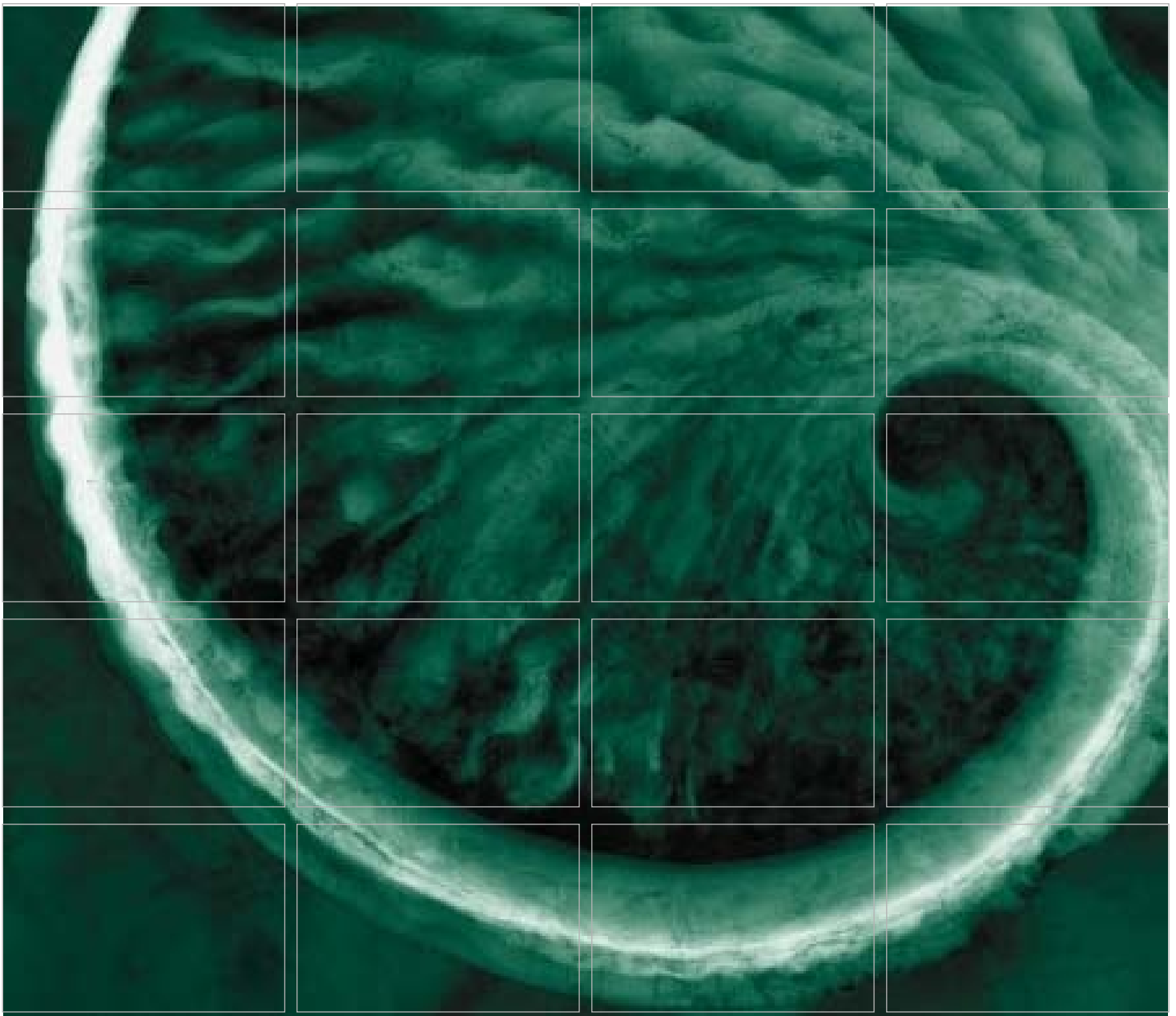




Project Shuttle

Prepared for:



Site Characterization Report
VRP Parcel

Jefferson Orchards Site

September 2017

VRP No. 17031

204 Chase Drive
Hurricane, WV 25526
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Roxul

Project Shuttle
Site Characterization Report
VRP Parcel
Jefferson Orchards Site

September 2017

VRP No. 17031

Project No. 0407978



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LIST OF ACRONYMS

AMSL	Above Mean Sea Level
SCR	Site Characterization Report
BGS	Below Ground Surface
COPC	Chemicals of Potential Concern
DI	Deionized
ER	Equipment rinse Blanks
ERM	Environmental Resources Management
ESA	Environmental Site Assessment
FOIA	Freedom of Information Act
HASP	Health and Safety Plan
IDW	Investigation Derived Waste
OSHA	Occupational Safety and Health Administration
PID	Photoionization Detector
PVC	Polyvinyl Chloride
QA/QC	Quality Assurance/Quality Control
SAP	Sampling and Analysis Plan
RAWP	Remedial Action Work Plan
USEPA	United States Environmental Protection Agency
VRA	Voluntary Remediation Agreement
VRP	Voluntary Remediation Program
WVDEP	West Virginia Department of Environmental Protection
WVDEP-DLR	West Virginia Department of Environmental Protection- Division of Land Restoration

EXECUTIVE SUMMARY

ERM conducted a Site Characterization investigation at the Jefferson Orchards Site near Kearneysville, West Virginia, on August 21 - 23, 2017 to investigate Constituents of Potential Concern (COPC) in site soils.

Sixteen soil borings were advanced to various depths ranging from 5 to 25 feet below ground surface (bgs) for the collection of soil samples. ERM advanced eleven soil borings to five feet bgs and five soil borings to 25 feet bgs. Soil samples were submitted to a West Virginia certified laboratory for analysis. Laboratory analytical data indicated concentrations in the soil were below West Virginia Industrial Soil De Minimis Standards.

Based on the analytical results, the Site does not appear to have been impacted by previous orchard and agricultural operations.

1.0 INTRODUCTION

On behalf of Roxul USA Inc. (Roxul), Environmental Resources Management, Inc. (ERM) conducted this Site Characterization Investigation on the main portion of the property located at 365 Granny Smith Lane near Kearnyesville, West Virginia. A site location map is included as **Figure 1**. The Jefferson Orchards property consists of approximately 400 acres of land, previously used as a fruit orchard and agricultural land. Roxul is negotiating the purchase of approximately 152 acres of the southwestern portion of the property, for the development and construction of an insulation manufacturing facility.

In June 2017, Jefferson Orchards submitted an application to enter approximately 80 acres of the proposed 152-acre development area into the West Virginia Voluntary Remediation Program (VRP) (**Figure 2**). The application was accepted on July 6, 2017 and a Voluntary Remediation Agreement (VRA) was executed between Jefferson Orchards, Inc. and the West Virginia Department of Environmental Protection (WVDEP) on August 14, 2017. The 80-acre VRP parcel is hereinafter referred to as the "Site".

This report summarizes the findings for the soil investigation conducted by ERM in August 2017 at the Site.

1.1 PURPOSE AND OBJECTIVES

The goal of this site characterization was to investigate both surface and subsurface soils at the Site, to identify potential impacts from former orchard operations. Data obtained during this sampling event will be used to prepare a Remedial Action Work Plan (RAWP) for the West Virginia VRP in accordance with WV 60CSR3-10 for preparation for redevelopment of the site.

1.2 SITE BACKGROUND INFORMATION

The Site consists of approximately 80 acres of land and was previously used as a fruit orchard and agricultural land. The Site is located in an area predominantly characterized by karst topography and is situated at an elevation of approximately 580 feet above mean sea level (amsl). Several limestone rock outcrops are visible on the Site. Topography across the Site consists of gentle to moderate slopes, with elevations ranging from

approximately 530 feet to 602 feet amsl. The Site is bound to the north and east by agricultural fields, to the west by wooded areas, a former quarry, and additional Jefferson orchard property not included in the VRP, and to the south by CSXT railroad and West Virginia Route 9.

A general site plan outlining the subject property with soil boring locations is provided as **Figure 2**.

1.3

PREVIOUS SITE CHARACTERIZATIONS

A summary of environmental investigations conducted at the Jefferson Orchards property in 2017 is provided below. Details of these investigations were included in reports submitted as part of the VRP application.

- ERM conducted a Phase I Site Investigation on March 6 - 7, 2017. The investigation included a site reconnaissance field visit and supplemental research. Based on identified historical site information, findings from the field visit, and desktop study, ERM recommended a Phase II Environmental Site Assessment (ESA) to further assess site soils and groundwater.
- ERM conducted a Phase II ESA March 15 - 17, 2017. The ESA activities included the advancement of four soil borings down to ten feet bgs for the collection of 20 soil samples and the collection of four grab groundwater samples from existing potable wells. A dieldrin concentration of 3.87 mg/kg was detected in (SB-JO-7 [0-6"]) above the West Virginia Industrial Soil Standard of 1.5 mg/kg. This sample was located in the vicinity of a former pesticide mixing station, which is located further west of the 80-acre VRP Parcel. Groundwater samples collected during the Phase II ESA had chloroform concentrations and dieldrin concentrations above their respective West Virginia Groundwater De Minimis Standards. Both samples were collected from wells located further west of the 80-acre VRP Parcel. ERM recommended further characterization of on-site media prior to future construction activities or other potential earth-disturbing activities.

2.0 *SITE CHARACTERIZATION*

Site characterization activities were conducted in accordance with the 25 August 2017 WVDEP-approved SAP to ensure the reliability of the data collected during each investigation.

2.1 *SOIL INVESTIGATION ACTIVITIES*

Soil sampling activities were conducted on August 21 – 23, 2017, to identify potential impacts from former orchard operations on the Site. A total of 16 soil borings were advanced at the Site including 11 borings to a total depth of five feet bgs, and five borings to a total depth of 25 feet bgs (or refusal). Soil borings were advanced by a West Virginia certified driller, A-Zone Environmental Services.

2.2 *UNDERGROUND UTILITY CLEARANCE*

Prior to advancement of soil borings, ERM subcontracted Underground Services Inc., (SoftDig) to conduct an underground utility survey in the vicinity of each proposed boring location. SoftDig used both ground penetrating radar and electromagnetic methods to scan a 20 foot radius of each boring location. No evidence of underground utilities was identified in the vicinity of the boring locations.

2.3 *ANALYTICAL PROGRAM*

Soil sampling parameters for this investigation were selected based on findings in ERM's March 2017 Phase II report. A list of Constituents of Potential Concern (COPCs) was developed and included lead, arsenic, and priority pollutant pesticides (ERM, 2017).

2.4 *PROCEDURES AND METHODOLOGIES*

Procedures and methodologies associated with equipment decontamination, soil sample collection, and waste handling are outlined in the following sections.

2.4.1 *Decontamination*

Decontamination of equipment was performed to remove residual chemical contamination before using the equipment to collect samples for environmental analysis. Sampling equipment was decontaminated using the following procedures:

1. Post-Sample Collection Cleanup – Residual visible soil was removed as much as possible by scraping and shaking.
2. Gross Wash and Water Rinse – The equipment was washed with laboratory-grade, phosphate-free detergent (Liquinox or Alconox) in water and rinsed with distilled water to remove visible particulates.
3. 10% Nitric Acid Rinse – Prior to collecting samples to be analyzed for metals, stainless steel and glass sampling equipment was rinsed with 10% nitric acid (HNO₃) solution. The nitric acid solution was applied using a labeled laboratory-grade Nalgene[®] spray bottle.
4. Analyte-Free Water Rinse – Decontaminated equipment was rinsed with deionized (DI) certified analyte-free water supplied by Preiser Scientific, Inc. DI water was applied using a labeled laboratory-grade Nalgene[®] spray bottle.
5. Protective Wrap – Decontaminated equipment was allowed to air dry and stored in a designated storage location, free from sources of contamination.

2.4.2 *Soil Sampling Methodologies*

Subsurface soil samples were collected from sixteen locations at the Site including SB-1 through SB-16. Three duplicate samples were collected at SB-3, SB-8, and SB-16 (DUP-1 through DUP-3, respectively). Continuous soil samples were collected in five foot intervals down to a maximum depth of 25 feet bgs via direct-push methods using a macro-tube sample collection device. Soil boring locations are illustrated on **Figure 2**.

Subsurface soil samples were collected from soil borings using a track-mounted 7822DT Geoprobe[®], employing direct-push techniques. The Geoprobe[®] unit was positioned at each soil boring location and the drive unit was hydraulically raised on its base so the weight of the vehicle and a hydraulically powered percussion hammer pushed the probe with an attached five (5) foot long 2 1/8-inch outside diameter outer core barrel into

the ground. Direct-push soil samples were collected using a specially designed stainless steel sample tube or core barrel with an inner polyvinyl chloride (PVC) macrocore sleeve. Following the retrieval of the PVC sleeve, each soil sample was removed from the core barrel and the sleeve split open using a decontaminated knife equipped with a stainless steel blade.

Immediately upon retrieval, ERM logged the soils and screened each foot interval using a MiniRAE 3000 Photoionization Detector (PID). The tip of the PID probe was placed above freshly disturbed soil within the core and the reading was recorded on the boring logs. The PID was calibrated daily prior to use and a calibration log is included in **Appendix A**. The soils were logged and classified according to the Unified Soils Classification system in accordance with ASTM Method D 2488 90. Soil sample descriptions, sample depth intervals, PID readings, and sample identification names were recorded on boring logs and are included in **Appendix B**. Grab soil samples locations are described below:

- Eleven soil borings were advanced to a depth of 5.0 feet bgs in selected locations across the site. Soil samples were collected from the following depth intervals: 0 - 6 inches; 6 - 12 inches; 12 - 18 inches; 18 - 24 inches; 24 - 30 inch; and 4.5 - 5.0 feet. The 0 - 6 inch and 24 - 30 inch intervals were submitted to the laboratory for analysis and the remaining three intervals were submitted on "hold" to be analyzed based on results of the analyzed intervals (i.e. if the 0 - 6 inch interval was detected above the Industrial Soil De Minimis Standards and the 24 -30 inch interval was below the De Minimis Standards, the 6 - 12 inch interval was analyzed, followed by the 12 - 18 inch interval, as necessary).
- Five soil borings were advanced to a depth of approximately 25.0 feet bgs. Soil samples were collected from the following depth intervals: 0 - 6 inches; 6 - 12 inches; 12 - 18 inches; 18 - 24 inches; 24 - 30 inch; 4.5 - 5.0 feet, 9.5 - 10 feet, 14.5 - 15 feet, 19.5 feet - 20 feet, and 20 -25 feet. The 0 - 6 inch and 24 - 30 inch intervals were submitted to the laboratory for analysis and the remaining eight intervals were submitted on "hold" to be analyzed based on results of the analyzed intervals.

Samples collected for chemical analysis were placed in appropriate sample containers with required preservatives, labeled for proper identification, packed in a cooler with ice, and submitted to West Virginia certified laboratory, ALS Environmental.

2.4.3 *Investigation-Derived Waste (IDW)*

After collecting soil samples, any remaining cuttings were collected in a properly labeled, Department of Transportation approved 55 gallon drum and stored onsite in a designated staging area. The container was labeled with the date filled and source of the waste. Upon characterization, the drum will be scheduled for pick up and disposal by a qualified waste disposal vendor.

2.5 *LABORATORY METHODOLOGIES*

Samples collected as part of this investigation were submitted to a West Virginia certified laboratory (ALS Environmental in Middletown, Pennsylvania). Samples were analyzed in accordance with USEPA approved procedures such as those set forth by SW-846, Methods of Chemical Analysis for Water and Wastes (USEPA 600/4 79 010) 3rd edition, update 1 (November, 1990). ALS meets Occupational Safety and Health Administration (OSHA) requirements, and has a Quality Assurance Program consistent with USEPA guidance document "Guidance for Data Quality Assessment: Practical Methods for Data Analysis EPA/600/R-96/084, July 2000."

3.0 RESULTS

Soil analytical results were compared to the West Virginia Industrial Soil De Minimis Standards (June, 2017).

3.1 SITE GEOLOGY

According to the United States Department of Agriculture Natural Resources Conservation Service web soil survey data, the Site geology is characterized by Hagerstown silt loam/silt clay and Vertrees silt loam/silt clay deposits. The silt loams and clays are underlain by Stonehenge Limestone bedrock, which is underlain by Conococheague Formation. The Hagerstown silt loam/silt clay and Vertrees silt loam/silt clay deposits are characterized as prime areas for farmland and are well drained soils. These sequences average 0 to 7 feet in thickness and were deposited on top of the Stonehenge Limestone bedrock unit. The Stonehenge Limestone bedrock is characterized as gray, thin-bedded to massive, fossiliferous limestone, largely mechanically deposited, with small black chert nodules and beds of “edgewise” conglomerate (Cardwell, et al., 1986).

Depth to bedrock beneath the Site varies due to the nature of limestone karst topography and ranged in the study area from 5 to 35 feet bgs. The bedrock underlying the Hagerstown silt loam/ silt clay and Vertrees silt loam/silt clay deposits is part of the Conococheague Formation of the Cambrian-System. The Conococheague Formation is predominately algal and mechanically deposited limestone, with interbeds of aphanitic limestone and dolomite. The Formation contains siliceous and dolomitic laminations (Cardwell, et al., 1986).

3.2 SOIL ANALYTICAL RESULTS

Soil analytical results were compared to the West Virginia Industrial Soil De Minimis Standards. Data is tabulated and included in **Tables 1A & 1B**. Laboratory analytical reports are included as **Appendix C**.

3.2.1 Inorganics (Lead and Arsenic)

No inorganics were detected above their respective West Virginia Industrial Soil De Minimis Standards in samples collected from the Site during the August 21 -23, 2017 sampling activities.

3.2.2 *Pesticides*

No pesticides were detected above their respective West Virginia Industrial Soil De Minimis Standards in samples collected from the Site during the August 21 -23, 2017 sampling activities.

3.3 *DATA VALIDATION*

Level IV data validation will be performed in accordance with the US EPA Region III Modifications to National Functional Guidelines (Organics – 9/94, and Inorganics – 4/93), as applied to SW-846 methodology for at least 10 percent of the soil samples collected during the 2014 and 2015 ASC activities. Data validation reports will be included as part of the Baseline/Residual Ecological and Human Health Risk Assessment.

3.4 *QA/QC ANALYTICAL RESULTS*

The precision and accuracy of the field sampling procedures were checked through the preparation, collection, submission and analysis of duplicate samples and equipment rinse blank samples. The following Quality Assurance/Quality Control (QA/QC) samples were collected and submitted for laboratory analysis:

<u>Sample Type</u>	<u>Quantity</u>
Duplicate Samples	3
Equipment Rinse Blanks	3

Three duplicate samples (DUP-1, DUP-2, and DUP-3) were used as quality assurance of sample analysis methods. The duplicate samples were prepared by dividing a single sample into two equal aliquots for separate analyses. The duplicate samples were analyzed for the same parameters as the corresponding regular sample. Duplicate sample analytical results were within typical analytical precision expectations. Laboratory analytical results for the field duplicate samples collected during the August 21 - 23, 2017 sampling activities are included in **Tables 1A** and **1B**.

Three equipment rinse blanks (ER-1 to ER-3) were collected using analyte-free DI water. Once the sampling equipment was fully decontaminated, the analyte-free water was poured over, across, and through the sample collection surfaces and the water was collected directly into appropriate

water matrix sample containers. One rinse blank was submitted per 20 samples. The rinse blanks were analyzed for the same parameters as those analyzed in matrix samples included in each particular shipment. Analytical results of the equipment rinse blank samples indicate the equipment decontamination procedures were effective in eliminating potential cross-contamination between sample locations. Laboratory analytical results for the rinse blank samples are included in **Table 1C**.

Additionally, the WVDEP collected five split samples for soil: SB-1 (0-0.5), SB-1 (2-2.5), SB-9 (0-0.5), SB-9 (2-2.5), and SB-11 (0-0.5). The samples were analyzed for the same parameters as the corresponding ERM samples and results were within the expected range.

Laboratory analytical results for the three duplicate samples and three ER samples are included in **Appendix C**.

4.0 SUMMARY AND CONCLUSIONS

ERM was retained by Roxul to conduct a Site Characterization Investigation within the Jefferson Orchards property in Kearneysville, West Virginia. The goal of site characterization activities was to investigate potential Constituents of Potential Concern (COPC) in site soils. The characterization activities included the following:

- Update of the site-specific Health & Safety Plan;
- Advancement of 16 soil borings including eleven to a total depth of five feet bgs and five to twenty-five feet bgs; and
- Collection of 53 soil samples for laboratory analysis of target COPC's.
- No COPC's were detected above the WV Industrial De Minimis Standards.

The site has been adequately investigated to determine if COPC's in soil are present at levels above the Industrial Soil De Minimis Standards. Based on the laboratory results, no further investigation of the Site is warranted at this time.

4.1 FUTURE ACTIONS

ERM will prepare a RAWP for the Site to document the remedial action objectives and evaluate a remedial approach.

5.0

REFERENCES

American Society for Testing and Materials (ASTM), 1990, Designation D-2488-90, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure).

Cardwell, D. H., R, Erwin, R. B., Woodward, H. P., and Lotz, C. W., 1968, 1968 Geologic Map of West Virginia: West Virginia Geological and Economic Survey.

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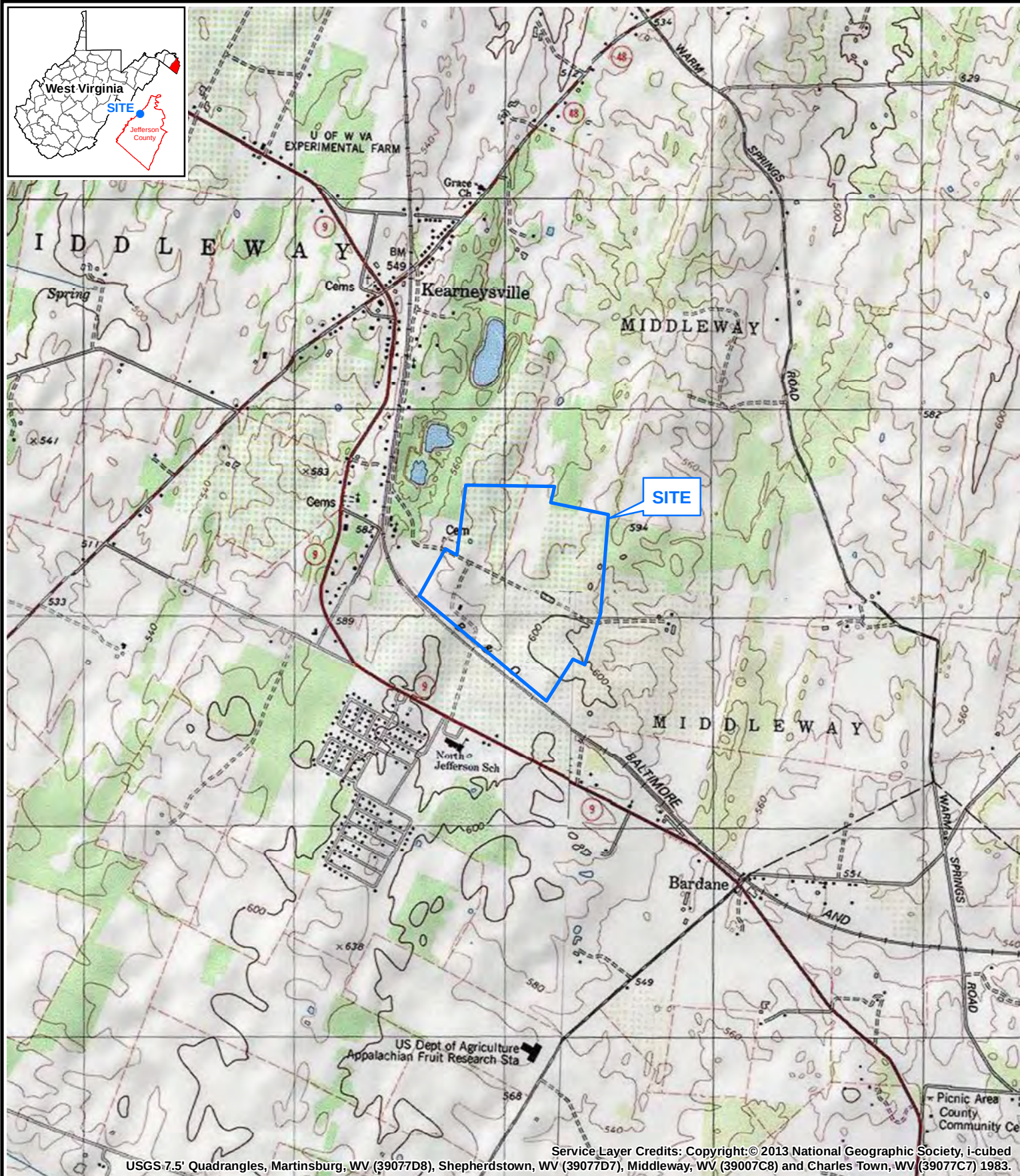
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Figures

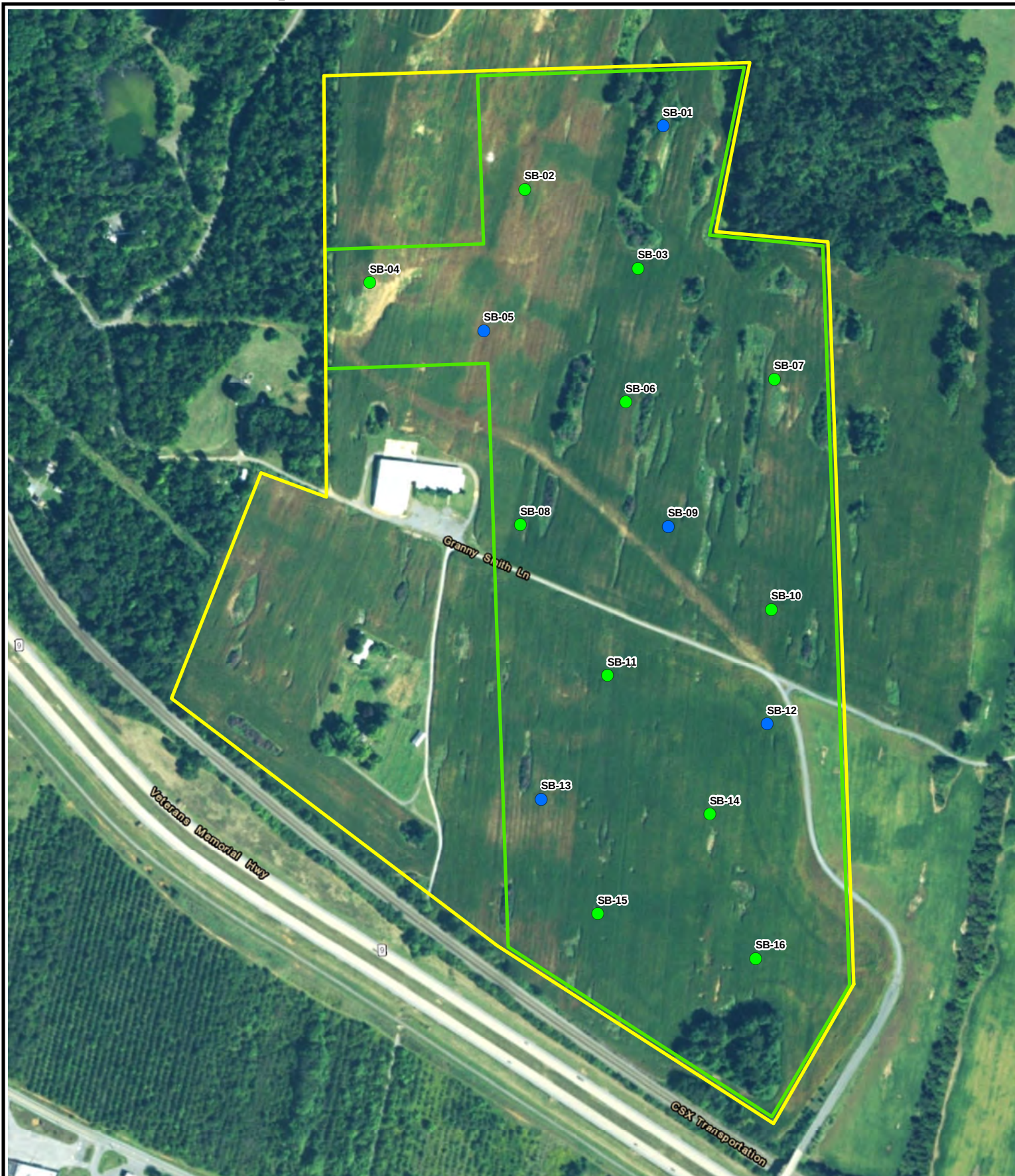


0 1,000 2,000 Feet



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Figure 1
Site Location Map
 Jefferson Orchard Site
 Project Shuttle
 Kearneysville, West Virginia



Legend

- Deep Soil Boring (25 ft.)
- Shallow Soil Boring (5 ft.)
- Project Boundary
- VRP Site Boundary

Figure 2 Site Plan

Jefferson Orchard Site
Project Shuttle
Kearneysville, West Virginia



0 400 Feet



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Tables

TABLE 1A - Soil Analytical Results - Arsenic and Lead
Project Shuttle
Jefferson Orchard Site
Jefferson County, West Virginia

Constituent			Inorganics	
			Arsenic	Lead
Sample ID	Date	Industrial Soil De Minimis Standards ¹ (mg/kg)	35	1000
SB-1 (0-0.5')	8/23/2017		7.3	13.0
DEP Split [SB-1 (0-0.5')]	8/23/2017		<0.18	6.5
SB-1 (2.0-2.5')	8/23/2017		8.1	15.4
DEP Split [SB-1 (2.0-2.5')]	8/23/2017		<0.18	4.5
SB-1 (9.0-9.5')	8/23/2017		4.3	9.9
SB-2 (0-0.5')	8/21/2017		12.7	23.3
SB-2 (1.0-1.5')	8/21/2017		17.3	32.8
SB-2 (2.0-2.5')	8/21/2017		23.3	25.9
SB-3 (0-0.5')	8/22/2017		10.2	20.4
SB-3 (1.0-1.5')	8/22/2017		8.7	17.5
SB-3 (2.0-2.5')	8/22/2017		8.4	13.2
Dup-3 (2.0-2.5')	8/22/2017		8.2	13.2
SB-4 (0-0.5')	8/22/2017		6.8	15.0
SB-4 (0.5-1.0')	8/22/2017		5.3	12.9
SB-4 (2.0-2.5')	8/22/2017		5.2	11.3
SB-5 (0-0.5')	8/21/2017		7.4	46.6
SB-5 (2.0-2.5')	8/21/2017		8.1	9.6
SB-5 (14.5-15.0')	8/21/2017		8.2	14.3
SB-5 (19.5-20.0')	8/21/2017		8.0	10.4
SB-6 (0-0.5')	8/22/2017		6.6	12.5
SB-6 (0.5-1.0')	8/22/2017		6.5	14.1
SB-6 (2.0-2.5')	8/22/2017		5.5	10.5
SB-7 (0-0.5')	8/22/2017		31.3	91.8
SB-7 (2.0-2.5')	8/22/2017		16.0	34.0
SB-7 (4.5-5.0')	8/22/2017		16.9	26.9
SB-8 (0-0.5')	8/21/2017		9.1	12.0
Dup-2 (0-0.5')	8/21/2017		8.9	10.8
SB-8 (2.0-2.5')	8/21/2017		11.2	15.9
SB-8 (4.5-5.0')	8/21/2017		11.7	21.2
SB-9 (0-0.5')	8/23/2017		10.3	20.3
DEP Split [SB-9 (0-0.5')]	8/23/2017		<0.18	11.3
SB-9 (2.0-2.5')	8/23/2017		12.9	20.2
DEP Split [SB-9 (2.0-2.5')]	8/23/2017		<0.18	8.75
SB-9 (4.5-5.0')	8/23/2017		10.2	17.8
SB-9 (19.5-20.0')	8/23/2017		14.0	15.3
SB-10 (0-0.5')	8/22/2017		30.5	89.5
SB-10 (1.5-2.0')	8/22/2017		7.0	13.4
SB-10 (2.0-2.5')	8/22/2017		8.5	11.2
SB-11 (0-0.5')	8/23/2017		12.3	21.6
DEP Split [SB-11 (0-0.5')]	8/23/2017		<0.18	38.5
SB-11 (1.0-1.5')	8/23/2017		13.9	20.1
SB-11 (2.0-2.5')	8/23/2017		11.7	22.0
SB-12 (0-0.5')	8/21/2017		6.4	15.3
SB-12 (2.0-2.5')	8/21/2017		9.0	42.6
SB-12 (13-13.5')	8/21/2017		10.7	15.1
SB-13 (0-0.5')	8/21/2017		8.2	19.7
SB-13 (2.0-2.5')	8/21/2017		6.8	11.5
SB-13 (9.5-10.0')	8/21/2017		7.5	15.2
SB-14 (0-0.5')	8/21/2017		5.6	11.5
SB-14 (1.0-1.5')	8/21/2017		4.8	17.2
SB-14 (2.0-2.5')	8/21/2017		5.9	16.1
SB-15 (0-0.5')	8/21/2017		8.6	16.9
SB-15 (2.0-2.5')	8/21/2017		8.6	15.5
SB-15 (4.5-5.0')	8/21/2017		8.5	14.6
SB-16 (0-0.5')	8/21/2017		10.6	18.1
SB-16 (1.0-1.5')	8/21/2017		7.8	13.7
SB-16 (2.0-2.5')	8/21/2017		9.6	21.5
Dup-1 (2.0-2.5')	8/21/2017		9.6	21.6

Notes:

¹ - West Virginia Industrial Soil De Minimis Standards (June 2017)
mg/kg - milligram per kilogram

BOLD - Detection

J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

Detections above WV Industrial Soil De Minimis Standards are highlighted yellow

TABLE 1B - Soil Analytical Results - Priority Pollutant Pesticides
Project Shuttle
Jefferson Orchard Site
Jefferson County, West Virginia

Constituent			Priority Pollutant Pesticides																			
			Aldrin	Alpha - BHC	Beta - BHC	Gamma - BHC	Delta - BHC	Chlordane	4,4-DDD	4,4-DDE	4,4-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene
Sample ID	Date	Industrial Soil De Minimis Standards ¹ (mg/kg)	3.6	5.6	20	44	NE	160	150	180	150	3.8	10000	NE	NE	380	NE	NE	11	6.2	6300	32
SB-1 (0-0.5')	8/23/2017		<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0204	<0.0198	<0.0198	<0.0198	<0.0198	<0.0102	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<0.0102	<0.0102	<0.0198	<0.210
DEP Split [SB-1 (0-0.5')]	8/23/2017		<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0021	<0.0041	<0.0041	<0.0041	<0.0041	<0.0021	<0.0041	<0.0041	<0.0041	<0.0041	<0.0041	<0.0021	<0.0021	<0.0207	<0.0207
SB-1 (2.0-2.5')	8/23/2017		<0.0103	<0.0103	<0.0103	<0.0103	<0.0103	<0.0206	<0.0201	<0.0201	<0.0201	<0.0103	<0.0201	<0.0201	<0.0201	<0.0201	<0.0201	<0.0201	<0.0103	<0.0103	<0.0201	<0.213
DEP Split [SB-1 (2.0-2.5')]	8/23/2017		<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0051	<0.0051	<0.0051	<0.0051	<0.0026	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0026	<0.0026	<0.0257	<0.0257
SB-1 (9.0-9.5')	8/23/2017		<0.0092	<0.0092	<0.0092	<0.0092	<0.0092	<0.0184	<0.0178	<0.0178	<0.0178	<0.0178	<0.0092	<0.0178	<0.0178	<0.0178	<0.0178	<0.0178	<0.0092	<0.0092	<0.0178	<0.189
SB-2 (0-0.5')	8/21/2017		<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0208	<0.0201	<0.0201	<0.0201	<0.0201	<0.0104	<0.0201	<0.0201	<0.0201	<0.0201	<0.0201	<0.0104	<0.0104	<0.0201	<0.213
SB-2 (1.0-1.5')	8/21/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	<0.0197	<0.0197	<0.0197	<0.0197	<0.0101	<0.0197	<0.0197	<0.0197	<0.0197	<0.0197	<0.0101	<0.0101	<0.0197	<0.209
SB-2 (2.0-2.5')	8/21/2017		<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0210	<0.0204	<0.0204	<0.0204	<0.0204	<0.0105	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0105	<0.0105	<0.0204	<0.216
SB-3 (0-0.5')	8/22/2017		<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0194	<0.0189	0.0076 J	0.003 J	<0.0189	<0.0097	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<0.0097	<0.0097	<0.0189	<0.200
SB-3 (1.0-1.5')	8/22/2017		<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.0194	<0.0194	<0.0194	<0.0194	<0.010	<0.0194	<0.0194	<0.0194	<0.0194	<0.0194	<0.010	<0.010	<0.0194	<0.205
SB-3 (2.0-2.5')	8/22/2017		<0.0104	<0.0104	<0.0104	<0.0104	<0.0104	<0.0208	<0.0203	<0.0203	<0.0203	<0.0203	<0.0104	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0104	<0.0104	<0.0203	<0.215
Dup-3 (2.0-2.5')	8/22/2017		<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0210	<0.0203	<0.0203	<0.0203	<0.0203	<0.0105	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0105	<0.0105	<0.0203	<0.215
SB-4 (0-0.5')	8/22/2017		<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0194	<0.0189	0.0188 J	0.0046 J	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<0.0097	<0.0097	<0.0189	<0.200
SB-4 (0.5-1.0')	8/22/2017		<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0194	<0.0188	<0.0188	<0.0188	<0.0188	<0.0097	<0.0188	<0.0188	<0.0188	<0.0188	<0.0188	<0.0097	<0.0097	<0.0188	<0.200
SB-4 (2.0-2.5')	8/22/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0101	<0.0195	<0.207
SB-5 (0-0.5')	8/21/2017		<0.0081	<0.0081	<0.0081	<0.0081	<0.0081	<0.0162	<0.0158	<0.0158	<0.0158	<0.0158	<0.0081	<0.0158	<0.0158	<0.0158	<0.0158	<0.0158	<0.0081	<0.0081	<0.0158	<0.167
SB-5 (2.0-2.5')	8/21/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	<0.0197	<0.0197	<0.0197	<0.0197	<0.0101	<0.0197	<0.0197	<0.0197	<0.0197	<0.0197	<0.0101	<0.0101	<0.0197	<0.209
SB-5 (14.5-15.0')	8/21/2017		<0.0103	<0.0103	<0.0103	<0.0103	<0.0103	<0.0103	<0.0199	0.0455	0.0198 J	<0.0199	<0.0103	<0.0199	<0.0199	<0.0199	<0.0199	<0.0199	<0.0103	<0.0103	<0.0199	<0.211
SB-5 (19.5-20.0')	8/21/2017		<0.0122	<0.0122	<0.0122	<0.0122	<0.0122	<0.0244	<0.0237	<0.0237	<0.0237	<0.0237	<0.0122	<0.0237	<0.0237	<0.0237	<0.0237	<0.0237	<0.0122	<0.0122	<0.0237	<0.252
SB-6 (0-0.5')	8/22/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0101	<0.0195	<0.0207
SB-6 (0.5-1.0')	8/22/2017		<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0198	<0.0191	<0.0191	<0.0191	<0.0191	<0.0099	<0.0191	<0.0191	<0.0191	<0.0191	<0.0191	<0.0099	<0.0099	<0.0191	<0.203
SB-6 (2.0-2.5')	8/22/2017		<0.0096	<0.0096	<0.0096	<0.0096	<0.0096	<0.0192	<0.0187	<0.0187	<0.0187	<0.0187	<0.0096	<0.0187	<0.0187	<0.0187	<0.0187	<0.0187	<0.0096	<0.0096	<0.0187	<0.198
SB-7 (0-0.5')	8/22/2017		<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0194	0.0195	0.437	0.229	0.0061 J	<0.0097	<0.0188	<0.0188	0.0048 J	<0.0188	<0.0188	<0.0097	<0.0097	<0.0188	<0.199
SB-7 (2.0-2.5')	8/22/2017		<0.011	<0.011	<0.011	<0.011	<0.011	<0.022	<0.0213	0.0043 J	<0.0213	<0.0213	<0.011	<0.0213	<0.0213	<0.0213	<0.0213	<0.0213	<0.011	<0.011	<0.0213	<0.226
SB-7 (4.5-5.0')	8/22/2017		<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0218	<0.0211	<0.0211	<0.0211	<0.0211	<0.0109	<0.0211	<0.0211	<0.0211	<0.0211	<0.0211	<0.0109	<0.0109	<0.0211	<0.224
SB-8 (0-0.5')	8/21/2017		<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0204	<0.0197	0.0173	0.0041 J	<0.0197	<0.0102	<0.0197	<0.0197	<0.0197	<0.0197	<0.0197	<0.0102	<0.0102	<0.0197	<0.209
Dup-2 (0-0.5')	8/21/2017		<0.0082	<0.0082	<0.0082	<0.0082	<0.0082	<0.0164	<0.0160	0.0042 J	0.002 J	<0.0160	<0.0082	<0.0160	<0.0160	<0.0160	<0.0160	<0.0160	<0.0082	<0.0082	<0.0160	<0.169
SB-8 (2.0-2.5')	8/21/2017		<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0210	<0.0203	<0.0203	<0.0203	<0.0203	<0.0105	<0.0203	<0.0203	<0.0203	<0.0203	<0.0203	<0.0105	<0.0105	<0.0203	<0.215
SB-8 (4.5-5.0')	8/21/2017		<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0216	<0.0210	<0.0210	<0.0210	<0.0210	<0.0108	<0.0210	<0.0210	<0.0210	<0.0210	<0.0210	<0.0108	<0.0108	<0.0210	<0.223

Notes:
¹ - West Virginia Industrial Soil De Minimis Standards (June 2017)
mg/kg - milligram per kilogram
NE - Not Established

BOLD - Detection
J - Detected but below the Reporting Limit; therefore, result is an estimated concentration
Detections above WV Industrial Soil De Minimis Standards are highlighted yellow

TABLE 1B - Soil Analytical Results - Priority Pollutant Pesticides
Project Shuttle
Jefferson Orchard Site
Jefferson County, West Virginia

Constituent			Priority Pollutant Pesticides																				
			Aldrin	Alpha - BHC	Beta - BHC	Gamma - BHC	Delta - BHC	Chlordane	4,4-DDD	4,4-DDE	4,4-DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulfate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor epoxide	Methoxychlor	Toxaphene	
Sample ID	Date	Industrial Soil De Minimis Standards ¹ (mg/kg)	3.6	5.6	20	44	NE	160	150	180	150	3.8	10000	NE	NE	380	NE	NE	11	6.2	6300	32	
SB-9 (0-0.5')	8/23/2017		<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.0188	<0.0182	<0.0182	<0.0182	<0.0182	<0.0094	<0.0182	<0.0182	<0.0182	<0.0182	<0.0182	<0.0094	<0.0094	<0.0182	<0.193	
DEP Split [SB-9 (0-0.5')]	8/23/2017		<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0019	<0.0038	<0.0038	<0.0038	<0.0038	<0.0019	<0.0038	<0.0038	<0.0038	<0.0038	<0.0038	<0.0019	<0.0019	<0.0192	<0.0192	
SB-9 (2.0-2.5')	8/23/2017		<0.0112	<0.0112	<0.0112	<0.0112	<0.0112	<0.0224	<0.0217	<0.0217	<0.0217	<0.0217	<0.0112	<0.0217	<0.0217	<0.0217	<0.0217	<0.0217	<0.0112	<0.0112	<0.0217	<0.230	
DEP Split [SB-9 (2.0-2.5')]	8/23/2017		<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0026	<0.0051	<0.0051	<0.0051	<0.0051	<0.0026	<0.0051	<0.0051	<0.0051	<0.0051	<0.0051	<0.0026	<0.0026	<0.0257	<0.0257	
SB-9 (4.5-5.0')	8/23/2017		<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0218	<0.0212	<0.0212	<0.0212	<0.0109	<0.0212	<0.0212	<0.0212	<0.0212	<0.0212	<0.0212	<0.0109	<0.0109	<0.0212	<0.224	
SB-9 (19.5-20.0')	8/23/2017		<0.0114	<0.0114	<0.0114	<0.0114	<0.0114	<0.0228	<0.0221	<0.0221	<0.0221	<0.0221	<0.0114	<0.0221	<0.0221	<0.0221	<0.0221	<0.0221	<0.0114	<0.0114	<0.0221	<0.234	
SB-10 (0-0.5')	8/22/2017		<0.0102	<0.0102	<0.0102	<0.0102	<0.0102	<0.0204	0.0099 J	0.303	0.0974	<0.0198	<0.0102	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<0.0102	<0.0102	<0.0198	<0.210	
SB-10 (1.5-2.0')	8/22/2017		<0.0094	<0.0094	<0.0094	<0.0094	<0.0094	<0.0188	<0.0183	0.0163 J	0.005 J	<0.0183	<0.0094	<0.0183	<0.0183	<0.0183	<0.0183	<0.0183	<0.0094	<0.0094	<0.0183	<0.194	
SB-10 (2.0-2.5')	8/22/2017		<0.0103	<0.0103	<0.0103	<0.0103	<0.0103	<0.0206	<0.020	<0.020	<0.020	<0.020	<0.0103	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.0103	<0.0103	<0.020	<0.212
SB-11 (0-0.5')	8/23/2017		<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0196	0.0146 J	0.746	0.292	0.006 J	<0.0098	<0.0191	<0.0191	<0.0191	<0.0191	<0.0191	<0.0098	<0.0098	<0.0191	<0.202	
DEP Split [SB-11 (0-0.5')]	8/23/2017		<0.0024	<0.0024	<0.0024	<0.0024	<0.0024	<0.0024	<0.0048	0.0784	0.0415	<0.0048	<0.0024	<0.0048	<0.0048	0.006	<0.0048	<0.0048	<0.0024	<0.0024	<0.0239	<0.0239	
SB-11 (1.0-1.5')	8/23/2017		<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	<0.0196	<0.0191	<0.0191	<0.0191	<0.0191	<0.0098	<0.0191	<0.0191	<0.0191	<0.0191	<0.0191	<0.0098	<0.0098	<0.0191	<0.202	
SB-11 (2.0-2.5')	8/23/2017		<0.0108	<0.0108	<0.0108	<0.0108	<0.0108	<0.0216	<0.0210	<0.0210	<0.0210	<0.0210	<0.0108	<0.0210	<0.0210	<0.0210	<0.0210	<0.0210	<0.0108	<0.0108	<0.0210	<0.222	
SB-12 (0-0.5')	8/21/2017		<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0198	<0.0192	0.005 J	0.0025 J	<0.0192	<0.0099	<0.0192	<0.0192	<0.0192	<0.0192	<0.0192	<0.0099	<0.0099	<0.0192	<0.204	
SB-12 (2.0-2.5')	8/21/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	<0.0196	<0.0196	<0.0196	<0.0196	<0.0101	<0.0196	<0.0196	<0.0196	<0.0196	<0.0196	<0.0101	<0.0101	<0.0196	<0.208	
SB-12 (13-13.5')	8/21/2017		<0.0109	<0.0109	<0.0109	<0.0109	<0.0109	<0.0218	<0.0212	<0.0212	<0.0212	<0.0212	<0.0109	<0.0212	<0.0212	<0.0212	<0.0212	<0.0212	<0.0109	<0.0109	<0.0212	<0.225	
SB-13 (0-0.5')	8/21/2017		<0.0095	<0.0095	<0.0095	<0.0095	<0.0095	<0.0190	0.0067 J	0.156	0.0507	<0.0185	<0.0095	<0.0185	<0.0185	<0.0185	<0.0185	<0.0185	<0.0095	<0.0095	<0.0185	<0.196	
SB-13 (2.0-2.5')	8/21/2017		<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0210	<0.0204	<0.0204	<0.0204	<0.0204	<0.0105	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0105	<0.0105	<0.0204	<0.216	
SB-13 (9.5-10.0')	8/21/2017		<0.0115	<0.0115	<0.0115	<0.0115	<0.0115	<0.0230	<0.0222	<0.0222	<0.0222	<0.0222	<0.0115	<0.0222	<0.0222	<0.0222	<0.0222	<0.0222	<0.0115	<0.0115	<0.0222	<0.236	
SB-14 (0-0.5')	8/21/2017		<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0198	<0.0192	<0.0192	<0.0192	<0.0192	<0.0099	<0.0192	<0.0192	<0.0192	<0.0192	<0.0192	<0.0099	<0.0099	<0.0192	<0.204	
SB-14 (1.0-1.5')	8/21/2017		<0.010	<0.010	<0.010	<0.010	<0.010	<0.020	<0.0194	<0.0194	<0.0194	<0.0194	<0.010	<0.0194	<0.0194	<0.0194	<0.0194	<0.0194	<0.010	<0.010	<0.0194	<0.206	
SB-14 (2.0-2.5')	8/21/2017		<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0198	<0.0192	<0.0192	<0.0192	<0.0192	<0.0099	<0.0192	<0.0192	<0.0192	<0.0192	<0.0192	<0.0099	<0.0099	<0.0192	<0.203	
SB-15 (0-0.5')	8/21/2017		<0.0099	<0.0099	<0.0099	<0.0099	<0.0099	<0.0198	0.0091 J	0.217	0.0509	0.0034 J	<0.0099	<0.0192	<0.0192	<0.0192	<0.0192	<0.0192	<0.0099	<0.0099	<0.0192	<0.204	
SB-15 (2.0-2.5')	8/21/2017		<0.008	<0.008	<0.008	<0.008	<0.008	<0.0160	<0.0155	<0.0155	0.0036 J	<0.0155	<0.0080	<0.0155	<0.0155	<0.0155	<0.0155	<0.0155	<0.008	<0.008	<0.0155	<0.164	
SB-15 (4.5-5.0')	8/21/2017		<0.0103	<0.0103	<0.0103	<0.0103	<0.0103	<0.0206	<0.0200	<0.0200	<0.0200	<0.0200	<0.0103	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0103	<0.0103	<0.0200	<0.212	
SB-16 (0-0.5')	8/21/2017		<0.0102	0.0458	0.107	0.0663	0.0169	<0.0204	0.0594	2.02	1.15	0.0254	<0.0102	<0.0198	<0.0198	<0.0198	<0.0198	<0.0198	<0.0102	<0.0102	<0.0198	<0.210	
SB-16 (1.0-1.5')	8/21/2017		<0.0097	<0.0097	<0.0097	<0.0097	<0.0097	<0.0194	<0.0189	<0.0189	<0.0189	<0.0189	<0.0097	<0.0189	<0.0189	<0.0189	<0.0189	<0.0189	<0.0097	<0.0097	<0.0189	<0.200	
SB-16 (2.0-2.5')	8/21/2017		<0.0101	<0.0101	<0.0101	<0.0101	<0.0101	<0.0202	0.0024 J	0.0353	0.0204	<0.0195	<0.0101	<0.0195	<0.0195	<0.0195	<0.0195	<0.0195	<0.0101	<0.0101	<0.0195	<0.207	
Dup-1 (2.0-2.5')	8/21/2017		<0.0105	<0.0105	<0.0105	<0.0105	<0.0105	<0.0210	<0.0204	<0.0204	<0.0204	<0.0204	<0.0105	<0.0204	<0.0204	<0.0204	<0.0204	<0.0204	<0.0105	<0.0105	<0.0204	<0.216	

Notes:
¹ - West Virginia Industrial Soil De Minimis Standards (June 2017)
mg/kg - milligram per kilogram
NE - Not Established
BOLD - Detection
J - Detected but below the Reporting Limit; therefore, result is an estimated concentration

Detections above WV Industrial Soil De Minimis Standards are highlighted yellow

TABLE 1C - QAQC Analytical Results
Project Shuttle
Jefferson Orchard Site
Jefferson County, West Virginia

Constituent	Groundwater De Minimis Standards ¹ (ug/L)	Sample ID	ER-1	ER-2	ER-3
		Date	8/21/2017	8/22/2017	8/23/2017
Inorganics					
Arsenic	10		<3.3	<3.3	<3.3
Lead	15		<2.2	<2.2	<2.2
Priority Pollutant Pesticides					
Aldrin	0.00092		<0.021	<0.020	<0.021
Alpha-BHC	0.0072		<0.021	<0.020	<0.021
Beta-BHC	0.025		<0.021	<0.020	<0.021
Delta-BHC	NE		<0.021	<0.020	<0.021
Gamma-BHC	0.2		<0.021	<0.020	<0.021
Chlordane	2		<0.021	<0.020	<0.021
4,4-DDD	0.032		<0.021	<0.020	<0.021
4,4-DDE	0.046		<0.021	<0.020	<0.021
4,4-DDT	0.23		<0.021	<0.020	<0.021
Dieldrin	0.00072		<0.021	<0.020	<0.021
Endosulfan I	31		<0.021	<0.020	<0.021
Endosulfan II	NE		<0.021	<0.020	<0.021
Endosulfan sulfate	NE		<0.021	<0.020	<0.021
Endrin	2		<0.021	<0.020	<0.021
Endrin aldehyde	NE		<0.021	<0.020	<0.021
Endrin ketone	NE		<0.021	<0.020	<0.021
Heptachlor	0.4		<0.021	<0.020	<0.021
Heptachlor epoxide	0.2		<0.021	<0.020	<0.021
Methoxychlor	40		<0.021	<0.020	<0.021
Toxaphene	3		<1.1	<0.98	<1.0

Notes:

¹ - West Virginia Groundwater De Minimis Standards (June 2017)

ug/L - microgram per liter

NE - Not Established

ER- equipment rinse blank sample

BOLD - Detection

Laboratory detection limits reported above WV Groundwater De Minimis Standards are highlighted blue

Appendix A
Calibration Logs

Calibration Log

Project Name: Roxul

Project Number: 0407978

Page: 1 of 1

By: T. Fewell & R. Baisden

Date: 8/21/2017 to 8/23/2017

Instrument SN: 592-000359

Date	Time	Instrument	Standard	Standard Concentration	Meter Reading	Comments
8/21/2017	7:45	MiniRAE 3000	Isobutylene	100 ppm	100ppm	--
8/22/2017	8:00	MiniRAE 3000	Isobutylene	100 ppm	100ppm	--
8/23/2017	8:40	MiniRAE 3000	Isobutylene	100 ppm	100ppm	--

Appendix B
Soil Boring Logs



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-1**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/23/2017
FINISH 08/23/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 324595.066
EASTING 2427226.212
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 9.5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ∇
DEPTH TO WATER (FINAL) ∇

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
2	[Topsoil, sand, silt, clays, loose, brown, dry-moist]	1				60/60		[(0-0.5ft) (28, 46, 56)]
	[Silt and clay, medium stiff, brown, moist]							[(0.5-1ft) (28, 46, 56)] [(1-1.5ft) (28, 46, 56)] [(1.5-2ft) (28, 46, 56)] [(2-2.5ft) (28, 46, 56)]
4								[(4.5-5ft) (28, 46, 56)]
6								
8								
	[Sand and silt]	9						
	[Bedrock]	9.3						[(9-9.5ft) (28, 46, 56)]
		9.5						

REMARKS:

LAB ANALYSIS:

28 = Pesticides

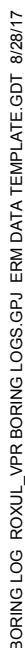
46 = Arsenic

56 = Lead



Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17





PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-3**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/22/2017
FINISH 08/22/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 324114.798
EASTING 2427134.165
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ▼
DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil, silt, clay, fine sand, loose, ditrial]				60/60		1.7	[(0-0.5ft) (28, 46, 56)]
							1.6	[(0.5-1ft) (28, 46, 56)]
2	[Silt and clay, trace fine sand, loose, brown]	1					1.8	[(1-1.5ft) (28, 46, 56)]
	[Silt and fine sand, loose, brown, moist]	1.5					2	[(1.5-2ft) (28, 46, 56)]
							2.5	[(2-2.5ft) (28, 46, 56)]
3	[Silt and clay, trace fine sand, brown, moist]	3					2.1	
4							2	
							1.9	[(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:
28 = Pesticides
46 = Arsenic
56 = Lead

 Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-4**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/22/2017
FINISH 08/22/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 324079.598
EASTING 2426222.841
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ▼
DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil, silt, clay, fine sand, loose, ditrital, dry]				60/60		2.7	[(0-0.5ft) (28, 46, 56)]
	[Silt and fine sand, loose, brown, dry]	0.5					2.2	[(0.5-1ft) (28, 46, 56)]
	[Silt and clay, trace fine sand, stiff, brown, moist]	1					2.8	[(1-1.5ft) (28, 46, 56)]
2							4.7	[(1.5-2ft) (28, 46, 56)]
							3.4	[(2-2.5ft) (28, 46, 56)]
3							2.7	
	[Fine sand and silt, loose, brown, moist]	3.5						
4	[Silt and clay, trace fine sand, brown, moist]	4					2.1	
							0.6	[(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:
28 = Pesticides
46 = Arsenic
56 = Lead

 Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
Report

BORING # **SB-5**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

A-Zone
West Virginia

DRILLING FOREMAN

Eric Linderburg

DRILLING METHOD

Direct Push

DRILLING EQUIPMENT

Geoprobe 7822DT

ERM REPRESENTATIVE

R. Baisden

OFFICE LOCATION

Hurricane, WV

DATE: START

08/21/2017

FINISH

08/21/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))

NORTHING 323910.884

EASTING 2426607.801

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH

22 ft

BOREHOLE DIAMETER

2 in

DEPTH TO WATER (INITIAL) ▾

DEPTH TO WATER (FINAL) ▾

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-6**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/22/2017
FINISH 08/22/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 323660.967
EASTING 2427085.599
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ▼
DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil, silt, clay]						1.9	[(0-0.5ft) (28, 46, 56)]
	[Silt and clay, some fine sand, loose, brown, moist]	0.5					2.9	[(0.5-1ft) (28, 46, 56)]
							2.8	[(1-1.5ft) (28, 46, 56)]
							2.1	[(1.5-2ft) (28, 46, 56)]
2	[Fine sand and silt, loose, brown, moist]	2					3.9	[(2-2.5ft) (28, 46, 56)]
3						60/60	2.8	
4							2.5	
							2.2	[(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:
28 = Pesticides
46 = Arsenic
56 = Lead



Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-7**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/22/2017
FINISH 08/22/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 323731.229
EASTING 2427590.735
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ▼
DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil, silt, fine sand, ditrital]						1	[(0-0.5ft) (28, 46, 56)]
	[Silt, fine sand, loose, brown, moist]	0.5					0.5	[(0.5-1ft) (28, 46, 56)]
							1.5	[(1-1.5ft) (28, 46, 56)]
2	[Silt and clay, trace fine sand, brown, moist]	1.5					1.6	[(1.5-2ft) (28, 46, 56)]
	[Silt and clay, brown, moist]	2					1.6	[(2-2.5ft) (28, 46, 56)]
3						60/60	1.3	
4							1.2	
							0.9	[(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:
28 = Pesticides
46 = Arsenic
56 = Lead

 Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-8**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/21/2017
FINISH 08/21/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 323250.344
EASTING 2426721.892
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ▽
DEPTH TO WATER (FINAL) ▽

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil, silt, clay, some fine sand and gravel, dark brown, loose, moist]							[(0-0.5ft) (28, 46, 56)]
	[Silt, clay, trace fine sand, not very plastic, stiff, brown to tan]	0.5						[(0.5-1ft) (28, 46, 56)]
2								[(1-1.5ft) (28, 46, 56)]
								[(1.5-2ft) (28, 46, 56)]
3								[(2-2.5ft) (28, 46, 56)]
4								
								[(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:
28 = Pesticides
46 = Arsenic
56 = Lead

 Direct push geoprobe sample



PROJECT:

Roxul
Roxul VRP Site Characterization
Report

BORING # **SB-9**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR DRILLING FOREMAN DRILLING METHOD DRILLING EQUIPMENT	A-Zone West Virginia Eric Linderburg Direct Push Geoprobe 7822DT	ERM REPRESENTATIVE OFFICE LOCATION DATE: START FINISH	R. Baisden Hurricane, WV 08/23/2017 08/23/2017
HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet)) NORTHING 323237.733 EASTING 2427222.537 VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION		BOREHOLE DEPTH 20 ft BOREHOLE DIAMETER 2 in DEPTH TO WATER (INITIAL) ▾ DEPTH TO WATER (FINAL) ▾	

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
2	[Topsoil, silt and clay, some sand, loose, ditrital, dark brown, moist]	1.5			60/60		0.6	[(0-0.5ft) (28, 46, 56)]
	0						[(0.5-1ft) (28, 46, 56)]	
	0.1						[(1-1.5ft) (28, 46, 56)]	
	0.9						[(1.5-2ft) (28, 46, 56)]	
	1.1						[(2-2.5ft) (28, 46, 56)]	
	1.4							
	0							
	1.7						[(4.5-5ft) (28, 46, 56)]	
	1.1							
	0							
6					60/60		1.2	
							1.3	
							1.9	[(9.5-10ft) (28, 46, 56)]
							0	
10	[Silt and clay, trace fine sand (less than above interval), plastic, stiff, moist]	10			60/60			
14					60/60			
18	[Silt and clay, trace fine sand (less than above interval), plastic, stiff, moist. Bedrock at end: Limestone thinly bedded]	15			60/60			[(14.5-15ft) (28, 46, 56)]
					60/60		0	
								[(19.5-20ft) (28, 46, 56)]

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead

BORING LOG ROXUL_VRP BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-10**

ERM PROJECT # 0407978

SHEET 1 OF 2

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/22/2017
FINISH 08/22/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 322951.615
EASTING 2427572.238
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ▾
DEPTH TO WATER (FINAL) ▾

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA				
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks	
1	[Topsoil, silt, fine sand, ditrital]	1			60/60	2	[(0-0.5ft) (28, 46, 56)]		
	2.1					[(0.5-1ft) (28, 46, 56)]			
	[Sand and silt, loose, brown, moist. Sand is coarser with depth]					1.2	[(1-1.5ft) (28, 46, 56)]		
						1.3	[(1.5-2ft) (28, 46, 56)]		
2					60/60	1.2	[(2-2.5ft) (28, 46, 56)]		
3						1			
						[Fine to medium sand, some silt, loose, brown]			
4					60/60	1			
[Silt and clay, trace fine sand, loose, brown]									
							0.9	[(4.5-5ft) (28, 46, 56)]	

REMARKS:

LAB ANALYSIS:
28 = Pesticides
46 = Arsenic
56 = Lead

 Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-11**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/23/2017
FINISH 08/23/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 322734.643
EASTING 2427008.912
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ▼
DEPTH TO WATER (FINAL) ▼

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil, silt and clay, fine sand, loose, ditrital, moist]	0.5				60/60	0.4	[(0-0.5ft) (28, 46, 56)]
	[Silt and clay, fine sand, medium plastic, light brown to tan, moist]						0.2	[(0.5-1ft) (28, 46, 56)]
2							0.1	[(1-1.5ft) (28, 46, 56)]
							0.7	[(1.5-2ft) (28, 46, 56)]
3							2.2	[(2-2.5ft) (28, 46, 56)]
							0.7	
4							1.4	
							0	[(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:
28 = Pesticides
46 = Arsenic
56 = Lead



Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
Report

BORING # **SB-12**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR

A-Zone
West Virginia

DRILLING FOREMAN

Eric Linderburg

DRILLING METHOD

Direct Push

DRILLING EQUIPMENT

Geoprobe 7822DT

ERM REPRESENTATIVE

R. Baisden

OFFICE LOCATION

Hurricane, WV

DATE: START

08/21/2017

FINISH

08/21/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))

NORTHING 322561.94

EASTING 2427546.94

VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH

13.5 ft

BOREHOLE DIAMETER

2 in

DEPTH TO WATER (INITIAL) ▾

DEPTH TO WATER (FINAL) ▾

REMARKS:

Direct push geoprobe sample

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-13**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DTERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/21/2017
FINISH 08/21/2017HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 322320.356
EASTING 2426777.535
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATIONBOREHOLE DEPTH 25 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ∇
DEPTH TO WATER (FINAL) ∇

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
5	[Topsoils, silt and clay, some fine sand, trace gravel, loose, ditrital, dark brown, moist]	0.5	---					[(0-0.5ft) (28, 46, 56)]
	[Silt and clay, trace fine sand, not plastic, stiff, light brown to tan]							[(0.5-1ft) (28, 46, 56)]
								[(1-1.5ft) (28, 46, 56)]
								[(1.5-2ft) (28, 46, 56)]
								[(2-2.5ft) (28, 46, 56)]
						60/60	0	
								[(4.5-5ft) (28, 46, 56)]
	[Silt and clay, trace fine sand, not plastic, stiff, light brown to tan; more fine sand at 4 foot depth]	5						
						60/60	0	
							0.4	
10	[Silt and fine sand, loose, some clay, tan, moist]	10					0	[(9.5-10ft) (28, 46, 56)]
	[Silt and clays, some fine sand, plastic, light brown, moist]	11	---					
	[Silt and fine sand, loose, some clay, tan, moist]	12	---					
	[Silt and clay, some fine sand, plastic, light brown, moist]	13	---			60/60	0	
15	[silt and fine sand, some clays, loose, tan, moist]	15						[(14.5-15ft) (28, 46, 56)]
	[Silt and clays, trace fine sand, plastic, light brown, moist]	16.5	---					
20						60/60	0	
								[(19.5-20ft) (28, 46, 56)]
						60/60	0	
								[(24.5-25ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead



Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-14**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/21/2017
FINISH 08/21/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 322260.402
EASTING 2427347.629
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ∇
DEPTH TO WATER (FINAL) ∇

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	Observations / Remarks
1	[Topsoil, silt and clay, some sand, trace gravel, dark brown]				60/60		0	[(0-0.5ft) (28, 46, 56)]
				[(0.5-1ft) (28, 46, 56)]				
				[(1-1.5ft) (28, 46, 56)]				
2	[Silt and clay, trace fine sand, not plastic, medium stiff, light brown to tan]	1.5						[(1.5-2ft) (28, 46, 56)]
				[(2-2.5ft) (28, 46, 56)]				
3								
4								
								[(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead



Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-15**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/21/2017
FINISH 08/21/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 321927.466
EASTING 2426962.8
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ▽
DEPTH TO WATER (FINAL) ▽

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
1	[Topsoil, silt and clay, some sand, ditrital, dark brown, loose, moist]							[(0-0.5ft) (28, 46, 56)]
	[Silt an dclay, some fine sand, medium plasticity light brown to tan, moist]	0.5						[(0.5-1ft) (28, 46, 56)]
2								[(1-1.5ft) (28, 46, 56)]
								[(1.5-2ft) (28, 46, 56)]
3								[(2-2.5ft) (28, 46, 56)]
4								[(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:
28 = Pesticides
46 = Arsenic
56 = Lead

 Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17



PROJECT:

Roxul
Roxul VRP Site Characterization
ReportBORING # **SB-16**

ERM PROJECT # 0407978

SHEET 1 OF 1

DRILLING CONTRACTOR A-Zone
West Virginia
DRILLING FOREMAN Eric Linderburg
DRILLING METHOD Direct Push
DRILLING EQUIPMENT Geoprobe 7822DT

ERM REPRESENTATIVE R. Baisden
OFFICE LOCATION Hurricane, WV
DATE: START 08/21/2017
FINISH 08/21/2017

HORIZONTAL DATUM (NAD 1983 StatePlane West Virginia N (US Feet))
NORTHING 321767.601
EASTING 2427496.241
VERTICAL DATUM (NAVD 88 (US Feet)) ELEVATION

BOREHOLE DEPTH 5 ft
BOREHOLE DIAMETER 2 in
DEPTH TO WATER (INITIAL) ▾
DEPTH TO WATER (FINAL) ▾

DEPTH ELEVATION	STRATA DESCRIPTION	DEPTH	USCS	GRAPHIC LOG	SAMPLING DATA			Observations / Remarks
					SAMPLE TYPE	RECOVERY	PID (ppm) 10.6 eV Lamp	
	[Topsoil, silt and clay, fine sand, trace gravel, loose, ditrital, dark brown]							
	[Silt and clay, trace fine sand, slightly plastic, light brown to tan, moist]	0.5						
1								[(0.5-1ft) (28, 46, 56)]
								[(1-1.5ft) (28, 46, 56)]
2								[(1.5-2ft) (28, 46, 56)]
								[(2-2.5ft) (28, 46, 56)]
3								[(0-5ft) (28, 46, 56)]
4								
								[(4.5-5ft) (28, 46, 56)]

REMARKS:

LAB ANALYSIS:

28 = Pesticides

46 = Arsenic

56 = Lead



Direct push geoprobe sample

BORING LOG ROXUL_VPR BORING LOGS.GPJ ERM DATA TEMPLATE.GDT 8/28/17

Appendix C

Analytical Soil Data Reports

September 7, 2017

Mr. David Connelly
Environmental Resource Management (ERM)-WV
204 Chase Drive
Hurricane, WV 25526

Certificate of Analysis

Revised Report - 9/7/2017 3:29:56 PM - See workorder comment section for explanation

Project Name:	2017-JEFFERSON COUNTY	Workorder:	2255972
Purchase Order:		Workorder ID:	ERM154 JEFFERSON COUNTY WV

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Tuesday, August 22, 2017 and Saturday, September 2, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

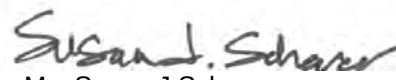
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.


Ms. Susan J Scherer
Project Coordinator

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SAMPLE SUMMARY

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255972001	SB-15 (0'-0.5')	Solid	8/21/2017 08:50	8/22/2017 16:50	Collected by Client
2255972002	SB-15 (0.5'-1.0')	Other	8/21/2017 08:52	8/22/2017 16:50	Collected by Client
2255972003	SB-15 (1.0'-1.5')	Other	8/21/2017 08:54	8/22/2017 16:50	Collected by Client
2255972004	SB-15 (1.5'-2.0')	Other	8/21/2017 08:56	8/22/2017 16:50	Collected by Client
2255972005	SB-15 (2.0'-2.5')	Other	8/21/2017 08:58	8/22/2017 16:50	Collected by Client
2255972006	SB-15 (4.5'-5.0')	Solid	8/21/2017 09:00	9/2/2017 19:09	Collected by Client
2255972007	SB-13 (0'-0.5')	Solid	8/21/2017 09:20	8/22/2017 16:50	Collected by Client
2255972008	SB-13 (0.5'-1.0')	Other	8/21/2017 09:22	8/22/2017 16:50	Collected by Client
2255972009	SB-13 (1.0'-1.5')	Other	8/21/2017 09:24	8/22/2017 16:50	Collected by Client
2255972010	SB-13 (1.5'-2.0')	Other	8/21/2017 09:26	8/22/2017 16:50	Collected by Client
2255972011	SB-13 (2.0'-2.5')	Solid	8/21/2017 09:28	8/22/2017 16:50	Collected by Client
2255972012	SB-13 (4.5'-5.0')	Other	8/21/2017 09:30	8/22/2017 16:50	Collected by Client
2255972013	SB-13 (9.5'-10.0')	Solid	8/21/2017 09:35	9/2/2017 19:09	Collected by Client
2255972014	SB-13 (14.5'-15.0')	Other	8/21/2017 09:40	8/22/2017 16:50	Collected by Client
2255972015	SB-13 (19.5'-20.0')	Other	8/21/2017 09:45	8/22/2017 16:50	Collected by Client
2255972016	SB-13 (24.5'-25.0')	Other	8/21/2017 09:50	8/22/2017 16:50	Collected by Client
2255972017	SB-16 (0'-0.5')	Solid	8/21/2017 10:35	8/22/2017 16:50	Collected by Client
2255972018	SB-16 (0.5'-1.0')	Other	8/21/2017 10:37	8/22/2017 16:50	Collected by Client
2255972019	SB-16 (1.0'-1.5')	Solid	8/21/2017 10:39	9/2/2017 19:09	Collected by Client
2255972020	SB-16 (1.5'-2.0')	Other	8/21/2017 10:41	8/22/2017 16:50	Collected by Client
2255972021	SB-16 (2.0'-2.5')	Solid	8/21/2017 10:43	8/22/2017 16:50	Collected by Client
2255972022	SB-16 (4.5'-5.0')	Other	8/21/2017 10:45	8/22/2017 16:50	Collected by Client
2255972023	DUP-1	Solid	8/21/2017 07:00	8/22/2017 16:50	Collected by Client
2255972024	ER-1	Water	8/21/2017 10:50	8/22/2017 16:50	Collected by Client
2255972025	SB-14 (0'-0.5')	Solid	8/21/2017 11:15	8/22/2017 16:50	Collected by Client
2255972026	SB-14 (0.5'-1.0')	Other	8/21/2017 11:17	8/22/2017 16:50	Collected by Client
2255972027	SB-14 (1.0'-1.5')	Solid	8/21/2017 11:19	9/2/2017 19:09	Collected by Client
2255972028	SB-14 (1.5'-2.0')	Other	8/21/2017 11:21	8/22/2017 16:50	Collected by Client
2255972029	SB-14 (2.0'-2.5')	Solid	8/21/2017 11:23	8/22/2017 16:50	Collected by Client
2255972030	SB-14 (4.5'-5.0')	Other	8/21/2017 11:25	8/22/2017 16:50	Collected by Client
2255972031	SB-12 (0'-0.5')	Solid	8/21/2017 11:40	8/22/2017 16:50	Collected by Client
2255972032	SB-12 (0.5'-1.0')	Other	8/21/2017 11:42	8/22/2017 16:50	Collected by Client

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SAMPLE SUMMARY

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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**PROJECT SUMMARY**

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 09/02/17 at 1909. SJS 09/05/17

Here are the additional samples that can be released from hold status and analyzed.

Sample Comments

Lab ID: 2255972001	Sample ID: SB-15 (0'-0.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255972005	Sample ID: SB-15 (2.0'-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255972006	Sample ID: SB-15 (4.5'-5.0')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255972007	Sample ID: SB-13 (0'-0.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255972011	Sample ID: SB-13 (2.0'-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255972013	Sample ID: SB-13 (9.5'-10.0')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255972017	Sample ID: SB-16 (0'-0.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255972019	Sample ID: SB-16 (1.0'-1.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255972021	Sample ID: SB-16 (2.0'-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255972023	Sample ID: DUP-1	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		

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**PROJECT SUMMARY**

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: 2255972025 **Sample ID:** SB-14 (0'-0.5') **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2255972027 **Sample ID:** SB-14 (1.0'-1.5') **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2255972029 **Sample ID:** SB-14 (2.0'-2.5') **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2255972031 **Sample ID:** SB-12 (0'-0.5') **Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972001**
Sample ID: **SB-15 (0'-0.5')**

Date Collected: 8/21/2017 08:50 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.9 U	U	ug/kg	9.9	3.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
alpha-BHC	9.9 U	U	ug/kg	9.9	0.87	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
beta-BHC	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
delta-BHC	9.9 U	U	ug/kg	9.9	0.76	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
gamma-BHC	9.9 U	U	ug/kg	9.9	0.82	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
alpha-Chlordane	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
gamma-Chlordane	9.9 U	U	ug/kg	9.9	1.7	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
4,4'-DDD	9.1J	J	ug/kg	19.2	1.6	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
4,4'-DDE	217		ug/kg	19.2	2.6	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
4,4'-DDT	50.9		ug/kg	19.2	2.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Dieldrin	3.4J	J	ug/kg	19.2	2.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Endosulfan I	9.9 U	U	ug/kg	9.9	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Endosulfan II	19.2 U	U	ug/kg	19.2	4.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Endosulfan Sulfate	19.2 U	U	ug/kg	19.2	1.3	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Endrin	19.2 U	U	ug/kg	19.2	1.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Endrin Aldehyde	19.2 U	U	ug/kg	19.2	2.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Endrin Ketone	19.2 U	U	ug/kg	19.2	2.7	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Heptachlor	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Heptachlor Epoxide	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Methoxychlor	19.2 U	U	ug/kg	19.2	2.6	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Toxaphene	204 U	U	ug/kg	204	33.8	SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	60		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
Tetrachloro-m-xylene (S)	65.6		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/28/17 01:14 RWS	A	
WET CHEMISTRY										
Moisture	15.3		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	84.7		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	8.6		mg/kg	1.6	0.55	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:27	ZMC	A1
Lead, Total	16.9		mg/kg	1.1	0.36	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:27	ZMC	A1

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NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972001**
Sample ID: **SB-15 (0'-0.5')**

Date Collected: 8/21/2017 08:50 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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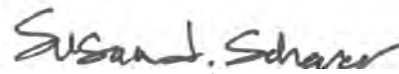
ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972005**
Sample ID: **SB-15 (2.0'-2.5')**

Date Collected: 8/21/2017 08:58 Matrix: Other
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	8.0 U	U	ug/kg	8.0	2.6	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
alpha-BHC	8.0 U	U	ug/kg	8.0	0.70	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
beta-BHC	8.0 U	U	ug/kg	8.0	0.84	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
delta-BHC	8.0 U	U	ug/kg	8.0	0.61	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
gamma-BHC	8.0 U	U	ug/kg	8.0	0.66	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
alpha-Chlordane	8.0 U	U	ug/kg	8.0	0.84	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
gamma-Chlordane	8.0 U	U	ug/kg	8.0	1.4	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
4,4'-DDD	15.5 U	U	ug/kg	15.5	1.3	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
4,4'-DDE	15.5 U	U	ug/kg	15.5	2.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
4,4'-DDT	3.6J	J	ug/kg	15.5	1.8	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Dieldrin	15.5 U	U	ug/kg	15.5	1.8	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Endosulfan I	8.0 U	U	ug/kg	8.0	0.98	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Endosulfan II	15.5 U	U	ug/kg	15.5	3.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Endosulfan Sulfate	15.5 U	U	ug/kg	15.5	1.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Endrin	15.5 U	U	ug/kg	15.5	1.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Endrin Aldehyde	15.5 U	U	ug/kg	15.5	1.7	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Endrin Ketone	15.5 U	U	ug/kg	15.5	2.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Heptachlor	8.0 U	U	ug/kg	8.0	0.80	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Heptachlor Epoxide	8.0 U	U	ug/kg	8.0	0.80	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Methoxychlor	15.5 U	U	ug/kg	15.5	2.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Toxaphene	164 U	U	ug/kg	164	27.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	57.5		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
Tetrachloro-m-xylene (S)	59.7		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:01	RWS	B
METALS										
Arsenic, Total	8.6		mg/kg	1.5	0.50	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:31	ZMC	B1
Lead, Total	15.5		mg/kg	1.0	0.33	SW846 6020A	8/24/17 00:35 LXC	8/24/17 10:31	ZMC	B1


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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972006** Date Collected: 8/21/2017 09:00 Matrix: Solid
Sample ID: **SB-15 (4.5'-5.0')** Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.3 U	U	ug/kg	10.3	3.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
alpha-BHC	10.3 U	U	ug/kg	10.3	0.91	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
beta-BHC	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
delta-BHC	10.3 U	U	ug/kg	10.3	0.79	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
gamma-BHC	10.3 U	U	ug/kg	10.3	0.85	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
alpha-Chlordane	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
gamma-Chlordane	10.3 U	U	ug/kg	10.3	1.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
4,4'-DDD	20.0 U	U	ug/kg	20.0	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
4,4'-DDE	20.0 U	U	ug/kg	20.0	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
4,4'-DDT	20.0 U	U	ug/kg	20.0	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Dieldrin	20.0 U	U	ug/kg	20.0	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Endosulfan I	10.3 U	U	ug/kg	10.3	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Endosulfan II	20.0 U	U	ug/kg	20.0	4.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Endosulfan Sulfate	20.0 U	U	ug/kg	20.0	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Endrin	20.0 U	U	ug/kg	20.0	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Endrin Aldehyde	20.0 U	U	ug/kg	20.0	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Endrin Ketone	20.0 U	U	ug/kg	20.0	2.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Heptachlor	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Heptachlor Epoxide	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Methoxychlor	20.0 U	U	ug/kg	20.0	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Toxaphene	212 U	U	ug/kg	212	35.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	64.8		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
Tetrachloro-m-xylene (S)	60.7		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:40	RWS	B
WET CHEMISTRY										
Moisture	20.3		%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
Total Solids	79.7	1	%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
METALS										
Arsenic, Total	8.5		mg/kg	1.7	0.58	SW846 6020A	9/5/17 01:30 LXC	9/5/17 05:54	ZMC	B1
Lead, Total	14.6		mg/kg	1.2	0.38	SW846 6020A	9/5/17 01:30 LXC	9/5/17 05:54	ZMC	B1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972006**
Sample ID: **SB-15 (4.5'-5.0')**

Date Collected: 8/21/2017 09:00 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972007**
Sample ID: **SB-13 (0'-0.5')**

Date Collected: 8/21/2017 09:20 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.5 U	U	ug/kg	9.5	3.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
alpha-BHC	9.5 U	U	ug/kg	9.5	0.84	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
beta-BHC	9.5 U	U	ug/kg	9.5	1.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
delta-BHC	9.5 U	U	ug/kg	9.5	0.73	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
gamma-BHC	9.5 U	U	ug/kg	9.5	0.78	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
alpha-Chlordane	9.5 U	U	ug/kg	9.5	1.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
gamma-Chlordane	9.5 U	U	ug/kg	9.5	1.6	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
4,4'-DDD	6.7J	J	ug/kg	18.5	1.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
4,4'-DDE	156		ug/kg	18.5	2.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
4,4'-DDT	50.7		ug/kg	18.5	2.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Dieldrin	18.5 U	U	ug/kg	18.5	2.1	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Endosulfan I	9.5 U	U	ug/kg	9.5	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Endosulfan II	18.5 U	U	ug/kg	18.5	3.9	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Endosulfan Sulfate	18.5 U	U	ug/kg	18.5	1.2	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Endrin	18.5 U	U	ug/kg	18.5	1.3	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Endrin Aldehyde	18.5 U	U	ug/kg	18.5	2.0	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Endrin Ketone	18.5 U	U	ug/kg	18.5	2.6	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Heptachlor	9.5 U	U	ug/kg	9.5	0.95	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Heptachlor Epoxide	9.5 U	U	ug/kg	9.5	0.95	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Methoxychlor	18.5 U	U	ug/kg	18.5	2.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Toxaphene	196 U	U	ug/kg	196	32.5	SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	56.2		%	30 - 135		SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
Tetrachloro-m-xylene (S)	63.2		%	30 - 111		SW846 8081B	8/24/17 16:20 JSR	8/28/17 02:17	RWS	A
WET CHEMISTRY										
Moisture	14.7		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	85.3		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	8.2		mg/kg	1.6	0.54	SW846 6020A	8/24/17 00:35 LXC	8/24/17 14:59	ZMC	A1
Lead, Total	19.7		mg/kg	1.1	0.36	SW846 6020A	8/24/17 00:35 LXC	8/24/17 14:59	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972007**
Sample ID: **SB-13 (0'-0.5')**

Date Collected: 8/21/2017 09:20 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972011** Date Collected: 8/21/2017 09:28 Matrix: Solid
Sample ID: **SB-13 (2.0'-2.5')** Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.5 U	U	ug/kg	10.5	3.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
alpha-BHC	10.5 U	U	ug/kg	10.5	0.93	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
beta-BHC	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
delta-BHC	10.5 U	U	ug/kg	10.5	0.80	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
gamma-BHC	10.5 U	U	ug/kg	10.5	0.87	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
alpha-Chlordane	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
gamma-Chlordane	10.5 U	U	ug/kg	10.5	1.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
4,4'-DDD	20.4 U	U	ug/kg	20.4	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
4,4'-DDE	20.4 U	U	ug/kg	20.4	2.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
4,4'-DDT	20.4 U	U	ug/kg	20.4	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Dieldrin	20.4 U	U	ug/kg	20.4	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Endosulfan I	10.5 U	U	ug/kg	10.5	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Endosulfan II	20.4 U	U	ug/kg	20.4	4.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Endosulfan Sulfate	20.4 U	U	ug/kg	20.4	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Endrin	20.4 U	U	ug/kg	20.4	1.5	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Endrin Aldehyde	20.4 U	U	ug/kg	20.4	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Endrin Ketone	20.4 U	U	ug/kg	20.4	2.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Heptachlor	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Heptachlor Epoxide	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Methoxychlor	20.4 U	U	ug/kg	20.4	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Toxaphene	216 U	U	ug/kg	216	35.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	93.5		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
Tetrachloro-m-xylene (S)	78.9		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 20:50	RWS	A
WET CHEMISTRY										
Moisture	20.7		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	79.3		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	6.8		mg/kg	1.8	0.61	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:03	ZMC	A1
Lead, Total	11.5		mg/kg	1.2	0.40	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:03	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972011**
Sample ID: **SB-13 (2.0'-2.5')**

Date Collected: 8/21/2017 09:28 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972013** Date Collected: 8/21/2017 09:35 Matrix: Solid
Sample ID: **SB-13 (9.5'-10.0')** Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	11.5 U	U	ug/kg	11.5	3.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
alpha-BHC	11.5 U	U	ug/kg	11.5	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
beta-BHC	11.5 U	U	ug/kg	11.5	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
delta-BHC	11.5 U	U	ug/kg	11.5	0.88	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
gamma-BHC	11.5 U	U	ug/kg	11.5	0.94	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
alpha-Chlordane	11.5 U	U	ug/kg	11.5	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
gamma-Chlordane	11.5 U	U	ug/kg	11.5	2.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
4,4'-DDD	22.2 U	U	ug/kg	22.2	1.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
4,4'-DDE	22.2 U	U	ug/kg	22.2	3.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
4,4'-DDT	22.2 U	U	ug/kg	22.2	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Dieldrin	22.2 U	U	ug/kg	22.2	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Endosulfan I	11.5 U	U	ug/kg	11.5	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Endosulfan II	22.2 U	U	ug/kg	22.2	4.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Endosulfan Sulfate	22.2 U	U	ug/kg	22.2	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Endrin	22.2 U	U	ug/kg	22.2	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Endrin Aldehyde	22.2 U	U	ug/kg	22.2	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Endrin Ketone	22.2 U	U	ug/kg	22.2	3.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Heptachlor	11.5 U	U	ug/kg	11.5	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Heptachlor Epoxide	11.5 U	U	ug/kg	11.5	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Methoxychlor	22.2 U	U	ug/kg	22.2	3.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Toxaphene	236 U	U	ug/kg	236	39.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	72.7		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
Tetrachloro-m-xylene (S)	57.8		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 16:55	RWS	B
WET CHEMISTRY										
Moisture	25.8		%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
Total Solids	74.2	1	%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
METALS										
Arsenic, Total	7.5		mg/kg	2.0	0.66	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:01	ZMC	B1
Lead, Total	15.2		mg/kg	1.3	0.44	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:01	ZMC	B1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972013**

Date Collected: 8/21/2017 09:35

Matrix: Solid

Sample ID: **SB-13 (9.5'-10.0')**

Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972017**
Sample ID: **SB-16 (0'-0.5')**

Date Collected: 8/21/2017 10:35 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
alpha-BHC	45.8		ug/kg	10.2	0.90	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
beta-BHC	107		ug/kg	10.2	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
delta-BHC	16.9		ug/kg	10.2	0.78	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
gamma-BHC	66.3		ug/kg	10.2	0.84	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
gamma-Chlordane	10.2 U	U	ug/kg	10.2	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
4,4'-DDD	59.4		ug/kg	19.8	1.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
4,4'-DDE	2020		ug/kg	198	27.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 11:41	RWS	A
4,4'-DDT	1150		ug/kg	198	22.8	SW846 8081B	8/29/17 14:40 JTH	8/31/17 11:41	RWS	A
Dieldrin	25.4		ug/kg	19.8	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Endosulfan II	19.8 U	U	ug/kg	19.8	4.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Endosulfan Sulfate	19.8 U	U	ug/kg	19.8	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Endrin	19.8 U	U	ug/kg	19.8	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Endrin Aldehyde	19.8 U	U	ug/kg	19.8	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Endrin Ketone	19.8 U	U	ug/kg	19.8	2.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Methoxychlor	19.8 U	U	ug/kg	19.8	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Toxaphene	210 U	U	ug/kg	210	34.9	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	86		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 11:41	RWS	A
Decachlorobiphenyls (S)	78.9		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Tetrachloro-m-xylene (S)	67.5		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:06	RWS	A
Tetrachloro-m-xylene (S)	72.8		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 11:41	RWS	A
WET CHEMISTRY										
Moisture	18.4		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	81.6		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	10.6		mg/kg	1.8	0.60	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:07	ZMC	A1
Lead, Total	18.1		mg/kg	1.2	0.40	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:07	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972017**
Sample ID: **SB-16 (0'-0.5')**

Date Collected: 8/21/2017 10:35 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972019** Date Collected: 8/21/2017 10:39 Matrix: Solid
Sample ID: **SB-16 (1.0'-1.5')** Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.7 U	U	ug/kg	9.7	3.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
alpha-BHC	9.7 U	U	ug/kg	9.7	0.86	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
beta-BHC	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
delta-BHC	9.7 U	U	ug/kg	9.7	0.74	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
gamma-BHC	9.7 U	U	ug/kg	9.7	0.80	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
alpha-Chlordane	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
gamma-Chlordane	9.7 U	U	ug/kg	9.7	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
4,4'-DDD	18.9 U	U	ug/kg	18.9	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
4,4'-DDE	18.9 U	U	ug/kg	18.9	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
4,4'-DDT	18.9 U	U	ug/kg	18.9	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Dieldrin	18.9 U	U	ug/kg	18.9	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Endosulfan I	9.7 U	U	ug/kg	9.7	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Endosulfan II	18.9 U	U	ug/kg	18.9	3.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Endosulfan Sulfate	18.9 U	U	ug/kg	18.9	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Endrin	18.9 U	U	ug/kg	18.9	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Endrin Aldehyde	18.9 U	U	ug/kg	18.9	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Endrin Ketone	18.9 U	U	ug/kg	18.9	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Heptachlor	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Heptachlor Epoxide	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Methoxychlor	18.9 U	U	ug/kg	18.9	2.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Toxaphene	200 U	U	ug/kg	200	33.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	70.1		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
Tetrachloro-m-xylene (S)	60.1		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:11	RWS	B
WET CHEMISTRY										
Moisture	17.0		%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
Total Solids	83.0	1	%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
METALS										
Arsenic, Total	7.8		mg/kg	1.7	0.56	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:05	ZMC	B1
Lead, Total	13.7		mg/kg	1.1	0.37	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:05	ZMC	B1

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972019**
Sample ID: **SB-16 (1.0'-1.5')**

Date Collected: 8/21/2017 10:39 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972021** Date Collected: 8/21/2017 10:43 Matrix: Solid
Sample ID: **SB-16 (2.0'-2.5')** Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.77	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.83	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
4,4'-DDD	2.4J	J	ug/kg	19.5	1.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
4,4'-DDE	35.3		ug/kg	19.5	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
4,4'-DDT	20.4		ug/kg	19.5	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Dieldrin	19.5 U	U	ug/kg	19.5	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Endosulfan II	19.5 U	U	ug/kg	19.5	4.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Endosulfan Sulfate	19.5 U	U	ug/kg	19.5	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Endrin	19.5 U	U	ug/kg	19.5	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Endrin Aldehyde	19.5 U	U	ug/kg	19.5	2.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Endrin Ketone	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Methoxychlor	19.5 U	U	ug/kg	19.5	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Toxaphene	207 U	U	ug/kg	207	34.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	84		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
Tetrachloro-m-xylene (S)	73.4		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:22	RWS	A
WET CHEMISTRY										
Moisture	20.7		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	79.3		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	9.6		mg/kg	1.9	0.63	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:10	ZMC	A1
Lead, Total	21.5		mg/kg	1.3	0.42	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:10	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972021**
Sample ID: **SB-16 (2.0'-2.5')**

Date Collected: 8/21/2017 10:43 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972023**
Sample ID: **DUP-1**

Date Collected: 8/21/2017 07:00 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.5 U	U	ug/kg	10.5	3.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
alpha-BHC	10.5 U	U	ug/kg	10.5	0.93	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
beta-BHC	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
delta-BHC	10.5 U	U	ug/kg	10.5	0.80	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
gamma-BHC	10.5 U	U	ug/kg	10.5	0.86	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
alpha-Chlordane	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
gamma-Chlordane	10.5 U	U	ug/kg	10.5	1.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
4,4'-DDD	20.4 U	U	ug/kg	20.4	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
4,4'-DDE	20.4 U	U	ug/kg	20.4	2.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
4,4'-DDT	20.4 U	U	ug/kg	20.4	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Dieldrin	20.4 U	U	ug/kg	20.4	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Endosulfan I	10.5 U	U	ug/kg	10.5	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Endosulfan II	20.4 U	U	ug/kg	20.4	4.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Endosulfan Sulfate	20.4 U	U	ug/kg	20.4	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Endrin	20.4 U	U	ug/kg	20.4	1.5	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Endrin Aldehyde	20.4 U	U	ug/kg	20.4	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Endrin Ketone	20.4 U	U	ug/kg	20.4	2.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Heptachlor	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Heptachlor Epoxide	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Methoxychlor	20.4 U	U	ug/kg	20.4	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Toxaphene	216 U	U	ug/kg	216	35.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	81.5		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
Tetrachloro-m-xylene (S)	73.1		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:38	RWS	A
WET CHEMISTRY										
Moisture	20.1		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	79.9		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	9.6		mg/kg	1.9	0.63	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:34	ZMC	A1
Lead, Total	21.6		mg/kg	1.3	0.41	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:34	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972023**

Date Collected: 8/21/2017 07:00

Matrix: Solid

Sample ID: **DUP-1**

Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972024**

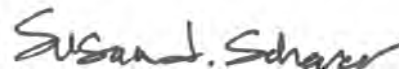
Date Collected: 8/21/2017 10:50

Matrix: Water

Sample ID: **ER-1**

Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	0.021 U	U	ug/L	0.021	0.0053	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
alpha-BHC	0.021 U	U	ug/L	0.021	0.0021	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
beta-BHC	0.021 U	U	ug/L	0.021	0.0084	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
delta-BHC	0.021 U	U	ug/L	0.021	0.0032	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
gamma-BHC	0.021 U	U	ug/L	0.021	0.0032	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
alpha-Chlordane	0.021 U	U	ug/L	0.021	0.0032	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
gamma-Chlordane	0.021 U	U	ug/L	0.021	0.0032	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
4,4'-DDD	0.021 U	U	ug/L	0.021	0.0074	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
4,4'-DDE	0.021 U	U	ug/L	0.021	0.0074	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
4,4'-DDT	0.021 U	U	ug/L	0.021	0.0063	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Dieldrin	0.021 U	U	ug/L	0.021	0.0032	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Endosulfan I	0.021 U	U	ug/L	0.021	0.0032	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Endosulfan II	0.021 U	U	ug/L	0.021	0.0063	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Endosulfan Sulfate	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Endrin	0.021 U	U	ug/L	0.021	0.0084	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Endrin Aldehyde	0.021 U	U	ug/L	0.021	0.011	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Endrin Ketone	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Heptachlor	0.021 U	U	ug/L	0.021	0.0032	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Heptachlor Epoxide	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Methoxychlor	0.021 U	U	ug/L	0.021	0.0095	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Toxaphene	1.1 U	U	ug/L	1.1	0.20	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	76.1		%	30 - 140		SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
Tetrachloro-m-xylene (S)	86		%	30 - 123		SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:30	RWS	B
METALS										
Arsenic, Total	0.0033 U	U	mg/L	0.0033	0.0011	SW846 6020A	8/25/17 00:30 ZMC	8/25/17 05:40	ZMC	A1
Lead, Total	0.0022 U	U	mg/L	0.0022	0.00074	SW846 6020A	8/25/17 00:30 ZMC	8/25/17 05:40	ZMC	A1



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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972025**
Sample ID: **SB-14 (0'-0.5')**

Date Collected: 8/21/2017 11:15 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.9 U	U	ug/kg	9.9	3.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
alpha-BHC	9.9 U	U	ug/kg	9.9	0.87	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
beta-BHC	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
delta-BHC	9.9 U	U	ug/kg	9.9	0.76	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
gamma-BHC	9.9 U	U	ug/kg	9.9	0.82	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
alpha-Chlordane	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
gamma-Chlordane	9.9 U	U	ug/kg	9.9	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
4,4'-DDD	19.2 U	U	ug/kg	19.2	1.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
4,4'-DDE	19.2 U	U	ug/kg	19.2	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
4,4'-DDT	19.2 U	U	ug/kg	19.2	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Dieldrin	19.2 U	U	ug/kg	19.2	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Endosulfan I	9.9 U	U	ug/kg	9.9	1.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Endosulfan II	19.2 U	U	ug/kg	19.2	4.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Endosulfan Sulfate	19.2 U	U	ug/kg	19.2	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Endrin	19.2 U	U	ug/kg	19.2	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Endrin Aldehyde	19.2 U	U	ug/kg	19.2	2.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Endrin Ketone	19.2 U	U	ug/kg	19.2	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Heptachlor	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Heptachlor Epoxide	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Methoxychlor	19.2 U	U	ug/kg	19.2	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Toxaphene	204 U	U	ug/kg	204	33.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	102		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
Tetrachloro-m-xylene (S)	80.1		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 21:53	RWS	A
WET CHEMISTRY										
Moisture	15.3		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	84.7		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	5.6		mg/kg	1.7	0.56	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:39	ZMC	A1
Lead, Total	11.5		mg/kg	1.1	0.37	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:39	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972025**
Sample ID: **SB-14 (0'-0.5')**

Date Collected: 8/21/2017 11:15 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972027** Date Collected: 8/21/2017 11:19 Matrix: Solid
Sample ID: **SB-14 (1.0'-1.5')** Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10 U	U	ug/kg	10	3.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
alpha-BHC	10 U	U	ug/kg	10	0.88	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
beta-BHC	10 U	U	ug/kg	10	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
delta-BHC	10 U	U	ug/kg	10	0.76	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
gamma-BHC	10 U	U	ug/kg	10	0.82	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
alpha-Chlordane	10 U	U	ug/kg	10	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
gamma-Chlordane	10 U	U	ug/kg	10	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
4,4'-DDD	19.4 U	U	ug/kg	19.4	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
4,4'-DDE	19.4 U	U	ug/kg	19.4	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
4,4'-DDT	19.4 U	U	ug/kg	19.4	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Dieldrin	19.4 U	U	ug/kg	19.4	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Endosulfan I	10 U	U	ug/kg	10	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Endosulfan II	19.4 U	U	ug/kg	19.4	4.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Endosulfan Sulfate	19.4 U	U	ug/kg	19.4	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Endrin	19.4 U	U	ug/kg	19.4	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Endrin Aldehyde	19.4 U	U	ug/kg	19.4	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Endrin Ketone	19.4 U	U	ug/kg	19.4	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Heptachlor	10 U	U	ug/kg	10	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Heptachlor Epoxide	10 U	U	ug/kg	10	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Methoxychlor	19.4 U	U	ug/kg	19.4	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Toxaphene	206 U	U	ug/kg	206	34.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	62.1		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
Tetrachloro-m-xylene (S)	62.9		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:27	RWS	B
WET CHEMISTRY										
Moisture	16.6		%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
Total Solids	83.4	1	%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
METALS										
Arsenic, Total	4.8		mg/kg	1.7	0.57	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:09	ZMC	B1
Lead, Total	17.2		mg/kg	1.1	0.37	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:09	ZMC	B1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972027**
Sample ID: **SB-14 (1.0'-1.5')**

Date Collected: 8/21/2017 11:19 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972029** Date Collected: 8/21/2017 11:23 Matrix: Solid
Sample ID: **SB-14 (2.0'-2.5')** Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.9 U	U	ug/kg	9.9	3.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
alpha-BHC	9.9 U	U	ug/kg	9.9	0.87	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
beta-BHC	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
delta-BHC	9.9 U	U	ug/kg	9.9	0.75	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
gamma-BHC	9.9 U	U	ug/kg	9.9	0.81	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
alpha-Chlordane	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
gamma-Chlordane	9.9 U	U	ug/kg	9.9	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
4,4'-DDD	19.2 U	U	ug/kg	19.2	1.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
4,4'-DDE	19.2 U	U	ug/kg	19.2	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
4,4'-DDT	19.2 U	U	ug/kg	19.2	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Dieldrin	19.2 U	U	ug/kg	19.2	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Endosulfan I	9.9 U	U	ug/kg	9.9	1.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Endosulfan II	19.2 U	U	ug/kg	19.2	4.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Endosulfan Sulfate	19.2 U	U	ug/kg	19.2	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Endrin	19.2 U	U	ug/kg	19.2	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Endrin Aldehyde	19.2 U	U	ug/kg	19.2	2.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Endrin Ketone	19.2 U	U	ug/kg	19.2	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Heptachlor	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Heptachlor Epoxide	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Methoxychlor	19.2 U	U	ug/kg	19.2	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Toxaphene	203 U	U	ug/kg	203	33.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	58.7		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
Tetrachloro-m-xylene (S)	70.1		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:09	RWS	A
WET CHEMISTRY										
Moisture	17.2		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	82.8		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	5.9		mg/kg	1.8	0.60	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:43	ZMC	A1
Lead, Total	16.1		mg/kg	1.2	0.40	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:43	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972029**
Sample ID: **SB-14 (2.0'-2.5')**

Date Collected: 8/21/2017 11:23 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972031**
Sample ID: **SB-12 (0'-0.5')**

Date Collected: 8/21/2017 11:40 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.9 U	U	ug/kg	9.9	3.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
alpha-BHC	9.9 U	U	ug/kg	9.9	0.87	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
beta-BHC	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
delta-BHC	9.9 U	U	ug/kg	9.9	0.76	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
gamma-BHC	9.9 U	U	ug/kg	9.9	0.82	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
alpha-Chlordane	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
gamma-Chlordane	9.9 U	U	ug/kg	9.9	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
4,4'-DDD	19.2 U	U	ug/kg	19.2	1.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
4,4'-DDE	5.0J	J	ug/kg	19.2	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
4,4'-DDT	2.5J	J	ug/kg	19.2	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Dieldrin	19.2 U	U	ug/kg	19.2	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Endosulfan I	9.9 U	U	ug/kg	9.9	1.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Endosulfan II	19.2 U	U	ug/kg	19.2	4.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Endosulfan Sulfate	19.2 U	U	ug/kg	19.2	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Endrin	19.2 U	U	ug/kg	19.2	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Endrin Aldehyde	19.2 U	U	ug/kg	19.2	2.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Endrin Ketone	19.2 U	U	ug/kg	19.2	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Heptachlor	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Heptachlor Epoxide	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Methoxychlor	19.2 U	U	ug/kg	19.2	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Toxaphene	204 U	U	ug/kg	204	33.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	84.1		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
Tetrachloro-m-xylene (S)	75.3		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:25	RWS	A
WET CHEMISTRY										
Moisture	14.3		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	85.7		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	6.4		mg/kg	1.7	0.55	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:46	ZMC	A1
Lead, Total	15.3		mg/kg	1.1	0.36	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:46	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255972 ERM154|JEFFERSON COUNTY WV

Lab ID: **2255972031**
Sample ID: **SB-12 (0'-0.5')**

Date Collected: 8/21/2017 11:40 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
2255972006	1	SB-15 (4.5'-5.0')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2255972013	1	SB-13 (9.5'-10.0')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2255972019	1	SB-16 (1.0'-1.5')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2255972027	1	SB-14 (1.0'-1.5')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				

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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/
SAMPLER. INSTRUCTIONS ON THE BACK

Page 2 of 2
Counter: _____
Tracking #: _____

Co. Name: **ERM**
Contact (Report to): **DAVE CONNELLY**
Address: **204 CHASE DRIVE, HAVERTOWN, PA**
Phone: **761-594777**

Bill to (if different than Report to):
PO#:

Project Name#: **JO VRP** ALS Quote #:
TAT: ☒ Normal/Standard TAT is 10-12 business days.
☐ Rush-Subject to ALS approval and surcharges.
Email? ☒ Fax? ☒ No.

Date Required:
Approved By:

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time	Matrix	Enter Number of Containers Per Analysis	ANALYSIS/METHOD REQUESTED	Container Type	Container Size	Preservative	Receipt Information (Completed by Smith & Birchall)
1 SB-13 (1.0'-1.5')	HOLD	8/21/17	0924	GS						Correct containers? ☒ Correct sample volume? ☒ Correct preservation? ☒ Headspace/Volatiles? ☒ Container in good condition? ☒
2 SB-13 (1.5'-2.0')	HOLD	8/21/17	0926							
3 SB-13 (2.0'-2.5')		8/21/17	0928							
4 SB-13 (4.5'-5.0')	HOLD	8/21/17	0930							
5 SB-13 (4.5'-10.0')	HOLD	8/21/17	0935							
6 SB-13 (14.5'-15.0')	HOLD	8/21/17	0940							
7 SB-13 (19.5'-20.0')	HOLD	8/21/17	0945							
8 SB-13 (24.5'-25.0')	HOLD	8/21/17	0950							

Notes: **Postcards 80814**
Argent & Lead 80104

ALS FIELD SERVICES
Pickup ☐ Labor ☐ Composite Sampling ☐ Rental Equipment ☐ Other ☐

ALS Criteria Required? ☐

SAMPLED BY (Please Print): **Ryan Brisden**

Relinquished By / Company Name: **R. Fowler / ERM**

Date: **8/21/17** Time: **0805**

Received By / Company Name: **gmc / AIS**

Date: **8/22/17** Time: **1650**

EOC: ☐ If yes, format type: ☐

DDO Criteria Required? ☐

* G-Grid; C-Composite
** Matrix: AL-Air; DW-Drinking Water; GW-Groundwater; OL-Oil; OL-Other Liquid; SL-Sludge; SW-Soil; WP-Water; WW-Wastewater
*** Container Type: AG-Ambic Glass; CG-Clear Glass; PL-Plastic; Container Size: 250ml, 500ml, 1L, 2L, 4L, 6L, 10L, 20L, 30L, 40L, 50L, 60L, 70L, 80L, 90L, 100L, 110L, 120L, 130L, 140L, 150L, 160L, 170L, 180L, 190L, 200L, 210L, 220L, 230L, 240L, 250L, 260L, 270L, 280L, 290L, 300L, 310L, 320L, 330L, 340L, 350L, 360L, 370L, 380L, 390L, 400L, 410L, 420L, 430L, 440L, 450L, 460L, 470L, 480L, 490L, 500L, 510L, 520L, 530L, 540L, 550L, 560L, 570L, 580L, 590L, 600L, 610L, 620L, 630L, 640L, 650L, 660L, 670L, 680L, 690L, 700L, 710L, 720L, 730L, 740L, 750L, 760L, 770L, 780L, 790L, 800L, 810L, 820L, 830L, 840L, 850L, 860L, 870L, 880L, 890L, 900L, 910L, 920L, 930L, 940L, 950L, 960L, 970L, 980L, 990L, 1000L, 1010L, 1020L, 1030L, 1040L, 1050L, 1060L, 1070L, 1080L, 1090L, 1100L, 1110L, 1120L, 1130L, 1140L, 1150L, 1160L, 1170L, 1180L, 1190L, 1200L, 1210L, 1220L, 1230L, 1240L, 1250L, 1260L, 1270L, 1280L, 1290L, 1300L, 1310L, 1320L, 1330L, 1340L, 1350L, 1360L, 1370L, 1380L, 1390L, 1400L, 1410L, 1420L, 1430L, 1440L, 1450L, 1460L, 1470L, 1480L, 1490L, 1500L, 1510L, 1520L, 1530L, 1540L, 1550L, 1560L, 1570L, 1580L, 1590L, 1600L, 1610L, 1620L, 1630L, 1640L, 1650L, 1660L, 1670L, 1680L, 1690L, 1700L, 1710L, 1720L, 1730L, 1740L, 1750L, 1760L, 1770L, 1780L, 1790L, 1800L, 1810L, 1820L, 1830L, 1840L, 1850L, 1860L, 1870L, 1880L, 1890L, 1900L, 1910L, 1920L, 1930L, 1940L, 1950L, 1960L, 1970L, 1980L, 1990L, 2000L, 2010L, 2020L, 2030L, 2040L, 2050L, 2060L, 2070L, 2080L, 2090L, 2100L, 2110L, 2120L, 2130L, 2140L, 2150L, 2160L, 2170L, 2180L, 2190L, 2200L, 2210L, 2220L, 2230L, 2240L, 2250L, 2260L, 2270L, 2280L, 2290L, 2300L, 2310L, 2320L, 2330L, 2340L, 2350L, 2360L, 2370L, 2380L, 2390L, 2400L, 2410L, 2420L, 2430L, 2440L, 2450L, 2460L, 2470L, 2480L, 2490L, 2500L, 2510L, 2520L, 2530L, 2540L, 2550L, 2560L, 2570L, 2580L, 2590L, 2600L, 2610L, 2620L, 2630L, 2640L, 2650L, 2660L, 2670L, 2680L, 2690L, 2700L, 2710L, 2720L, 2730L, 2740L, 2750L, 2760L, 2770L, 2780L, 2790L, 2800L, 2810L, 2820L, 2830L, 2840L, 2850L, 2860L, 2870L, 2880L, 2890L, 2900L, 2910L, 2920L, 2930L, 2940L, 2950L, 2960L, 2970L, 2980L, 2990L, 3000L, 3010L, 3020L, 3030L, 3040L, 3050L, 3060L, 3070L, 3080L, 3090L, 3100L, 3110L, 3120L, 3130L, 3140L, 3150L, 3160L, 3170L, 3180L, 3190L, 3200L, 3210L, 3220L, 3230L, 3240L, 3250L, 3260L, 3270L, 3280L, 3290L, 3300L, 3310L, 3320L, 3330L, 3340L, 3350L, 3360L, 3370L, 3380L, 3390L, 3400L, 3410L, 3420L, 3430L, 3440L, 3450L, 3460L, 3470L, 3480L, 3490L, 3500L, 3510L, 3520L, 3530L, 3540L, 3550L, 3560L, 3570L, 3580L, 3590L, 3600L, 3610L, 3620L, 3630L, 3640L, 3650L, 3660L, 3670L, 3680L, 3690L, 3700L, 3710L, 3720L, 3730L, 3740L, 3750L, 3760L, 3770L, 3780L, 3790L, 3800L, 3810L, 3820L, 3830L, 3840L, 3850L, 3860L, 3870L, 3880L, 3890L, 3900L, 3910L, 3920L, 3930L, 3940L, 3950L, 3960L, 3970L, 3980L, 3990L, 4000L, 4010L, 4020L, 4030L, 4040L, 4050L, 4060L, 4070L, 4080L, 4090L, 4100L, 4110L, 4120L, 4130L, 4140L, 4150L, 4160L, 4170L, 4180L, 4190L, 4200L, 4210L, 4220L, 4230L, 4240L, 4250L, 4260L, 4270L, 4280L, 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ALS Environmental



34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

September 7, 2017

Mr. David Connelly
Environmental Resource Management (ERM)-WV
204 Chase Drive
Hurricane, WV 25526

Certificate of Analysis

Revised Report - 9/7/2017 3:30:09 PM - See workorder comment section for explanation

Project Name:	2017-JEFFERSON COUNTY	Workorder:	2255995
Purchase Order:		Workorder ID:	ERM155 JEFFERSON COUNTY WV

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Tuesday, August 22, 2017 and Saturday, September 2, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2255995001	SB-12 (1.0'-1.5')	Other	8/21/2017 11:44	8/22/2017 16:50	Collected by Client
2255995002	SB-12 (1.5'-2.0')	Other	8/21/2017 11:46	8/22/2017 16:50	Collected by Client
2255995003	SB-12 (2.0'-2.5')	Solid	8/21/2017 11:58	8/22/2017 16:50	Collected by Client
2255995004	SB-12 (4.5'-5.0')	Other	8/21/2017 11:50	8/22/2017 16:50	Collected by Client
2255995005	SB-12 (9.5'-10.0')	Other	8/21/2017 11:55	8/22/2017 16:50	Collected by Client
2255995006	SB-12 (13'-13.5')	Solid	8/21/2017 12:00	9/2/2017 19:09	Collected by Client
2255995007	SB-8 (0'-0.5')	Solid	8/21/2017 13:45	8/22/2017 16:50	Collected by Client
2255995008	SB-8 (0.5'-1.0')	Other	8/21/2017 13:47	8/22/2017 16:50	Collected by Client
2255995009	SB-8 (1.0'-1.5')	Other	8/21/2017 13:49	8/22/2017 16:50	Collected by Client
2255995010	SB-8 (1.5'-2.0')	Other	8/21/2017 13:51	8/22/2017 16:50	Collected by Client
2255995011	SB-8 (2.0'-2.5')	Solid	8/21/2017 13:53	8/22/2017 16:50	Collected by Client
2255995012	SB-8 (4.5'-5.0')	Solid	8/21/2017 13:55	9/2/2017 19:09	Collected by Client
2255995013	DUP-2	Solid	8/21/2017 07:30	8/22/2017 16:50	Collected by Client
2255995014	SB-5 (0'-0.5)	Solid	8/21/2017 15:10	8/22/2017 16:50	Collected by Client
2255995015	SB-5 (0.5'-1.0')	Other	8/21/2017 15:12	8/22/2017 16:50	Collected by Client
2255995016	SB-5 (1.0'-1.5')	Other	8/21/2017 15:14	8/22/2017 16:50	Collected by Client
2255995017	SB-5 (1.5'-2.0')	Other	8/21/2017 15:16	8/22/2017 16:50	Collected by Client
2255995018	SB-5 (2.0'-2.5')	Solid	8/21/2017 15:18	8/22/2017 16:50	Collected by Client
2255995019	SB-5 (4.5'-5.0')	Other	8/21/2017 15:20	8/22/2017 16:50	Collected by Client
2255995020	SB-5 (9.5'-10.0')	Other	8/21/2017 15:25	8/22/2017 16:50	Collected by Client
2255995021	SB-5 (14.5'-15.0')	Solid	8/21/2017 15:30	9/2/2017 19:09	Collected by Client
2255995022	SB-5 (19.5'-20.0')	Solid	8/21/2017 15:35	9/2/2017 19:09	Collected by Client
2255995023	SB-5 (21.5'-22.0')	Other	8/21/2017 15:40	8/22/2017 16:50	Collected by Client
2255995024	SB-2 (0'-0.5')	Solid	8/21/2017 16:15	8/22/2017 16:50	Collected by Client
2255995025	SB-2 (0.5'-1.0')	Other	8/21/2017 16:17	8/22/2017 16:50	Collected by Client
2255995026	SB-2 (1.0'-1.5')	Solid	8/21/2017 16:19	9/2/2017 19:09	Collected by Client
2255995027	SB-2 (1.5'-2.0')	Other	8/21/2017 16:21	8/22/2017 16:50	Collected by Client
2255995028	SB-2 (2.0'-2.5')	Solid	8/21/2017 16:23	8/22/2017 16:50	Collected by Client
2255995029	SB-2 (4.5'-5.0')	Other	8/21/2017 00:00	8/22/2017 16:50	Collected by Client

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 Vancouver Waterloo · Winnipeg · Yellowknife United States: Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York Mexico: Monterrey

SAMPLE SUMMARY

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Workorder Comments

This certificate of analysis was modified to report samples 2255995014-SB-5 (0'-0.5') and 2255995013-DUP-2 on a dry weight basis. The original report was released with as received results for these two samples. SJS 09/01/17

This certificate of analysis was modified based on the email request from Dave Connelly 09/02/17 at 1909. SJS 09/05/17

Here are the additional samples that can be released from hold status and analyzed.

Sample Comments

Lab ID: 2255995003	Sample ID: SB-12 (2.0'-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255995006	Sample ID: SB-12 (13'-13.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255995007	Sample ID: SB-8 (0'-0.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255995011	Sample ID: SB-8 (2.0'-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255995012	Sample ID: SB-8 (4.5'-5.0')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255995013	Sample ID: DUP-2	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255995014	Sample ID: SB-5 (0'-0.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255995018	Sample ID: SB-5 (2.0'-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2255995021	Sample ID: SB-5 (14.5'-15.0')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		

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**PROJECT SUMMARY**

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: 2255995022**Sample ID:** SB-5 (19.5'-20.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2255995024**Sample ID:** SB-2 (0'-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2255995026**Sample ID:** SB-2 (1.0'-1.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2255995028**Sample ID:** SB-2 (2.0'-2.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995003** Date Collected: 8/21/2017 11:58 Matrix: Solid
Sample ID: **SB-12 (2.0'-2.5')** Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.77	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.83	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
4,4'-DDD	19.6 U	U	ug/kg	19.6	1.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
4,4'-DDE	19.6 U	U	ug/kg	19.6	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
4,4'-DDT	19.6 U	U	ug/kg	19.6	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Dieldrin	19.6 U	U	ug/kg	19.6	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Endosulfan II	19.6 U	U	ug/kg	19.6	4.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Endosulfan Sulfate	19.6 U	U	ug/kg	19.6	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Endrin	19.6 U	U	ug/kg	19.6	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Endrin Aldehyde	19.6 U	U	ug/kg	19.6	2.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Endrin Ketone	19.6 U	U	ug/kg	19.6	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Methoxychlor	19.6 U	U	ug/kg	19.6	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Toxaphene	208 U	U	ug/kg	208	34.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	87.2		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
Tetrachloro-m-xylene (S)	75.7		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 22:40	RWS	A
WET CHEMISTRY										
Moisture	17.9		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	82.1		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	9.0	1	mg/kg	1.7	0.56	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:50	ZMC	A1
Lead, Total	42.6	2	mg/kg	1.1	0.37	SW846 6020A	8/24/17 00:35 LXC	8/24/17 15:50	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995003**
Sample ID: **SB-12 (2.0'-2.5')**

Date Collected: 8/21/2017 11:58 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995006**
Sample ID: **SB-12 (13'-13.5')**

Date Collected: 8/21/2017 12:00 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.9 U	U	ug/kg	10.9	3.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
alpha-BHC	10.9 U	U	ug/kg	10.9	0.96	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
beta-BHC	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
delta-BHC	10.9 U	U	ug/kg	10.9	0.84	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
gamma-BHC	10.9 U	U	ug/kg	10.9	0.90	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
alpha-Chlordane	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
gamma-Chlordane	10.9 U	U	ug/kg	10.9	1.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
4,4'-DDD	21.2 U	U	ug/kg	21.2	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
4,4'-DDE	21.2 U	U	ug/kg	21.2	2.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
4,4'-DDT	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Dieldrin	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Endosulfan I	10.9 U	U	ug/kg	10.9	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Endosulfan II	21.2 U	U	ug/kg	21.2	4.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Endosulfan Sulfate	21.2 U	U	ug/kg	21.2	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Endrin	21.2 U	U	ug/kg	21.2	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Endrin Aldehyde	21.2 U	U	ug/kg	21.2	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Endrin Ketone	21.2 U	U	ug/kg	21.2	3.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Heptachlor	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Heptachlor Epoxide	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Methoxychlor	21.2 U	U	ug/kg	21.2	2.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Toxaphene	225 U	U	ug/kg	225	37.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	61.9		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
Tetrachloro-m-xylene (S)	69.7		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:42	RWS	B
WET CHEMISTRY										
Moisture	22.3		%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
Total Solids	77.7	1	%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
METALS										
Arsenic, Total	10.7		mg/kg	1.9	0.62	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:13	ZMC	B1
Lead, Total	15.1		mg/kg	1.2	0.41	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:13	ZMC	B1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995006**

Date Collected: 8/21/2017 12:00

Matrix: Solid

Sample ID: **SB-12 (13'-13.5')**

Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995007**
Sample ID: **SB-8 (0'-0.5')**

Date Collected: 8/21/2017 13:45 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
alpha-BHC	10.2 U	U	ug/kg	10.2	0.90	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
beta-BHC	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
delta-BHC	10.2 U	U	ug/kg	10.2	0.78	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
gamma-BHC	10.2 U	U	ug/kg	10.2	0.84	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
gamma-Chlordane	10.2 U	U	ug/kg	10.2	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
4,4'-DDD	19.7 U	U	ug/kg	19.7	1.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
4,4'-DDE	17.3J	J	ug/kg	19.7	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
4,4'-DDT	4.1J	J	ug/kg	19.7	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Dieldrin	19.7 U	U	ug/kg	19.7	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Endosulfan II	19.7 U	U	ug/kg	19.7	4.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Endosulfan Sulfate	19.7 U	U	ug/kg	19.7	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Endrin	19.7 U	U	ug/kg	19.7	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Endrin Aldehyde	19.7 U	U	ug/kg	19.7	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Endrin Ketone	19.7 U	U	ug/kg	19.7	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Methoxychlor	19.7 U	U	ug/kg	19.7	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Toxaphene	209 U	U	ug/kg	209	34.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	95.9		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
Tetrachloro-m-xylene (S)	76.2		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:12	RWS	A
WET CHEMISTRY										
Moisture	17.4		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	82.6		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	9.1		mg/kg	1.8	0.59	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:11	ZMC	A1
Lead, Total	12.0		mg/kg	1.2	0.39	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:11	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995007**
Sample ID: **SB-8 (0'-0.5')**

Date Collected: 8/21/2017 13:45 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995011**
Sample ID: **SB-8 (2.0'-2.5')**

Date Collected: 8/21/2017 13:53 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.5 U	U	ug/kg	10.5	3.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
alpha-BHC	10.5 U	U	ug/kg	10.5	0.92	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
beta-BHC	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
delta-BHC	10.5 U	U	ug/kg	10.5	0.80	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
gamma-BHC	10.5 U	U	ug/kg	10.5	0.86	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
alpha-Chlordane	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
gamma-Chlordane	10.5 U	U	ug/kg	10.5	1.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
4,4'-DDD	20.3 U	U	ug/kg	20.3	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
4,4'-DDE	20.3 U	U	ug/kg	20.3	2.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
4,4'-DDT	20.3 U	U	ug/kg	20.3	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Dieldrin	20.3 U	U	ug/kg	20.3	2.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Endosulfan I	10.5 U	U	ug/kg	10.5	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Endosulfan II	20.3 U	U	ug/kg	20.3	4.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Endosulfan Sulfate	20.3 U	U	ug/kg	20.3	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Endrin	20.3 U	U	ug/kg	20.3	1.5	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Endrin Aldehyde	20.3 U	U	ug/kg	20.3	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Endrin Ketone	20.3 U	U	ug/kg	20.3	2.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Heptachlor	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Heptachlor Epoxide	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Methoxychlor	20.3 U	U	ug/kg	20.3	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Toxaphene	215 U	U	ug/kg	215	35.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	87.3		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
Tetrachloro-m-xylene (S)	70.9		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:28	RWS	A
WET CHEMISTRY										
Moisture	20.3		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	79.7		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	11.2		mg/kg	1.8	0.62	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:07	ZMC	A1
Lead, Total	15.9		mg/kg	1.2	0.41	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:07	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995011**
Sample ID: **SB-8 (2.0'-2.5')**

Date Collected: 8/21/2017 13:53 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995012**
Sample ID: **SB-8 (4.5'-5.0')**

Date Collected: 8/21/2017 13:55 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.8 U	U	ug/kg	10.8	3.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
alpha-BHC	10.8 U	U	ug/kg	10.8	0.95	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
beta-BHC	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
delta-BHC	10.8 U	U	ug/kg	10.8	0.83	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
gamma-BHC	10.8 U	U	ug/kg	10.8	0.89	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
alpha-Chlordane	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
gamma-Chlordane	10.8 U	U	ug/kg	10.8	1.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
4,4'-DDD	21.0 U	U	ug/kg	21.0	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
4,4'-DDE	21.0 U	U	ug/kg	21.0	2.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
4,4'-DDT	21.0 U	U	ug/kg	21.0	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Dieldrin	21.0 U	U	ug/kg	21.0	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Endosulfan I	10.8 U	U	ug/kg	10.8	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Endosulfan II	21.0 U	U	ug/kg	21.0	4.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Endosulfan Sulfate	21.0 U	U	ug/kg	21.0	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Endrin	21.0 U	U	ug/kg	21.0	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Endrin Aldehyde	21.0 U	U	ug/kg	21.0	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Endrin Ketone	21.0 U	U	ug/kg	21.0	2.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Heptachlor	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Heptachlor Epoxide	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Methoxychlor	21.0 U	U	ug/kg	21.0	2.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Toxaphene	223 U	U	ug/kg	223	36.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	56.1		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
Tetrachloro-m-xylene (S)	57.9		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 17:58	RWS	B
WET CHEMISTRY										
Moisture	21.9		%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
Total Solids	78.1	1	%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
METALS										
Arsenic, Total	11.7		mg/kg	1.8	0.59	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:28	ZMC	B1
Lead, Total	21.2		mg/kg	1.2	0.39	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:28	ZMC	B1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995012**
Sample ID: **SB-8 (4.5'-5.0')**

Date Collected: 8/21/2017 13:55 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995013**

Date Collected: 8/21/2017 07:30

Matrix: Solid

Sample ID: **DUP-2**

Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	8.2 U	U	ug/kg	8.2	2.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
alpha-BHC	8.2 U	U	ug/kg	8.2	0.73	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
beta-BHC	8.2 U	U	ug/kg	8.2	0.87	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
delta-BHC	8.2 U	U	ug/kg	8.2	0.63	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
gamma-BHC	8.2 U	U	ug/kg	8.2	0.68	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
alpha-Chlordane	8.2 U	U	ug/kg	8.2	0.87	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
gamma-Chlordane	8.2 U	U	ug/kg	8.2	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
4,4'-DDD	16.0 U	U	ug/kg	16.0	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
4,4'-DDE	4.2J	J	ug/kg	16.0	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
4,4'-DDT	2.0J	J	ug/kg	16.0	1.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Dieldrin	16.0 U	U	ug/kg	16.0	1.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Endosulfan I	8.2 U	U	ug/kg	8.2	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Endosulfan II	16.0 U	U	ug/kg	16.0	3.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Endosulfan Sulfate	16.0 U	U	ug/kg	16.0	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Endrin	16.0 U	U	ug/kg	16.0	1.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Endrin Aldehyde	16.0 U	U	ug/kg	16.0	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Endrin Ketone	16.0 U	U	ug/kg	16.0	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Heptachlor	8.2 U	U	ug/kg	8.2	0.82	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Heptachlor Epoxide	8.2 U	U	ug/kg	8.2	0.82	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Methoxychlor	16.0 U	U	ug/kg	16.0	2.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Toxaphene	169 U	U	ug/kg	169	28.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	92.6		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
Tetrachloro-m-xylene (S)	74.4		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:43	RWS	B
WET CHEMISTRY										
Moisture	18.7		%	0.1	0.01	S2540G-11		9/1/17 14:02	AXD	B
Total Solids	81.3		%	0.1	0.01	S2540G-11		9/1/17 14:02	AXD	B
METALS										
Arsenic, Total	8.9		mg/kg	1.4	0.47	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:15	ZMC	B1
Lead, Total	10.8		mg/kg	0.94	0.31	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:15	ZMC	B1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995013**

Date Collected: 8/21/2017 07:30

Matrix: Solid

Sample ID: **DUP-2**

Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995014**
Sample ID: **SB-5 (0'-0.5)**

Date Collected: 8/21/2017 15:10 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	8.1 U	U	ug/kg	8.1	2.6	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
alpha-BHC	8.1 U	U	ug/kg	8.1	0.72	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
beta-BHC	8.1 U	U	ug/kg	8.1	0.86	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
delta-BHC	8.1 U	U	ug/kg	8.1	0.62	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
gamma-BHC	8.1 U	U	ug/kg	8.1	0.67	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
alpha-Chlordane	8.1 U	U	ug/kg	8.1	0.86	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
gamma-Chlordane	8.1 U	U	ug/kg	8.1	1.4	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
4,4'-DDD	15.8 U	U	ug/kg	15.8	1.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
4,4'-DDE	15.8 U	U	ug/kg	15.8	2.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
4,4'-DDT	15.8 U	U	ug/kg	15.8	1.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Dieldrin	15.8 U	U	ug/kg	15.8	1.8	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Endosulfan I	8.1 U	U	ug/kg	8.1	1.0	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Endosulfan II	15.8 U	U	ug/kg	15.8	3.3	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Endosulfan Sulfate	15.8 U	U	ug/kg	15.8	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Endrin	15.8 U	U	ug/kg	15.8	1.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Endrin Aldehyde	15.8 U	U	ug/kg	15.8	1.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Endrin Ketone	15.8 U	U	ug/kg	15.8	2.2	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Heptachlor	8.1 U	U	ug/kg	8.1	0.81	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Heptachlor Epoxide	8.1 U	U	ug/kg	8.1	0.81	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Methoxychlor	15.8 U	U	ug/kg	15.8	2.1	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Toxaphene	167 U	U	ug/kg	167	27.7	SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	83		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
Tetrachloro-m-xylene (S)	74.2		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/30/17 23:59	RWS	B
WET CHEMISTRY										
Moisture	14.7		%	0.1	0.01	S2540G-11		9/1/17 14:02	AXD	B
Total Solids	85.3		%	0.1	0.01	S2540G-11		9/1/17 14:02	AXD	B
METALS										
Arsenic, Total	7.4		mg/kg	1.5	0.49	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:19	ZMC	B1
Lead, Total	46.6		mg/kg	0.98	0.32	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:19	ZMC	B1

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**ANALYTICAL RESULTS**

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995014**
Sample ID: **SB-5 (0'-0.5)**Date Collected: 8/21/2017 15:10 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995018**
Sample ID: **SB-5 (2.0'-2.5')**

Date Collected: 8/21/2017 15:18 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.78	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.84	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
4,4'-DDD	19.7 U	U	ug/kg	19.7	1.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
4,4'-DDE	19.7 U	U	ug/kg	19.7	2.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
4,4'-DDT	19.7 U	U	ug/kg	19.7	2.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Dieldrin	19.7 U	U	ug/kg	19.7	2.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Endosulfan II	19.7 U	U	ug/kg	19.7	4.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Endosulfan Sulfate	19.7 U	U	ug/kg	19.7	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Endrin	19.7 U	U	ug/kg	19.7	1.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Endrin Aldehyde	19.7 U	U	ug/kg	19.7	2.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Endrin Ketone	19.7 U	U	ug/kg	19.7	2.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Methoxychlor	19.7 U	U	ug/kg	19.7	2.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Toxaphene	209 U	U	ug/kg	209	34.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	83		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
Tetrachloro-m-xylene (S)	74.1		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:15	RWS	A
WET CHEMISTRY										
Moisture	19.4		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	80.6		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	8.1		mg/kg	1.8	0.61	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:22	ZMC	A1
Lead, Total	9.6		mg/kg	1.2	0.40	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:22	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995018**
Sample ID: **SB-5 (2.0'-2.5')**

Date Collected: 8/21/2017 15:18 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995021**

Date Collected: 8/21/2017 15:30

Matrix: Solid

Sample ID: **SB-5 (14.5'-15.0')**

Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.3 U	U	ug/kg	10.3	3.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
alpha-BHC	10.3 U	U	ug/kg	10.3	0.90	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
beta-BHC	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
delta-BHC	10.3 U	U	ug/kg	10.3	0.78	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
gamma-BHC	10.3 U	U	ug/kg	10.3	0.84	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
alpha-Chlordane	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
gamma-Chlordane	10.3 U	U	ug/kg	10.3	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
4,4'-DDD	19.9 U	U	ug/kg	19.9	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
4,4'-DDE	45.5		ug/kg	19.9	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
4,4'-DDT	19.8J	J	ug/kg	19.9	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Dieldrin	19.9 U	U	ug/kg	19.9	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Endosulfan I	10.3 U	U	ug/kg	10.3	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Endosulfan II	19.9 U	U	ug/kg	19.9	4.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Endosulfan Sulfate	19.9 U	U	ug/kg	19.9	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Endrin	19.9 U	U	ug/kg	19.9	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Endrin Aldehyde	19.9 U	U	ug/kg	19.9	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Endrin Ketone	19.9 U	U	ug/kg	19.9	2.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Heptachlor	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Heptachlor Epoxide	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Methoxychlor	19.9 U	U	ug/kg	19.9	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Toxaphene	211 U	U	ug/kg	211	35.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	73.8		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
Tetrachloro-m-xylene (S)	66.4		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:14	RWS	B
WET CHEMISTRY										
Moisture	20.8		%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
Total Solids	79.2	1	%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
METALS										
Arsenic, Total	8.2		mg/kg	1.7	0.56	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:32	ZMC	B1
Lead, Total	14.3		mg/kg	1.1	0.37	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:32	ZMC	B1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995021**

Date Collected: 8/21/2017 15:30

Matrix: Solid

Sample ID: **SB-5 (14.5'-15.0')**

Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995022** Date Collected: 8/21/2017 15:35 Matrix: Solid
Sample ID: **SB-5 (19.5'-20.0')** Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	12.2 U	U	ug/kg	12.2	4.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
alpha-BHC	12.2 U	U	ug/kg	12.2	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
beta-BHC	12.2 U	U	ug/kg	12.2	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
delta-BHC	12.2 U	U	ug/kg	12.2	0.94	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
gamma-BHC	12.2 U	U	ug/kg	12.2	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
alpha-Chlordane	12.2 U	U	ug/kg	12.2	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
gamma-Chlordane	12.2 U	U	ug/kg	12.2	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
4,4'-DDD	23.7 U	U	ug/kg	23.7	1.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
4,4'-DDE	23.7 U	U	ug/kg	23.7	3.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
4,4'-DDT	23.7 U	U	ug/kg	23.7	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Dieldrin	23.7 U	U	ug/kg	23.7	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Endosulfan I	12.2 U	U	ug/kg	12.2	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Endosulfan II	23.7 U	U	ug/kg	23.7	5.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Endosulfan Sulfate	23.7 U	U	ug/kg	23.7	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Endrin	23.7 U	U	ug/kg	23.7	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Endrin Aldehyde	23.7 U	U	ug/kg	23.7	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Endrin Ketone	23.7 U	U	ug/kg	23.7	3.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Heptachlor	12.2 U	U	ug/kg	12.2	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Heptachlor Epoxide	12.2 U	U	ug/kg	12.2	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Methoxychlor	23.7 U	U	ug/kg	23.7	3.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Toxaphene	252 U	U	ug/kg	252	41.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	61		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
Tetrachloro-m-xylene (S)	65.7		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:30	RWS	B
WET CHEMISTRY										
Moisture	31.4		%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
Total Solids	68.6	1	%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
METALS										
Arsenic, Total	8.0		mg/kg	2.1	0.69	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:36	ZMC	B1
Lead, Total	10.4		mg/kg	1.4	0.45	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:36	ZMC	B1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995022**

Date Collected: 8/21/2017 15:35

Matrix: Solid

Sample ID: **SB-5 (19.5'-20.0')**

Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995024**
Sample ID: **SB-2 (0'-0.5')**

Date Collected: 8/21/2017 16:15 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.4 U	U	ug/kg	10.4	3.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
alpha-BHC	10.4 U	U	ug/kg	10.4	0.91	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
beta-BHC	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
delta-BHC	10.4 U	U	ug/kg	10.4	0.79	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
gamma-BHC	10.4 U	U	ug/kg	10.4	0.85	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
alpha-Chlordane	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
gamma-Chlordane	10.4 U	U	ug/kg	10.4	1.8	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
4,4'-DDD	20.1 U	U	ug/kg	20.1	1.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
4,4'-DDE	20.1 U	U	ug/kg	20.1	2.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
4,4'-DDT	20.1 U	U	ug/kg	20.1	2.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Dieldrin	20.1 U	U	ug/kg	20.1	2.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Endosulfan I	10.4 U	U	ug/kg	10.4	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Endosulfan II	20.1 U	U	ug/kg	20.1	4.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Endosulfan Sulfate	20.1 U	U	ug/kg	20.1	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Endrin	20.1 U	U	ug/kg	20.1	1.5	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Endrin Aldehyde	20.1 U	U	ug/kg	20.1	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Endrin Ketone	20.1 U	U	ug/kg	20.1	2.8	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Heptachlor	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Heptachlor Epoxide	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Methoxychlor	20.1 U	U	ug/kg	20.1	2.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Toxaphene	213 U	U	ug/kg	213	35.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	83.6		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
Tetrachloro-m-xylene (S)	73.1		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:30	RWS	A
WET CHEMISTRY										
Moisture	21.1		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	78.9		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	12.7		mg/kg	1.8	0.61	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:26	ZMC	A1
Lead, Total	23.3		mg/kg	1.2	0.40	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:26	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995024**
Sample ID: **SB-2 (0'-0.5')**

Date Collected: 8/21/2017 16:15 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995026**
Sample ID: **SB-2 (1.0'-1.5')**

Date Collected: 8/21/2017 16:19 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
delta-BHC	10.1 U	U	ug/kg	10.1	0.78	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
gamma-BHC	10.1 U	U	ug/kg	10.1	0.84	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
4,4'-DDD	19.7 U	U	ug/kg	19.7	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
4,4'-DDE	19.7 U	U	ug/kg	19.7	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
4,4'-DDT	19.7 U	U	ug/kg	19.7	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Dieldrin	19.7 U	U	ug/kg	19.7	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Endosulfan I	10.1 U	U	ug/kg	10.1	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Endosulfan II	19.7 U	U	ug/kg	19.7	4.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Endosulfan Sulfate	19.7 U	U	ug/kg	19.7	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Endrin	19.7 U	U	ug/kg	19.7	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Endrin Aldehyde	19.7 U	U	ug/kg	19.7	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Endrin Ketone	19.7 U	U	ug/kg	19.7	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Methoxychlor	19.7 U	U	ug/kg	19.7	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Toxaphene	209 U	U	ug/kg	209	34.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	81.9		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
Tetrachloro-m-xylene (S)	75.6		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 18:46	RWS	B
WET CHEMISTRY										
Moisture	17.8		%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
Total Solids	82.2	1	%	0.1	0.01	S2540G-11		9/2/17 23:31	MLM	B
METALS										
Arsenic, Total	17.3		mg/kg	1.7	0.57	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:39	ZMC	B1
Lead, Total	32.8		mg/kg	1.1	0.38	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:39	ZMC	B1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995026**
Sample ID: **SB-2 (1.0'-1.5')**

Date Collected: 8/21/2017 16:19 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995028**
Sample ID: **SB-2 (2.0'-2.5')**

Date Collected: 8/21/2017 16:23 Matrix: Solid
Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.5 U	U	ug/kg	10.5	3.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
alpha-BHC	10.5 U	U	ug/kg	10.5	0.93	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
beta-BHC	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
delta-BHC	10.5 U	U	ug/kg	10.5	0.80	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
gamma-BHC	10.5 U	U	ug/kg	10.5	0.86	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
alpha-Chlordane	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
gamma-Chlordane	10.5 U	U	ug/kg	10.5	1.8	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
4,4'-DDD	20.4 U	U	ug/kg	20.4	1.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
4,4'-DDE	20.4 U	U	ug/kg	20.4	2.8	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
4,4'-DDT	20.4 U	U	ug/kg	20.4	2.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Dieldrin	20.4 U	U	ug/kg	20.4	2.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Endosulfan I	10.5 U	U	ug/kg	10.5	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Endosulfan II	20.4 U	U	ug/kg	20.4	4.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Endosulfan Sulfate	20.4 U	U	ug/kg	20.4	1.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Endrin	20.4 U	U	ug/kg	20.4	1.5	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Endrin Aldehyde	20.4 U	U	ug/kg	20.4	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Endrin Ketone	20.4 U	U	ug/kg	20.4	2.8	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Heptachlor	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Heptachlor Epoxide	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Methoxychlor	20.4 U	U	ug/kg	20.4	2.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Toxaphene	216 U	U	ug/kg	216	35.8	SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	94.6		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
Tetrachloro-m-xylene (S)	69.1		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 00:46	RWS	A
WET CHEMISTRY										
Moisture	20.0		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
Total Solids	80.0		%	0.1	0.01	S2540G-11		8/23/17 14:22	AXD	
METALS										
Arsenic, Total	23.3		mg/kg	1.6	0.53	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:30	ZMC	A1
Lead, Total	25.9	1	mg/kg	1.1	0.35	SW846 6020A	8/24/17 00:35 LXC	8/24/17 12:30	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2255995 ERM155|JEFFERSON COUNTY WV

Lab ID: **2255995028**

Date Collected: 8/21/2017 16:23

Matrix: Solid

Sample ID: **SB-2 (2.0'-2.5')**

Date Received: 8/22/2017 16:50

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
2255995003	1	SB-12 (2.0'-2.5')	SW846 6020A	Arsenic, Total
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. The sample was post-digestion spiked, and this matrix spike was within acceptable recovery limits.				
2255995003	2	SB-12 (2.0'-2.5')	SW846 6020A	Lead, Total
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. The sample was post-digestion spiked, and this matrix spike was within acceptable recovery limits.				
2255995006	1	SB-12 (13'-13.5')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2255995012	1	SB-8 (4.5'-5.0')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2255995021	1	SB-5 (14.5'-15.0')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2255995022	1	SB-5 (19.5'-20.0')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2255995026	1	SB-2 (1.0'-1.5')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2255995028	1	SB-2 (2.0'-2.5')	SW846 6020A	Lead, Total
The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. The sample was post-digestion spiked, and this matrix spike was within acceptable recovery limits.				

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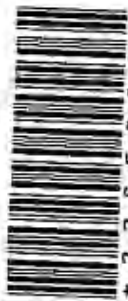
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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT /
SAMPLER. INSTRUCTIONS ON THE BACK.

Page 1 of 1
Courier:
Tracking #:



* 2 2 5 5 9 9 5 *

Co. Name: ERM		Phone: 3047574777	
Contact (Please Print): Dave Connelly			
Address: 204 Chase Drive			
Bill to (if different than Report to):		PO#:	
Project Name/ID: JO VRP		ALS Quote #:	
TAT: ☒ Normal-Standard TAT is 10-12 business days. ☐ Rush-Subject to ALS approval and surcharges.		Date Required: Approved By:	
Email? ☒	Fax? ☐		
Sample Description/Location (as it will appear on the lab report)		COC Comments	Sample Date
1 SB-12 (1.0-1.5')		Hold	8/21/17 1144 G 5
2 SB-12 (1.5-2.0')		Hold	8/21/17 1146
3 SB-12 (2.0-2.5')			8/21/17 1148
4 SB-12 (2.5-5.0')		Hold	8/21/17 1150
5 SB-12 (9.5-10.0')		Hold	8/21/17 1155
6 SB-12 (13-13.5')		Hold	8/21/17 1200
7 SB-8 (0-0.5')			8/21/17 1345
8 SB-8 (0.5-1.0')		Hold	8/21/17 1347
SAMPLED BY (Please Print):		Project Comments:	
Relinquished By / Company Name		Date	Time
1 Robert P. Ferrell / ERM		8/21/17	0805
3 ALS B.O.		8/22	1650
5			
7			
9			

ANALYSES/METHOD REQUESTED	
Enter Number of Containers Per Analysis	
Pest: Cides 8081A Lead & Arsenic	
Matrix: G 5	
Container in good condition? ☒	
COC Labels complete/accurate? ☒	
Received on ice? ☒	
(If present) Seals intact? ☒	
Custody seals Present? ☒	
Correct sample volume? ☒	
Correct preservation? ☒	
Headspace/Volatiles? ☒	
Circle appropriate Y or N.	

ALS FIELD SERVICES	
☐ Pickup ☐ Labor ☐ Composite Sampling ☐ Rental Equipment ☐ Other:	
SWA: ☐ Standard ☐ CLP-like ☐ NJ-Reduced ☐ NJ-Full Form 7-2: ☐ yes ☐ no ☐ yes ☐ no ☐ yes ☐ no Data Deliverables: ☐ if yes, format type: Other:	
SQA Samples Collected in? ☐ MD ☐ NJ ☐ NY ☐ PA ERM: ☐ yes ☐ no DOD Criteria Required? ☐	

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

* G-Grab; C-Composite

**Matrix: AL-Air; DW-Drinking Water; GW-Groundwater; GH-Oil; OL-Other Liquid; SL-Sludge; SO-Soil; WP-Wipe; WW-Wastewater

***Container Type: AG-Amber Glass; CG-Clear Glass; PL-Plastic, Container Size: 250ml, 500ml, 1L, 2L, etc. Preservative: HCl, HNO3, NaOH, etc.

Rev 01-2013



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CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Co. Name: **ERM**

Contact (Report to): **DAVE CONNELLY**
Address: **244 CHASE DRIVE**

Phone: **304 7574777**

Bill to (different than Report to):

PO#:

Project Name/ID: **JO VEP**

ALS Quote #:

TAT: ☒ Normal-Standard TAT is 10-12 business days.
☐ Rush-Subject to ALS approval and surcharges.

Date Required:
Approved By:

Email? ☒
Fax? ☒

Y No:

Sample Description/Location
(as it will appear on the lab report)

COC Comments

Sample Date

Military Time

Enter Number of Containers Per Analysis

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September 7, 2017

Mr. David Connelly
Environmental Resource Management (ERM)-WV
204 Chase Drive
Hurricane, WV 25526

Certificate of Analysis

Revised Report - 9/7/2017 3:31:50 PM - See workorder comment section for explanation

Project Name:	2017-JEFFERSON COUNTY	Workorder:	2256251
Purchase Order:		Workorder ID:	ERM156 JEFFERSON COUNTY WV

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Wednesday, August 23, 2017 and Saturday, September 2, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

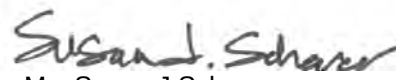
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.


Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2256251001	SB-6(1.5-2.0')	Other	8/22/2017 11:20	8/23/2017 16:52	Collected by Client
2256251002	SB-6(2.0-2.5')	Solid	8/22/2017 11:25	8/23/2017 16:52	Collected by Client
2256251003	SB-6(4.5-5.0')	Other	8/22/2017 11:30	8/23/2017 16:52	Collected by Client
2256251004	SB-4(0-0.5')	Solid	8/22/2017 12:55	8/23/2017 16:52	Collected by Client
2256251005	SB-4(0.5-1.0')	Solid	8/22/2017 13:00	9/2/2017 19:09	Collected by Client
2256251006	SB-4(1.0-1.5')	Other	8/22/2017 13:05	8/23/2017 16:52	Collected by Client
2256251007	SB-4(1.5-2.0')	Other	8/22/2017 13:10	8/23/2017 16:52	Collected by Client
2256251008	SB-4(2.0-2.5')	Solid	8/22/2017 13:15	8/23/2017 16:52	Collected by Client

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SAMPLE SUMMARY

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 09/02/17 at 1909. SJS 09/05/17

Here are the additional samples that can be released from hold status and analyzed.

Sample Comments

Lab ID: 2256251002**Sample ID:** SB-6(2.0-2.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256251004**Sample ID:** SB-4(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256251005**Sample ID:** SB-4(0.5-1.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256251008**Sample ID:** SB-4(2.0-2.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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ANALYTICAL RESULTS

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Lab ID: **2256251002** Date Collected: 8/22/2017 11:25 Matrix: Solid
Sample ID: **SB-6(2.0-2.5')** Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.6 U	U	ug/kg	9.6	3.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
alpha-BHC	9.6 U	U	ug/kg	9.6	0.85	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
beta-BHC	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
delta-BHC	9.6 U	U	ug/kg	9.6	0.74	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
gamma-BHC	9.6 U	U	ug/kg	9.6	0.79	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
alpha-Chlordane	9.6 U	U	ug/kg	9.6	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
gamma-Chlordane	9.6 U	U	ug/kg	9.6	1.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
4,4'-DDD	18.7 U	U	ug/kg	18.7	1.5	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
4,4'-DDE	18.7 U	U	ug/kg	18.7	2.5	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
4,4'-DDT	18.7 U	U	ug/kg	18.7	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Dieldrin	18.7 U	U	ug/kg	18.7	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Endosulfan I	9.6 U	U	ug/kg	9.6	1.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Endosulfan II	18.7 U	U	ug/kg	18.7	3.9	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Endosulfan Sulfate	18.7 U	U	ug/kg	18.7	1.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Endrin	18.7 U	U	ug/kg	18.7	1.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Endrin Aldehyde	18.7 U	U	ug/kg	18.7	2.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Endrin Ketone	18.7 U	U	ug/kg	18.7	2.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Heptachlor	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Heptachlor Epoxide	9.6 U	U	ug/kg	9.6	0.96	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Methoxychlor	18.7 U	U	ug/kg	18.7	2.5	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Toxaphene	198 U	U	ug/kg	198	32.9	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	87.2		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
Tetrachloro-m-xylene (S)	68.9		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:02	RWS	A
WET CHEMISTRY										
Moisture	14.6		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	85.4		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	5.5		mg/kg	1.7	0.56	SW846 6020A	8/24/17 05:45 LXC	8/24/17 12:59	ZMC	A1
Lead, Total	10.5		mg/kg	1.1	0.37	SW846 6020A	8/24/17 05:45 LXC	8/24/17 12:59	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Lab ID: **2256251002**
Sample ID: **SB-6(2.0-2.5')**

Date Collected: 8/22/2017 11:25 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Lab ID: **2256251004**
Sample ID: **SB-4(0-0.5')**

Date Collected: 8/22/2017 12:55 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.7 U	U	ug/kg	9.7	3.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
alpha-BHC	9.7 U	U	ug/kg	9.7	0.86	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
beta-BHC	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
delta-BHC	9.7 U	U	ug/kg	9.7	0.74	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
gamma-BHC	9.7 U	U	ug/kg	9.7	0.80	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
alpha-Chlordane	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
gamma-Chlordane	9.7 U	U	ug/kg	9.7	1.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
4,4'-DDD	18.9 U	U	ug/kg	18.9	1.5	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
4,4'-DDE	18.8J	J	ug/kg	18.9	2.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
4,4'-DDT	4.6J	J	ug/kg	18.9	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Dieldrin	18.9 U	U	ug/kg	18.9	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Endosulfan I	9.7 U	U	ug/kg	9.7	1.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Endosulfan II	18.9 U	U	ug/kg	18.9	3.9	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Endosulfan Sulfate	18.9 U	U	ug/kg	18.9	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Endrin	18.9 U	U	ug/kg	18.9	1.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Endrin Aldehyde	18.9 U	U	ug/kg	18.9	2.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Endrin Ketone	18.9 U	U	ug/kg	18.9	2.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Heptachlor	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Heptachlor Epoxide	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Methoxychlor	18.9 U	U	ug/kg	18.9	2.5	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Toxaphene	200 U	U	ug/kg	200	33.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	90.7		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
Tetrachloro-m-xylene (S)	76		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:18	RWS	A
WET CHEMISTRY										
Moisture	13.7		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	86.3		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	6.8		mg/kg	1.7	0.57	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:07	ZMC	A1
Lead, Total	15.0		mg/kg	1.1	0.37	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:07	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Lab ID: **2256251004**
Sample ID: **SB-4(0-0.5')**

Date Collected: 8/22/2017 12:55 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Lab ID: **2256251005**
Sample ID: **SB-4(0.5-1.0')**

Date Collected: 8/22/2017 13:00 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.7 U	U	ug/kg	9.7	3.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
alpha-BHC	9.7 U	U	ug/kg	9.7	0.86	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
beta-BHC	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
delta-BHC	9.7 U	U	ug/kg	9.7	0.74	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
gamma-BHC	9.7 U	U	ug/kg	9.7	0.80	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
alpha-Chlordane	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
gamma-Chlordane	9.7 U	U	ug/kg	9.7	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
4,4'-DDD	18.8 U	U	ug/kg	18.8	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
4,4'-DDE	18.8 U	U	ug/kg	18.8	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
4,4'-DDT	18.8 U	U	ug/kg	18.8	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Dieldrin	18.8 U	U	ug/kg	18.8	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Endosulfan I	9.7 U	U	ug/kg	9.7	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Endosulfan II	18.8 U	U	ug/kg	18.8	3.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Endosulfan Sulfate	18.8 U	U	ug/kg	18.8	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Endrin	18.8 U	U	ug/kg	18.8	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Endrin Aldehyde	18.8 U	U	ug/kg	18.8	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Endrin Ketone	18.8 U	U	ug/kg	18.8	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Heptachlor	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Heptachlor Epoxide	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Methoxychlor	18.8 U	U	ug/kg	18.8	2.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Toxaphene	200 U	U	ug/kg	200	33.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	81.4		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
Tetrachloro-m-xylene (S)	75.7		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:02	RWS	A
WET CHEMISTRY										
Moisture	13.5		%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
Total Solids	86.5	1	%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
METALS										
Arsenic, Total	5.3		mg/kg	1.6	0.54	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:43	ZMC	A1
Lead, Total	12.9		mg/kg	1.1	0.35	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:43	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Lab ID: **2256251005**
Sample ID: **SB-4(0.5-1.0')**

Date Collected: 8/22/2017 13:00 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Lab ID: **2256251008**
Sample ID: **SB-4(2.0-2.5')**

Date Collected: 8/22/2017 13:15 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.77	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.83	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
4,4'-DDD	19.5 U	U	ug/kg	19.5	1.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
4,4'-DDE	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
4,4'-DDT	19.5 U	U	ug/kg	19.5	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Dieldrin	19.5 U	U	ug/kg	19.5	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Endosulfan II	19.5 U	U	ug/kg	19.5	4.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Endosulfan Sulfate	19.5 U	U	ug/kg	19.5	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Endrin	19.5 U	U	ug/kg	19.5	1.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Endrin Aldehyde	19.5 U	U	ug/kg	19.5	2.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Endrin Ketone	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Methoxychlor	19.5 U	U	ug/kg	19.5	2.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Toxaphene	207 U	U	ug/kg	207	34.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	78.9		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
Tetrachloro-m-xylene (S)	75.6		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:33	RWS	A
WET CHEMISTRY										
Moisture	16.6		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	83.4		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	5.2		mg/kg	1.7	0.58	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:10	ZMC	A1
Lead, Total	11.3		mg/kg	1.2	0.38	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:10	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256251 ERM156|JEFFERSON COUNTY WV

Lab ID: **2256251008**
Sample ID: **SB-4(2.0-2.5')**

Date Collected: 8/22/2017 13:15 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2256251005	1	SB-4(0.5-1.0')	S2540G-11	Total Solids

Analyte was analyzed past the 7 day holding time.

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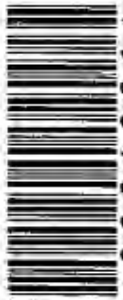


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F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/
SAMPLER. INSTRUCTIONS ON THE BACK

Page 1 of 1
Courier: ALS
Tracking #: 2256251



Co. Name: ERM		Phone: 304 757477		ANALYSES/METHOD REQUESTED	
Contact (Report to): Dave Connolly		Address: 204 Chase Drive		Therm ID: 309	
Project Name/ID: TO VRR		ALS Quote #: 		No. of Coolers: 	
TAT: ☒ Normal-Standard TAT is 10-12 business days		Date Required: 		Notes: 	
TAT: ☐ Rush-Subject to ALS approval and surcharges		Approved By: 		Correct sample volume? ☒ Correct preservation? ☒ Headspace/Volatiles? ☒ Container in good condition? ☒	
Email? ☒ Fax? ☐		PO#: 		Correct containers? ☒ Received on ice? ☒ COC labels complete/accurate? ☒	
Sample Description/Location (as it will appear on the lab report)		COC Comments		Enter Number of Containers Per Analysis	
1 SB-6 (1.5-2.0')		Hold		1	
2 SB-6 (2.0-2.5')		Hold		1	
3 SB-6 (2.5-5.0')		Hold		1	
4 SB-4 (0-0.5')		Hold		1	
5 SB-4 (0.5-1.0')		Hold		1	
6 SB-4 (1.0-1.5')		Hold		1	
7 SB-4 (1.5-2.0')		Hold		1	
8 SB-4 (2.0-2.5')		Hold		1	
SAMPLER BY (Please Print): Tyler Fewell		Project Comments: 8/23/17 2320		Data Deliverables	
Relinquished By / Company Name		Received By / Company Name		Standard ☐ CLP-like ☐ NJ-Reduced ☐ NJ-Full ☐	
1 David R. Fewell		2 ALS		State Samples Collected in? ☐ MD ☐ NJ ☐ NY ☐ PA ☐	
3 ALS		4 gmu		If yes, format type: ☐ Other ☐	
5 		6 		DOB Criteria Required? ☐	
7 		8 		ALS FIELD SERVICES	
9 		10 		Pickup ☐ Labor ☐ Composite Sampling ☐ Rental Equipment ☐ Other: ☐	

Copies: WHITE - ORIGINAL - CANARY - CUSTOMER COPY

Matrix: AL=Air; DW=Drinking Water; GW=Groundwater; OL=Oil; OL-Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WW=Wastewater

Container Type: AG=Amber Glass; GG=Clear Glass; PL=Plastic; Container Size: 250ml, 500ml, 1L, 5oz, etc. Preservative: HCl, HNO3, NaOH, etc.

Rev 01-2013

September 7, 2017

Mr. David Connelly
Environmental Resource Management (ERM)-WV
204 Chase Drive
Hurricane, WV 25526

Certificate of Analysis

Revised Report - 9/7/2017 3:31:52 PM - See workorder comment section for explanation

Project Name:	2017-JEFFERSON COUNTY	Workorder:	2256252
Purchase Order:		Workorder ID:	ERM157 JEFFERSON COUNTY WV

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Wednesday, August 23, 2017 and Saturday, September 2, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

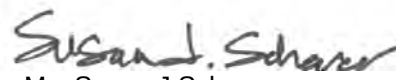
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.


Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2256252 ERM157|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2256252001	SB-9(9.5-10')	Other	8/23/2017 11:07	8/23/2017 16:52	Collected by Client
2256252002	SB-9(14.5-15')	Other	8/23/2017 11:12	8/23/2017 16:52	Collected by Client
2256252003	SB-9(19.5-20')	Solid	8/23/2017 11:17	9/2/2017 19:09	Collected by Client
2256252004	ER-3	Water	8/23/2017 11:25	8/23/2017 16:52	Collected by Client
2256252005	SB-1(0-0.5')	Solid	8/23/2017 11:53	8/23/2017 16:52	Collected by Client
2256252006	SB-1(0.5-1.0')	Other	8/23/2017 11:55	8/23/2017 16:52	Collected by Client
2256252007	SB-1(1.0-1.5')	Other	8/23/2017 11:57	8/23/2017 16:52	Collected by Client
2256252008	SB-1(1.5-2.0')	Other	8/23/2017 11:59	8/23/2017 16:52	Collected by Client

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SAMPLE SUMMARY

Workorder: 2256252 ERM157|JEFFERSON COUNTY WV

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2256252 ERM157|JEFFERSON COUNTY WV

Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 09/02/17 at 1909. SJS 09/05/17

Here are the additional samples that can be released from hold status and analyzed.

Sample Comments

Lab ID: 2256252003**Sample ID:** SB-9(19.5-20')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256252005**Sample ID:** SB-1(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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ANALYTICAL RESULTS

Workorder: 2256252 ERM157|JEFFERSON COUNTY WV

Lab ID: **2256252003**
Sample ID: **SB-9(19.5-20')**

Date Collected: 8/23/2017 11:17 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	11.4 U	U	ug/kg	11.4	3.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
alpha-BHC	11.4 U	U	ug/kg	11.4	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
beta-BHC	11.4 U	U	ug/kg	11.4	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
delta-BHC	11.4 U	U	ug/kg	11.4	0.87	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
gamma-BHC	11.4 U	U	ug/kg	11.4	0.94	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
alpha-Chlordane	11.4 U	U	ug/kg	11.4	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
gamma-Chlordane	11.4 U	U	ug/kg	11.4	1.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
4,4'-DDD	22.1 U	U	ug/kg	22.1	1.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
4,4'-DDE	22.1 U	U	ug/kg	22.1	3.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
4,4'-DDT	22.1 U	U	ug/kg	22.1	2.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Dieldrin	22.1 U	U	ug/kg	22.1	2.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Endosulfan I	11.4 U	U	ug/kg	11.4	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Endosulfan II	22.1 U	U	ug/kg	22.1	4.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Endosulfan Sulfate	22.1 U	U	ug/kg	22.1	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Endrin	22.1 U	U	ug/kg	22.1	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Endrin Aldehyde	22.1 U	U	ug/kg	22.1	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Endrin Ketone	22.1 U	U	ug/kg	22.1	3.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Heptachlor	11.4 U	U	ug/kg	11.4	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Heptachlor Epoxide	11.4 U	U	ug/kg	11.4	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Methoxychlor	22.1 U	U	ug/kg	22.1	2.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Toxaphene	234 U	U	ug/kg	234	38.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	70.2		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
Tetrachloro-m-xylene (S)	69.9		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:17	RWS	A
WET CHEMISTRY										
Moisture	27.8		%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
Total Solids	72.2	1	%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
METALS										
Arsenic, Total	14.0		mg/kg	1.9	0.64	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:58	ZMC	A1
Lead, Total	15.3		mg/kg	1.3	0.42	SW846 6020A	9/5/17 01:30 LXC	9/5/17 06:58	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256252 ERM157|JEFFERSON COUNTY WV

Lab ID: **2256252003**
Sample ID: **SB-9(19.5-20')**

Date Collected: 8/23/2017 11:17 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256252 ERM157|JEFFERSON COUNTY WV

Lab ID: **2256252004**

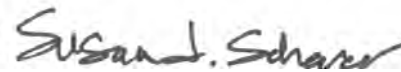
Date Collected: 8/23/2017 11:25

Matrix: Water

Sample ID: **ER-3**

Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	0.021 U	U	ug/L	0.021	0.0052	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
alpha-BHC	0.021 U	U	ug/L	0.021	0.0021	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
beta-BHC	0.021 U	U	ug/L	0.021	0.0083	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
delta-BHC	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
gamma-BHC	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
alpha-Chlordane	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
gamma-Chlordane	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
4,4'-DDD	0.021 U	U	ug/L	0.021	0.0073	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
4,4'-DDE	0.021 U	U	ug/L	0.021	0.0073	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
4,4'-DDT	0.021 U	U	ug/L	0.021	0.0063	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Dieldrin	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Endosulfan I	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Endosulfan II	0.021 U	U	ug/L	0.021	0.0063	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Endosulfan Sulfate	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Endrin	0.021 U	U	ug/L	0.021	0.0083	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Endrin Aldehyde	0.021 U	U	ug/L	0.021	0.010	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Endrin Ketone	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Heptachlor	0.021 U	U	ug/L	0.021	0.0031	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Heptachlor Epoxide	0.021 U	U	ug/L	0.021	0.0042	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Methoxychlor	0.021 U	U	ug/L	0.021	0.0094	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Toxaphene	1.0 U	U	ug/L	1.0	0.20	SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By</i> <i>Cntr</i>
Decachlorobiphenyls (S)	82.8		%	30 - 140		SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
Tetrachloro-m-xylene (S)	85		%	30 - 123		SW846 8081B	8/25/17 09:10 J1D	8/28/17 22:01	RWS	B
METALS										
Arsenic, Total	0.0033 U	U	mg/L	0.0033	0.0011	SW846 6020A	8/25/17 00:30 ZMC	8/25/17 05:52	ZMC	A1
Lead, Total	0.0022 U	U	mg/L	0.0022	0.00074	SW846 6020A	8/25/17 00:30 ZMC	8/25/17 05:52	ZMC	A1



Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256252 ERM157|JEFFERSON COUNTY WV

Lab ID: **2256252005**
Sample ID: **SB-1(0-0.5')**

Date Collected: 8/23/2017 11:53 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
alpha-BHC	10.2 U	U	ug/kg	10.2	0.90	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
beta-BHC	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
delta-BHC	10.2 U	U	ug/kg	10.2	0.78	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
gamma-BHC	10.2 U	U	ug/kg	10.2	0.84	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
gamma-Chlordane	10.2 U	U	ug/kg	10.2	1.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
4,4'-DDD	19.8 U	U	ug/kg	19.8	1.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
4,4'-DDE	19.8 U	U	ug/kg	19.8	2.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
4,4'-DDT	19.8 U	U	ug/kg	19.8	2.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Dieldrin	19.8 U	U	ug/kg	19.8	2.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Endosulfan II	19.8 U	U	ug/kg	19.8	4.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Endosulfan Sulfate	19.8 U	U	ug/kg	19.8	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Endrin	19.8 U	U	ug/kg	19.8	1.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Endrin Aldehyde	19.8 U	U	ug/kg	19.8	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Endrin Ketone	19.8 U	U	ug/kg	19.8	2.8	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Methoxychlor	19.8 U	U	ug/kg	19.8	2.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Toxaphene	210 U	U	ug/kg	210	34.8	SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	85.1		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
Tetrachloro-m-xylene (S)	72.7		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 01:49	RWS	A
WET CHEMISTRY										
Moisture	17.3		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	82.7		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	7.3		mg/kg	1.7	0.58	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:14	ZMC	A1
Lead, Total	13.0		mg/kg	1.2	0.38	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:14	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256252 ERM157|JEFFERSON COUNTY WV

Lab ID: **2256252005**

Date Collected: 8/23/2017 11:53

Matrix: Solid

Sample ID: **SB-1(0-0.5')**

Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2256252003	1	SB-9(19.5-20')	S2540G-11	Total Solids

Analyte was analyzed past the 7 day holding time.

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Middletown, PA 17057
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F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Page of
Courier:
Tracking #:



Environmental

Co. Name: **ERM**
Contact (Report to): **Dave Connelly**
Address: **204 Chase Drive**
Phone: **301 757 4777**

Bill to (if different than Report to):

PO#:

Project Name#: **TOURP** ALS Quote #:
TAT: ☒ Normal-Standard TAT is 10-12 business days.
Rush-Subject to ALS approval and surcharges.
Email? ☒ Y ☐ N
Fax? ☐ Y ☐ N

Sample Description/Location (as it will appear on the lab report)	COC Comments	Sample Date	Military Time
1 SB-9 (9.5-10')	Hold	8/23/17	1107
2 SB-9 (14.5-15')	Hold	8/23/17	1112
3 SB-9 (19.5-20')	Hold	8/23/17	1117
4 ER-3		8/23/17	1125
5 SB-1 (0-0.5')		8/23/17	1153
6 SB-1 (0.5-1.0')	Hold	8/23/17	1155
7 SB-1 (1.0-1.5')	Hold	8/23/17	1157
8 SB-1 (1.5-2.0')	Hold	8/23/17	1159

Project Comments:

SAMPLED BY (Please Print):

Tyler Fawell

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
1 Taylor R. Fawell ERM	8/23/17	1340	2 ALS-Bethlehem	8/23	1340
3 ALS-Bethlehem	8/23	1652	4 gml ALS	9/13	1652
5			6		
7			8		
9			10		

* G=Grab; C=Composite

**Matrix: A=Air; D=Drinking Water; GW=Groundwater; Q=Oil; OL=Other Liquid; SL=Sediment; SQ=Soil; WP=Wipe; WW=Wastewater
***Container Type: AG=Amber Glass; CO=Clear Glass; PL=Plastic. Container Size: 250ml, 500ml, 1L, 5oz., etc. Preservative: HCl, HNO3, NaOH, etc.

Copies: WHITE - ORIGINAL CANARY - CUSTOMER COPY

Rev 01-2013

Container Type		Container Size		Preservative	
Type		Size		Preservative	
ANALYSIS/METHOD REQUESTED					
Enter Number of Containers Per Analysis					
Pest. Cides 8081A Lead & Arsenic T. As & T. Pb					
Correct containers? ☒ Y ☐ N Correct sample volume? ☒ Y ☐ N Correct preservation? ☒ Y ☐ N Headspace/Volatilized? ☒ Y ☐ N COC labels complete/accurate? ☒ Y ☐ N Received on ice? ☒ Y ☐ N (If present) Seals intact? ☒ Y ☐ N Custody seals Present? ☒ Y ☐ N Container in good condition? ☒ Y ☐ N					
ALS FIELD SERVICES Pickup ☐ Labor ☐ Composite Sampling ☐ Rental Equipment ☐ Other: ☐					
SQA Forms ☐ ☐ ☐ ☐ Data Deliverables Standard ☐ CLP-File ☐ NJ-Reduced ☐ NJ-Full ☐ If yes, format type: ☐ ☐ ☐ ☐ Other: ☐					
SQA Samples Collected in? ☐ MD ☐ NJ ☐ NY ☐ PA DOD Criteria Required? ☐					

September 7, 2017

Mr. David Connelly
Environmental Resource Management (ERM)-WV
204 Chase Drive
Hurricane, WV 25526

Certificate of Analysis

Revised Report - 9/7/2017 3:32:17 PM - See workorder comment section for explanation

Project Name:	2017-JEFFERSON COUNTY	Workorder:	2256253
Purchase Order:		Workorder ID:	ERM158 JEFFERSON COUNTY WV

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Wednesday, August 23, 2017 and Saturday, September 2, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

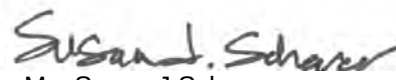
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.


Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2256253 ERM158|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2256253001	SB-4(4.5-5.0')	Other	8/22/2017 13:20	8/23/2017 16:52	Collected by Client
2256253002	ER-2	Water	8/22/2017 13:35	8/23/2017 16:52	Collected by Client
2256253003	SB-11(0-0.5')	Solid	8/23/2017 10:15	8/23/2017 16:52	Collected by Client
2256253004	SB-11(0.5-1.0')	Other	8/23/2017 10:17	8/23/2017 16:52	Collected by Client
2256253005	SB-11(1.0-1.5')	Solid	8/23/2017 10:19	9/2/2017 19:09	Collected by Client
2256253006	SB-11(1.5-2.0')	Other	8/23/2017 10:21	8/23/2017 16:52	Collected by Client

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SAMPLE SUMMARY

Workorder: 2256253 ERM158|JEFFERSON COUNTY WV

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2256253 ERM158|JEFFERSON COUNTY WV

Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 09/02/17 at 1909. SJS 09/05/17

Here are the additional samples that can be released from hold status and analyzed.

Sample Comments

Lab ID: 2256253003

Sample ID: SB-11(0-0.5')

Sample Type: SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256253005

Sample ID: SB-11(1.0-1.5')

Sample Type: SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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ANALYTICAL RESULTS

Workorder: 2256253 ERM158|JEFFERSON COUNTY WV

Lab ID: 2256253002

Date Collected: 8/22/2017 13:35

Matrix: Water

Sample ID: ER-2

Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	0.020 U	U	ug/L	0.020	0.0049	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
alpha-BHC	0.020 U	U	ug/L	0.020	0.0020	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
beta-BHC	0.020 U	U	ug/L	0.020	0.0078	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
delta-BHC	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
gamma-BHC	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
alpha-Chlordane	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
gamma-Chlordane	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
4,4'-DDD	0.020 U	U	ug/L	0.020	0.0069	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
4,4'-DDE	0.020 U	U	ug/L	0.020	0.0069	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
4,4'-DDT	0.020 U	U	ug/L	0.020	0.0059	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Dieldrin	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Endosulfan I	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Endosulfan II	0.020 U	U	ug/L	0.020	0.0059	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Endosulfan Sulfate	0.020 U	U	ug/L	0.020	0.0039	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Endrin	0.020 U	U	ug/L	0.020	0.0078	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Endrin Aldehyde	0.020 U	U	ug/L	0.020	0.0098	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Endrin Ketone	0.020 U	U	ug/L	0.020	0.0039	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Heptachlor	0.020 U	U	ug/L	0.020	0.0029	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Heptachlor Epoxide	0.020 U	U	ug/L	0.020	0.0039	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Methoxychlor	0.020 U	U	ug/L	0.020	0.0088	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Toxaphene	0.98 U	U	ug/L	0.98	0.19	SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	75.5		%	30 - 140		SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
Tetrachloro-m-xylene (S)	86		%	30 - 123		SW846 8081B	8/25/17 09:10 J1D	8/28/17 21:45	RWS	B
METALS										
Arsenic, Total	0.0033 U	U	mg/L	0.0033	0.0011	SW846 6020A	8/25/17 00:30 ZMC	8/25/17 05:21	ZMC	A1
Lead, Total	0.0022 U	U	mg/L	0.0022	0.00074	SW846 6020A	8/25/17 00:30 ZMC	8/25/17 05:21	ZMC	A1

Ms. Susan J Scherer

Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256253 ERM158|JEFFERSON COUNTY WV

Lab ID: **2256253003**
Sample ID: **SB-11(0-0.5')**

Date Collected: 8/23/2017 10:15 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.8 U	U	ug/kg	9.8	3.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
alpha-BHC	9.8 U	U	ug/kg	9.8	0.87	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
beta-BHC	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
delta-BHC	9.8 U	U	ug/kg	9.8	0.75	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
gamma-BHC	9.8 U	U	ug/kg	9.8	0.81	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
alpha-Chlordane	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
gamma-Chlordane	9.8 U	U	ug/kg	9.8	1.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
4,4'-DDD	14.6J	J	ug/kg	19.1	1.6	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
4,4'-DDE	746		ug/kg	191	26.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 11:57	RWS	A
4,4'-DDT	292	1	ug/kg	19.1	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Dieldrin	6.0J	J	ug/kg	19.1	2.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Endosulfan I	9.8 U	U	ug/kg	9.8	1.2	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Endosulfan II	19.1 U	U	ug/kg	19.1	4.0	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Endosulfan Sulfate	19.1 U	U	ug/kg	19.1	1.3	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Endrin	19.1 U	U	ug/kg	19.1	1.4	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Endrin Aldehyde	19.1 U	U	ug/kg	19.1	2.1	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Endrin Ketone	19.1 U	U	ug/kg	19.1	2.7	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Heptachlor	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Heptachlor Epoxide	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Methoxychlor	19.1 U	U	ug/kg	19.1	2.5	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Toxaphene	202 U	U	ug/kg	202	33.5	SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	86.2		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 11:57	RWS	A
Decachlorobiphenyls (S)	89		%	30 - 135		SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Tetrachloro-m-xylene (S)	69.8		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 02:05	RWS	A
Tetrachloro-m-xylene (S)	73.6		%	30 - 111		SW846 8081B	8/29/17 14:40 JTH	8/31/17 11:57	RWS	A
WET CHEMISTRY										
Moisture	16.9		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	83.1		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	12.3		mg/kg	1.8	0.59	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:18	ZMC	A1
Lead, Total	21.6		mg/kg	1.2	0.39	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:18	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256253 ERM158|JEFFERSON COUNTY WV

Lab ID: **2256253003**
Sample ID: **SB-11(0-0.5')**

Date Collected: 8/23/2017 10:15 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256253 ERM158|JEFFERSON COUNTY WV

Lab ID: **2256253005** Date Collected: 8/23/2017 10:19 Matrix: Solid
Sample ID: **SB-11(1.0-1.5')** Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.8 U	U	ug/kg	9.8	3.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
alpha-BHC	9.8 U	U	ug/kg	9.8	0.87	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
beta-BHC	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
delta-BHC	9.8 U	U	ug/kg	9.8	0.75	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
gamma-BHC	9.8 U	U	ug/kg	9.8	0.81	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
alpha-Chlordane	9.8 U	U	ug/kg	9.8	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
gamma-Chlordane	9.8 U	U	ug/kg	9.8	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
4,4'-DDD	19.1 U	U	ug/kg	19.1	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
4,4'-DDE	19.1 U	U	ug/kg	19.1	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
4,4'-DDT	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Dieldrin	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Endosulfan I	9.8 U	U	ug/kg	9.8	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Endosulfan II	19.1 U	U	ug/kg	19.1	4.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Endosulfan Sulfate	19.1 U	U	ug/kg	19.1	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Endrin	19.1 U	U	ug/kg	19.1	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Endrin Aldehyde	19.1 U	U	ug/kg	19.1	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Endrin Ketone	19.1 U	U	ug/kg	19.1	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Heptachlor	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Heptachlor Epoxide	9.8 U	U	ug/kg	9.8	0.98	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Methoxychlor	19.1 U	U	ug/kg	19.1	2.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Toxaphene	202 U	U	ug/kg	202	33.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	68.3		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
Tetrachloro-m-xylene (S)	63.4		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:33	RWS	A
WET CHEMISTRY										
Moisture	16.8		%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
Total Solids	83.2	1	%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
METALS										
Arsenic, Total	13.9		mg/kg	1.8	0.59	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:02	ZMC	A1
Lead, Total	20.1		mg/kg	1.2	0.39	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:02	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256253 ERM158|JEFFERSON COUNTY WV

Lab ID: **2256253005**
Sample ID: **SB-11(1.0-1.5')**

Date Collected: 8/23/2017 10:19 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
2256253003	1	SB-11(0-0.5')	SW846 8081B	4,4'-DDT
The QC sample type MS/MSD for method SW846 8081B was outside the control limits for the analyte 4,4'-DDT. The % Recovery could not accurately determined due to the amount of analyte in the parent sample.				
2256253005	1	SB-11(1.0-1.5')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				

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September 7, 2017

Mr. David Connelly
Environmental Resource Management (ERM)-WV
204 Chase Drive
Hurricane, WV 25526

Certificate of Analysis

Revised Report - 9/7/2017 3:32:23 PM - See workorder comment section for explanation

Project Name:	2017-JEFFERSON COUNTY	Workorder:	2256254
Purchase Order:		Workorder ID:	ERM159 JEFFERSON COUNTY WV

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Wednesday, August 23, 2017 and Saturday, September 2, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

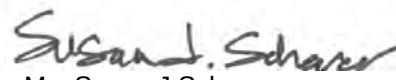
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.


Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2256254001	SB-3(2.0-2.5')	Solid	8/22/2017 10:35	8/23/2017 16:52	Collected by Client
2256254002	DUP-3	Solid	8/22/2017 07:00	8/23/2017 16:52	Collected by Client
2256254003	SB-3(4.5-5.0')	Other	8/22/2017 10:40	8/23/2017 16:52	Collected by Client
2256254004	SB-6(0-0.5')	Solid	8/22/2017 11:05	8/23/2017 16:52	Collected by Client
2256254005	SB-6(0.5-1')	Solid	8/22/2017 11:10	9/2/2017 19:09	Collected by Client
2256254006	SB-6(1.0-1.5')	Other	8/22/2017 11:15	8/23/2017 16:52	Collected by Client

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SAMPLE SUMMARY

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 09/02/17 at 1909. SJS 09/05/17

Here are the additional samples that can be released from hold status and analyzed.

Sample Comments

Lab ID: 2256254001**Sample ID:** SB-3(2.0-2.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256254002**Sample ID:** DUP-3**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256254004**Sample ID:** SB-6(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256254005**Sample ID:** SB-6(0.5-1')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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ANALYTICAL RESULTS

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Lab ID: **2256254001**
Sample ID: **SB-3(2.0-2.5')**

Date Collected: 8/22/2017 10:35 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.4 U	U	ug/kg	10.4	3.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
alpha-BHC	10.4 U	U	ug/kg	10.4	0.92	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
beta-BHC	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
delta-BHC	10.4 U	U	ug/kg	10.4	0.80	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
gamma-BHC	10.4 U	U	ug/kg	10.4	0.86	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
alpha-Chlordane	10.4 U	U	ug/kg	10.4	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
gamma-Chlordane	10.4 U	U	ug/kg	10.4	1.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
4,4'-DDD	20.3 U	U	ug/kg	20.3	1.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
4,4'-DDE	20.3 U	U	ug/kg	20.3	2.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
4,4'-DDT	20.3 U	U	ug/kg	20.3	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Dieldrin	20.3 U	U	ug/kg	20.3	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Endosulfan I	10.4 U	U	ug/kg	10.4	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Endosulfan II	20.3 U	U	ug/kg	20.3	4.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Endosulfan Sulfate	20.3 U	U	ug/kg	20.3	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Endrin	20.3 U	U	ug/kg	20.3	1.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Endrin Aldehyde	20.3 U	U	ug/kg	20.3	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Endrin Ketone	20.3 U	U	ug/kg	20.3	2.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Heptachlor	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Heptachlor Epoxide	10.4 U	U	ug/kg	10.4	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Methoxychlor	20.3 U	U	ug/kg	20.3	2.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Toxaphene	215 U	U	ug/kg	215	35.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	94.4		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
Tetrachloro-m-xylene (S)	81.1		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 17:53	RWS	A
WET CHEMISTRY										
Moisture	18.6		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	81.4		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	8.4		mg/kg	1.8	0.61	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:55	ZMC	A1
Lead, Total	13.2		mg/kg	1.2	0.41	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:55	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Lab ID: **2256254001**
Sample ID: **SB-3(2.0-2.5')**

Date Collected: 8/22/2017 10:35 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Lab ID: **2256254002**
Sample ID: **DUP-3**

Date Collected: 8/22/2017 07:00 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.5 U	U	ug/kg	10.5	3.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
alpha-BHC	10.5 U	U	ug/kg	10.5	0.92	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
beta-BHC	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
delta-BHC	10.5 U	U	ug/kg	10.5	0.80	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
gamma-BHC	10.5 U	U	ug/kg	10.5	0.86	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
alpha-Chlordane	10.5 U	U	ug/kg	10.5	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
gamma-Chlordane	10.5 U	U	ug/kg	10.5	1.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
4,4'-DDD	20.3 U	U	ug/kg	20.3	1.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
4,4'-DDE	20.3 U	U	ug/kg	20.3	2.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
4,4'-DDT	20.3 U	U	ug/kg	20.3	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Dieldrin	20.3 U	U	ug/kg	20.3	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Endosulfan I	10.5 U	U	ug/kg	10.5	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Endosulfan II	20.3 U	U	ug/kg	20.3	4.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Endosulfan Sulfate	20.3 U	U	ug/kg	20.3	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Endrin	20.3 U	U	ug/kg	20.3	1.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Endrin Aldehyde	20.3 U	U	ug/kg	20.3	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Endrin Ketone	20.3 U	U	ug/kg	20.3	2.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Heptachlor	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Heptachlor Epoxide	10.5 U	U	ug/kg	10.5	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Methoxychlor	20.3 U	U	ug/kg	20.3	2.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Toxaphene	215 U	U	ug/kg	215	35.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	86.7		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
Tetrachloro-m-xylene (S)	78.7		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:09	RWS	A
WET CHEMISTRY										
Moisture	18.7		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	81.3		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	8.2		mg/kg	1.7	0.56	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:59	ZMC	A1
Lead, Total	13.2		mg/kg	1.1	0.37	SW846 6020A	8/24/17 05:45 LXC	8/24/17 13:59	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Lab ID: **2256254002**

Date Collected: 8/22/2017 07:00

Matrix: Solid

Sample ID: **DUP-3**

Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Lab ID: 2256254004

Date Collected: 8/22/2017 11:05

Matrix: Solid

Sample ID: SB-6(0-0.5')

Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.1 U	U	ug/kg	10.1	3.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
alpha-BHC	10.1 U	U	ug/kg	10.1	0.89	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
beta-BHC	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
delta-BHC	10.1 U	U	ug/kg	10.1	0.77	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
gamma-BHC	10.1 U	U	ug/kg	10.1	0.83	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
alpha-Chlordane	10.1 U	U	ug/kg	10.1	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
gamma-Chlordane	10.1 U	U	ug/kg	10.1	1.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
4,4'-DDD	19.5 U	U	ug/kg	19.5	1.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
4,4'-DDE	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
4,4'-DDT	19.5 U	U	ug/kg	19.5	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Dieldrin	19.5 U	U	ug/kg	19.5	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Endosulfan I	10.1 U	U	ug/kg	10.1	1.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Endosulfan II	19.5 U	U	ug/kg	19.5	4.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Endosulfan Sulfate	19.5 U	U	ug/kg	19.5	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Endrin	19.5 U	U	ug/kg	19.5	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Endrin Aldehyde	19.5 U	U	ug/kg	19.5	2.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Endrin Ketone	19.5 U	U	ug/kg	19.5	2.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Heptachlor	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Heptachlor Epoxide	10.1 U	U	ug/kg	10.1	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Methoxychlor	19.5 U	U	ug/kg	19.5	2.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Toxaphene	207 U	U	ug/kg	207	34.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	72.1		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
Tetrachloro-m-xylene (S)	65.3		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:24	RWS	A
WET CHEMISTRY										
Moisture	16.6		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	83.4		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	6.6		mg/kg	1.6	0.55	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:02	ZMC	A1
Lead, Total	12.5		mg/kg	1.1	0.36	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:02	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Lab ID: **2256254004**
Sample ID: **SB-6(0-0.5')**

Date Collected: 8/22/2017 11:05 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Lab ID: **2256254005**
Sample ID: **SB-6(0.5-1')**

Date Collected: 8/22/2017 11:10 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.9 U	U	ug/kg	9.9	3.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
alpha-BHC	9.9 U	U	ug/kg	9.9	0.87	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
beta-BHC	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
delta-BHC	9.9 U	U,1	ug/kg	9.9	0.75	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
gamma-BHC	9.9 U	U	ug/kg	9.9	0.81	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
alpha-Chlordane	9.9 U	U	ug/kg	9.9	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
gamma-Chlordane	9.9 U	U	ug/kg	9.9	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
4,4'-DDD	19.1 U	U,3,4	ug/kg	19.1	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
4,4'-DDE	19.1 U	U	ug/kg	19.1	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
4,4'-DDT	19.1 U	U,5,6	ug/kg	19.1	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Dieldrin	19.1 U	U	ug/kg	19.1	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Endosulfan I	9.9 U	U	ug/kg	9.9	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Endosulfan II	19.1 U	U	ug/kg	19.1	4.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Endosulfan Sulfate	19.1 U	U	ug/kg	19.1	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Endrin	19.1 U	U,2	ug/kg	19.1	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Endrin Aldehyde	19.1 U	U	ug/kg	19.1	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Endrin Ketone	19.1 U	U	ug/kg	19.1	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Heptachlor	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Heptachlor Epoxide	9.9 U	U	ug/kg	9.9	0.99	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Methoxychlor	19.1 U	U	ug/kg	19.1	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Toxaphene	203 U	U	ug/kg	203	33.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	79.3		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
Tetrachloro-m-xylene (S)	67.4		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 19:49	RWS	A
WET CHEMISTRY										
Moisture	16.0		%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
Total Solids	84.0	7	%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
METALS										
Arsenic, Total	6.5		mg/kg	1.7	0.55	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:17	ZMC	A1
Lead, Total	14.1		mg/kg	1.1	0.36	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:17	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256254 ERM159|JEFFERSON COUNTY WV

Lab ID: **2256254005**
Sample ID: **SB-6(0.5-1')**

Date Collected: 8/22/2017 11:10 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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**PARAMETER QUALIFIERS**

Lab ID	#	Sample ID	Analytical Method	Analyte
2256254005	1	SB-6(0.5-1')	SW846 8081B	delta-BHC
The QC sample type MS for method SW846 8081B was outside the control limits for the analyte delta-BHC. The % Recovery was reported as 57.9 and the control limits were 60 to 103.				
2256254005	2	SB-6(0.5-1')	SW846 8081B	Endrin
The QC sample type MS for method SW846 8081B was outside the control limits for the analyte Endrin. The % Recovery was reported as 61.8 and the control limits were 63 to 108.				
2256254005	3	SB-6(0.5-1')	SW846 8081B	4,4'-DDD
The QC sample type MS for method SW846 8081B was outside the control limits for the analyte 4,4'-DDD. The % Recovery was reported as 0 and the control limits were 57 to 111.				
2256254005	4	SB-6(0.5-1')	SW846 8081B	4,4'-DDD
The QC sample type MSD for method SW846 8081B was outside the control limits for the analyte 4,4'-DDD. The RPD was reported as 200 and the upper control limit is 40.				
2256254005	5	SB-6(0.5-1')	SW846 8081B	4,4'-DDT
The QC sample type MS for method SW846 8081B was outside the control limits for the analyte 4,4'-DDT. The % Recovery was reported as 53.8 and the control limits were 60 to 122.				
2256254005	6	SB-6(0.5-1')	SW846 8081B	4,4'-DDT
The QC sample type MSD for method SW846 8081B was outside the control limits for the analyte 4,4'-DDT. The % Recovery was reported as 58 and the control limits were 60 to 122.				
2256254005	7	SB-6(0.5-1')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				

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September 7, 2017

Mr. David Connelly
Environmental Resource Management (ERM)-WV
204 Chase Drive
Hurricane, WV 25526

Certificate of Analysis

Revised Report - 9/7/2017 3:32:41 PM - See workorder comment section for explanation

Project Name:	2017-JEFFERSON COUNTY	Workorder:	2256258
Purchase Order:		Workorder ID:	ERM160 JEFFERSON COUNTY WV

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Wednesday, August 23, 2017 and Saturday, September 2, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

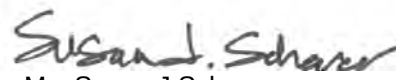
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.


Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2256258001	SB-7(1.0-1.5')	Other	8/22/2017 09:45	8/23/2017 16:52	Collected by Client
2256258002	SB-7(1.5-2.0')	Other	8/22/2017 09:50	8/23/2017 16:52	Collected by Client
2256258003	SB-7(2.02.5')	Solid	8/22/2017 09:55	8/23/2017 16:52	Collected by Client
2256258004	SB-7(4.5-5.0')	Solid	8/22/2017 10:00	9/2/2017 19:09	Collected by Client
2256258005	SB-3(0-0.5')	Solid	8/22/2017 10:15	8/23/2017 16:52	Collected by Client
2256258006	SB-3(0.5-1.0')	Other	8/22/2017 10:20	8/23/2017 16:52	Collected by Client
2256258007	SB-3(1.0-1.5')	Solid	8/22/2017 10:25	9/2/2017 19:09	Collected by Client
2256258008	SB-3(1.5-2.0')	Other	8/22/2017 10:30	8/23/2017 16:52	Collected by Client

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SAMPLE SUMMARY

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 09/02/17 at 1909. SJS 09/05/17

Here are the additional samples that can be released from hold status and analyzed.

Sample Comments

Lab ID: 2256258003**Sample ID:** SB-7(2.02.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256258004**Sample ID:** SB-7(4.5-5.0')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256258005**Sample ID:** SB-3(0-0.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

Lab ID: 2256258007**Sample ID:** SB-3(1.0-1.5')**Sample Type:** SAMPLE

This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.

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ANALYTICAL RESULTS

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Lab ID: **2256258003**
Sample ID: **SB-7(2.02.5')**

Date Collected: 8/22/2017 09:55 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	11.0 U	U	ug/kg	11.0	3.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
alpha-BHC	11.0 U	U	ug/kg	11.0	0.97	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
beta-BHC	11.0 U	U	ug/kg	11.0	1.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
delta-BHC	11.0 U	U	ug/kg	11.0	0.84	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
gamma-BHC	11.0 U	U	ug/kg	11.0	0.91	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
alpha-Chlordane	11.0 U	U	ug/kg	11.0	1.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
gamma-Chlordane	11.0 U	U	ug/kg	11.0	1.9	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
4,4'-DDD	21.3 U	U	ug/kg	21.3	1.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
4,4'-DDE	4.3J	J	ug/kg	21.3	2.9	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
4,4'-DDT	21.3 U	U	ug/kg	21.3	2.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Dieldrin	21.3 U	U	ug/kg	21.3	2.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Endosulfan I	11.0 U	U	ug/kg	11.0	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Endosulfan II	21.3 U	U	ug/kg	21.3	4.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Endosulfan Sulfate	21.3 U	U	ug/kg	21.3	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Endrin	21.3 U	U	ug/kg	21.3	1.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Endrin Aldehyde	21.3 U	U	ug/kg	21.3	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Endrin Ketone	21.3 U	U	ug/kg	21.3	3.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Heptachlor	11.0 U	U	ug/kg	11.0	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Heptachlor Epoxide	11.0 U	U	ug/kg	11.0	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Methoxychlor	21.3 U	U	ug/kg	21.3	2.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Toxaphene	226 U	U	ug/kg	226	37.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	76.1		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
Tetrachloro-m-xylene (S)	66		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:40	RWS	A
WET CHEMISTRY										
Moisture	24.2		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	75.8		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	16.0		mg/kg	1.6	0.55	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:17	ZMC	A1
Lead, Total	34.0		mg/kg	1.1	0.36	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:17	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Lab ID: **2256258003**
Sample ID: **SB-7(2.02.5')**

Date Collected: 8/22/2017 09:55 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Lab ID: **2256258004**
Sample ID: **SB-7(4.5-5.0')**

Date Collected: 8/22/2017 10:00 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.9 U	U	ug/kg	10.9	3.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
alpha-BHC	10.9 U	U	ug/kg	10.9	0.96	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
beta-BHC	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
delta-BHC	10.9 U	U	ug/kg	10.9	0.83	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
gamma-BHC	10.9 U	U	ug/kg	10.9	0.89	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
alpha-Chlordane	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
gamma-Chlordane	10.9 U	U	ug/kg	10.9	1.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
4,4'-DDD	21.1 U	U	ug/kg	21.1	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
4,4'-DDE	21.1 U	U	ug/kg	21.1	2.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
4,4'-DDT	21.1 U	U	ug/kg	21.1	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Dieldrin	21.1 U	U	ug/kg	21.1	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Endosulfan I	10.9 U	U	ug/kg	10.9	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Endosulfan II	21.1 U	U	ug/kg	21.1	4.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Endosulfan Sulfate	21.1 U	U	ug/kg	21.1	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Endrin	21.1 U	U	ug/kg	21.1	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Endrin Aldehyde	21.1 U	U	ug/kg	21.1	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Endrin Ketone	21.1 U	U	ug/kg	21.1	2.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Heptachlor	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Heptachlor Epoxide	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Methoxychlor	21.1 U	U	ug/kg	21.1	2.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Toxaphene	224 U	U	ug/kg	224	37.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	86.2		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
Tetrachloro-m-xylene (S)	75		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:37	RWS	A
WET CHEMISTRY										
Moisture	23.8		%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
Total Solids	76.2	1	%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
METALS										
Arsenic, Total	16.9		mg/kg	2.0	0.66	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:21	ZMC	A1
Lead, Total	26.9		mg/kg	1.3	0.43	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:21	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Lab ID: **2256258004**
Sample ID: **SB-7(4.5-5.0')**

Date Collected: 8/22/2017 10:00 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Lab ID: **2256258005**
Sample ID: **SB-3(0-0.5')**

Date Collected: 8/22/2017 10:15 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.7 U	U	ug/kg	9.7	3.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
alpha-BHC	9.7 U	U	ug/kg	9.7	0.86	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
beta-BHC	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
delta-BHC	9.7 U	U	ug/kg	9.7	0.74	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
gamma-BHC	9.7 U	U	ug/kg	9.7	0.80	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
alpha-Chlordane	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
gamma-Chlordane	9.7 U	U	ug/kg	9.7	1.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
4,4'-DDD	18.9 U	U	ug/kg	18.9	1.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
4,4'-DDE	7.6J	J	ug/kg	18.9	2.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
4,4'-DDT	3.0J	J	ug/kg	18.9	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Dieldrin	18.9 U	U	ug/kg	18.9	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Endosulfan I	9.7 U	U	ug/kg	9.7	1.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Endosulfan II	18.9 U	U	ug/kg	18.9	3.9	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Endosulfan Sulfate	18.9 U	U	ug/kg	18.9	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Endrin	18.9 U	U	ug/kg	18.9	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Endrin Aldehyde	18.9 U	U	ug/kg	18.9	2.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Endrin Ketone	18.9 U	U	ug/kg	18.9	2.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Heptachlor	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Heptachlor Epoxide	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Methoxychlor	18.9 U	U	ug/kg	18.9	2.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Toxaphene	200 U	U	ug/kg	200	33.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	81.6		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
Tetrachloro-m-xylene (S)	72.4		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 18:56	RWS	A
WET CHEMISTRY										
Moisture	18.1		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	81.9		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	10.2		mg/kg	1.8	0.59	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:21	ZMC	A1
Lead, Total	20.4		mg/kg	1.2	0.39	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:21	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Lab ID: **2256258005**
Sample ID: **SB-3(0-0.5')**

Date Collected: 8/22/2017 10:15 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Lab ID: **2256258007**
Sample ID: **SB-3(1.0-1.5')**

Date Collected: 8/22/2017 10:25 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10 U	U	ug/kg	10	3.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
alpha-BHC	10 U	U	ug/kg	10	0.88	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
beta-BHC	10 U	U	ug/kg	10	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
delta-BHC	10 U	U	ug/kg	10	0.76	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
gamma-BHC	10 U	U	ug/kg	10	0.82	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
alpha-Chlordane	10 U	U	ug/kg	10	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
gamma-Chlordane	10 U	U	ug/kg	10	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
4,4'-DDD	19.4 U	U	ug/kg	19.4	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
4,4'-DDE	19.4 U	U	ug/kg	19.4	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
4,4'-DDT	19.4 U	U	ug/kg	19.4	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Dieldrin	19.4 U	U	ug/kg	19.4	2.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Endosulfan I	10 U	U	ug/kg	10	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Endosulfan II	19.4 U	U	ug/kg	19.4	4.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Endosulfan Sulfate	19.4 U	U	ug/kg	19.4	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Endrin	19.4 U	U	ug/kg	19.4	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Endrin Aldehyde	19.4 U	U	ug/kg	19.4	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Endrin Ketone	19.4 U	U	ug/kg	19.4	2.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Heptachlor	10 U	U	ug/kg	10	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Heptachlor Epoxide	10 U	U	ug/kg	10	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Methoxychlor	19.4 U	U	ug/kg	19.4	2.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Toxaphene	205 U	U	ug/kg	205	34.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	77.5		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
Tetrachloro-m-xylene (S)	71.5		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 20:52	RWS	A
WET CHEMISTRY										
Moisture	15.9		%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
Total Solids	84.1	1	%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
METALS										
Arsenic, Total	8.7		mg/kg	1.7	0.57	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:25	ZMC	A1
Lead, Total	17.5		mg/kg	1.1	0.38	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:25	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256258 ERM160|JEFFERSON COUNTY WV

Lab ID: **2256258007**
Sample ID: **SB-3(1.0-1.5')**

Date Collected: 8/22/2017 10:25 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2256258004	1	SB-7(4.5-5.0')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2256258007	1	SB-3(1.0-1.5')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				

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September 7, 2017

Mr. David Connelly
Environmental Resource Management (ERM)-WV
204 Chase Drive
Hurricane, WV 25526

Certificate of Analysis

Revised Report - 9/7/2017 3:33:13 PM - See workorder comment section for explanation

Project Name:	2017-JEFFERSON COUNTY	Workorder:	2256263
Purchase Order:		Workorder ID:	ERM162 JEFFERSON COUNTY WV

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Wednesday, August 23, 2017 and Saturday, September 2, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.

Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2256263001	SB-11(2.0-2.5')	Solid	8/23/2017 10:23	8/23/2017 16:52	Collected by Client
2256263002	SB-11(4.5-5.0')	Other	8/23/2017 10:25	8/23/2017 16:52	Collected by Client
2256263003	SB-9(0-0.5')	Solid	8/23/2017 10:52	8/23/2017 16:52	Collected by Client
2256263004	SB-9(0.5-1.0')	Other	8/23/2017 10:54	8/23/2017 16:52	Collected by Client
2256263005	SB-9(1.0-1.5')	Other	8/23/2017 10:56	8/23/2017 16:52	Collected by Client
2256263006	SB-9(1.5-2.0')	Other	8/23/2017 10:58	8/23/2017 16:52	Collected by Client
2256263007	SB-9(2.0-2.5')	Solid	8/23/2017 11:00	8/23/2017 16:52	Collected by Client
2256263008	SB-9(4.5-5.0')	Solid	8/23/2017 11:02	9/2/2017 19:09	Collected by Client
2256263009	SB-1(2.0-2.5')	Solid	8/23/2017 12:01	8/23/2017 16:52	Collected by Client
2256263010	SB-1(4.5-5.0')	Other	8/23/2017 12:03	8/23/2017 16:52	Collected by Client
2256263011	SB-1(9.0-9.5')	Solid	8/23/2017 12:05	9/2/2017 19:09	Collected by Client

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SAMPLE SUMMARY

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 09/02/17 at 1909. SJS 09/05/17

Here are the additional samples that can be released from hold status and analyzed.

Sample Comments

Lab ID: 2256263001	Sample ID: SB-11(2.0-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2256263003	Sample ID: SB-9(0-0.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2256263007	Sample ID: SB-9(2.0-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2256263008	Sample ID: SB-9(4.5-5.0')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2256263009	Sample ID: SB-1(2.0-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2256263011	Sample ID: SB-1(9.0-9.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		

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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263001**
Sample ID: **SB-11(2.0-2.5')**

Date Collected: 8/23/2017 10:23 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.8 U	U	ug/kg	10.8	3.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
alpha-BHC	10.8 U	U	ug/kg	10.8	0.95	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
beta-BHC	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
delta-BHC	10.8 U	U	ug/kg	10.8	0.83	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
gamma-BHC	10.8 U	U	ug/kg	10.8	0.89	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
alpha-Chlordane	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
gamma-Chlordane	10.8 U	U	ug/kg	10.8	1.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
4,4'-DDD	21.0 U	U	ug/kg	21.0	1.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
4,4'-DDE	21.0 U	U	ug/kg	21.0	2.9	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
4,4'-DDT	21.0 U	U	ug/kg	21.0	2.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Dieldrin	21.0 U	U	ug/kg	21.0	2.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Endosulfan I	10.8 U	U	ug/kg	10.8	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Endosulfan II	21.0 U	U	ug/kg	21.0	4.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Endosulfan Sulfate	21.0 U	U	ug/kg	21.0	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Endrin	21.0 U	U	ug/kg	21.0	1.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Endrin Aldehyde	21.0 U	U	ug/kg	21.0	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Endrin Ketone	21.0 U	U	ug/kg	21.0	2.9	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Heptachlor	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Heptachlor Epoxide	10.8 U	U	ug/kg	10.8	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Methoxychlor	21.0 U	U	ug/kg	21.0	2.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Toxaphene	222 U	U	ug/kg	222	36.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	61.5		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
Tetrachloro-m-xylene (S)	58.1		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:59	RWS	A
WET CHEMISTRY										
Moisture	23.8		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	76.2		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	11.7		mg/kg	1.9	0.63	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:48	ZMC	A1
Lead, Total	22.0		mg/kg	1.3	0.42	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:48	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263001**
Sample ID: **SB-11(2.0-2.5')**

Date Collected: 8/23/2017 10:23 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263003**
Sample ID: **SB-9(0-0.5')**

Date Collected: 8/23/2017 10:52 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.4 U	U	ug/kg	9.4	3.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
alpha-BHC	9.4 U	U	ug/kg	9.4	0.83	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
beta-BHC	9.4 U	U	ug/kg	9.4	0.99	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
delta-BHC	9.4 U	U	ug/kg	9.4	0.72	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
gamma-BHC	9.4 U	U	ug/kg	9.4	0.77	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
alpha-Chlordane	9.4 U	U	ug/kg	9.4	0.99	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
gamma-Chlordane	9.4 U	U	ug/kg	9.4	1.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
4,4'-DDD	18.2 U	U	ug/kg	18.2	1.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
4,4'-DDE	18.2 U	U	ug/kg	18.2	2.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
4,4'-DDT	18.2 U	U	ug/kg	18.2	2.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Dieldrin	18.2 U	U	ug/kg	18.2	2.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Endosulfan I	9.4 U	U	ug/kg	9.4	1.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Endosulfan II	18.2 U	U	ug/kg	18.2	3.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Endosulfan Sulfate	18.2 U	U	ug/kg	18.2	1.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Endrin	18.2 U	U	ug/kg	18.2	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Endrin Aldehyde	18.2 U	U	ug/kg	18.2	2.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Endrin Ketone	18.2 U	U	ug/kg	18.2	2.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Heptachlor	9.4 U	U	ug/kg	9.4	0.94	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Heptachlor Epoxide	9.4 U	U	ug/kg	9.4	0.94	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Methoxychlor	18.2 U	U	ug/kg	18.2	2.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Toxaphene	193 U	U	ug/kg	193	32.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	91		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
Tetrachloro-m-xylene (S)	92.8		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:14	RWS	A
WET CHEMISTRY										
Moisture	14.5		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	85.5		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	10.3		mg/kg	1.7	0.57	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:51	ZMC	A1
Lead, Total	20.3		mg/kg	1.1	0.38	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:51	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263003**
Sample ID: **SB-9(0-0.5')**

Date Collected: 8/23/2017 10:52 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263007**
Sample ID: **SB-9(2.0-2.5')**

Date Collected: 8/23/2017 11:00 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	11.2 U	U	ug/kg	11.2	3.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
alpha-BHC	11.2 U	U	ug/kg	11.2	0.99	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
beta-BHC	11.2 U	U	ug/kg	11.2	1.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
delta-BHC	11.2 U	U	ug/kg	11.2	0.86	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
gamma-BHC	11.2 U	U	ug/kg	11.2	0.92	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
alpha-Chlordane	11.2 U	U	ug/kg	11.2	1.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
gamma-Chlordane	11.2 U	U	ug/kg	11.2	1.9	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
4,4'-DDD	21.7 U	U	ug/kg	21.7	1.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
4,4'-DDE	21.7 U	U	ug/kg	21.7	3.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
4,4'-DDT	21.7 U	U	ug/kg	21.7	2.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Dieldrin	21.7 U	U	ug/kg	21.7	2.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Endosulfan I	11.2 U	U	ug/kg	11.2	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Endosulfan II	21.7 U	U	ug/kg	21.7	4.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Endosulfan Sulfate	21.7 U	U	ug/kg	21.7	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Endrin	21.7 U	U	ug/kg	21.7	1.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Endrin Aldehyde	21.7 U	U	ug/kg	21.7	2.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Endrin Ketone	21.7 U	U	ug/kg	21.7	3.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Heptachlor	11.2 U	U	ug/kg	11.2	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Heptachlor Epoxide	11.2 U	U	ug/kg	11.2	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Methoxychlor	21.7 U	U	ug/kg	21.7	2.9	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Toxaphene	230 U	U	ug/kg	230	38.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	83.8		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
Tetrachloro-m-xylene (S)	80.7		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:30	RWS	A
WET CHEMISTRY										
Moisture	24.0		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	76.0		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	12.9		mg/kg	1.9	0.65	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:55	ZMC	A1
Lead, Total	20.2		mg/kg	1.3	0.43	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:55	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263007**
Sample ID: **SB-9(2.0-2.5')**

Date Collected: 8/23/2017 11:00 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263008**
Sample ID: **SB-9(4.5-5.0')**

Date Collected: 8/23/2017 11:02 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.9 U	U	ug/kg	10.9	3.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
alpha-BHC	10.9 U	U	ug/kg	10.9	0.96	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
beta-BHC	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
delta-BHC	10.9 U	U	ug/kg	10.9	0.83	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
gamma-BHC	10.9 U	U	ug/kg	10.9	0.90	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
alpha-Chlordane	10.9 U	U	ug/kg	10.9	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
gamma-Chlordane	10.9 U	U	ug/kg	10.9	1.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
4,4'-DDD	21.2 U	U	ug/kg	21.2	1.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
4,4'-DDE	21.2 U	U	ug/kg	21.2	2.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
4,4'-DDT	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Dieldrin	21.2 U	U	ug/kg	21.2	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Endosulfan I	10.9 U	U	ug/kg	10.9	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Endosulfan II	21.2 U	U	ug/kg	21.2	4.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Endosulfan Sulfate	21.2 U	U	ug/kg	21.2	1.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Endrin	21.2 U	U	ug/kg	21.2	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Endrin Aldehyde	21.2 U	U	ug/kg	21.2	2.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Endrin Ketone	21.2 U	U	ug/kg	21.2	2.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Heptachlor	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Heptachlor Epoxide	10.9 U	U	ug/kg	10.9	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Methoxychlor	21.2 U	U	ug/kg	21.2	2.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Toxaphene	224 U	U	ug/kg	224	37.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	75.9		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
Tetrachloro-m-xylene (S)	73.4		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:24	RWS	A
WET CHEMISTRY										
Moisture	23.5		%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
Total Solids	76.5	1	%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
METALS										
Arsenic, Total	10.2		mg/kg	1.9	0.62	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:32	ZMC	A1
Lead, Total	17.8		mg/kg	1.2	0.41	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:32	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263008**
Sample ID: **SB-9(4.5-5.0')**

Date Collected: 8/23/2017 11:02 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263009**
Sample ID: **SB-1(2.0-2.5')**

Date Collected: 8/23/2017 12:01 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.3 U	U	ug/kg	10.3	3.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
alpha-BHC	10.3 U	U	ug/kg	10.3	0.91	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
beta-BHC	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
delta-BHC	10.3 U	U	ug/kg	10.3	0.79	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
gamma-BHC	10.3 U	U	ug/kg	10.3	0.85	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
alpha-Chlordane	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
gamma-Chlordane	10.3 U	U	ug/kg	10.3	1.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
4,4'-DDD	20.1 U	U	ug/kg	20.1	1.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
4,4'-DDE	20.1 U	U	ug/kg	20.1	2.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
4,4'-DDT	20.1 U	U	ug/kg	20.1	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Dieldrin	20.1 U	U	ug/kg	20.1	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Endosulfan I	10.3 U	U	ug/kg	10.3	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Endosulfan II	20.1 U	U	ug/kg	20.1	4.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Endosulfan Sulfate	20.1 U	U	ug/kg	20.1	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Endrin	20.1 U	U	ug/kg	20.1	1.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Endrin Aldehyde	20.1 U	U	ug/kg	20.1	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Endrin Ketone	20.1 U	U	ug/kg	20.1	2.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Heptachlor	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Heptachlor Epoxide	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Methoxychlor	20.1 U	U	ug/kg	20.1	2.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Toxaphene	213 U	U	ug/kg	213	35.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	75.1		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
Tetrachloro-m-xylene (S)	71.4		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 20:46	RWS	A
WET CHEMISTRY										
Moisture	21.4		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	78.6		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	8.1		mg/kg	1.9	0.64	SW846 6020A	8/25/17 01:20 LXC	8/25/17 11:42	ZMC	A1
Lead, Total	15.4		mg/kg	1.3	0.42	SW846 6020A	8/25/17 01:20 LXC	8/25/17 11:42	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263009**
Sample ID: **SB-1(2.0-2.5')**

Date Collected: 8/23/2017 12:01 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263011**
Sample ID: **SB-1(9.0-9.5')**

Date Collected: 8/23/2017 12:05 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.2 U	U	ug/kg	9.2	3.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
alpha-BHC	9.2 U	U	ug/kg	9.2	0.81	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
beta-BHC	9.2 U	U	ug/kg	9.2	0.97	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
delta-BHC	9.2 U	U	ug/kg	9.2	0.70	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
gamma-BHC	9.2 U	U	ug/kg	9.2	0.76	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
alpha-Chlordane	9.2 U	U	ug/kg	9.2	0.97	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
gamma-Chlordane	9.2 U	U	ug/kg	9.2	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
4,4'-DDD	17.8 U	U	ug/kg	17.8	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
4,4'-DDE	17.8 U	U	ug/kg	17.8	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
4,4'-DDT	17.8 U	U	ug/kg	17.8	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Dieldrin	17.8 U	U	ug/kg	17.8	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Endosulfan I	9.2 U	U	ug/kg	9.2	1.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Endosulfan II	17.8 U	U	ug/kg	17.8	3.7	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Endosulfan Sulfate	17.8 U	U	ug/kg	17.8	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Endrin	17.8 U	U	ug/kg	17.8	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Endrin Aldehyde	17.8 U	U	ug/kg	17.8	1.9	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Endrin Ketone	17.8 U	U	ug/kg	17.8	2.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Heptachlor	9.2 U	U	ug/kg	9.2	0.92	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Heptachlor Epoxide	9.2 U	U	ug/kg	9.2	0.92	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Methoxychlor	17.8 U	U	ug/kg	17.8	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Toxaphene	189 U	U	ug/kg	189	31.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	75.7		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
Tetrachloro-m-xylene (S)	72.6		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:40	RWS	A
WET CHEMISTRY										
Moisture	12.2		%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
Total Solids	87.8	1	%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
METALS										
Arsenic, Total	4.3		mg/kg	1.7	0.56	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:36	ZMC	A1
Lead, Total	9.9		mg/kg	1.1	0.37	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:36	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256263 ERM162|JEFFERSON COUNTY WV

Lab ID: **2256263011**
Sample ID: **SB-1(9.0-9.5')**

Date Collected: 8/23/2017 12:05 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2256263008	1	SB-9(4.5-5.0')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				
2256263011	1	SB-1(9.0-9.5')	S2540G-11	Total Solids
Analyte was analyzed past the 7 day holding time.				

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34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

Environmental

Co. Name: **ERM**

Contact (Print): **Dave Connelly**

Address: **204 Chase Drive**

Phone: **304 757 4777**

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

ALL SHADED AREAS MUST BE COMPLETED BY THE CLIENT/
SAMPLER. INSTRUCTIONS ON THE BACK.

Page **1** of **2**

Count:

Tracking #:



* 2 2 5 6 2 6 3 *

Co. Name: ERM Contact (Print): Dave Connelly Address: 204 Chase Drive Phone: 304 757 4777		Project Name#: JO VRP ALS Quote #: Date Required: Approved By: TAT: ☒ Normal Standard TAT is 10-12 business days. ☐ Rush Subject to ALS approval and surcharge.		Bill to (if different than Report to): PO#: Project Name#: JO VRP ALS Quote #: Date Required: Approved By: TAT: ☒ Normal Standard TAT is 10-12 business days. ☐ Rush Subject to ALS approval and surcharge.			
Sample Description/Location (as it will appear on the lab report)		COC Comments		Sample Date		Military Time	
1 SB-11 (2.0-2.5')		Hold		8/23/17		1023	
2 SB-11 (4.5-5.0')		Hold		8/23/17		1025	
3 SB-9 (0-0.5')		Hold		8/23/17		1052	
4 SB-9 (0.5-1.0')		Hold		8/23/17		1054	
5 SB-9 (1.0-1.5')		Hold		8/23/17		1056	
6 SB-9 (1.5-2.0')		Hold		8/23/17		1058	
7 SB-9 (2.0-2.5')		Hold		8/23/17		1100	
8 SB-9 (4.5-5.0')		Hold		8/23/17		1102	
SAMPLED BY (Please Print): Tyler Fawell		Project Comments: C 8/24/17 ALS		Received By / Company Name ALS Analytical		Date 8/23	
Relinquished By / Company Name ALS-BO		Date 8-23		Time 1652		Time 1340	
1 Joseph R. Fawell / ERM		8/23/17		1340		2	
3 ALS-BO		8-23		1652		4	
5						6	
7						8	
9						10	

ANALYSES/METHOD REQUESTED Pesticides 80814 Lead and Arsenic 6000 A		Enter Number of Containers Per Analysis 6 S	
Container Type 6000 A		Matrix S	
Container Size 4"		Preservation -	
ALS FIELD SERVICES ☐ Pickup ☐ Labor ☐ Composite Sampling ☐ Special Equipment ☐ Other:		Data Deliverables ☐ Standard ☐ CLP-100 ☐ NJ-Reduced ☐ NJ-Full ☐ If yes, format type:	
State Sampled Collected by: MD ☐ NJ ☐ NY ☐ PA ☐		COD Criteria Required? ☐	

* G-Grab; C-Composite
 **Matrix: AL-Air; DW-Drinking Water; GW-Groundwater; DI-DI; OL-Other Liquid; SL-Sludge; SO-Soil; VP-Volatil; WW-Wastewater
 ***Container Type: AG-Ambic Glass; CG-Clear Glass; PL-Plastic; Container Size: 250ml, 500ml, 1L, 8oz, etc. Preservative: HCl, HNO3, NaOH, etc.

September 7, 2017

Mr. David Connelly
Environmental Resource Management (ERM)-WV
204 Chase Drive
Hurricane, WV 25526

Certificate of Analysis

Revised Report - 9/7/2017 3:33:00 PM - See workorder comment section for explanation

Project Name:	2017-JEFFERSON COUNTY	Workorder:	2256261
Purchase Order:		Workorder ID:	ERM161 JEFFERSON COUNTY WV

Dear Mr. Connelly:

Enclosed are the analytical results for samples received by the laboratory between Wednesday, August 23, 2017 and Saturday, September 2, 2017.

The ALS Environmental laboratory in Middletown, Pennsylvania is a National Environmental Laboratory Accreditation Program (NELAP) accredited laboratory and as such, certifies that all applicable test results meet the requirements of NELAP.

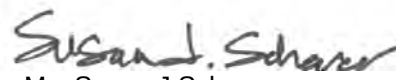
If you have any questions regarding this certificate of analysis, please contact Ms. Susan J Scherer (Project Coordinator) at (717) 944-5541.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable. For a specific list of accredited analytes, refer to the certifications section of the ALS website at www.alsglobal.com/en/Our-Services/Life-Sciences/Environmental/Downloads.

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ALS Spring City: 10 Riverside Drive, Spring City, PA 19475 610-948-4903

This page is included as part of the Analytical Report and must be retained as a permanent record thereof.


Ms. Susan J Scherer
Project Coordinator

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**SAMPLE SUMMARY**

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Lab ID	Sample ID	Matrix	Date Collected	Date Received	Collected By
2256261001	SB-10(0-0.5')	Solid	8/22/2017 08:45	8/23/2017 16:52	Collected by Client
2256261002	SB-10(0.5-1.0')	Other	8/22/2017 08:50	8/23/2017 16:52	Collected by Client
2256261003	SB-10(1.0-1.5')	Other	8/22/2017 08:55	8/23/2017 16:52	Collected by Client
2256261004	SB-10(1.5-2.0')	Solid	8/22/2017 09:00	9/2/2017 19:09	Collected by Client
2256261005	SB-10(2.0-2.5')	Solid	8/22/2017 09:05	8/23/2017 16:52	Collected by Client
2256261006	SB-10(4.5-5.0')	Other	8/22/2017 09:10	8/23/2017 16:52	Collected by Client
2256261007	SB-7(0-0.5')	Solid	8/22/2017 09:35	8/23/2017 16:52	Collected by Client
2256261008	SB-7(0.5-1.0')	Other	8/22/2017 09:40	8/23/2017 16:52	Collected by Client

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SAMPLE SUMMARY

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Notes

- Samples collected by ALS personnel are done so in accordance with the procedures set forth in the ALS Field Sampling Plan (20 - Field Services Sampling Plan).
- All Waste Water analyses comply with methodology requirements of 40 CFR Part 136.
- All Drinking Water analyses comply with methodology requirements of 40 CFR Part 141.
- Unless otherwise noted, all quantitative results for soils are reported on a dry weight basis.
- The Chain of Custody document is included as part of this report.
- All Library Search analytes should be regarded as tentative identifications based on the presumptive evidence of the mass spectra. Concentrations reported are estimated values.
- Parameters identified as "analyze immediately" require analysis within 15 minutes of collection. Any "analyze immediately" parameters not listed under the header "Field Parameters" are performed in the laboratory and are therefore analyzed out of hold time.
- Method references listed on this report beginning with the prefix "S" followed by a method number (such as S2310B-97) refer to methods from "Standard Methods for the Examination of Water and Wastewater".
- For microbiological analyses, the "Prepared" value is the date/time into the incubator and the "Analyzed" value is the date/time out the incubator.

Standard Acronyms/Flags

J	Indicates an estimated value between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL) for the analyte
U	Indicates that the analyte was Not Detected (ND)
N	Indicates presumptive evidence of the presence of a compound
MDL	Method Detection Limit
PQL	Practical Quantitation Limit
RDL	Reporting Detection Limit
ND	Not Detected - indicates that the analyte was Not Detected at the RDL
Cntr	Analysis was performed using this container
RegLmt	Regulatory Limit
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
DUP	Sample Duplicate
%Rec	Percent Recovery
RPD	Relative Percent Difference
LOD	DoD Limit of Detection
LOQ	DoD Limit of Quantitation
DL	DoD Detection Limit
I	Indicates reported value is greater than or equal to the Method Detection Limit (MDL) but less than the Report Detection Limit (RDL)
(S)	Surrogate Compound
NC	Not Calculated
*	Result outside of QC limits

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PROJECT SUMMARY

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Workorder Comments

This certificate of analysis was modified based on the email request from Dave Connelly 09/02/17 at 1909. SJS 09/05/17

Here are the additional samples that can be released from hold status and analyzed.

Sample Comments

Lab ID: 2256261001	Sample ID: SB-10(0-0.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2256261004	Sample ID: SB-10(1.5-2.0')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2256261005	Sample ID: SB-10(2.0-2.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		
Lab ID: 2256261007	Sample ID: SB-7(0-0.5')	Sample Type: SAMPLE
This sample was analyzed at a dilution in the 8081 Pesticide analysis due to sample matrix interference. Reporting limits were adjusted accordingly.		

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ANALYTICAL RESULTS

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Lab ID: **2256261001**
Sample ID: **SB-10(0-0.5')**

Date Collected: 8/22/2017 08:45 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.2 U	U	ug/kg	10.2	3.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
alpha-BHC	10.2 U	U	ug/kg	10.2	0.90	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
beta-BHC	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
delta-BHC	10.2 U	U	ug/kg	10.2	0.78	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
gamma-BHC	10.2 U	U	ug/kg	10.2	0.84	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
alpha-Chlordane	10.2 U	U	ug/kg	10.2	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
gamma-Chlordane	10.2 U	U	ug/kg	10.2	1.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
4,4'-DDD	9.9J	J	ug/kg	19.8	1.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
4,4'-DDE	303		ug/kg	19.8	2.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
4,4'-DDT	97.4		ug/kg	19.8	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Dieldrin	19.8 U	U	ug/kg	19.8	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Endosulfan I	10.2 U	U	ug/kg	10.2	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Endosulfan II	19.8 U	U	ug/kg	19.8	4.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Endosulfan Sulfate	19.8 U	U	ug/kg	19.8	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Endrin	19.8 U	U	ug/kg	19.8	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Endrin Aldehyde	19.8 U	U	ug/kg	19.8	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Endrin Ketone	19.8 U	U	ug/kg	19.8	2.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Heptachlor	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Heptachlor Epoxide	10.2 U	U	ug/kg	10.2	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Methoxychlor	19.8 U	U	ug/kg	19.8	2.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Toxaphene	210 U	U	ug/kg	210	34.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	30.9		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
Tetrachloro-m-xylene (S)	30.5		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:11	RWS	A
WET CHEMISTRY										
Moisture	16.7		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	83.3		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	30.5		mg/kg	1.8	0.59	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:36	ZMC	A1
Lead, Total	89.5		mg/kg	1.2	0.39	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:36	ZMC	A1

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**ANALYTICAL RESULTS**

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Lab ID: **2256261001**
Sample ID: **SB-10(0-0.5')**Date Collected: 8/22/2017 08:45 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Project Coordinator**ALS Environmental Laboratory Locations Across North America****Canada:** Burlington · Calgary · Centre of Excellence · Edmonton · Fort McMurray · Fort St. John · Grande Prairie · London · Mississauga · Richmond Hill · Saskatoon · Thunder Bay
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ANALYTICAL RESULTS

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Lab ID: **2256261004** Date Collected: 8/22/2017 09:00 Matrix: Solid
Sample ID: **SB-10(1.5-2.0')** Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.4 U	U	ug/kg	9.4	3.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
alpha-BHC	9.4 U	U	ug/kg	9.4	0.83	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
beta-BHC	9.4 U	U	ug/kg	9.4	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
delta-BHC	9.4 U	U	ug/kg	9.4	0.72	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
gamma-BHC	9.4 U	U	ug/kg	9.4	0.78	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
alpha-Chlordane	9.4 U	U	ug/kg	9.4	1.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
gamma-Chlordane	9.4 U	U	ug/kg	9.4	1.6	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
4,4'-DDD	18.3 U	U	ug/kg	18.3	1.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
4,4'-DDE	16.3J	J	ug/kg	18.3	2.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
4,4'-DDT	5.0J	J	ug/kg	18.3	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Dieldrin	18.3 U	U	ug/kg	18.3	2.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Endosulfan I	9.4 U	U	ug/kg	9.4	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Endosulfan II	18.3 U	U	ug/kg	18.3	3.8	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Endosulfan Sulfate	18.3 U	U	ug/kg	18.3	1.2	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Endrin	18.3 U	U	ug/kg	18.3	1.3	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Endrin Aldehyde	18.3 U	U	ug/kg	18.3	2.0	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Endrin Ketone	18.3 U	U	ug/kg	18.3	2.5	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Heptachlor	9.4 U	U	ug/kg	9.4	0.94	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Heptachlor Epoxide	9.4 U	U	ug/kg	9.4	0.94	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Methoxychlor	18.3 U	U	ug/kg	18.3	2.4	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Toxaphene	194 U	U	ug/kg	194	32.1	SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	72.8		%	30 - 135		SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
Tetrachloro-m-xylene (S)	72.4		%	30 - 111		SW846 8081B	9/3/17 09:40 JTH	9/6/17 21:08	RWS	A
WET CHEMISTRY										
Moisture	12.0		%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
Total Solids	88.0	1	%	0.1	0.01	S2540G-11		9/3/17 13:00	MLM	A
METALS										
Arsenic, Total	7.0		mg/kg	1.6	0.54	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:29	ZMC	A1
Lead, Total	13.4		mg/kg	1.1	0.35	SW846 6020A	9/5/17 01:30 LXC	9/5/17 07:29	ZMC	A1

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State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Lab ID: **2256261004**
Sample ID: **SB-10(1.5-2.0')**

Date Collected: 8/22/2017 09:00 Matrix: Solid
Date Received: 9/2/2017 19:09

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Lab ID: **2256261005**
Sample ID: **SB-10(2.0-2.5')**

Date Collected: 8/22/2017 09:05 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	10.3 U	U	ug/kg	10.3	3.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
alpha-BHC	10.3 U	U	ug/kg	10.3	0.91	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
beta-BHC	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
delta-BHC	10.3 U	U	ug/kg	10.3	0.79	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
gamma-BHC	10.3 U	U	ug/kg	10.3	0.85	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
alpha-Chlordane	10.3 U	U	ug/kg	10.3	1.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
gamma-Chlordane	10.3 U	U	ug/kg	10.3	1.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
4,4'-DDD	20.0 U	U	ug/kg	20.0	1.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
4,4'-DDE	20.0 U	U	ug/kg	20.0	2.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
4,4'-DDT	20.0 U	U	ug/kg	20.0	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Dieldrin	20.0 U	U	ug/kg	20.0	2.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Endosulfan I	10.3 U	U	ug/kg	10.3	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Endosulfan II	20.0 U	U	ug/kg	20.0	4.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Endosulfan Sulfate	20.0 U	U	ug/kg	20.0	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Endrin	20.0 U	U	ug/kg	20.0	1.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Endrin Aldehyde	20.0 U	U	ug/kg	20.0	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Endrin Ketone	20.0 U	U	ug/kg	20.0	2.8	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Heptachlor	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Heptachlor Epoxide	10.3 U	U	ug/kg	10.3	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Methoxychlor	20.0 U	U	ug/kg	20.0	2.7	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Toxaphene	212 U	U	ug/kg	212	35.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	70.4		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
Tetrachloro-m-xylene (S)	62.2		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:27	RWS	A
WET CHEMISTRY										
Moisture	17.9		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	82.1		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	8.5		mg/kg	1.8	0.61	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:40	ZMC	A1
Lead, Total	11.2		mg/kg	1.2	0.40	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:40	ZMC	A1

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ANALYTICAL RESULTS

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Lab ID: **2256261005**
Sample ID: **SB-10(2.0-2.5')**

Date Collected: 8/22/2017 09:05 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
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Ms. Susan J Scherer
Project Coordinator

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ANALYTICAL RESULTS

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Lab ID: **2256261007**
Sample ID: **SB-7(0-0.5')**

Date Collected: 8/22/2017 09:35 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
PESTICIDES										
Aldrin	9.7 U	U	ug/kg	9.7	3.1	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
alpha-BHC	9.7 U	U	ug/kg	9.7	0.85	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
beta-BHC	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
delta-BHC	9.7 U	U	ug/kg	9.7	0.74	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
gamma-BHC	9.7 U	U	ug/kg	9.7	0.80	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
alpha-Chlordane	9.7 U	U	ug/kg	9.7	1.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
gamma-Chlordane	9.7 U	U	ug/kg	9.7	1.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
4,4'-DDD	19.5		ug/kg	18.8	1.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
4,4'-DDE	437		ug/kg	93.9	12.8	SW846 8081B	8/30/17 11:00 JTH	9/1/17 11:02	RWS	A
4,4'-DDT	229		ug/kg	18.8	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Dieldrin	6.1J	J	ug/kg	18.8	2.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Endosulfan I	9.7 U	U	ug/kg	9.7	1.2	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Endosulfan II	18.8 U	U	ug/kg	18.8	3.9	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Endosulfan Sulfate	18.8 U	U	ug/kg	18.8	1.3	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Endrin	4.8J	J	ug/kg	18.8	1.4	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Endrin Aldehyde	18.8 U	U	ug/kg	18.8	2.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Endrin Ketone	18.8 U	U	ug/kg	18.8	2.6	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Heptachlor	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Heptachlor Epoxide	9.7 U	U	ug/kg	9.7	0.97	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Methoxychlor	18.8 U	U	ug/kg	18.8	2.5	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Toxaphene	199 U	U	ug/kg	199	33.0	SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
<i>Surrogate Recoveries</i>	<i>Results</i>	<i>Flag</i>	<i>Units</i>	<i>Limits</i>		<i>Method</i>	<i>Prepared</i>	<i>By</i>	<i>Analyzed</i>	<i>By Cntr</i>
Decachlorobiphenyls (S)	83.3		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	9/1/17 11:02	RWS	A
Decachlorobiphenyls (S)	73.1		%	30 - 135		SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
Tetrachloro-m-xylene (S)	69.9		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	9/1/17 11:02	RWS	A
Tetrachloro-m-xylene (S)	70.8		%	30 - 111		SW846 8081B	8/30/17 11:00 JTH	8/31/17 19:43	RWS	A
WET CHEMISTRY										
Moisture	14.9		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
Total Solids	85.1		%	0.1	0.01	S2540G-11		8/25/17 09:17	AXD	
METALS										
Arsenic, Total	31.3		mg/kg	1.7	0.58	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:44	ZMC	A1
Lead, Total	91.8		mg/kg	1.2	0.38	SW846 6020A	8/24/17 05:45 LXC	8/24/17 14:44	ZMC	A1

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ALS Environmental



34 Dogwood Lane ■ Middletown, PA 17057 ■ Phone: 717-944-5541 ■ Fax: 717-944-1430 ■ www.alsglobal.com

NELAP Certifications: NJ PA010 , NY 11759 , PA 22-293 DoD ELAP: A2LA 0818.01
State Certifications: DE ID 11 , MA PA0102 , MD 128 , VA 460157 , WV 343

ANALYTICAL RESULTS

Workorder: 2256261 ERM161|JEFFERSON COUNTY WV

Lab ID: **2256261007**
Sample ID: **SB-7(0-0.5')**

Date Collected: 8/22/2017 09:35 Matrix: Solid
Date Received: 8/23/2017 16:52

Parameters	Results	Flag	Units	RDL	MDL	Method	Prepared By	Analyzed	By	Cntr
------------	---------	------	-------	-----	-----	--------	-------------	----------	----	------

Ms. Susan J Scherer
Project Coordinator

ALS Environmental Laboratory Locations Across North America

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PARAMETER QUALIFIERS

Lab ID	#	Sample ID	Analytical Method	Analyte
2256261004	1	SB-10(1.5-2.0')	S2540G-11	Total Solids

Analyte was analyzed past the 7 day holding time.

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Vancouver Waterloo · Winnipeg · Yellowknife **United States:** Cincinnati · Everett · Fort Collins · Holland · Houston · Middletown · Salt Lake City · Spring City · York **Mexico:** Monterrey



34 Dogwood Lane
Middletown, PA 17057
P. 717-944-5541
F. 717-944-1430

CHAIN OF CUSTODY/ REQUEST FOR ANALYSIS

Page 1 of 1
Counter:
Tracking #:



* 2 2 5 6 2 6 1 *

Co. Name: ERM Contact (Name): Dave Connelly Address: 204 Chase Drive Phone: 304 7574777 PO#:		Project Name/ID: JOVRP ALS Quote #: TAT: ☒ Normal-Standard TAT is 10-12 business days. ☐ Rush-Subject to ALS approval and surcharging. Email? ☒ Fax? ☐ Y No: <u>David, Connelly@ERM.com</u>		Sample Description/Location (as it will appear on the lab report)		COC Comments		Sample Date Military Time		Matrix G or C		Enter Number of Containers Per Analysis		ANALYSIS/METHOD REQUESTED		Container Type <u>6</u> Size <u>1L</u> Preservative <u> </u>		Phone: 304 7574777 Therm. ID: 309 No. of Coolers: Notes:		Container in good condition? COC Labels complete/accurate? Received on ice? (if present) Seals intact? Custody seals Present?		Headspace/Volatilized? Correct preservation? Correct sample volume? Correct containers?		Circle appropriate Y or N.	
1 SB-10(0-0.5')		Hold		8/22/17 0845		S		X		X		X		X		X		X		X		X			
2 SB-10(0.5-1.0')		Hold		8/22/17 0850		S		X		X		X		X		X		X		X		X			
3 SB-10(1.0-1.5')		Hold		8/22/17 0855		S		X		X		X		X		X		X		X		X			
4 SB-10(1.5-2.0')		Hold		8/22/17 0900		S		X		X		X		X		X		X		X		X			
5 SB-10(2.0-2.5')		Hold		8/22/17 0905		S		X		X		X		X		X		X		X		X			
6 SB-10(4.5-5.0')		Hold		8/22/17 0910		S		X		X		X		X		X		X		X		X			
7 SB-7(0-0.5')		Hold		8/22/17 0935		S		X		X		X		X		X		X		X		X			
8 SB-7(0.5-1.0')		Hold		8/22/17 0940		S		X		X		X		X		X		X		X		X			
SAMPLED BY (Please Print): Tyler Fowell		Project Comments:		Relinquished By / Company Name: Tyler Fowell		Date: 8/23/17		Time: 1340		Received By / Company Name: ALS-BL Duke		Date: 8-13		Time: 1340		Standard ☐ Standard ☐ CLP-like ☐ NJ-Reduced ☐ NJ-Full		State Sample Collected in? MD ☐ NJ ☐ NY ☐ PA ☐		ALS FIELD SERVICES ☐ Pickup ☐ Labor ☐ Composite Sampling ☐ Rental Equipment ☐ Other:					
1 7-2017-1-1-ERM		8/23/17 1340		2		ALS-BL Duke		8-13		1340		X		X		X		X		X		X			
3 115-88		8/23 1152		4		gml ALS		8/23		1652		X		X		X		X		X		X			
5				6				8				X		X		X		X		X		X			
7				8				10				X		X		X		X		X		X			
9				10								X		X		X		X		X		X			

* G=Grab; C=Composite
 **Matrix: AL=Air; DW=Drinking Water; GW=Groundwater; OL=Oil; OL=Other Liquid; SL=Sludge; SO=Soil; WP=Wipe; WWW=Wastewater
 ***Container Type: AG=Amber Glass; CG=Clear Glass, PL=Plastic. Container Size: 200ml, 500ml, 1L, 5oz., etc. Preservative: HCL, HNO3, NaOH, etc.

WVDEP Split Sample Analytical Data Report

Send Reports and Invoices to:

Project Manager Sheena Moore C0510412
Address 22288 Northwestern Pike
City Romney State WV Zip 26757
Phone 304 707 6094 Fax _____
Email sheena.r.moore@wv.gov

Location: Martinsburg

Results: ☒ Email ☐ Mail ☐ Fax

☐ 24-Hour RUSH ☐ 3-Day RUSH ☒ Normal

☐ Level I ☐ Level II ☐ Level III ☒ Level IV (CLP-like)

☐ EQUIS EDD in Excel Format

ANALYSIS REQUIRED

[illegible]

ANALYTICAL METHOD

◀ PRESERVATIVE

COMMENTS:

PPL pesticides,
Arsenic + Lead
No duplicates

1	Relinquished by: (Signature) <i>Sheena Mott</i>	Received by: (Signature) <i>Megan Pomares</i>	Date <i>8/23/17</i>	Time <i>1342</i>
2	Relinquished by: (Signature) <i>Megan Pomares</i>	Received by: (Signature) <i>FedEx</i>	Date <i>8/24/17</i>	Time <i>1700</i>
3	Relinquished by: (Signature) <i>FedEx</i>	Received by: (Signature) <i>Adrian A</i>	Date <i>8/25/17</i>	Time <i>830</i>

White – Retained by Lab ■ Yellow – Returned with Report ■ Pink – Retained by Sampler

DELIVERY

☒ Hand Delivered ☐ Courier ☐ UPS ☐ FedEx ☐ Other:

Tracking #

ARRIVAL

Chain of Custody Seal: ☐ Intact ☐ Broken ☐ Absent

Iced: ☒ Yes ☐ No

Temperature: 12.2 °C

**Reliance Laboratories, Inc.**

2044 Meadowbrook Road | P.O. Box 4657
Bridgeport, WV 26330
Phone: 304.842.5285 | Fax: 304.842.5351

Martinsburg Laboratory

Ridgefield Business Center | 25 Crimson Circle
Martinsburg, WV 25403
Phone: 304.596.2084 | Fax: 304.596.2086

Certifications: WV Department of Health #: 00354, 00443 | WV Department of Environmental Protection #: 158, 181
MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

LABORATORY REPORT SUMMARY

Client: C05642

Wednesday, September 06, 2017

WV DIVISION OF ENVIRONMENTAL PROTECTION
22288 NORTHWESTERN PIKE
ROMNEY

WV 26757-

Total Number of Pages: 6
(Not Including C.O.C.)
Page 1 of 6

Lab ID	Sample ID	Sample ID 2	Sample Date
272983-2017-S	SB11 0-0.5		8/23/2017
272984-2017-S	SB9 0-0.5		8/23/2017
272985-2017-S	SB9 2-2.5		8/23/2017
272986-2017-S	SB1 0-0.5		8/23/2017
272987-2017-S	SB1 2-2.5		8/23/2017

The enclosed results have been analyzed according to the referenced method and SOP. Any deviations to the method have been noted on the report. Unless otherwise noted, all results have been verified to meet quality control requirements of the method. All analysis performed by Reliance Laboratories, Bridgeport, WV unless otherwise noted. Parameters analyzed by Reliance Laboratories, Martinsburg, WV are noted with @ on laboratory report. This report may not be reproduced, except in full, without written approval of Reliance Laboratories, Inc.

Report Reviewed By:

**Reliance Laboratories, Inc.**

2044 Meadowbrook Road | P.O. Box 4657
Bridgeport, WV 26330
Phone: 304.842.5285 | Fax: 304.842.5351

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WV DIVISION OF ENVIRONMENTAL PROTECTION
22288 NORTHWESTERN PIKE

Wednesday, September 06, 2017

Page 2 of 6

ROMNEY, WV 26757-

Lab Number: 272983-2017-s **Sample ID:** SB11 0-0.5

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MRL
Analyte Group: <u>Inorganics</u>							
Total Lead	38.5	mg/kg	SW6010C	9/1/2017	10:43 TH		
Total Arsenic	< 0.18	mg/kg	SW6010C	9/1/2017	10:43 TH		

Remarks:

Date Sample Collected: 8/23/2017 10:15

Sample Submitted By: S. Moore

Date Sample Received: 8/23/2017 13:42

Sample temp. upon receipt: 12.2 Deg C

MDL - Minimum Detectable Limit

MCL - Maximum Contaminant Level, USEPA Regulated

ND = Not Detected at the MDL or MRL

MRL - Minimum Reporting Limit

J = Reported value is an estimate because concentration is less than the MRL

*Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: **mg/kg as received

**Reliance Laboratories, Inc.**

2044 Meadowbrook Road | P.O. Box 4657
Bridgeport, WV 26330
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Martinsburg Laboratory

Ridgefield Business Center | 25 Crimson Circle
Martinsburg, WV 25403
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MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

WV DIVISION OF ENVIRONMENTAL PROTECTION
22288 NORTHWESTERN PIKE

Wednesday, September 06, 2017

Page 3 of 6

ROMNEY, WV 26757-

Lab Number: 272984-2017-s **Sample ID:** SB9 0-0.5

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MRL
Analyte Group: <u>Inorganics</u>							
Total Lead	11.3	mg/kg	SW6010C	9/1/2017	10:45 TH		
Total Arsenic	< 0.18	mg/kg	SW6010C	9/1/2017	10:45 TH		

Remarks:

Date Sample Collected: 8/23/2017 10:45
Sample Submitted By: S. Moore
Date Sample Received: 8/23/2017 13:42

Sample temp. upon receipt: 12.2 Deg C

MDL - Minimum Detectable Limit

MCL - Maximum Contaminant Level, USEPA Regulated

ND = Not Detected at the MDL or MRL

MRL - Minimum Reporting Limit

J = Reported value is an estimate because concentration is less than the MRL

*Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: **mg/kg as received

**Reliance Laboratories, Inc.**

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Bridgeport, WV 26330
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Martinsburg, WV 25403
Phone: 304.596.2084 | Fax: 304.596.2086

Certifications: WV Department of Health #: 00354, 00443 | WV Department of Environmental Protection #: 158, 181
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WV DIVISION OF ENVIRONMENTAL PROTECTION
22288 NORTHWESTERN PIKE

Wednesday, September 06, 2017

Page 4 of 6

ROMNEY, WV 26757-

Lab Number: 272985-2017-s **Sample ID:** SB9 2-2.5

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MRL
Analyte Group: <u>Inorganics</u>							
Total Lead	8.75	mg/kg	SW6010C	9/1/2017	10:47 TH		
Total Arsenic	< 0.18	mg/kg	SW6010C	9/1/2017	10:47 TH		

Remarks:

Date Sample Collected: 8/23/2017 10:58
Sample Submitted By: S. Moore
Date Sample Received: 8/23/2017 13:42
Sample temp. upon receipt: 12.2 Deg C
MDL - Minimum Detectable Limit
MCL - Maximum Contaminant Level, USEPA Regulated

ND = Not Detected at the MDL or MRL
MRL - Minimum Reporting Limit
J = Reported value is an estimate because concentration is less than the MRL

*Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: **mg/kg as received

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WV DIVISION OF ENVIRONMENTAL PROTECTION
22288 NORTHWESTERN PIKE

Wednesday, September 06, 2017

Page 5 of 6

ROMNEY, WV 26757-

Lab Number: 272986-2017-s **Sample ID:** SB1 0-0.5

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MRL
Analyte Group: <u>Inorganics</u>							
Total Lead	6.50	mg/kg	SW6010C	9/1/2017	10:49 TH		
Total Arsenic	< 0.18	mg/kg	SW6010C	9/1/2017	10:49 TH		

Remarks:

Date Sample Collected: 8/23/2017 11:55
Sample Submitted By: S. Moore
Date Sample Received: 8/23/2017 13:42
Sample temp. upon receipt: 12.2 Deg C
MDL - Minimum Detectable Limit
MCL - Maximum Contaminant Level, USEPA Regulated

ND = Not Detected at the MDL or MRL
MRL - Minimum Reporting Limit
J = Reported value is an estimate because concentration is less than the MRL

*Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: **mg/kg as received

**Reliance Laboratories, Inc.**

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WV DIVISION OF ENVIRONMENTAL PROTECTION
22288 NORTHWESTERN PIKE

Wednesday, September 06, 2017

Page 6 of 6

ROMNEY, WV 26757-

Lab Number: 272987-2017-s **Sample ID:** SB1 2-2.5

Parameter	Value	Units	Method	Date/Time Analyzed	Analyst	MDL	MRL
Analyte Group: <u>Inorganics</u>							
Total Lead	4.50	mg/kg	SW6010C	9/1/2017	10:51 TH		
Total Arsenic	< 0.18	mg/kg	SW6010C	9/1/2017	10:51 TH		

Remarks:

Date Sample Collected: 8/23/2017 12:00
Sample Submitted By: S. Moore
Date Sample Received: 8/23/2017 13:42
Sample temp. upon receipt: 12.2 Deg C
MDL - Minimum Detectable Limit
MCL - Maximum Contaminant Level, USEPA Regulated

ND = Not Detected at the MDL or MRL
MRL - Minimum Reporting Limit
J = Reported value is an estimate because concentration is less than the MRL

*Method Code: STANDARD METHODS ONLINE ED; US EPA METHODS FOR THE CHEMICAL ANALYSIS OF WATER AND WASTES, Rev. 83; US EPA METHODS FOR THE DETERMINATION OF METALS IN ENVIRONMENTAL SAMPLES, May 1994; TEST METHODS FOR EVALUATING SOLID WASTE, SW-846, 3rd ED; USEPA Manual for Certification of Laboratories Analyzing Drinking Water, 5th ED. In accordance with EPA Regulations, all reports, including raw data and quality control data, are maintained by the laboratory for a minimum of 5 years.

NOTE: **mg/kg as received

NOTE:*MS and/or MSD recovery falls outside of acceptable quality control criteria for this analytical batch.

September 06, 2017

Ms. Tenley Miller
Reliance Laboratories, Inc.
2044 Meadowbrook Road
P.O. Box 4657
Bridgeport, WV 26330

RE: Project: 272983-2017-S - 272987-2017-S
Pace Project No.: 30228158

Dear Ms. Miller:

Enclosed are the analytical results for sample(s) received by the laboratory on August 25, 2017. The results relate only to the samples included in this report. Results reported herein conform to the most current, applicable TNI/NELAC standards and the laboratory's Quality Assurance Manual, where applicable, unless otherwise noted in the body of the report.

If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Robbin Robl
robbin.robl@pacelabs.com
(724)850-5613
Project Manager

Enclosures



REPORT OF LABORATORY ANALYSIS

This report shall not be reproduced, except in full,
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CERTIFICATIONS

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

Pennsylvania Certification IDs

1638 Roseytown Rd Suites 2,3&4, Greensburg, PA 15601

L-A-B DOD-ELAP Accreditation #: L2417

Alabama Certification #: 41590

Arizona Certification #: AZ0734

Arkansas Certification

California Certification #: 04222CA

Colorado Certification

Connecticut Certification #: PH-0694

Delaware Certification

Florida/TNI Certification #: E87683

Georgia Certification #: C040

Guam Certification

Hawaii Certification

Idaho Certification

Illinois Certification

Indiana Certification

Iowa Certification #: 391

Kansas/TNI Certification #: E-10358

Kentucky Certification #: 90133

Louisiana DHH/TNI Certification #: LA140008

Louisiana DEQ/TNI Certification #: 4086

Maine Certification #: PA00091

Maryland Certification #: 308

Massachusetts Certification #: M-PA1457

Michigan/PADEP Certification

Missouri Certification #: 235

Montana Certification #: Cert 0082

Nebraska Certification #: NE-05-29-14

Nevada Certification #: PA014572015-1

New Hampshire/TNI Certification #: 2976

New Jersey/TNI Certification #: PA 051

New Mexico Certification #: PA01457

New York/TNI Certification #: 10888

North Carolina Certification #: 42706

North Dakota Certification #: R-190

Oregon/TNI Certification #: PA200002

Pennsylvania/TNI Certification #: 65-00282

Puerto Rico Certification #: PA01457

Rhode Island Certification #: 65-00282

South Dakota Certification

Tennessee Certification #: TN2867

Texas/TNI Certification #: T104704188-14-8

Utah/TNI Certification #: PA014572015-5

USDA Soil Permit #: P330-14-00213

Vermont Dept. of Health: ID# VT-0282

Virgin Island/PADEP Certification

Virginia/VELAP Certification #: 460198

Washington Certification #: C868

West Virginia DEP Certification #: 143

West Virginia DHHR Certification #: 9964C

Wisconsin Certification

Wyoming Certification #: 8TMS-L

REPORT OF LABORATORY ANALYSIS

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SAMPLE SUMMARY

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

Lab ID	Sample ID	Matrix	Date Collected	Date Received
30228158001	272983-2017-S	Solid	08/23/17 10:15	08/25/17 10:00
30228158002	272984-2017-S	Solid	08/23/17 10:45	08/25/17 10:00
30228158003	272985-2017-S	Solid	08/23/17 10:58	08/25/17 10:00
30228158004	272986-2017-S	Solid	08/23/17 11:55	08/25/17 10:00
30228158005	272987-2017-S	Solid	08/23/17 12:00	08/25/17 10:00

REPORT OF LABORATORY ANALYSIS

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SAMPLE ANALYTE COUNT

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

Lab ID	Sample ID	Method	Analysts	Analytes Reported
30228158001	272983-2017-S	EPA 8081A	CWB	23
		ASTM D2974-87	GLG	1
30228158002	272984-2017-S	EPA 8081A	CWB	23
		ASTM D2974-87	GLG	1
30228158003	272985-2017-S	EPA 8081A	CWB	23
		ASTM D2974-87	GLG	1
30228158004	272986-2017-S	EPA 8081A	CWB	23
		ASTM D2974-87	GLG	1
30228158005	272987-2017-S	EPA 8081A	CWB	23
		ASTM D2974-87	GLG	1

REPORT OF LABORATORY ANALYSIS

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PROJECT NARRATIVE

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

Method: EPA 8081A

Description: 8081 GCS Pesticides

Client: Reliance Laboratories, Inc.

Date: September 06, 2017

General Information:

5 samples were analyzed for EPA 8081A. All samples were received in acceptable condition with any exceptions noted below or on the chain-of custody and/or the sample condition upon receipt form (SCUR) attached at the end of this report.

Hold Time:

The samples were analyzed within the method required hold times with any exceptions noted below.

Sample Preparation:

The samples were prepared in accordance with EPA 3546 with any exceptions noted below.

Initial Calibrations (including MS Tune as applicable):

All criteria were within method requirements with any exceptions noted below.

Continuing Calibration:

All criteria were within method requirements with any exceptions noted below.

Surrogates:

All surrogates were within QC limits with any exceptions noted below.

Method Blank:

All analytes were below the report limit in the method blank, where applicable, with any exceptions noted below.

Laboratory Control Spike:

All laboratory control spike compounds were within QC limits with any exceptions noted below.

Matrix Spikes:

All percent recoveries and relative percent differences (RPDs) were within acceptance criteria with any exceptions noted below.

QC Batch: 270100

A matrix spike and/or matrix spike duplicate (MS/MSD) were performed on the following sample(s): 30228381001

ML: Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

- MS (Lab ID: 1329061)
 - 4,4'-DDD
- MSD (Lab ID: 1329062)
 - 4,4'-DDD

Additional Comments:

This data package has been reviewed for quality and completeness and is approved for release.

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

Sample: 272983-2017-S **Lab ID: 30228158001** Collected: 08/23/17 10:15 Received: 08/25/17 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides Analytical Method: EPA 8081A Preparation Method: EPA 3546									
Aldrin	ND	ug/kg	2.4	0.11	1	08/30/17 19:17	09/01/17 21:33	309-00-2	
alpha-BHC	ND	ug/kg	2.4	0.080	1	08/30/17 19:17	09/01/17 21:33	319-84-6	
beta-BHC	ND	ug/kg	2.4	0.15	1	08/30/17 19:17	09/01/17 21:33	319-85-7	
delta-BHC	ND	ug/kg	2.4	0.056	1	08/30/17 19:17	09/01/17 21:33	319-86-8	
gamma-BHC (Lindane)	ND	ug/kg	2.4	0.079	1	08/30/17 19:17	09/01/17 21:33	58-89-9	
alpha-Chlordane	ND	ug/kg	2.4	0.071	1	08/30/17 19:17	09/01/17 21:33	5103-71-9	
gamma-Chlordane	ND	ug/kg	2.4	0.064	1	08/30/17 19:17	09/01/17 21:33	5103-74-2	
4,4'-DDD	ND	ug/kg	4.8	0.19	1	08/30/17 19:17	09/01/17 21:33	72-54-8	
4,4'-DDE	78.4	ug/kg	4.8	0.15	1	08/30/17 19:17	09/01/17 21:33	72-55-9	
4,4'-DDT	41.5	ug/kg	4.8	0.13	1	08/30/17 19:17	09/01/17 21:33	50-29-3	
Dieldrin	ND	ug/kg	4.8	0.14	1	08/30/17 19:17	09/01/17 21:33	60-57-1	
Endosulfan I	ND	ug/kg	2.4	0.090	1	08/30/17 19:17	09/01/17 21:33	959-98-8	
Endosulfan II	ND	ug/kg	4.8	0.13	1	08/30/17 19:17	09/01/17 21:33	33213-65-9	
Endosulfan sulfate	ND	ug/kg	4.8	0.14	1	08/30/17 19:17	09/01/17 21:33	1031-07-8	
Endrin	6.0	ug/kg	4.8	0.18	1	08/30/17 19:17	09/01/17 21:33	72-20-8	
Endrin aldehyde	ND	ug/kg	4.8	0.24	1	08/30/17 19:17	09/01/17 21:33	7421-93-4	
Endrin ketone	ND	ug/kg	4.8	0.20	1	08/30/17 19:17	09/01/17 21:33	53494-70-5	
Heptachlor	ND	ug/kg	2.4	0.079	1	08/30/17 19:17	09/01/17 21:33	76-44-8	
Heptachlor epoxide	ND	ug/kg	2.4	0.086	1	08/30/17 19:17	09/01/17 21:33	1024-57-3	
Methoxychlor	ND	ug/kg	23.9	0.64	1	08/30/17 19:17	09/01/17 21:33	72-43-5	
Toxaphene	ND	ug/kg	23.9	4.6	1	08/30/17 19:17	09/01/17 21:33	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	42	%	37-113		1	08/30/17 19:17	09/01/17 21:33	877-09-8	
Decachlorobiphenyl (S)	41	%	39-122		1	08/30/17 19:17	09/01/17 21:33	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	30.7	%	0.10	0.10	1		08/31/17 13:30		
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Sample: 272984-2017-S **Lab ID: 30228158002** Collected: 08/23/17 10:45 Received: 08/25/17 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides Analytical Method: EPA 8081A Preparation Method: EPA 3546									
Aldrin	ND	ug/kg	1.9	0.088	1	08/30/17 19:17	09/01/17 21:41	309-00-2	
alpha-BHC	ND	ug/kg	1.9	0.065	1	08/30/17 19:17	09/01/17 21:41	319-84-6	
beta-BHC	ND	ug/kg	1.9	0.12	1	08/30/17 19:17	09/01/17 21:41	319-85-7	
delta-BHC	ND	ug/kg	1.9	0.045	1	08/30/17 19:17	09/01/17 21:41	319-86-8	
gamma-BHC (Lindane)	ND	ug/kg	1.9	0.063	1	08/30/17 19:17	09/01/17 21:41	58-89-9	
alpha-Chlordane	ND	ug/kg	1.9	0.058	1	08/30/17 19:17	09/01/17 21:41	5103-71-9	
gamma-Chlordane	ND	ug/kg	1.9	0.052	1	08/30/17 19:17	09/01/17 21:41	5103-74-2	
4,4'-DDD	ND	ug/kg	3.8	0.15	1	08/30/17 19:17	09/01/17 21:41	72-54-8	
4,4'-DDE	ND	ug/kg	3.8	0.12	1	08/30/17 19:17	09/01/17 21:41	72-55-9	

REPORT OF LABORATORY ANALYSIS

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ANALYTICAL RESULTS

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

Sample: 272984-2017-S **Lab ID: 30228158002** Collected: 08/23/17 10:45 Received: 08/25/17 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides Analytical Method: EPA 8081A Preparation Method: EPA 3546									
4,4'-DDT	ND	ug/kg	3.8	0.10	1	08/30/17 19:17	09/01/17 21:41	50-29-3	
Dieldrin	ND	ug/kg	3.8	0.11	1	08/30/17 19:17	09/01/17 21:41	60-57-1	
Endosulfan I	ND	ug/kg	1.9	0.073	1	08/30/17 19:17	09/01/17 21:41	959-98-8	
Endosulfan II	ND	ug/kg	3.8	0.10	1	08/30/17 19:17	09/01/17 21:41	33213-65-9	
Endosulfan sulfate	ND	ug/kg	3.8	0.11	1	08/30/17 19:17	09/01/17 21:41	1031-07-8	
Endrin	ND	ug/kg	3.8	0.14	1	08/30/17 19:17	09/01/17 21:41	72-20-8	
Endrin aldehyde	ND	ug/kg	3.8	0.19	1	08/30/17 19:17	09/01/17 21:41	7421-93-4	
Endrin ketone	ND	ug/kg	3.8	0.16	1	08/30/17 19:17	09/01/17 21:41	53494-70-5	
Heptachlor	ND	ug/kg	1.9	0.063	1	08/30/17 19:17	09/01/17 21:41	76-44-8	
Heptachlor epoxide	ND	ug/kg	1.9	0.069	1	08/30/17 19:17	09/01/17 21:41	1024-57-3	
Methoxychlor	ND	ug/kg	19.2	0.51	1	08/30/17 19:17	09/01/17 21:41	72-43-5	
Toxaphene	ND	ug/kg	19.2	3.7	1	08/30/17 19:17	09/01/17 21:41	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	37	%	37-113		1	08/30/17 19:17	09/01/17 21:41	877-09-8	
Decachlorobiphenyl (S)	40	%	39-122		1	08/30/17 19:17	09/01/17 21:41	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	15.4	%	0.10	0.10	1		08/31/17 13:30		
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Sample: 272985-2017-S **Lab ID: 30228158003** Collected: 08/23/17 10:58 Received: 08/25/17 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides Analytical Method: EPA 8081A Preparation Method: EPA 3546									
Aldrin	ND	ug/kg	2.6	0.12	1	08/30/17 19:17	09/01/17 21:50	309-00-2	
alpha-BHC	ND	ug/kg	2.6	0.086	1	08/30/17 19:17	09/01/17 21:50	319-84-6	
beta-BHC	ND	ug/kg	2.6	0.16	1	08/30/17 19:17	09/01/17 21:50	319-85-7	
delta-BHC	ND	ug/kg	2.6	0.060	1	08/30/17 19:17	09/01/17 21:50	319-86-8	
gamma-BHC (Lindane)	ND	ug/kg	2.6	0.085	1	08/30/17 19:17	09/01/17 21:50	58-89-9	
alpha-Chlordane	ND	ug/kg	2.6	0.077	1	08/30/17 19:17	09/01/17 21:50	5103-71-9	
gamma-Chlordane	ND	ug/kg	2.6	0.069	1	08/30/17 19:17	09/01/17 21:50	5103-74-2	
4,4'-DDD	ND	ug/kg	5.1	0.21	1	08/30/17 19:17	09/01/17 21:50	72-54-8	
4,4'-DDE	ND	ug/kg	5.1	0.16	1	08/30/17 19:17	09/01/17 21:50	72-55-9	
4,4'-DDT	ND	ug/kg	5.1	0.14	1	08/30/17 19:17	09/01/17 21:50	50-29-3	
Dieldrin	ND	ug/kg	5.1	0.15	1	08/30/17 19:17	09/01/17 21:50	60-57-1	
Endosulfan I	ND	ug/kg	2.6	0.097	1	08/30/17 19:17	09/01/17 21:50	959-98-8	
Endosulfan II	ND	ug/kg	5.1	0.14	1	08/30/17 19:17	09/01/17 21:50	33213-65-9	
Endosulfan sulfate	ND	ug/kg	5.1	0.15	1	08/30/17 19:17	09/01/17 21:50	1031-07-8	
Endrin	ND	ug/kg	5.1	0.19	1	08/30/17 19:17	09/01/17 21:50	72-20-8	
Endrin aldehyde	ND	ug/kg	5.1	0.26	1	08/30/17 19:17	09/01/17 21:50	7421-93-4	
Endrin ketone	ND	ug/kg	5.1	0.22	1	08/30/17 19:17	09/01/17 21:50	53494-70-5	
Heptachlor	ND	ug/kg	2.6	0.085	1	08/30/17 19:17	09/01/17 21:50	76-44-8	

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ANALYTICAL RESULTS

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

Sample: 272985-2017-S **Lab ID: 30228158003** Collected: 08/23/17 10:58 Received: 08/25/17 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides Analytical Method: EPA 8081A Preparation Method: EPA 3546									
Heptachlor epoxide	ND	ug/kg	2.6	0.092	1	08/30/17 19:17	09/01/17 21:50	1024-57-3	
Methoxychlor	ND	ug/kg	25.7	0.68	1	08/30/17 19:17	09/01/17 21:50	72-43-5	
Toxaphene	ND	ug/kg	25.7	4.9	1	08/30/17 19:17	09/01/17 21:50	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	47	%	37-113		1	08/30/17 19:17	09/01/17 21:50	877-09-8	
Decachlorobiphenyl (S)	41	%	39-122		1	08/30/17 19:17	09/01/17 21:50	2051-24-3	
Percent Moisture Analytical Method: ASTM D2974-87									
Percent Moisture	36.0	%	0.10	0.10	1		08/31/17 13:30		

Sample: 272986-2017-S **Lab ID: 30228158004** Collected: 08/23/17 11:55 Received: 08/25/17 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides Analytical Method: EPA 8081A Preparation Method: EPA 3546									
Aldrin	ND	ug/kg	2.1	0.094	1	08/30/17 19:17	09/01/17 21:59	309-00-2	
alpha-BHC	ND	ug/kg	2.1	0.069	1	08/30/17 19:17	09/01/17 21:59	319-84-6	
beta-BHC	ND	ug/kg	2.1	0.13	1	08/30/17 19:17	09/01/17 21:59	319-85-7	
delta-BHC	ND	ug/kg	2.1	0.048	1	08/30/17 19:17	09/01/17 21:59	319-86-8	
gamma-BHC (Lindane)	ND	ug/kg	2.1	0.068	1	08/30/17 19:17	09/01/17 21:59	58-89-9	
alpha-Chlordane	ND	ug/kg	2.1	0.062	1	08/30/17 19:17	09/01/17 21:59	5103-71-9	
gamma-Chlordane	ND	ug/kg	2.1	0.056	1	08/30/17 19:17	09/01/17 21:59	5103-74-2	
4,4'-DDD	ND	ug/kg	4.1	0.17	1	08/30/17 19:17	09/01/17 21:59	72-54-8	
4,4'-DDE	ND	ug/kg	4.1	0.13	1	08/30/17 19:17	09/01/17 21:59	72-55-9	
4,4'-DDT	ND	ug/kg	4.1	0.11	1	08/30/17 19:17	09/01/17 21:59	50-29-3	
Dieldrin	ND	ug/kg	4.1	0.12	1	08/30/17 19:17	09/01/17 21:59	60-57-1	
Endosulfan I	ND	ug/kg	2.1	0.078	1	08/30/17 19:17	09/01/17 21:59	959-98-8	
Endosulfan II	ND	ug/kg	4.1	0.11	1	08/30/17 19:17	09/01/17 21:59	33213-65-9	
Endosulfan sulfate	ND	ug/kg	4.1	0.12	1	08/30/17 19:17	09/01/17 21:59	1031-07-8	
Endrin	ND	ug/kg	4.1	0.16	1	08/30/17 19:17	09/01/17 21:59	72-20-8	
Endrin aldehyde	ND	ug/kg	4.1	0.21	1	08/30/17 19:17	09/01/17 21:59	7421-93-4	
Endrin ketone	ND	ug/kg	4.1	0.17	1	08/30/17 19:17	09/01/17 21:59	53494-70-5	
Heptachlor	ND	ug/kg	2.1	0.068	1	08/30/17 19:17	09/01/17 21:59	76-44-8	
Heptachlor epoxide	ND	ug/kg	2.1	0.074	1	08/30/17 19:17	09/01/17 21:59	1024-57-3	
Methoxychlor	ND	ug/kg	20.7	0.55	1	08/30/17 19:17	09/01/17 21:59	72-43-5	
Toxaphene	ND	ug/kg	20.7	4.0	1	08/30/17 19:17	09/01/17 21:59	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	50	%	37-113		1	08/30/17 19:17	09/01/17 21:59	877-09-8	
Decachlorobiphenyl (S)	46	%	39-122		1	08/30/17 19:17	09/01/17 21:59	2051-24-3	
Percent Moisture Analytical Method: ASTM D2974-87									
Percent Moisture	19.9	%	0.10	0.10	1		08/31/17 13:30		

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ANALYTICAL RESULTS

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

Sample: 272987-2017-S **Lab ID: 30228158005** Collected: 08/23/17 12:00 Received: 08/25/17 10:00 Matrix: Solid

Results reported on a "dry weight" basis and are adjusted for percent moisture, sample size and any dilutions.

Parameters	Results	Units	Report Limit	MDL	DF	Prepared	Analyzed	CAS No.	Qual
8081 GCS Pesticides Analytical Method: EPA 8081A Preparation Method: EPA 3546									
Aldrin	ND	ug/kg	2.6	0.12	1	08/30/17 19:17	09/01/17 22:08	309-00-2	
alpha-BHC	ND	ug/kg	2.6	0.086	1	08/30/17 19:17	09/01/17 22:08	319-84-6	
beta-BHC	ND	ug/kg	2.6	0.16	1	08/30/17 19:17	09/01/17 22:08	319-85-7	
delta-BHC	ND	ug/kg	2.6	0.060	1	08/30/17 19:17	09/01/17 22:08	319-86-8	
gamma-BHC (Lindane)	ND	ug/kg	2.6	0.084	1	08/30/17 19:17	09/01/17 22:08	58-89-9	
alpha-Chlordane	ND	ug/kg	2.6	0.077	1	08/30/17 19:17	09/01/17 22:08	5103-71-9	
gamma-Chlordane	ND	ug/kg	2.6	0.069	1	08/30/17 19:17	09/01/17 22:08	5103-74-2	
4,4'-DDD	ND	ug/kg	5.1	0.21	1	08/30/17 19:17	09/01/17 22:08	72-54-8	
4,4'-DDE	ND	ug/kg	5.1	0.16	1	08/30/17 19:17	09/01/17 22:08	72-55-9	
4,4'-DDT	ND	ug/kg	5.1	0.14	1	08/30/17 19:17	09/01/17 22:08	50-29-3	
Dieldrin	ND	ug/kg	5.1	0.15	1	08/30/17 19:17	09/01/17 22:08	60-57-1	
Endosulfan I	ND	ug/kg	2.6	0.097	1	08/30/17 19:17	09/01/17 22:08	959-98-8	
Endosulfan II	ND	ug/kg	5.1	0.14	1	08/30/17 19:17	09/01/17 22:08	33213-65-9	
Endosulfan sulfate	ND	ug/kg	5.1	0.15	1	08/30/17 19:17	09/01/17 22:08	1031-07-8	
Endrin	ND	ug/kg	5.1	0.19	1	08/30/17 19:17	09/01/17 22:08	72-20-8	
Endrin aldehyde	ND	ug/kg	5.1	0.26	1	08/30/17 19:17	09/01/17 22:08	7421-93-4	
Endrin ketone	ND	ug/kg	5.1	0.22	1	08/30/17 19:17	09/01/17 22:08	53494-70-5	
Heptachlor	ND	ug/kg	2.6	0.084	1	08/30/17 19:17	09/01/17 22:08	76-44-8	
Heptachlor epoxide	ND	ug/kg	2.6	0.092	1	08/30/17 19:17	09/01/17 22:08	1024-57-3	
Methoxychlor	ND	ug/kg	25.7	0.68	1	08/30/17 19:17	09/01/17 22:08	72-43-5	
Toxaphene	ND	ug/kg	25.7	4.9	1	08/30/17 19:17	09/01/17 22:08	8001-35-2	
Surrogates									
Tetrachloro-m-xylene (S)	48	%	37-113		1	08/30/17 19:17	09/01/17 22:08	877-09-8	
Decachlorobiphenyl (S)	43	%	39-122		1	08/30/17 19:17	09/01/17 22:08	2051-24-3	

Percent Moisture

Analytical Method: ASTM D2974-87

Percent Moisture	35.8	%	0.10	0.10	1		08/31/17 13:30		
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QUALITY CONTROL DATA

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

QC Batch: 270100 Analysis Method: EPA 8081A
QC Batch Method: EPA 3546 Analysis Description: 8081 GCS Pesticides
Associated Lab Samples: 30228158001, 30228158002, 30228158003, 30228158004, 30228158005

METHOD BLANK: 1329059 Matrix: Solid
Associated Lab Samples: 30228158001, 30228158002, 30228158003, 30228158004, 30228158005

Parameter	Units	Blank Result	Reporting Limit	MDL	Analyzed	Qualifiers
4,4'-DDD	ug/kg	ND	3.3	0.13	09/01/17 20:40	
4,4'-DDE	ug/kg	ND	3.3	0.10	09/01/17 20:40	
4,4'-DDT	ug/kg	ND	3.3	0.090	09/01/17 20:40	
Aldrin	ug/kg	ND	1.7	0.076	09/01/17 20:40	
alpha-BHC	ug/kg	ND	1.7	0.056	09/01/17 20:40	
alpha-Chlordane	ug/kg	ND	1.7	0.050	09/01/17 20:40	
beta-BHC	ug/kg	ND	1.7	0.10	09/01/17 20:40	
delta-BHC	ug/kg	ND	1.7	0.039	09/01/17 20:40	
Dieldrin	ug/kg	ND	3.3	0.096	09/01/17 20:40	
Endosulfan I	ug/kg	ND	1.7	0.063	09/01/17 20:40	
Endosulfan II	ug/kg	ND	3.3	0.090	09/01/17 20:40	
Endosulfan sulfate	ug/kg	ND	3.3	0.097	09/01/17 20:40	
Endrin	ug/kg	ND	3.3	0.12	09/01/17 20:40	
Endrin aldehyde	ug/kg	ND	3.3	0.17	09/01/17 20:40	
Endrin ketone	ug/kg	ND	3.3	0.14	09/01/17 20:40	
gamma-BHC (Lindane)	ug/kg	ND	1.7	0.055	09/01/17 20:40	
gamma-Chlordane	ug/kg	ND	1.7	0.045	09/01/17 20:40	
Heptachlor	ug/kg	ND	1.7	0.055	09/01/17 20:40	
Heptachlor epoxide	ug/kg	ND	1.7	0.060	09/01/17 20:40	
Methoxychlor	ug/kg	ND	16.7	0.44	09/01/17 20:40	
Toxaphene	ug/kg	ND	16.7	3.2	09/01/17 20:40	
Decachlorobiphenyl (S)	%	49	39-122		09/01/17 20:40	
Tetrachloro-m-xylene (S)	%	49	37-113		09/01/17 20:40	

LABORATORY CONTROL SAMPLE: 1329060

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
4,4'-DDD	ug/kg	26.7	21.0	79	64-119	
4,4'-DDE	ug/kg	26.7	21.7	81	50-114	
4,4'-DDT	ug/kg	26.7	23.9	90	68-118	
Aldrin	ug/kg	13.3	10.2	77	50-98	
alpha-BHC	ug/kg	13.3	10.1	76	50-105	
alpha-Chlordane	ug/kg	13.3	10.3	77	51-104	
beta-BHC	ug/kg	13.3	9.7	73	49-104	
delta-BHC	ug/kg	13.3	10.4	78	48-113	
Dieldrin	ug/kg	26.7	21.1	79	63-112	
Endosulfan I	ug/kg	13.3	10.1	76	60-108	
Endosulfan II	ug/kg	26.7	21.1	79	51-112	
Endosulfan sulfate	ug/kg	26.7	21.6	81	54-112	
Endrin	ug/kg	26.7	22.0	83	65-114	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

LABORATORY CONTROL SAMPLE: 1329060

Parameter	Units	Spike Conc.	LCS Result	LCS % Rec	% Rec Limits	Qualifiers
Endrin aldehyde	ug/kg	26.7	20.5	77	53-145	
Endrin ketone	ug/kg	26.7	21.5	81	57-123	
gamma-BHC (Lindane)	ug/kg	13.3	10.1	76	55-112	
gamma-Chlordane	ug/kg	13.3	10.2	76	53-102	
Heptachlor	ug/kg	13.3	10.4	78	59-108	
Heptachlor epoxide	ug/kg	13.3	10.2	77	51-105	
Methoxychlor	ug/kg	133	121	91	64-116	
Toxaphene	ug/kg		ND			
Decachlorobiphenyl (S)	%			55	39-122	
Tetrachloro-m-xylene (S)	%			55	37-113	

MATRIX SPIKE & MATRIX SPIKE DUPLICATE: 1329061 1329062

Parameter	Units	30228381001		MS		MSD		MS		MSD		MS		MSD		% Rec		Max		Qual
		Result	Conc.	Spike Conc.	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Result	Conc.	Limits	RPD	RPD	RPD	
4,4'-DDD	ug/kg	ND	31.9	32.2	20.5	21.6	57	60	64-119	6	25	ML								
4,4'-DDE	ug/kg	ND	31.9	32.2	24.7	27.2	66	73	50-114	10	25									
4,4'-DDT	ug/kg	ND	31.9	32.2	36.1	37.6	103	107	68-118	4	25									
Aldrin	ug/kg	ND	15.9	16.1	11.1	11.5	69	71	50-98	4	25									
alpha-BHC	ug/kg	ND	15.9	16.1	11.6	12.0	72	73	50-105	3	25									
alpha-Chlordane	ug/kg	ND	15.9	16.1	11.2	11.6	66	68	51-104	3	25									
beta-BHC	ug/kg	ND	15.9	16.1	10.7	11.2	61	64	49-104	5	25									
delta-BHC	ug/kg	ND	15.9	16.1	12.0	12.2	71	71	48-113	1	25									
Dieldrin	ug/kg	ND	31.9	32.2	24.3	24.5	76	76	63-112	1	25									
Endosulfan I	ug/kg	ND	15.9	16.1	11.0	11.4	66	67	60-108	3	25									
Endosulfan II	ug/kg	ND	31.9	32.2	23.4	24.5	69	71	51-112	5	25									
Endosulfan sulfate	ug/kg	ND	31.9	32.2	23.7	24.0	69	69	54-112	1	25									
Endrin	ug/kg	ND	31.9	32.2	28.2	29.3	80	83	65-114	4	25									
Endrin aldehyde	ug/kg	ND	31.9	32.2	21.1	19.2	63	57	53-145	9	25									
Endrin ketone	ug/kg	ND	31.9	32.2	23.2	20.9	72	64	57-123	10	25									
gamma-BHC (Lindane)	ug/kg	ND	15.9	16.1	11.6	11.9	70	71	55-112	3	25									
gamma-Chlordane	ug/kg	ND	15.9	16.1	11.0	11.4	67	68	53-102	4	25									
Heptachlor	ug/kg	ND	15.9	16.1	12.0	12.3	74	75	59-108	2	25									
Heptachlor epoxide	ug/kg	ND	15.9	16.1	11.1	11.5	67	69	51-105	4	25									
Methoxychlor	ug/kg	ND	159	161	157	159	98	98	64-116	1	25									
Decachlorobiphenyl (S)	%						47	50	39-122											
Tetrachloro-m-xylene (S)	%						49	50	37-113											

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REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

QC Batch: 270223 Analysis Method: ASTM D2974-87
QC Batch Method: ASTM D2974-87 Analysis Description: Dry Weight/Percent Moisture
Associated Lab Samples: 30228158001, 30228158002, 30228158003, 30228158004, 30228158005

SAMPLE DUPLICATE: 1329737

Parameter	Units	30228542001 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	6.9	6.4	6	20	

SAMPLE DUPLICATE: 1329741

Parameter	Units	30228542002 Result	Dup Result	RPD	Max RPD	Qualifiers
Percent Moisture	%	18.5	19.0	2	20	

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QUALIFIERS

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

ML Matrix spike recovery and/or matrix spike duplicate recovery was below laboratory control limits. Result may be biased low.

REPORT OF LABORATORY ANALYSIS

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QUALITY CONTROL DATA CROSS REFERENCE TABLE

Project: 272983-2017-S - 272987-2017-S

Pace Project No.: 30228158

Lab ID	Sample ID	QC Batch Method	QC Batch	Analytical Method	Analytical Batch
30228158001	272983-2017-S	EPA 3546	270100	EPA 8081A	270320
30228158002	272984-2017-S	EPA 3546	270100	EPA 8081A	270320
30228158003	272985-2017-S	EPA 3546	270100	EPA 8081A	270320
30228158004	272986-2017-S	EPA 3546	270100	EPA 8081A	270320
30228158005	272987-2017-S	EPA 3546	270100	EPA 8081A	270320
30228158001	272983-2017-S	ASTM D2974-87	270223		
30228158002	272984-2017-S	ASTM D2974-87	270223		
30228158003	272985-2017-S	ASTM D2974-87	270223		
30228158004	272986-2017-S	ASTM D2974-87	270223		
30228158005	272987-2017-S	ASTM D2974-87	270223		

REPORT OF LABORATORY ANALYSIS

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Reliance Laboratories, Inc.
2044 Meadowbrook Road | P.O. Box 4657
Bridgeport, WV 26330
Phone: 304.842.5285 | Fax: 304.842.5351

Martinsburg Laboratory
Ridgefield Business Center | 25 Crimson Circle
Martinsburg, WV 25403
Phone: 304.596.2084 | Fax: 304.596.2086

Certifications: WV Department of Health #: 00354, 00443 | WV Department of Environmental Protection #: 158, 181
MD Department of Environment #: 336, 337 | US Environmental Protection Agency #: WV00042, WV00901

Environmental Analysts and Consultants

RelianceLabs@wvdsi.net | www.RelianceLabs.net

Thursday, August 24, 2017

30 2 28 1 58

Pace Analytical Services
1638 Roseytown Rd.
Suites 2, 3, 4
Greensburg, PA 15601

Please analyze the following sample(s) for: Pesticides

Please identify as:

272983-2017-S	272984-2017-S	272985-2017-S	272986-2017-S	272987-2017-S
8/23/2017	8/23/2017	8/23/2017	8/23/2017	8/23/2017
10:15 a.m.	10:45 a.m.	10:58 a.m.	11:55 a.m.	12:00 p.m.

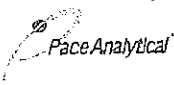
PLEASE SEND RESULTS & INVOICE TO:

RELIANCE LABORATORIES, INC.
ATTN: TENLEY MILLER
PO BOX 4657
BRIDGEPORT, WV 26330
tmiller@wvdsi.net

Thank you,
Megan Ramirez

PLEASE EXECUTE THE ENCLOSED CHAIN OF CUSTODY RECORD AND RETURN WITH RESULTS.
THANK YOU.

Pittsburgh Lab Sample Condition Upon Receipt



Client Name:

Reliance

Project #

30228158

Courier: ☒ Fed Ex ☐ UPS ☐ USPS ☐ Client ☐ Commercial ☐ Pace Other _____

Tracking #: 770106881430

Label	<u>ARM</u>
LIMS Login	<u>BLM</u>

Custody Seal on Cooler/Box Present: ☐ yes ☒ no Seals intact: ☐ yes ☐ no

Thermometer Used 8 Type of Ice: Wet Blue None

Cooler Temperature Observed Temp 4.4 °C Correction Factor: 10.0 °C Final Temp: 4.4 °C

Temp should be above freezing to 6°C

Date and Initials of person examining contents: ARM 8/25/17

Comments:

	Yes	No	N/A	
Chain of Custody Present:	☒	☐	☐	1.
Chain of Custody Filled Out:	☒	☐	☐	2.
Chain of Custody Relinquished:	☒	☐	☐	3.
Sampler Name & Signature on COC:	☐	☒	☐	4. <u>No signature</u>
Sample Labels match COC:	☒	☐	☐	5.
-Includes date/time/ID Matrix: <u>SL</u>				
Samples Arrived within Hold Time:	☒	☐	☐	6.
Short Hold Time Analysis (<72hr remaining):	☐	☒	☐	7.
Rush Turn Around Time Requested:	☐	☒	☐	8.
Sufficient Volume:	☒	☐	☐	9.
Correct Containers Used:	☒	☐	☐	10.
-Pace Containers Used:	☐	☒	☐	
Containers Intact:	☒	☐	☐	11.
Orthophosphate field filtered	☐	☐	☒	12.
Hex Cr Aqueous Compliance/NPDES sample field filtered	☐	☐	☒	13.
Organic Samples checked for dechlorination:	☐	☐	☒	14.
Filtered volume received for Dissolved tests	☐	☐	☒	15.
All containers have been checked for preservation.	☐	☐	☒	16.
All containers needing preservation are found to be in compliance with EPA recommendation.	☐	☐	☒	
exceptions: VOA, coliform, TOC, O&G, Phenolics				
				Initial when completed <u>ARM</u> Date/time of preservation
				Lot # of added preservative
Headspace in VOA Vials (>6mm):	☐	☐	☒	17.
Trip Blank Present:	☐	☐	☒	18.
Trip Blank Custody Seals Present	☐	☐	☒	
Rad Aqueous Samples Screened > 0.5 mrem/hr	☐	☐	☒	Initial when completed: Date:

Client Notification/ Resolution:

Person Contacted: _____ Date/Time: _____ Contacted By: _____

Comments/ Resolution: _____

☐ A check in this box indicates that additional information has been stored in ereports.

Note: Whenever there is a discrepancy affecting North Carolina compliance samples, a copy of this form will be sent to the North Carolina DEHNR Certification Office (i.e. out of hold, incorrect preservative, out of temp, incorrect containers)
 *PM review is documented electronically in LIMS. When the Project Manager closes the SRF Review schedule in LIMS. The review is in the Status section of the Workorder Edit Screen.