURE NO.:
APPROVED BY:	PROJECT NO.: 4642	DATE: 11/26/2018	1

Source: VGIN

Table 1
Soil Analytical Results Summary
The Barn at Lake Anna
2800 Lewiston Road
Bumpass, Virginia

Location ID	Sample Date	Depth (ft)	PID (ppm-v)	Constituents of Concern (mg/kg)						
				Acetone	2-Butanone	Methyl Acetate	MTBE	Toluene	Xylene (Total)	Lead
SB01A	11/09/08	18	0.0	< 0.007	< 0.001	< 0.001	< 0.0005	0.0005 J	< 0.001	11.6
SB02	11/09/18	13	0.0	0.011 J	< 0.001	0.001 J	< 0.0006	0.0008 J	< 0.001	39.7
SB04	11/09/18	10.5	1.0	0.006 J	< 0.0009	< 0.0009	< 0.0004	0.0003 J	< 0.0008	17.3
SB05	11/09/18	9.5	7.0	0.032	0.004 J	< 0.001	0.130	0.002 J	0.001 J	29.2
Trip Blank	--	--	--	< 0.006	< 0.001	< 0.001	< 0.0005	0.002 J	< 0.0009	--

ft = feet

mg/kg = milligrams per kilogram

< = analyte not detected at or above the specified laboratory detection limit

Volatile organic compound (VOC) analysis conducted in accordance with SW8260B

J = Estimated value >= the Method Detection Limit (MDL or DL) and < the Limit of Quantitation (LOQ or RL)

Results formatted in **bold** indicate laboratory detections

MTBE = Methyl tert-butyl Ether



ATTACHMENT I
SOIL BORING LOGS

Log of Boring: SB01



Date Started: 11/9/18
Date Completed: 11/9/18
Total Depth (ft): 1.5
Boring Diameter (in): 2.25
Bedrock Depth (ft): N/A
Elevation (ft-amsl): N/A
Permit Number: N/A

Project Code: 4642
Project Name: Lake Anna Gas Station
Drilled By: Environmental Alliance Inc.
Logged By: J. White
Drill Rig: Hand Auger
Drill Method: Hand Auger
Sampling Method: Grab

Depth (ft)	Sample Number	Sample Interval	Recovery (Inches)	PID	Lithological Description	Interpreted Lithology	Comments
0					ASPHALT		
0				0.0	CL: Brown silty CLAY/fill		
0				0.0			
2							- Refusal at 1.5-ft (gravel fill)
4							
6							
8							
10							
12							
14							
16							
18							
20							

Log of Boring: SB01A



Date Started: 11/9/18
Date Completed: 11/9/18
Total Depth (ft): 18.0
Boring Diameter (in): 2.25
Bedrock Depth (ft): N/A
Elevation (ft-amsl): N/A
Permit Number: N/A

Project Code: 4642
Project Name: Lake Anna Gas Station
Drilled By: Ground Zero
Logged By: J. White
Drill Rig: Geoprobe 7822 DT
Drill Method: Direct Push
Sampling Method: Macro Core

Depth (ft)	Sample Number	Sample Interval	Recovery (Inches)	PID	Lithological Description	Interpreted Lithology	Comments
0				0.0	ASPHALT		
0				0.0	CL: Brown silty CLAY/fill		- Hand cleared to 5-ft
0				0.0	CL: Reddish-brown silty CLAY		
2				0.0			
4				0.0			
6				0.0			
8	1		50	0.0			
10				0.0			
12				0.0			
14	2		52	0.0			
16				0.0	CL: Reddish-brown CLAY with saprolite		
18	3		39	0.0			- Collected grab soil sample at 18-ft. bgs for laboratory analysis
18				0.0			- Refusal at 18-ft (weathered bedrock)
20							

Log of Boring: SB02



Date Started: 11/9/18
Date Completed: 11/9/18
Total Depth (ft): 13.0
Boring Diameter (in): 2.25
Bedrock Depth (ft): N/A
Elevation (ft-amsl): N/A
Permit Number: N/A

Project Code: 4642
Project Name: Lake Anna Gas Station
Drilled By: Ground Zero
Logged By: J. White
Drill Rig: Geoprobe 7822 DT
Drill Method: Direct Push
Sampling Method: Macro Core

Depth (ft)	Sample Number	Sample Interval	Recovery (Inches)	PID	Lithological Description	Interpreted Lithology	Comments
0					ASPHALT		
0.0					CL: Light brown silty CLAY/fill		- Hand cleared to 5-ft
0.0					CL: Reddish-brown silty CLAY		
2							
4							
6							
8	1		51				
10					CL: Reddish-brown CLAY with saprolite at 13-ft		
12	2		37				- Collected grab soil sample at 13-ft. bgs for laboratory analysis
14							- Refusal at 13-ft (weathered bedrock)
16							
18							
20							

Log of Boring: SB04



Date Started: 11/9/18
Date Completed: 11/9/18
Total Depth (ft): 19.5
Boring Diameter (in): 2.25
Bedrock Depth (ft): N/A
Elevation (ft-amsl): N/A
Permit Number: N/A

Project Code: 4642
Project Name: Lake Anna Gas Station
Drilled By: Ground Zero
Logged By: J. White
Drill Rig: Geoprobe 7822 DT
Drill Method: Direct Push
Sampling Method: Macro Core

Depth (ft)	Sample Number	Sample Interval	Recovery (Inches)	PID	Lithological Description	Interpreted Lithology	Comments
0					ASPHALT		
0.0					CL: Brown silty CLAY/fill		- Hand cleared to 5-ft
0.2					CL: Reddish-brown silty CLAY		
2							
0.0							
0.0							
4							
0.0							
6							
0.5							
0.6							
8	1		48				
0.4							
0.4							
10							
0.4							
1.0							- Collected grab soil sample at 10.5-ft. bgs for laboratory analysis
12	2		57				
0.8							
0.4							
14							
0.3							
0.0					CL: Reddish-brown silty CLAY with saprolite at 19.5-ft		
0.0							
16							
0.0							
18	3		45				
0.0							
0.0							
20							- Refusal at 19.5-ft (weathered bedrock)

Log of Boring: SB05



Date Started: 11/9/18
Date Completed: 11/9/18
Total Depth (ft): 20.0
Boring Diameter (in): 2.25
Bedrock Depth (ft): N/A
Elevation (ft-amsl): N/A
Permit Number: N/A

Project Code: 4642
Project Name: Lake Anna Gas Station
Drilled By: Ground Zero
Logged By: J. White
Drill Rig: Geoprobe 7822 DT
Drill Method: Direct Push
Sampling Method: Macro Core

Depth (ft)	Sample Number	Sample Interval	Recovery (Inches)	PID	Lithological Description	Interpreted Lithology	Comments
0				0.0	ASPHALT		
0				0.0	CL: Brown silty CLAY/fill		- Hand cleared to 5-ft
0				0.0	CL: Reddish-brown silty CLAY		
2				0.0			
				0.3			
4				0.8			
				4.4			
6				4.6			
	1		57	5.5			
8				6.1			
				6.8			
10				7.0			- Collected grab soil sample at 9.5-ft. bgs for laboratory analysis
				5.4			
12				3.4			
	2		53	3.3			
14				4.8			
				4.8	CL: Reddish-brown silty CLAY with saprolite at 20-ft		
16				3.4			
				3.1			
18				2.8			
	3		47	2.6			
20				2.1			- Refusal at 20-ft (weathered bedrock)

ATTACHMENT II
LABORATORY ANALYTICAL REPORT



ANALYSIS REPORT

Prepared by:

Eurofins Lancaster Laboratories Environmental
2425 New Holland Pike
Lancaster, PA 17601

Prepared for:

Environmental Alliance, Inc.
5341 Limestone Rd
Wilmington DE 19808

Report Date: November 25, 2018 16:37

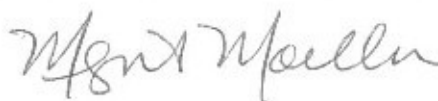
Project: 4642, VA

Account #: 07039
Group Number: 2008831
PO Number: 17524
State of Sample Origin: VA

Electronic Copy To Environmental Alliance, Inc.
Electronic Copy To Environmental Alliance, Inc.

Attn: Data Administrator
Attn: Aaron Siegel

Respectfully Submitted,



Megan A. Moeller
Senior Specialist

(717) 556-7261

To view our laboratory's current scopes of accreditation please go to <http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/>. Historical copies may be requested through your project manager.



SAMPLE INFORMATION

<u>Client Sample Description</u>	<u>Sample Collection Date/Time</u>	<u>ELLE#</u>
SB01 Grab Soil	11/09/2018 11:15	9897098
SB02 Grab Soil	11/09/2018 11:40	9897099
SB04 Grab Soil	11/09/2018 10:35	9897100
SB05 Grab Soil	11/09/2018 11:00	9897101
MeOH	11/09/2018	9897102

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

Sample Description: SB01 Grab Soil
SB01A1801109181115 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: SW 9897098
ELLE Group #: 2008831
Matrix: Soil

Project Name: 4642, VA

Submission Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018 11:15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles			mg/kg	mg/kg	mg/kg	
SW-846 8260B						
10237	Acetone	67-64-1	N.D.	0.007	0.022	1
10237	Benzene	71-43-2	N.D.	0.0004	0.005	1
10237	Bromodichloromethane	75-27-4	N.D.	0.0003	0.005	1
10237	Bromoform	75-25-2	N.D.	0.004	0.011	1
10237	Bromomethane	74-83-9	N.D.	0.0009	0.005	1
10237	2-Butanone	78-93-3	N.D.	0.001	0.011	1
10237	Carbon Disulfide	75-15-0	N.D.	0.0004	0.005	1
10237	Carbon Tetrachloride	56-23-5	N.D.	0.0005	0.005	1
10237	Chlorobenzene	108-90-7	N.D.	0.0004	0.005	1
10237	Chloroethane	75-00-3	N.D.	0.002	0.005	1
10237	Chloroform	67-66-3	N.D.	0.0004	0.005	1
10237	Chloromethane	74-87-3	N.D.	0.0005	0.005	1
10237	Cyclohexane	110-82-7	N.D.	0.0005	0.005	1
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.0003	0.005	1
10237	Dibromochloromethane	124-48-1	N.D.	0.003	0.009	1
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0003	0.005	1
10237	1,2-Dichlorobenzene	95-50-1	N.D.	0.0004	0.005	1
10237	1,3-Dichlorobenzene	541-73-1	N.D.	0.0004	0.005	1
10237	1,4-Dichlorobenzene	106-46-7	N.D.	0.0004	0.005	1
10237	Dichlorodifluoromethane	75-71-8	N.D.	0.0004	0.005	1
10237	1,1-Dichloroethane	75-34-3	N.D.	0.0004	0.005	1
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0003	0.005	1
10237	1,1-Dichloroethene	75-35-4	N.D.	0.0004	0.005	1
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0005	0.005	1
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0004	0.005	1
10237	1,2-Dichloropropane	78-87-5	N.D.	0.0004	0.005	1
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0004	0.005	1
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.005	1
10237	Ethylbenzene	100-41-4	N.D.	0.0004	0.005	1
10237	Freon 113	76-13-1	N.D.	0.0004	0.011	1
10237	2-Hexanone	591-78-6	N.D.	0.001	0.011	1
10237	Isopropylbenzene	98-82-8	N.D.	0.0005	0.005	1
10237	Methyl Acetate	79-20-9	N.D.	0.001	0.005	1
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	0.005	1
10237	4-Methyl-2-pentanone	108-10-1	N.D.	0.001	0.011	1
10237	Methylcyclohexane	108-87-2	N.D.	0.0007	0.005	1
10237	Methylene Chloride	75-09-2	N.D.	0.001	0.005	1
10237	Styrene	100-42-5	N.D.	0.0004	0.005	1
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0003	0.005	1
10237	Tetrachloroethene	127-18-4	N.D.	0.0005	0.005	1
10237	Toluene	108-88-3	0.0005 J	0.0003	0.005	1
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.0009	0.005	1

*=This limit was used in the evaluation of the final result

Sample Description: SB01 Grab Soil
SB01A1801109181115 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: SW 9897098
ELLE Group #: 2008831
Matrix: Soil

Project Name: 4642, VA

Submission Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018 11:15

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles		SW-846 8260B	mg/kg	mg/kg	mg/kg	
10237	1,1,1-Trichloroethane	71-55-6	N.D.	0.0004	0.005	1
10237	1,1,2-Trichloroethane	79-00-5	N.D.	0.0003	0.005	1
10237	Trichloroethene	79-01-6	N.D.	0.0004	0.005	1
10237	Trichlorofluoromethane	75-69-4	N.D.	0.0007	0.005	1
10237	Vinyl Chloride	75-01-4	N.D.	0.0005	0.005	1
10237	Xylene (Total)	1330-20-7	N.D.	0.001	0.005	1
Metals		SW-846 6010B	mg/kg	mg/kg	mg/kg	
06955	Lead	7439-92-1	11.6	0.557	1.39	1
Wet Chemistry		SM 2540 G-2011	%	%	%	
		%Moisture Calc				
00111	Moisture	n.a.	7.9	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs TCL (4.3) 8260 Soil	SW-846 8260B	1	X183201AA	11/16/2018 10:42	Jennifer K Howe	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201831751902	11/09/2018 11:15	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201831751902	11/09/2018 11:15	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201831751902	11/09/2018 11:15	Client Supplied	1
06955	Lead	SW-846 6010B	1	183180570801	11/17/2018 20:24	Elaine F Stoltzfus	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	183180570801	11/16/2018 05:25	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18320820007B	11/16/2018 15:44	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SB02 Grab Soil
SB021301109181140 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: SW 9897099
ELLE Group #: 2008831
Matrix: Soil

Project Name: 4642, VA

Submission Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018 11:40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles			mg/kg	mg/kg	mg/kg	
	SW-846 8260B					
10237	Acetone	67-64-1	0.011 J	0.007	0.023	0.98
10237	Benzene	71-43-2	N.D.	0.0005	0.006	0.98
10237	Bromodichloromethane	75-27-4	N.D.	0.0003	0.006	0.98
10237	Bromoform	75-25-2	N.D.	0.005	0.011	0.98
10237	Bromomethane	74-83-9	N.D.	0.0009	0.006	0.98
10237	2-Butanone	78-93-3	N.D.	0.001	0.011	0.98
10237	Carbon Disulfide	75-15-0	N.D.	0.0005	0.006	0.98
10237	Carbon Tetrachloride	56-23-5	N.D.	0.0006	0.006	0.98
10237	Chlorobenzene	108-90-7	N.D.	0.0005	0.006	0.98
10237	Chloroethane	75-00-3	N.D.	0.002	0.006	0.98
10237	Chloroform	67-66-3	N.D.	0.0005	0.006	0.98
10237	Chloromethane	74-87-3	N.D.	0.0006	0.006	0.98
10237	Cyclohexane	110-82-7	N.D.	0.0006	0.006	0.98
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.0003	0.006	0.98
10237	Dibromochloromethane	124-48-1	N.D.	0.003	0.009	0.98
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0003	0.006	0.98
10237	1,2-Dichlorobenzene	95-50-1	N.D.	0.0005	0.006	0.98
10237	1,3-Dichlorobenzene	541-73-1	N.D.	0.0005	0.006	0.98
10237	1,4-Dichlorobenzene	106-46-7	N.D.	0.0005	0.006	0.98
10237	Dichlorodifluoromethane	75-71-8	N.D.	0.0005	0.006	0.98
10237	1,1-Dichloroethane	75-34-3	N.D.	0.0005	0.006	0.98
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0003	0.006	0.98
10237	1,1-Dichloroethene	75-35-4	N.D.	0.0005	0.006	0.98
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0006	0.006	0.98
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0005	0.006	0.98
10237	1,2-Dichloropropane	78-87-5	N.D.	0.0005	0.006	0.98
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0005	0.006	0.98
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.006	0.98
10237	Ethylbenzene	100-41-4	N.D.	0.0005	0.006	0.98
10237	Freon 113	76-13-1	N.D.	0.0005	0.011	0.98
10237	2-Hexanone	591-78-6	N.D.	0.001	0.011	0.98
10237	Isopropylbenzene	98-82-8	N.D.	0.0006	0.006	0.98
10237	Methyl Acetate	79-20-9	0.001 J	0.001	0.006	0.98
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0006	0.006	0.98
10237	4-Methyl-2-pentanone	108-10-1	N.D.	0.001	0.011	0.98
10237	Methylcyclohexane	108-87-2	N.D.	0.0007	0.006	0.98
10237	Methylene Chloride	75-09-2	N.D.	0.001	0.006	0.98
10237	Styrene	100-42-5	N.D.	0.0005	0.006	0.98
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0003	0.006	0.98
10237	Tetrachloroethene	127-18-4	N.D.	0.0006	0.006	0.98
10237	Toluene	108-88-3	0.0008 J	0.0003	0.006	0.98
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.0009	0.006	0.98

*=This limit was used in the evaluation of the final result

Sample Description: SB02 Grab Soil
SB021301109181140 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: SW 9897099
ELLE Group #: 2008831
Matrix: Soil

Project Name: 4642, VA

Submittal Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018 11:40

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles			mg/kg	mg/kg	mg/kg	
SW-846 8260B						
10237	1,1,1-Trichloroethane	71-55-6	N.D.	0.0005	0.006	0.98
10237	1,1,2-Trichloroethane	79-00-5	N.D.	0.0003	0.006	0.98
10237	Trichloroethene	79-01-6	N.D.	0.0005	0.006	0.98
10237	Trichlorofluoromethane	75-69-4	N.D.	0.0007	0.006	0.98
10237	Vinyl Chloride	75-01-4	N.D.	0.0006	0.006	0.98
10237	Xylene (Total)	1330-20-7	N.D.	0.001	0.006	0.98
Metals			mg/kg	mg/kg	mg/kg	
SW-846 6010B						
06955	Lead	7439-92-1	39.7	0.479	1.20	1
Wet Chemistry			%	%	%	
SM 2540 G-2011						
%Moisture Calc						
00111	Moisture	n.a.	13.1	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs TCL (4.3) 8260 Soil	SW-846 8260B	1	X183201AA	11/16/2018 11:05	Jennifer K Howe	0.98
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201831751902	11/09/2018 11:40	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201831751902	11/09/2018 11:40	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201831751902	11/09/2018 11:40	Client Supplied	1
06955	Lead	SW-846 6010B	1	183180570801	11/17/2018 20:27	Elaine F Stoltzfus	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	183180570801	11/16/2018 05:25	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18320820007B	11/16/2018 15:44	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SB04 Grab Soil
SB041051109181035 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: SW 9897100
ELLE Group #: 2008831
Matrix: Soil

Project Name: 4642, VA

Submission Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018 10:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles			mg/kg	mg/kg	mg/kg	
SW-846 8260B						
10237	Acetone	67-64-1	0.006 J	0.005	0.017	0.76
10237	Benzene	71-43-2	N.D.	0.0003	0.004	0.76
10237	Bromodichloromethane	75-27-4	N.D.	0.0003	0.004	0.76
10237	Bromoform	75-25-2	N.D.	0.003	0.009	0.76
10237	Bromomethane	74-83-9	N.D.	0.0007	0.004	0.76
10237	2-Butanone	78-93-3	N.D.	0.0009	0.009	0.76
10237	Carbon Disulfide	75-15-0	N.D.	0.0003	0.004	0.76
10237	Carbon Tetrachloride	56-23-5	N.D.	0.0004	0.004	0.76
10237	Chlorobenzene	108-90-7	N.D.	0.0003	0.004	0.76
10237	Chloroethane	75-00-3	N.D.	0.002	0.004	0.76
10237	Chloroform	67-66-3	N.D.	0.0003	0.004	0.76
10237	Chloromethane	74-87-3	N.D.	0.0004	0.004	0.76
10237	Cyclohexane	110-82-7	N.D.	0.0004	0.004	0.76
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.0003	0.004	0.76
10237	Dibromochloromethane	124-48-1	N.D.	0.003	0.007	0.76
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0003	0.004	0.76
10237	1,2-Dichlorobenzene	95-50-1	N.D.	0.0003	0.004	0.76
10237	1,3-Dichlorobenzene	541-73-1	N.D.	0.0003	0.004	0.76
10237	1,4-Dichlorobenzene	106-46-7	N.D.	0.0003	0.004	0.76
10237	Dichlorodifluoromethane	75-71-8	N.D.	0.0003	0.004	0.76
10237	1,1-Dichloroethane	75-34-3	N.D.	0.0003	0.004	0.76
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0003	0.004	0.76
10237	1,1-Dichloroethene	75-35-4	N.D.	0.0003	0.004	0.76
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0004	0.004	0.76
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0003	0.004	0.76
10237	1,2-Dichloropropane	78-87-5	N.D.	0.0003	0.004	0.76
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0003	0.004	0.76
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.004	0.76
10237	Ethylbenzene	100-41-4	N.D.	0.0003	0.004	0.76
10237	Freon 113	76-13-1	N.D.	0.0003	0.009	0.76
10237	2-Hexanone	591-78-6	N.D.	0.0009	0.009	0.76
10237	Isopropylbenzene	98-82-8	N.D.	0.0004	0.004	0.76
10237	Methyl Acetate	79-20-9	N.D.	0.0009	0.004	0.76
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0004	0.004	0.76
10237	4-Methyl-2-pentanone	108-10-1	N.D.	0.0009	0.009	0.76
10237	Methylcyclohexane	108-87-2	N.D.	0.0005	0.004	0.76
10237	Methylene Chloride	75-09-2	N.D.	0.0009	0.004	0.76
10237	Styrene	100-42-5	N.D.	0.0003	0.004	0.76
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0003	0.004	0.76
10237	Tetrachloroethene	127-18-4	N.D.	0.0004	0.004	0.76
10237	Toluene	108-88-3	0.0003 J	0.0003	0.004	0.76
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.0007	0.004	0.76

*=This limit was used in the evaluation of the final result

Sample Description: SB04 Grab Soil
SB041051109181035 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: SW 9897100
ELLE Group #: 2008831
Matrix: Soil

Project Name: 4642, VA

Submittal Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018 10:35

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles			SW-846 8260B	mg/kg	mg/kg	
10237	1,1,1-Trichloroethane	71-55-6	N.D.	0.0003	0.004	0.76
10237	1,1,2-Trichloroethane	79-00-5	N.D.	0.0003	0.004	0.76
10237	Trichloroethene	79-01-6	N.D.	0.0003	0.004	0.76
10237	Trichlorofluoromethane	75-69-4	N.D.	0.0005	0.004	0.76
10237	Vinyl Chloride	75-01-4	N.D.	0.0004	0.004	0.76
10237	Xylene (Total)	1330-20-7	N.D.	0.0008	0.004	0.76
Metals			SW-846 6010B	mg/kg	mg/kg	
06955	Lead	7439-92-1	17.3	0.661	1.65	1
Wet Chemistry			SM 2540 G-2011	%	%	
	%Moisture Calc					
00111	Moisture	n.a.	13.5	0.50	0.50	1
	Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.					

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs TCL (4.3) 8260 Soil	SW-846 8260B	1	X183201AA	11/16/2018 11:29	Jennifer K Howe	0.76
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201831751902	11/09/2018 10:35	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201831751902	11/09/2018 10:35	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201831751902	11/09/2018 10:35	Client Supplied	1
06955	Lead	SW-846 6010B	1	183180570801	11/17/2018 20:30	Elaine F Stoltzfus	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	183180570801	11/16/2018 05:25	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18320820007B	11/16/2018 15:44	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: SB05 Grab Soil
SB050951109181100 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: SW 9897101
ELLE Group #: 2008831
Matrix: Soil

Project Name: 4642, VA

Submission Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018 11:00

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles			mg/kg	mg/kg	mg/kg	
		SW-846 8260B				
10237	Acetone	67-64-1	0.032	0.007	0.022	0.92
10237	Benzene	71-43-2	N.D.	0.0004	0.005	0.92
10237	Bromodichloromethane	75-27-4	N.D.	0.0003	0.005	0.92
10237	Bromoform	75-25-2	N.D.	0.004	0.011	0.92
10237	Bromomethane	74-83-9	N.D.	0.0009	0.005	0.92
10237	2-Butanone	78-93-3	0.004 J	0.001	0.011	0.92
10237	Carbon Disulfide	75-15-0	N.D.	0.0004	0.005	0.92
10237	Carbon Tetrachloride	56-23-5	N.D.	0.0005	0.005	0.92
10237	Chlorobenzene	108-90-7	N.D.	0.0004	0.005	0.92
10237	Chloroethane	75-00-3	N.D.	0.002	0.005	0.92
10237	Chloroform	67-66-3	N.D.	0.0004	0.005	0.92
10237	Chloromethane	74-87-3	N.D.	0.0005	0.005	0.92
10237	Cyclohexane	110-82-7	N.D.	0.0005	0.005	0.92
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.0003	0.005	0.92
10237	Dibromochloromethane	124-48-1	N.D.	0.003	0.009	0.92
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0003	0.005	0.92
10237	1,2-Dichlorobenzene	95-50-1	N.D.	0.0004	0.005	0.92
10237	1,3-Dichlorobenzene	541-73-1	N.D.	0.0004	0.005	0.92
10237	1,4-Dichlorobenzene	106-46-7	N.D.	0.0004	0.005	0.92
10237	Dichlorodifluoromethane	75-71-8	N.D.	0.0004	0.005	0.92
10237	1,1-Dichloroethane	75-34-3	N.D.	0.0004	0.005	0.92
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0003	0.005	0.92
10237	1,1-Dichloroethene	75-35-4	N.D.	0.0004	0.005	0.92
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0005	0.005	0.92
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0004	0.005	0.92
10237	1,2-Dichloropropane	78-87-5	N.D.	0.0004	0.005	0.92
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0004	0.005	0.92
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.005	0.92
10237	Ethylbenzene	100-41-4	N.D.	0.0004	0.005	0.92
10237	Freon 113	76-13-1	N.D.	0.0004	0.011	0.92
10237	2-Hexanone	591-78-6	N.D.	0.001	0.011	0.92
10237	Isopropylbenzene	98-82-8	N.D.	0.0005	0.005	0.92
10237	Methyl Acetate	79-20-9	N.D.	0.001	0.005	0.92
10237	Methyl Tertiary Butyl Ether	1634-04-4	0.13	0.0005	0.005	0.92
10237	4-Methyl-2-pentanone	108-10-1	N.D.	0.001	0.011	0.92
10237	Methylcyclohexane	108-87-2	N.D.	0.0007	0.005	0.92
10237	Methylene Chloride	75-09-2	N.D.	0.001	0.005	0.92
10237	Styrene	100-42-5	N.D.	0.0004	0.005	0.92
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0003	0.005	0.92
10237	Tetrachloroethene	127-18-4	N.D.	0.0005	0.005	0.92
10237	Toluene	108-88-3	0.002 J	0.0003	0.005	0.92
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.0009	0.005	0.92

*=This limit was used in the evaluation of the final result

Sample Description: SB05 Grab Soil
SB050951109181100 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: SW 9897101
ELLE Group #: 2008831
Matrix: Soil

Project Name: 4642, VA

Submission Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018 11:00

CAT No.	Analysis Name	CAS Number	Dry Result	Dry Method Detection Limit*	Dry Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
SW-846 8260B			mg/kg	mg/kg	mg/kg	
10237	1,1,1-Trichloroethane	71-55-6	N.D.	0.0004	0.005	0.92
10237	1,1,2-Trichloroethane	79-00-5	N.D.	0.0003	0.005	0.92
10237	Trichloroethene	79-01-6	N.D.	0.0004	0.005	0.92
10237	Trichlorofluoromethane	75-69-4	N.D.	0.0007	0.005	0.92
10237	Vinyl Chloride	75-01-4	N.D.	0.0005	0.005	0.92
10237	Xylene (Total)	1330-20-7	0.001 J	0.001	0.005	0.92
Metals						
SW-846 6010B			mg/kg	mg/kg	mg/kg	
06955	Lead	7439-92-1	29.2	0.573	1.43	1
Wet Chemistry						
SM 2540 G-2011			%	%	%	
%Moisture Calc						
00111	Moisture	n.a.	16.2	0.50	0.50	1
Moisture represents the loss in weight of the sample after oven drying at 103 - 105 degrees Celsius. The moisture result reported is on an as-received basis.						

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs TCL (4.3) 8260 Soil	SW-846 8260B	1	X183201AA	11/16/2018 11:52	Jennifer K Howe	0.92
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201831751902	11/09/2018 11:00	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201831751902	11/09/2018 11:00	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	2	201831751902	11/09/2018 11:00	Client Supplied	1
06955	Lead	SW-846 6010B	1	183180570801	11/17/2018 20:32	Elaine F Stoltzfus	1
05708	ICP-ICPMS - SW, 3050B - U3	SW-846 3050B	1	183180570801	11/16/2018 05:25	Annamaria Kuhns	1
00111	Moisture	SM 2540 G-2011 %Moisture Calc	1	18320820007B	11/16/2018 15:44	Larry E Bevins	1

*=This limit was used in the evaluation of the final result

Sample Description: MeOH
Trip_Blanks110918 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: G5 9897102
ELLE Group #: 2008831
Matrix: MeOH

Project Name: 4642, VA

Submission Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles			mg/kg	mg/kg	mg/kg	
10237	Acetone	67-64-1	N.D.	0.006	0.020	1
10237	Benzene	71-43-2	N.D.	0.0004	0.005	1
10237	Bromodichloromethane	75-27-4	N.D.	0.0003	0.005	1
10237	Bromoform	75-25-2	N.D.	0.004	0.010	1
10237	Bromomethane	74-83-9	N.D.	0.0008	0.005	1
10237	2-Butanone	78-93-3	N.D.	0.001	0.010	1
10237	Carbon Disulfide	75-15-0	N.D.	0.0004	0.005	1
10237	Carbon Tetrachloride	56-23-5	N.D.	0.0005	0.005	1
10237	Chlorobenzene	108-90-7	N.D.	0.0004	0.005	1
10237	Chloroethane	75-00-3	N.D.	0.002	0.005	1
10237	Chloroform	67-66-3	N.D.	0.0004	0.005	1
10237	Chloromethane	74-87-3	N.D.	0.0005	0.005	1
10237	Cyclohexane	110-82-7	N.D.	0.0005	0.005	1
10237	1,2-Dibromo-3-chloropropane	96-12-8	N.D.	0.0003	0.005	1
10237	Dibromochloromethane	124-48-1	N.D.	0.003	0.008	1
10237	1,2-Dibromoethane	106-93-4	N.D.	0.0003	0.005	1
10237	1,2-Dichlorobenzene	95-50-1	N.D.	0.0004	0.005	1
10237	1,3-Dichlorobenzene	541-73-1	N.D.	0.0004	0.005	1
10237	1,4-Dichlorobenzene	106-46-7	N.D.	0.0004	0.005	1
10237	Dichlorodifluoromethane	75-71-8	N.D.	0.0004	0.005	1
10237	1,1-Dichloroethane	75-34-3	N.D.	0.0004	0.005	1
10237	1,2-Dichloroethane	107-06-2	N.D.	0.0003	0.005	1
10237	1,1-Dichloroethene	75-35-4	N.D.	0.0004	0.005	1
10237	cis-1,2-Dichloroethene	156-59-2	N.D.	0.0005	0.005	1
10237	trans-1,2-Dichloroethene	156-60-5	N.D.	0.0004	0.005	1
10237	1,2-Dichloropropane	78-87-5	N.D.	0.0004	0.005	1
10237	cis-1,3-Dichloropropene	10061-01-5	N.D.	0.0004	0.005	1
10237	trans-1,3-Dichloropropene	10061-02-6	N.D.	0.0003	0.005	1
10237	Ethylbenzene	100-41-4	N.D.	0.0004	0.005	1
10237	Freon 113	76-13-1	N.D.	0.0004	0.010	1
10237	2-Hexanone	591-78-6	N.D.	0.001	0.010	1
10237	Isopropylbenzene	98-82-8	N.D.	0.0005	0.005	1
10237	Methyl Acetate	79-20-9	N.D.	0.001	0.005	1
10237	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.0005	0.005	1
10237	4-Methyl-2-pentanone	108-10-1	N.D.	0.001	0.010	1
10237	Methylcyclohexane	108-87-2	N.D.	0.0006	0.005	1
10237	Methylene Chloride	75-09-2	N.D.	0.001	0.005	1
10237	Styrene	100-42-5	N.D.	0.0004	0.005	1
10237	1,1,2,2-Tetrachloroethane	79-34-5	N.D.	0.0003	0.005	1
10237	Tetrachloroethene	127-18-4	N.D.	0.0005	0.005	1
10237	Toluene	108-88-3	0.002 J	0.0003	0.005	1
10237	1,2,4-Trichlorobenzene	120-82-1	N.D.	0.0008	0.005	1

*=This limit was used in the evaluation of the final result

Sample Description: MeOH
Trip_Blanks110918 4642, VA

Environmental Alliance, Inc.
ELLE Sample #: G5 9897102
ELLE Group #: 2008831
Matrix: MeOH

Project Name: 4642, VA

Submittal Date/Time: 11/13/2018 10:50
Collection Date/Time: 11/09/2018

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit*	As Received Limit of Quantitation	Dilution Factor
GC/MS Volatiles						
		SW-846 8260B	mg/kg	mg/kg	mg/kg	
10237	1,1,1-Trichloroethane	71-55-6	N.D.	0.0004	0.005	1
10237	1,1,2-Trichloroethane	79-00-5	N.D.	0.0003	0.005	1
10237	Trichloroethene	79-01-6	N.D.	0.0004	0.005	1
10237	Trichlorofluoromethane	75-69-4	N.D.	0.0006	0.005	1
10237	Vinyl Chloride	75-01-4	N.D.	0.0005	0.005	1
10237	Xylene (Total)	1330-20-7	N.D.	0.0009	0.005	1

Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
10237	VOCs TCL (4.3) 8260 Soil	SW-846 8260B	1	X183201AA	11/16/2018 10:19	Jennifer K Howe	1
07579	GC/MS-5g Field Preserv.MeOH-NC	SW-846 5035A	1	201831751902	11/09/2018 00:00	Client Supplied	1
02392	L/H Field Preserved Bisulfate	SW-846 5035A	1	201831751902	11/09/2018 00:00	Client Supplied	1

*=This limit was used in the evaluation of the final result

Quality Control Summary

Client Name: Environmental Alliance, Inc.
Reported: 11/25/2018 16:37

Group Number: 2008831

Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

Method Blank

Analysis Name	Result	MDL**	LOQ
	mg/kg	mg/kg	mg/kg
Batch number: X183201AA	Sample number(s): 9897098-9897102		
Acetone	N.D.	0.006	0.020
Benzene	N.D.	0.0004	0.005
Bromodichloromethane	N.D.	0.0003	0.005
Bromoform	N.D.	0.004	0.010
Bromomethane	N.D.	0.0008	0.005
2-Butanone	N.D.	0.001	0.010
Carbon Disulfide	N.D.	0.0004	0.005
Carbon Tetrachloride	N.D.	0.0005	0.005
Chlorobenzene	N.D.	0.0004	0.005
Chloroethane	N.D.	0.002	0.005
Chloroform	N.D.	0.0004	0.005
Chloromethane	N.D.	0.0005	0.005
Cyclohexane	N.D.	0.0005	0.005
1,2-Dibromo-3-chloropropane	N.D.	0.0003	0.005
Dibromochloromethane	N.D.	0.003	0.008
1,2-Dibromoethane	N.D.	0.0003	0.005
1,2-Dichlorobenzene	N.D.	0.0004	0.005
1,3-Dichlorobenzene	N.D.	0.0004	0.005
1,4-Dichlorobenzene	N.D.	0.0004	0.005
Dichlorodifluoromethane	N.D.	0.0004	0.005
1,1-Dichloroethane	N.D.	0.0004	0.005
1,2-Dichloroethane	N.D.	0.0003	0.005
1,1-Dichloroethene	N.D.	0.0004	0.005
cis-1,2-Dichloroethene	N.D.	0.0005	0.005
trans-1,2-Dichloroethene	N.D.	0.0004	0.005
1,2-Dichloropropane	N.D.	0.0004	0.005
cis-1,3-Dichloropropene	N.D.	0.0004	0.005
trans-1,3-Dichloropropene	N.D.	0.0003	0.005
Ethylbenzene	N.D.	0.0004	0.005
Freon 113	N.D.	0.0004	0.010
2-Hexanone	N.D.	0.001	0.010
Isopropylbenzene	N.D.	0.0005	0.005
Methyl Acetate	N.D.	0.001	0.005
Methyl Tertiary Butyl Ether	N.D.	0.0005	0.005
4-Methyl-2-pentanone	N.D.	0.001	0.010
Methylcyclohexane	N.D.	0.0006	0.005
Methylene Chloride	N.D.	0.001	0.005
Styrene	N.D.	0.0004	0.005
1,1,1,2-Tetrachloroethane	N.D.	0.0003	0.005

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Environmental Alliance, Inc.
Reported: 11/25/2018 16:37

Group Number: 2008831

Method Blank (continued)

Analysis Name	Result	MDL**	LOQ
	mg/kg	mg/kg	mg/kg
Tetrachloroethene	N.D.	0.0005	0.005
Toluene	N.D.	0.0003	0.005
1,2,4-Trichlorobenzene	N.D.	0.0008	0.005
1,1,1-Trichloroethane	N.D.	0.0004	0.005
1,1,2-Trichloroethane	N.D.	0.0003	0.005
Trichloroethene	N.D.	0.0004	0.005
Trichlorofluoromethane	N.D.	0.0006	0.005
Vinyl Chloride	N.D.	0.0005	0.005
Xylene (Total)	N.D.	0.0009	0.005
Batch number: 183180570801	Sample number(s): 9897098-9897101		
Lead	N.D.	0.600	1.50

LCS/LCSD

Analysis Name	LCS Spike Added	LCS Conc	LCSD Spike Added	LCSD Conc	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: X183201AA	Sample number(s): 9897098-9897102								
Acetone	0.150	0.135	0.150	0.137	90	91	41-150	1	30
Benzene	0.0200	0.0206	0.0200	0.0201	103	100	80-120	3	30
Bromodichloromethane	0.0200	0.0176	0.0200	0.0169	88	84	70-120	4	30
Bromoform	0.0200	0.0132	0.0200	0.0131	66	65	51-127	1	30
Bromomethane	0.0200	0.0193	0.0200	0.0183	96	92	45-140	5	30
2-Butanone	0.150	0.113	0.150	0.112	75	75	57-128	0	30
Carbon Disulfide	0.0200	0.0195	0.0200	0.0189	97	95	64-133	3	30
Carbon Tetrachloride	0.0200	0.0170	0.0200	0.0166	85	83	64-134	3	30
Chlorobenzene	0.0200	0.0203	0.0200	0.0198	101	99	80-120	2	30
Chloroethane	0.0200	0.0209	0.0200	0.0207	104	103	43-135	1	30
Chloroform	0.0200	0.0189	0.0200	0.0184	94	92	80-120	3	30
Chloromethane	0.0200	0.0204	0.0200	0.0197	102	99	56-120	4	30
Cyclohexane	0.0200	0.0167	0.0200	0.0161	83	81	58-126	3	30
1,2-Dibromo-3-chloropropane	0.0200	0.0139	0.0200	0.0143	69	72	48-134	3	30
Dibromochloromethane	0.0200	0.0158	0.0200	0.0160	79	80	69-125	1	30
1,2-Dibromoethane	0.0200	0.0180	0.0200	0.0178	90	89	76-120	1	30
1,2-Dichlorobenzene	0.0200	0.0195	0.0200	0.0196	98	98	76-120	1	30
1,3-Dichlorobenzene	0.0200	0.0189	0.0200	0.0188	94	94	75-120	0	30
1,4-Dichlorobenzene	0.0200	0.0195	0.0200	0.0194	98	97	80-120	1	30
Dichlorodifluoromethane	0.0200	0.0155	0.0200	0.0149	77	74	21-127	4	30
1,1-Dichloroethane	0.0200	0.0184	0.0200	0.0181	92	90	79-120	2	30
1,2-Dichloroethane	0.0200	0.0178	0.0200	0.0178	89	89	71-128	0	30
1,1-Dichloroethene	0.0200	0.0201	0.0200	0.0196	101	98	73-129	2	30

*- Outside of specification

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(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Environmental Alliance, Inc.
Reported: 11/25/2018 16:37

Group Number: 2008831

LCS/LCSD (continued)

Analysis Name	LCS Spike Added mg/kg	LCS Conc mg/kg	LCSD Spike Added mg/kg	LCSD Conc mg/kg	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
cis-1,2-Dichloroethene	0.0200	0.0198	0.0200	0.0198	99	99	80-123	0	30
trans-1,2-Dichloroethene	0.0200	0.0205	0.0200	0.0200	103	100	80-125	3	30
1,2-Dichloropropane	0.0200	0.0190	0.0200	0.0188	95	94	80-120	1	30
cis-1,3-Dichloropropene	0.0200	0.0155	0.0200	0.0153	78	77	66-120	1	30
trans-1,3-Dichloropropene	0.0200	0.0153	0.0200	0.0151	76	75	68-122	2	30
Ethylbenzene	0.0200	0.0194	0.0200	0.0189	97	95	78-120	3	30
Freon 113	0.0200	0.0220	0.0200	0.0210	110	105	64-135	5	30
2-Hexanone	0.100	0.0723	0.100	0.0724	72	72	54-140	0	30
Isopropylbenzene	0.0200	0.0187	0.0200	0.0183	93	91	77-120	2	30
Methyl Acetate	0.0200	0.0155	0.0200	0.0166	78	83	67-128	6	30
Methyl Tertiary Butyl Ether	0.0200	0.0153	0.0200	0.0153	77	77	72-120	0	30
4-Methyl-2-pentanone	0.100	0.0721	0.100	0.0728	72	73	67-128	1	30
Methylcyclohexane	0.0200	0.0171	0.0200	0.0166	86	83	61-124	3	30
Methylene Chloride	0.0200	0.0198	0.0200	0.0193	99	97	76-122	2	30
Styrene	0.0200	0.0182	0.0200	0.0177	91	88	76-120	3	30
1,1,2,2-Tetrachloroethane	0.0200	0.0193	0.0200	0.0197	96	98	69-125	2	30
Tetrachloroethene	0.0200	0.0182	0.0200	0.0177	91	88	73-120	3	30
Toluene	0.0200	0.0202	0.0200	0.0197	101	98	80-120	3	30
1,2,4-Trichlorobenzene	0.0200	0.0162	0.0200	0.0153	81	76	56-130	6	30
1,1,1-Trichloroethane	0.0200	0.0157	0.0200	0.0156	79	78	69-123	1	30
1,1,2-Trichloroethane	0.0200	0.0201	0.0200	0.0199	100	100	80-120	1	30
Trichloroethene	0.0200	0.0193	0.0200	0.0187	96	93	80-120	3	30
Trichlorofluoromethane	0.0200	0.0200	0.0200	0.0187	100	94	55-134	7	30
Vinyl Chloride	0.0200	0.0219	0.0200	0.0210	109	105	52-120	4	30
Xylene (Total)	0.0600	0.0581	0.0600	0.0567	97	95	75-120	2	30
	mg/kg	mg/kg	mg/kg	mg/kg					
Batch number: 183180570801	Sample number(s): 9897098-9897101								
Lead	15	14.87			99		90-115		
	%	%	%	%					
Batch number: 18320820007B	Sample number(s): 9897098-9897101								
Moisture	89.5	89.43			100		99-101		

*- Outside of specification

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(2) The unspiked result was more than four times the spike added.

Quality Control Summary

Client Name: Environmental Alliance, Inc.
Reported: 11/25/2018 16:37

Group Number: 2008831

Laboratory Duplicate

Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	BKG Conc %	DUP Conc %	DUP RPD	DUP RPD Max
Batch number: 18320820007B	Sample number(s): 9897098-9897101 BKG: 9897099			
Moisture	13.05	12.86	1	5

Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

Analysis Name: VOCs TCL (4.3) 8260 Soil
Batch number: X183201AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
9897098	97	106	99	86
9897099	98	109	100	89
9897100	101	116	99	88
9897101	94	100	97	95
9897102	100	113	98	88
Blank	98	105	100	88
LCS	94	103	102	98
LCSD	93	103	103	99
Limits:	50-141	54-135	52-141	50-131

*- Outside of specification

** - This limit was used in the evaluation of the final result for the blank

(1) The result for one or both determinations was less than five times the LOQ.

(2) The unspiked result was more than four times the spike added.



Client: Environmental Alliance, Inc.

Delivery and Receipt Information

Delivery Method:	<u>Fed Ex</u>	Arrival Timestamp:	<u>11/13/2018 10:50</u>
Number of Packages:	<u>1</u>	Number of Projects:	<u>2</u>
State/Province of Origin:	<u>VA</u>		

Arrival Condition Summary

Shipping Container Sealed:	Yes	Sample IDs on COC match Containers:	Yes
Custody Seal Present:	Yes	Sample Date/Times match COC:	Yes
Custody Seal Intact:	Yes	VOA Vial Headspace \geq 6mm:	N/A
Samples Chilled:	Yes	Total Trip Blank Qty:	2
Paperwork Enclosed:	Yes	Trip Blank Type:	See Below
Samples Intact:	Yes	Air Quality Samples Present:	No
Missing Samples:	No		
Extra Samples:	No		
Discrepancy in Container Qty on COC:	No		

Trip Blank Type(s): 1 5ml Methanol, 1 Sodium Biosulfate

Unpacked by Nicole Reiff (25684) at 15:09 on 11/13/2018

Samples Chilled Details

Thermometer Types: DT = Digital (Temp. Bottle) IR = Infrared (Surface Temp) All Temperatures in °C.

Cooler #	Thermometer ID	Corrected Temp	Therm. Type	Ice Type	Ice Present?	Ice Container	Elevated Temp?
1	32170023	3.8	IR	Wet	Y	Bagged	N

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

BMQL	Below Minimum Quantitation Level	mL	milliliter(s)
C	degrees Celsius	MPN	Most Probable Number
cfu	colony forming units	N.D.	non-detect
CP Units	cobalt-chloroplatinate units	ng	nanogram(s)
F	degrees Fahrenheit	NTU	nephelometric turbidity units
g	gram(s)	pg/L	picogram/liter
IU	International Units	RL	Reporting Limit
kg	kilogram(s)	TNTC	Too Numerous To Count
L	liter(s)	µg	microgram(s)
lb.	pound(s)	µL	microliter(s)
m3	cubic meter(s)	umhos/cm	micromhos/cm
meq	milliequivalents	MCL	Maximum Contamination Limit
mg	milligram(s)		
<	less than		
>	greater than		
ppm	parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg) or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter per liter of gas.		
ppb	parts per billion		
Dry weight basis	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture. All other results are reported on an as-received basis.		

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Measurement uncertainty values, as applicable, are available upon request.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff.

This report shall not be reproduced except in full, without the written approval of the laboratory.

Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" are not performed within 15 minutes.

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Data Qualifiers

Qualifier	Definition
C	Result confirmed by reanalysis
D1	Indicates for dual column analyses that the result is reported from column 1
D2	Indicates for dual column analyses that the result is reported from column 2
E	Concentration exceeds the calibration range
K1	Initial Calibration Blank is above the QC limit and the sample result is ND
K2	Continuing Calibration Blank is above the QC limit and the sample result is ND
K3	Initial Calibration Verification is above the QC limit and the sample result is ND
K4	Continuing Calibration Verification is above the QC limit and the sample result is ND
J (or G, I, X)	Estimated value \geq the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
P	Concentration difference between the primary and confirmation column $>40\%$. The lower result is reported.
P^	Concentration difference between the primary and confirmation column $> 40\%$. The higher result is reported.
U	Analyte was not detected at the value indicated
V	Concentration difference between the primary and confirmation column $>100\%$. The reporting limit is raised due to this disparity and evident interference.
W	The dissolved oxygen uptake for the unseeded blank is greater than 0.20 mg/L.
Z	Laboratory Defined - see analysis report

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.