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The Trusted Integrator for Sustainable Solutions

REMOVAL SUPPORT TEAM 3
EPA CONTRACT EP-S2-14-01

August 24, 2018

Mr. Terry Kish, On-Scene Coordinator
U.S. Environmental Protection Agency, Region II
Removal Action Branch
2890 Woodbridge Avenue
Edison, New Jersey 08837

EPA CONTRACT No: EP-S2-14-01
TDD No: TO-0370-0026
DC No: RST3-05-D-0017
SUBJECT: SOIL SAMPLING REPORT, JUNE 2018 EVENT
EIGHTEEN MILE CREEK SITE
NIAGARA COUNTY, NEW YORK

Dear Mr. Kish,

Enclosed please find the Soil Sampling Report, June 2018 Event, which summarizes the soil sampling activities conducted by the U.S. Environmental Protection Agency (EPA) with the support of Weston Solutions, Inc., Removal Support Team 3 (RST 3) at the Eighteen Mile Creek Site (the Site) located in Niagara County, New York. The sampling event was performed as part of a Remedial Investigation at four residential properties located in the vicinity of the Site from June 26, through June 27, 2018.

If you have any questions or comments, please contact me at (732) 570-4997.

Sincerely,

Weston Solutions, Inc.

Michael Mannino
RST 3 Site Project Manager

Enclosure
cc: TDD File: TO-0370-0026

SOIL SAMPLING REPORT, JUNE 2018 EVENT

EIGHTEEN MILE CREEK SITE

Niagara County, New York

SSID No: A269
EPA ID No.: NYN000206456

DC No: RST3-05-D-0017
TDD No: TO-0370-0026
EPA Contract No: EP-S2-14-01

Prepared for:

U.S. Environmental Protection Agency, Region II
2890 Woodbridge Avenue
Edison, New Jersey 08837

Prepared by:

Removal Support Team 3
Weston Solutions, Inc.
Federal East Division
Edison, New Jersey 08837

August 2018

TABLE OF CONTENTS

LIST OF ATTACHMENTS

Attachment A: Figures

Attachment B: Tables

Attachment C: Chains of Custody Records

Attachment D: Validated Data Package

1.0 Introduction

On June 26 and 27, 2018, the U.S. Environmental Protection Agency (EPA) Region II, with the support of Weston Solutions, Inc., Removal Support Team 3 (RST 3), conducted a soil sampling event as part of a Remedial Investigation of the existing soil at the Eighteen Mile Creek Site (the Site). Composite soil samples were collected for laboratory analysis from four residential properties located along North Adam Street and Dayton Street, located in the vicinity of the Site. For privacy reasons, unique identifier numbers (Property P044 through P047) were assigned to each of the investigated properties.

1.1 Site Location and Description

Eighteen Mile Creek (the Creek) originates southeast of the City of Lockport in the Niagara County Park and Golf Course, flows into a sluice that is also fed by the New York State Barge Canal (NYSBC), and exits north of the canal into Eighteen Mile Creek East Branch in Lockport. Eighteen Mile Creek West Branch originates in Upson Park on the north side of the NYSBC and also receives water from two underground flows. The East and West Branches converge and flow under Clinton Street to the Mill Pond. The Creek flows north for approximately 15 miles, past the Clinton Street, Newfane and Burt Dams, and empties near the western end of Lake Ontario in Olcott. The portion of the Creek that was placed on the National Priorities List (NPL) is defined by the stretch that spans approximately 12.7 miles from just south of Clinton Street to Burt Dam. The portion from Clinton to Harwood Streets in the City of Lockport is identified by the New York State Department of Environmental Conservation (NYSDEC) as the Eighteen Mile Creek Corridor (the Corridor).

Refer to Attachment A, Figure 1: Site Location Map.

1.2 Site History and Background

The NYSDEC has conducted multiple environmental investigations within the Corridor which identified polychlorinated biphenyls (PCBs) and heavy metals, both within the Creek and at several properties situated within the Corridor. Based on the findings from the NYDEC investigations, on March 15, 2012, EPA placed the Site on the NPL list.

EPA issued a Record of Decision (ROD) in September 2013, for Operable Unit-1 (OU-1) which, required the relocation of residents from five residential properties along Water Street followed by demolition of the vacant homes and installation of a fence. In addition, the ROD required the demolition of the former Flintkote facility located at 300 Mill Street in order to facilitate completion of Remedial Investigation of the property. The OU-1 ROD was implemented from 2014 to 2015.

In addition to other Remedial Investigation work performed by EPA, in March 2013, EPA collected a single transect of soil samples along the east side of Mill Street opposite of the former Flintkote properties. Surface soil samples were collected and analyzed for metals and PCBs. Elevated concentrations of lead were reported in two of the samples collected. A second sampling event was conducted at those two properties in accordance with the *Superfund Lead-Contaminated Residential Sites Handbook.* With the development of new analytical tools, EPA

collected additional soil samples in October 2016 from known contaminated areas of the former Flintkote property for forensic comparison to the lead found in soil on the residential properties to further evaluate whether or not the elevated concentrations of lead were attributable to the Site.

In July 2017, EPA and RST 3 conducted a Remedial Investigation at nine residential properties located in the vicinity of the Site along Mill Street, Porter Street, and Chapel Street. A total of 163 grab soil samples, including quality assurance/quality control (QA/QC) samples, were collected from all nine properties at depths 0 to 2 inches, 2 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches, below ground surface (bgs). The soil samples were screened on-site for lead using a portable X-ray Fluorescence (XRF) analyzer and then submitted for laboratory analyses of target analyte list (TAL) metals, including tin, and target compound list (TCL) PCBs. The screening and analytical results were compared with the EPA Removal Management Levels (RMLs) for residential soil. Analytical results indicated that concentrations of lead and/or manganese exceeded the EPA RMLs of 400 milligrams per kilogram (mg/kg) and 1,800 mg/kg, respectively for lead and manganese, in at least one or more soil samples collected at each of the nine properties. The highest concentration of lead was 1,340 mg/kg at depths 6 to 12 inches bgs and the highest concentration of manganese was 2,830 mg/kg at depths 18 to 24 inches bgs. In addition, concentrations of thallium exceeded the EPA RML of 0.78 mg/kg in at least one or more soil samples collected from three of the sampled properties. The highest concentration of thallium was 1.2 mg/kg at depths 12 to 18 inches bgs. Analytical results did not indicate any concentrations of PCBs above the EPA RML in any soil samples collected from all nine properties.

In September 2017, EPA and RST 3 conducted a Remedial Investigation at eight residential properties located in the vicinity of the Site along Mill Street, Porter Street, and Chapel Street. A total of 147 composite soil samples, including QA/QC samples, were collected from all eight properties at depths 0 to 2 inches, 2 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches bgs and submitted for laboratory analysis of TAL metals, including tin. Analytical results indicated that concentrations of lead exceeded the EPA RML of 400 mg/kg in at least one or more soil samples collected from each of the eight properties. The highest concentration of lead was 1,400 mg/kg at depths 6 to 12 inches bgs. In addition, the concentrations of manganese and thallium exceeded the EPA RMLs of 1,800 mg/kg and 0.78 mg/kg, respectively in at least one or more soil samples collected from two of the sampled properties. The highest concentration of manganese and thallium was 2,400 mg/kg and 1.9 J (estimated result) mg/kg, respectively at depths 12 to 18 inches bgs.

In November 2017, EPA and RST 3 conducted a Remedial Investigation at 10 residential properties located in the vicinity of the Site along North Adam Street, Porter Street, and Frost Street. A total of 121 composite samples, including QA/QC samples, were collected from all 10 properties at depths 0 to 2 inches, 2 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches bgs and submitted for laboratory analysis of TAL metals, including tin. Analytical results indicated that concentrations of lead were above the EPA RML in eight of the ten properties sampled during the event. The highest concentration of lead was 1,610 mg/kg at depths 6 to 12 inches bgs. In addition, the concentrations of manganese exceeded the EPA RML of 1,800 mg/kg in at least one or more soil samples collected from three of the sampled properties. The highest concentration of manganese was 2,640 mg/kg at depths 18 to 24 inches bgs.

2.0 Scope of Work

RST 3 was tasked by EPA with the collection of five-point composite soil samples, including QA/QC samples, from soil borings advanced using non-dedicated stainless steel hand augers at four residential properties (Property P044, P045, P046, and P037) located in the vicinity of the Site. All the soil samples were submitted for laboratory analyses of TAL metals, including tin. In addition, RST 3 was tasked with providing support for photographic documentation and notation in the Site logbook of all site activities, entering sampling information into the EPA Scribe database, an environmental data management system, and documenting sampling locations with Global Position System (GPS) technology.

Refer to Attachment A, Figure 2: Property Layout Map.

3.0 On-Site Personnel

Name	Affiliation	Duties On-site
Terry Kish	EPA, Region II	On-Scene Coordinator
Michael Mannino	Weston Solutions, Inc., RST 3	Site Project Manager, Site Health and Safety, Sample Collection and Sample Management, Global Positioning System Documentation
Michael Beuthe	Weston Solutions, Inc., RST 3	Sample Collection and Sample Management, Sample Quality Control/Quality Assurance
Patrick Ahern	Weston Solutions, Inc., RST 3	Sample Collection and Sample Management
Bryan Gonzalez	Weston Solutions, Inc., RST 3	Sample Collection and Sample Management

EPA: U.S. Environmental Protection Agency
RST 3: Removal Support Team 3

4.0 Summary of Site Activities and Observations

Prior to mobilization to the Site, the locations of subsurface utilities at each property were marked out following a utility mark-out request submitted by RST 3 to the New York 811 Dig Safe program to identify subsurface utilities within the proposed investigation areas. On June 25, 2018, RST 3 mobilized to the Site to perform the soil sampling event. On June 26 through June 27, 2018, non-dedicated stainless steel hand augers were utilized to advance soil borings at locations in designated sampling quadrants (quads) at each property. A total of 84 composite soil samples, including QA/QC samples, were collected from the sampling quads at all four residential properties. Rinsate blanks were collected daily at the end of each sampling day. The soil samples and rinsate blanks were shipped to an EPA Contract Laboratory Program (CLP) laboratory, Bonner Analytical Testing Company (Bonner), located in Hattiesburg, Mississippi, for TAL metals, including tin, analyses.

5.0 Sampling Methodology

All field work was performed in accordance with the RST 3 *Site-Specific Health and Safety Plan* (HASP), the RST 3 *Site-Specific Quality Assurance Project Plan* (QAPP), and EPA's Emergency Response Team (ERT)/Scientific, Engineering, Response & Analytical Services (SERAS) contractor Standard Operating Procedures (SOPs) Number (No.) 2001: *General Field Sampling*

Guidelines and SOP No. 2012: *Soil Sampling*. At each property to be sampled, the area of concern (AOC) was divided into sampling quads of approximately equal surface area. The number of quads and sample locations at each property were determined by the EPA On-Scene Coordinator (OSC) and marked using survey flags. Soil sampling was conducted generally following the guidelines provided in the EPA *Superfund Lead-Contaminated Residential Sites Handbook*.

Soil borings were advanced manually using non-dedicated stainless steel hand augers to a depth of two feet bgs at each selected location. Generally, five-point composite soil samples were collected from five discrete depth intervals (0 to 2 inches, 2 to 6 inches, 6 to 12 inches, 12 to 18 inches, and 18 to 24 inches bgs) within each sampling quad and composited into one sample for each specific interval. At each property, all the soil samples were collected from the stainless steel hand augers using dedicated plastic scoops and placed in re-sealable plastic bags. Organic debris was removed from each bagged sample before being homogenized and then placed into 8 ounce (oz.) glass sample jars. Fresh nitrile gloves were donned between sampling intervals and boring locations. Using this sampling method, five composite soil samples from five discreet depth intervals were typically collected from each sample quad at each property.

The soil samples were sieved by the laboratory using 150 micrometer (µm) sieve prior to analysis. Field duplicates and matrix spike/matrix spike duplicates (MS/MSD) were collected at the rate of one per 20 field samples or one per property, whichever was less. In order to demonstrate adequate decontamination of non-dedicated sampling equipment (*i.e.* stainless hand augers), a rinsate blank was collected at the end of each sampling day by pouring laboratory grade de-ionized water over a decontaminated stainless-steel hand auger. The rinse water was collected into a sample bottle. Decontamination of non-dedicated sampling equipment (*i.e.,* stainless steel hand augers) was conducted in accordance with EPA's ERT/SERAS contractor SOP No. 2006: *Sampling Equipment Decontamination*, and was performed between sampling intervals and locations, and consisted of a soap (Alconox®) solution scrub and potable water rinse.

All sample information was entered into the EPA Scribe data management system from which sample labels and Chains of Custody (COC) Record were generated. The sample labels were affixed to the soil sample jars and rinsate sample bottles and then preserved on ice in sample coolers. RST 3 performed photographic documentation of the Site conditions and notation in a Site logbook of site activities throughout the Remedial Investigation. Sample location coordinates were documented using GPS technology.

After sampling was completed at each property, the soil borings were backfilled with the originally removed soil in reverse order. In the event that additional soil was needed to properly backfill the borehole, top soil was utilized to return the boring locations to their pre-sampling conditions.

6.0 Laboratory Receiving Samples

Sample Matrix	CLP Case Number	Analysis	Name and Address of Laboratory
Soil and Rinsate Blank (Aqueous)	47720	TAL Metals and Tin	Bonner Analytical Testing Company 2703 Oak Grove Road Hattiesburg, Mississippi 39402 ***(CLP laboratory)***

CLP = Contract Laboratory Program
TAL = Target Analyte List

7.0 Sample Collection and Dispatch

On June 29, 2018, RST 3 shipped a total of 84 soil samples, including four field duplicates, additional volumes of four samples designated as MS/MSD and two rinsate blanks under COC record numbers (Nos.) 2-062918-085223-0016, 2-062918-092540-0017, 2-062918-092613-0018, and 2-062918-092635-0019 via FedEx Airbill No. 8066 7287 2625 to Bonner for TAL metals, including tin, analyses.

Refer to Attachment B, Table 1: Sample Collection Summary Table and Attachment C: Chains of Custody Records.

8.0 Soil Analytical Results Summary

The validated analytical results of the soil samples collected from the four residential properties were compared with the EPA RMLs (revised May 2016). Validated analytical results indicated that concentrations of lead were above the EPA RML of 400 mg/kg in at least one or more soil samples collected from at least one or more depth intervals in one or more quads at two of the four properties sampled during this event. Sample P045-S001-0612-01, which was collected at 6 to 12 inches bgs in Quad 1 of Property P045, indicated the highest concentration of lead at 1,240 mg/kg. Manganese was detected above the EPA RML of 1,800 mg/kg in at least one or more soil samples collected from at least one or more depth intervals in one or more quads at one of the four properties. Sample P045-S003-1824-01, which was collected at 18 to 24 inches bgs from Property P045, indicated the highest concentration of manganese at 2,850 mg/kg.

Refer to Attachment A, Figure 3A through Figure 3D, Analytical Results Maps (Lead); Attachment B, Table 2A through Table 2D: Validated Analytical Results Summary Tables - TAL Metals plus Tin; and Attachment D: Validated Data Package.

9.0 Conclusion

Concentrations of lead were above the EPA RMLs in two of the four properties sampled during this event. In addition, concentrations of manganese were above the EPA RML in one of the four properties sampled during this event. It is anticipated that EPA will utilize the results from this Removal Assessment sampling event to determine future actions, which may include an expanded Remedial Investigation of other properties located in the vicinity of the Site, and potentially, the subsequent removal of TAL metal contamination identified in soil at the investigated properties.

Report prepared by: Michael Mannino — 8/24/2018

Michael Mannino
RST 3 Site Project Manager

Date

Report reviewed by: Bernard Nwosu — 8/24/2018

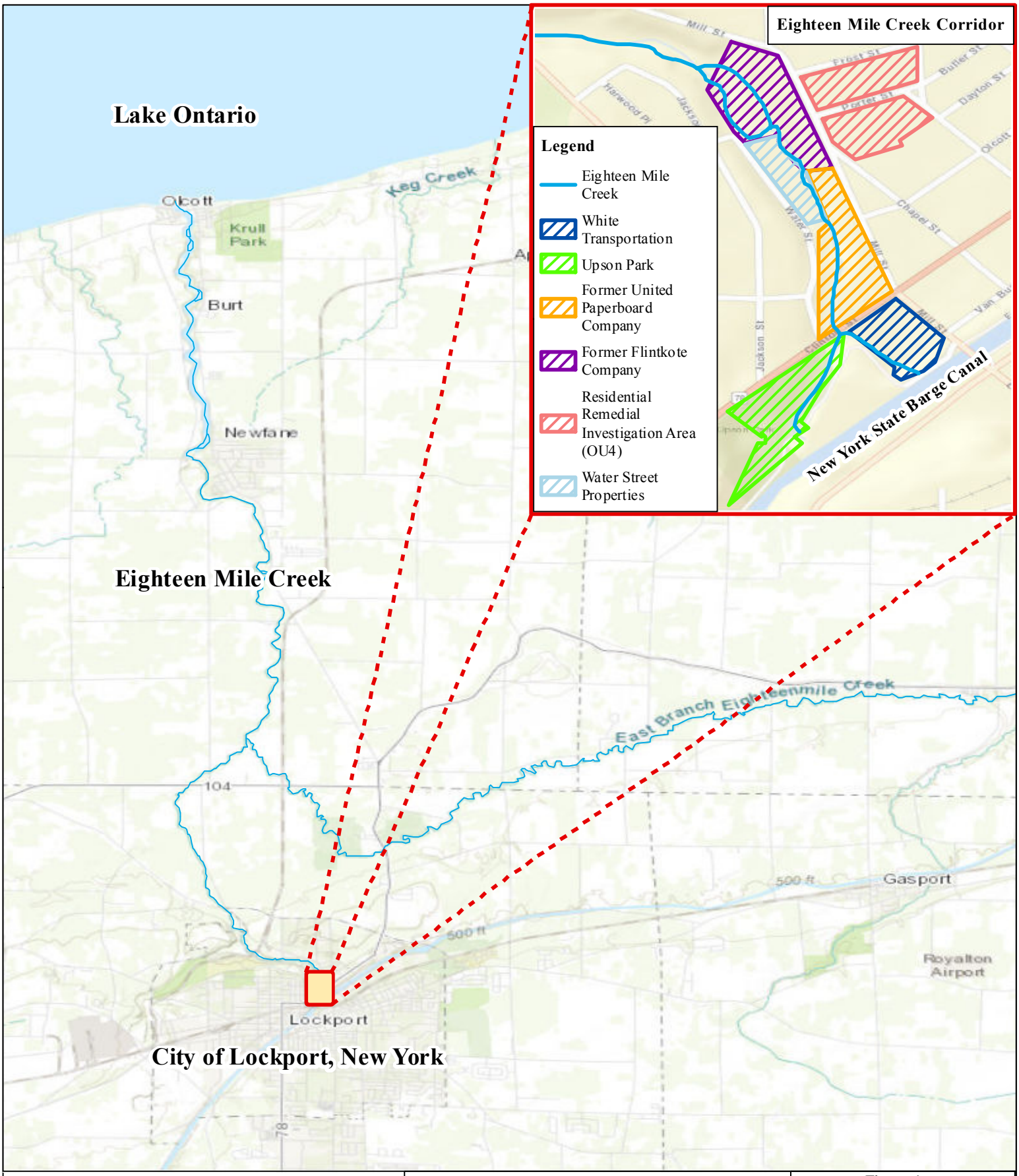
Bernard Nwosu
RST 3 Group Leader

Date

ATTACHMENT A

Figures

Figure 1: Site Location Map
Figure 2: Property Layout Map
Figure 3A: Property P044 Analytical Results Map (Lead)
Figure 3B: Property P045 Analytical Results Map (Lead)
Figure 3C: Property P046 Analytical Results Map (Lead)
Figure 3D: Property P047 Analytical Results Map (Lead)



Legend

Eighteen Mile Creek Corridor

Eighteen Mile Creek

0 0.5 1 2 3 4 Miles

N

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East Division

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Environmental Compliance Consultants, Inc.,
Avatar Environmental, LLC, On-Site Environmental,
Inc. and Sovereign Consulting, Inc

Figure 1:
Site Location Map

Eighteen Mile Creek Site
Niagara County, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

GIS ANALYST:	M. MANNINO
EPA OSC:	T. KISH
RST SPM:	M. GARIBALDI
FILENAME:	180517_UPDATEDSLM.MXD

DATE MODIFIED: 7/25/2018

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Legend

Property Boundary

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Figure 2:Property Layout Map

Eighteen Mile Creek Site
Niagara County, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

DATE MODIFIED: 8/24/2018

GIS ANALYST:	M. MANNINO
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RST SPM:	M. MANNINO
FILENAME:	180824_PropLocMap

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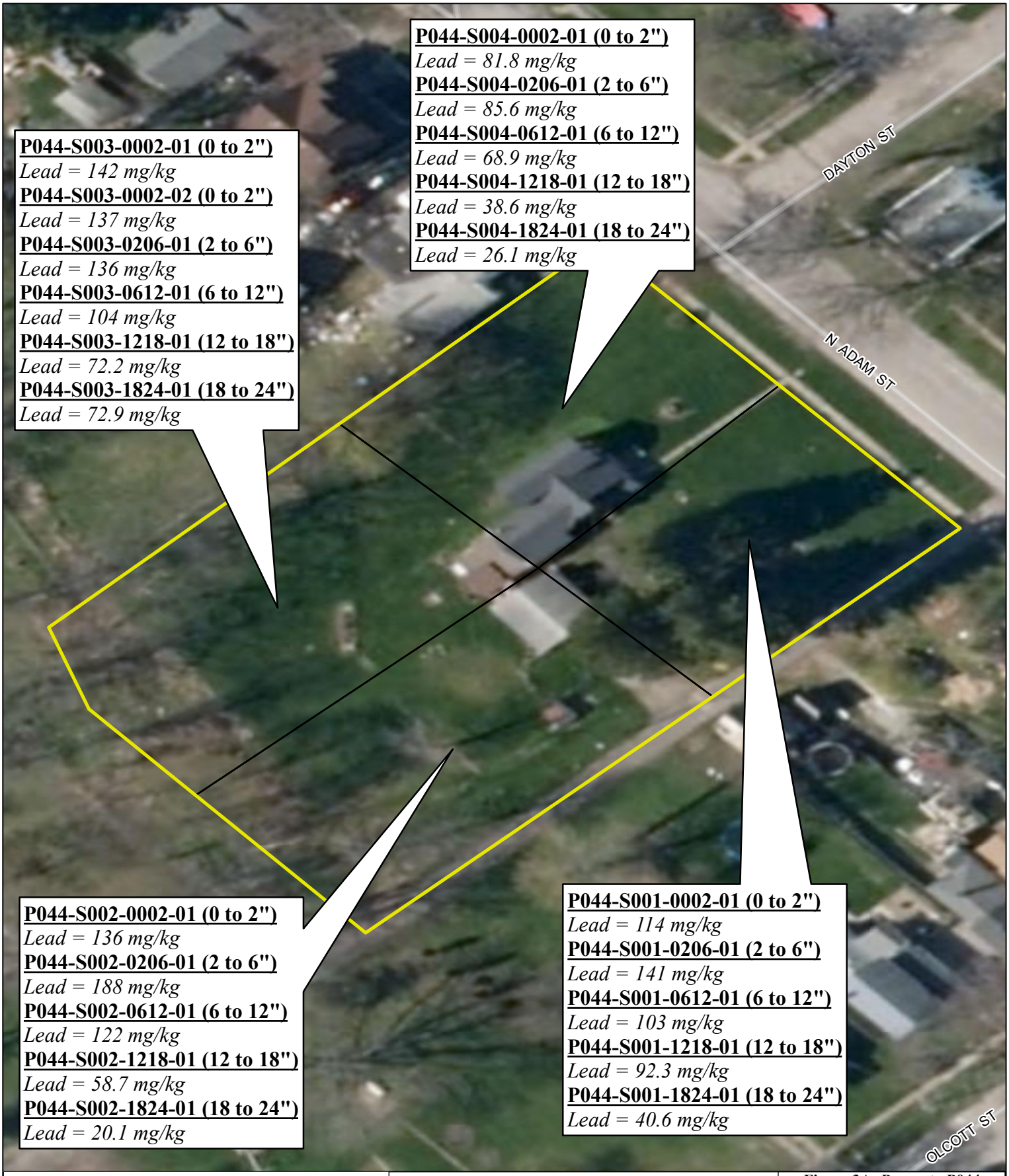

Legend

- Property Boundary
- Sample Quad Boundary

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Figure 3A: Property P044
Analytical Results (Lead)

Eighteen Mile Creek Site
Niagara County, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

DATE MODIFIED: 8/24/2018

GIS ANALYST:	M. MANNINO
EPA OSC:	T. KISH
RST SPM:	M. MANNINO
FILENAME:	180621_P044

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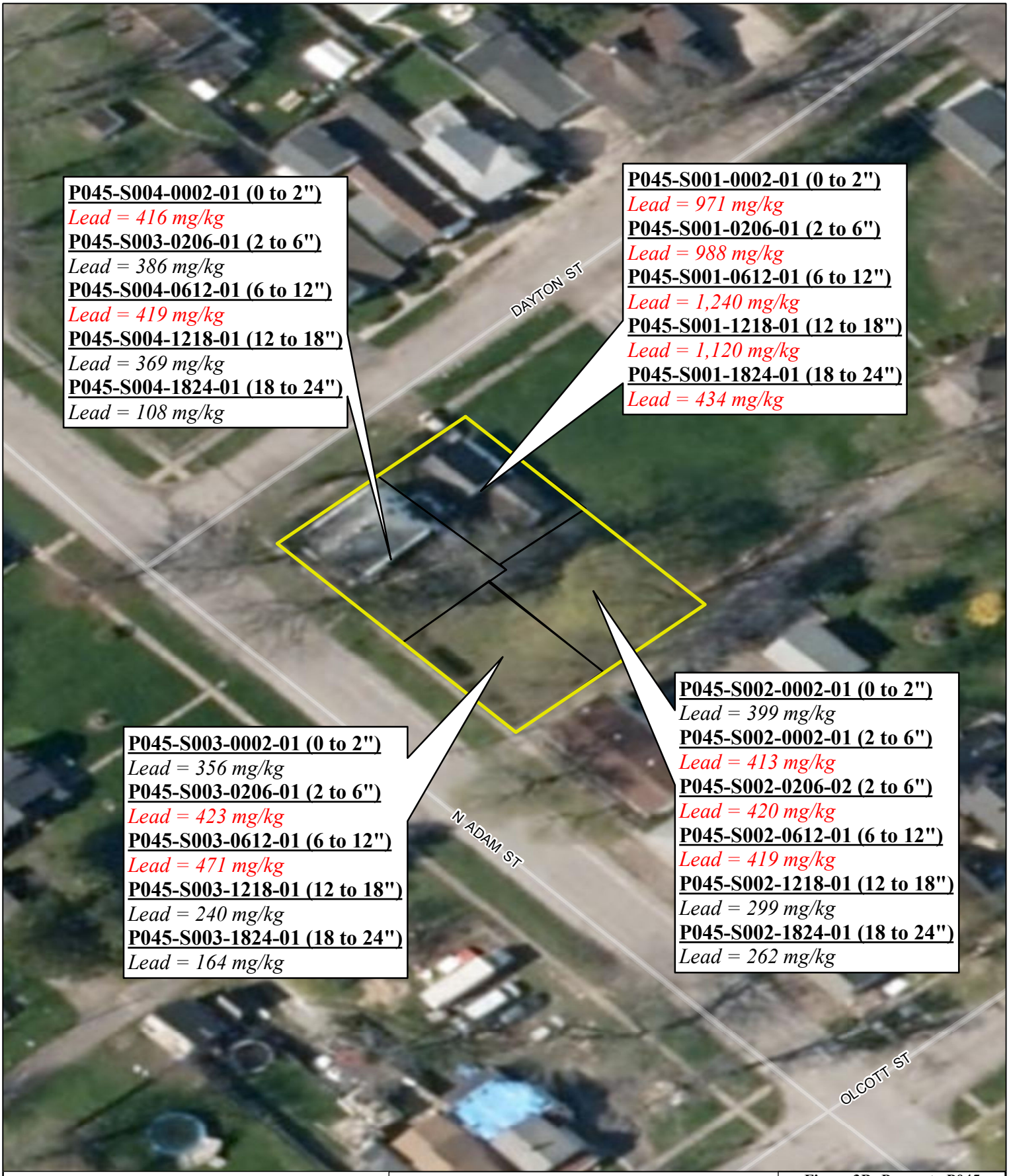

Legend

- Property Boundary
- Sample Quad Boundary

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Figure 3B: Property P045
Analytical Results (Lead)

Eighteen Mile Creek Site
Niagara County, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

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FILENAME:	180621_P045

DATE MODIFIED: 8/24/2018

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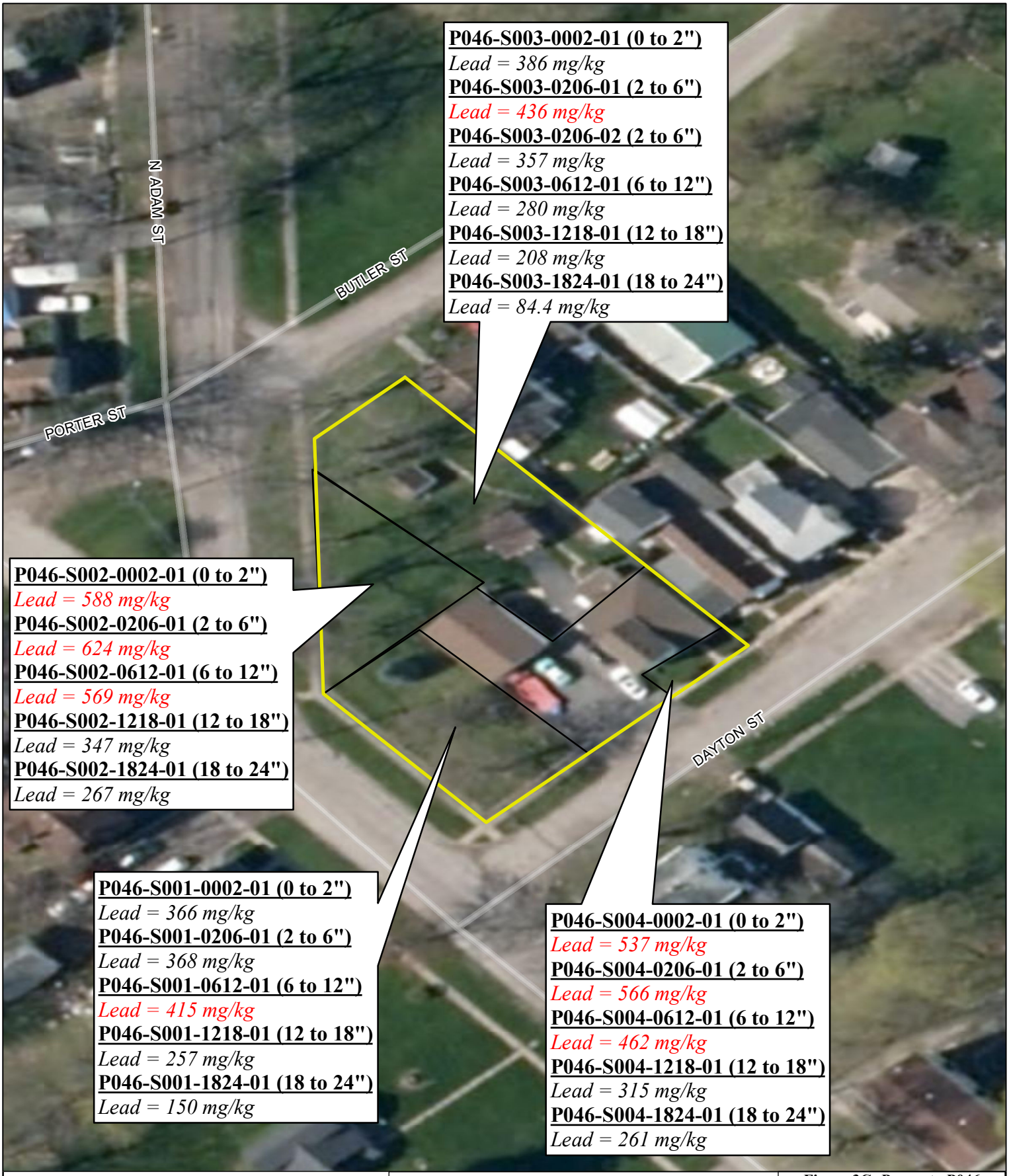

Legend

- Property Boundary
- Sample Quad Boundary

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Figure 3C: Property P046
Analytical Results (Lead)

Eighteen Mile Creek Site
Niagara County, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

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RST SPM:	M. MANNINO
FILENAME:	180621_P046

DATE MODIFIED: 8/24/2018

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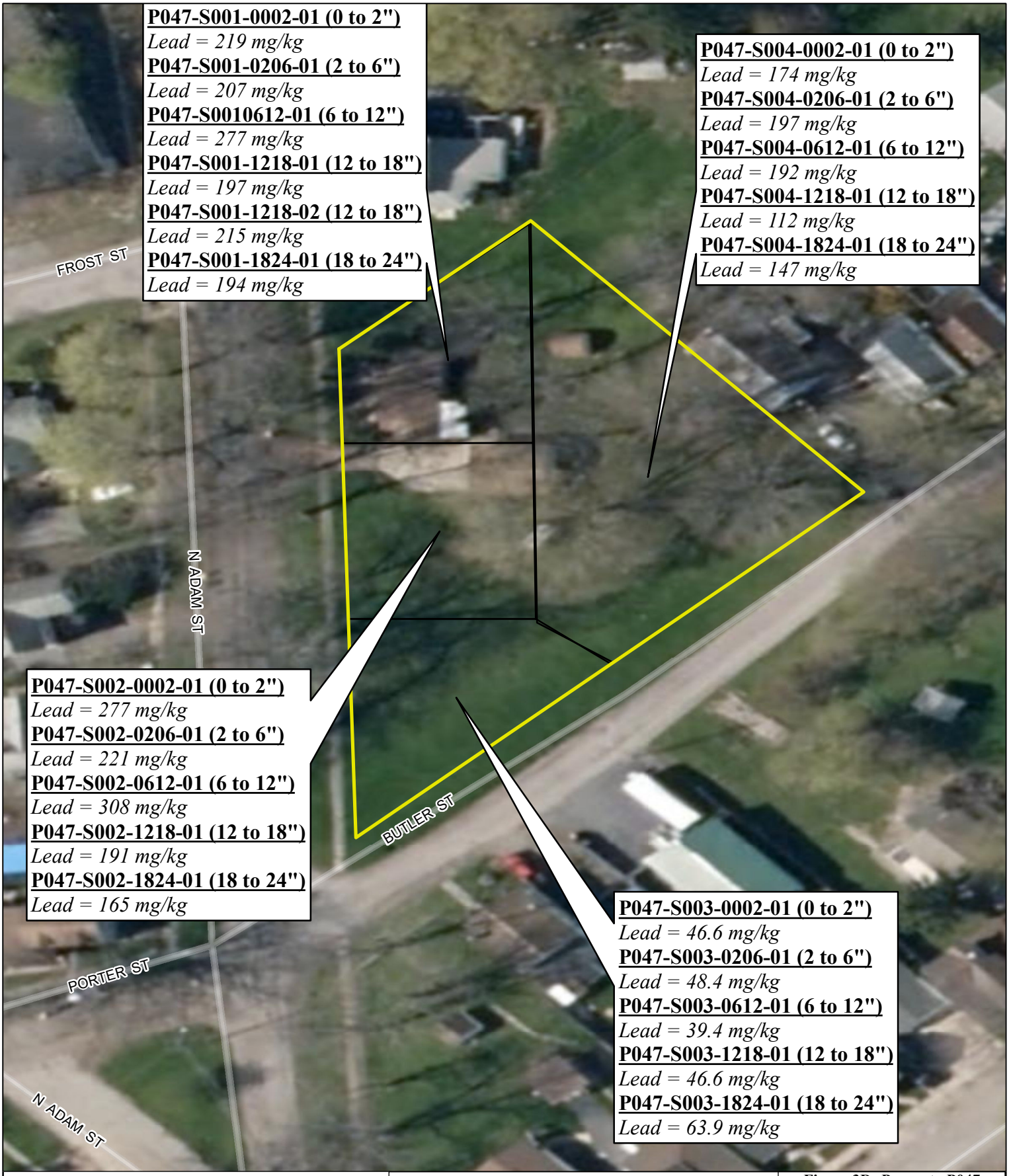

Legend

- Property Boundary
- Sample Quad Boundary

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Figure 3D: Property P047
Analytical Results (Lead)

Eighteen Mile Creek Site
Niagara County, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
REMOVAL SUPPORT TEAM 3
CONTRACT # EP-S2-14-01

GIS ANALYST:	M. MANNINO
EPA OSC:	T. KISH
RST SPM:	M. MANNINO
FILENAME:	180621_P047

DATE MODIFIED: 8/24/2018

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ATTACHMENT B

Tables

Table 1: Sample Collection Summary Table
Eighteen Mile Creek Site
Niagara County, New York
June 26 through June 27, 2018

Property No.	RST 3 Sample No.	CLP Sample No.	Sample Date	Sample Time	Matrix	Collection Method	Depth (Inches)	Sample Type	Analysis
P044	P044-S001-0002-01	BE2F7	6/26/2018	14:15	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P044-S001-0206-01	BE2F8	6/26/2018	14:17	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P044-S001-0612-01	BE2F9	6/26/2018	14:24	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P044-S001-1218-01	BE2G0	6/26/2018	14:47	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P044-S001-1824-01	BE2G1	6/26/2018	14:50	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P044-S002-0002-01	BE2G2	6/26/2018	15:20	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P044-S002-0206-01	BE2G3	6/26/2018	15:25	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P044-S002-0612-01	BE2G4	6/26/2018	15:30	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P044-S002-1218-01	BE2G5	6/26/2018	15:38	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P044-S002-1824-01	BE2G6	6/26/2018	15:40	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P044-S003-0002-01	BE2G7	6/26/2018	15:29	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P044-S003-0002-02	BE2G8	6/26/2018	15:29	Soil	Composite	0-2	Field Duplicate	TAL Metals + Tin
	P044-S003-0206-01	BE2G9	6/26/2018	15:35	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P044-S003-0612-01	BE2H0	6/26/2018	15:40	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P044-S003-1218-01	BE2H1	6/26/2018	16:25	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P044-S003-1824-01	BE2H2	6/26/2018	16:31	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P044-S004-0002-01	BE2H3	6/26/2018	13:30	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P044-S004-0206-01	BE2H4	6/26/2018	13:37	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P044-S004-0612-01	BE2H5	6/26/2018	13:53	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P044-S004-1218-01	BE2H6	6/26/2018	14:10	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P044-S004-1824-01	BE2H7	6/26/2018	14:15	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	RB-180626	BE2H8	6/26/2018	17:15	DI Water	Grab	N/A	Rinsate Blank	TAL Metals + Tin
P045	P045-S001-0002-01	BE2D6	6/26/2018	8:48	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P045-S001-0206-01	BE2D7	6/26/2018	8:50	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P045-S001-0612-01	BE2D8	6/26/2018	8:56	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P045-S001-1218-01	BE2D9	6/26/2018	9:15	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P045-S001-1824-01	BE2E0	6/26/2018	9:29	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P045-S002-0002-01	BE2E1	6/26/2018	9:58	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P045-S002-0206-01	BE2E2	6/26/2018	10:26	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P045-S002-0206-02	BE2E3	6/26/2018	10:26	Soil	Composite	2-6	Field Duplicate	TAL Metals + Tin
	P045-S002-0612-01	BE2E4	6/26/2018	10:36	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P045-S002-1218-01	BE2E5	6/26/2018	10:40	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P045-S002-1824-01	BE2E6	6/26/2018	10:45	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P045-S003-0002-01	BE2E7	6/26/2018	11:00	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P045-S003-0206-01	BE2E8	6/26/2018	11:04	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P045-S003-0612-01	BE2E9	6/26/2018	11:20	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P045-S003-1218-01	BE2F0	6/26/2018	11:25	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P045-S003-1824-01	BE2F1	6/26/2018	11:30	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P045-S004-0002-01	BE2F2	6/26/2018	9:20	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P045-S004-0206-01	BE2F3	6/26/2018	9:25	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P045-S004-0612-01	BE2F4	6/26/2018	10:00	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P045-S004-1218-01	BE2F5	6/26/2018	10:05	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P045-S004-1824-01	BE2F6	6/26/2018	10:10	Soil	Composite	18-24	Field Sample	TAL Metals + Tin

Notes:
RST 3 = Removal Support Team 3.
No. = Number.
TAL = Target Analyte List.
DI = De-ionized.
NA = Not Applicable.
*Matrix Spike/Matrix Spike Duplicate.

Table 1: Sample Collection Summary Table
Eighteen Mile Creek Site
Niagara County, New York
June 26 through June 27, 2018

Property No.	RST 3 Sample No.	CLP Sample No.	Sample Date	Sample Time	Matrix	Collection Method	Depth (Inches)	Sample Type	Analysis
P046	P046-S001-0002-01	BE2L0	6/27/2018	13:37	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P046-S001-0206-01	BE2L1	6/27/2018	13:40	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P046-S001-0612-01	BE2L2	6/27/2018	14:10	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P046-S001-1218-01	BE2L3	6/27/2018	14:17	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P046-S001-1824-01	BE2L4	6/27/2018	14:27	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P046-S002-0002-01	BE2L5	6/27/2018	14:10	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P046-S002-0206-01	BE2L6	6/27/2018	14:15	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P046-S002-0612-01	BE2L7	6/27/2018	14:35	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P046-S002-1218-01	BE2L8	6/27/2018	14:40	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P046-S002-1824-01	BE2L9	6/27/2018	15:30	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P046-S003-0002-01	BE2M0	6/27/2018	14:45	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P046-S003-0206-01	BE2M1	6/27/2018	15:02	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P046-S003-0206-02	BE2M2	6/27/2018	15:02	Soil	Composite	2-6	Field Duplicate	TAL Metals + Tin
	P046-S003-0612-01	BE2M3	6/27/2018	15:13	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P046-S003-1218-01	BE2M4	6/27/2018	15:38	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P046-S003-1824-01	BE2M5	6/27/2018	15:50	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P046-S004-0002-01	BE2M6	6/27/2018	16:00	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P046-S004-0206-01	BE2M7	6/27/2018	16:08	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P046-S004-0612-01	BE2M8	6/27/2018	16:10	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P046-S004-1218-01	BE2M9	6/27/2018	16:13	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P046-S004-1824-01	BE2N0	6/27/2018	16:30	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	RB-180627	BE2N1	6/27/2018	16:43	DI Water	Grab	N/A	Rinsate Blank	TAL Metals + Tin
P047	P047-S001-0002-01	BE2H9	6/27/2018	8:21	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P047-S001-0206-01	BE2J0	6/27/2018	8:28	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P047-S001-0612-01	BE2J1	6/27/2018	8:39	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P047-S001-1218-01	BE2J2	6/27/2018	8:55	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P047-S001-1218-02	BE2J3	6/27/2018	8:55	Soil	Composite	12-18	Field Duplicate	TAL Metals + Tin
	P047-S001-1824-01	BE2J4	6/27/2018	9:00	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P047-S002-0002-01	BE2J5	6/27/2018	8:45	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P047-S002-0206-01	BE2J6	6/27/2018	8:50	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P047-S002-0612-01	BE2J7	6/27/2018	8:55	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P047-S002-1218-01	BE2J8	6/27/2018	9:24	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P047-S002-1824-01	BE2J9	6/27/2018	9:32	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P047-S003-0002-01	BE2K0	6/27/2018	9:30	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P047-S003-0206-01	BE2K1	6/27/2018	9:35	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P047-S003-0612-01	BE2K2	6/27/2018	10:13	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P047-S003-1218-01	BE2K3	6/27/2018	10:44	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P047-S003-1824-01	BE2K4	6/27/2018	11:00	Soil	Composite	18-24	Field Sample	TAL Metals + Tin
	P047-S004-0002-01	BE2K5	6/27/2018	10:05	Soil	Composite	0-2	Field Sample	TAL Metals + Tin
	P047-S004-0206-01	BE2K6	6/27/2018	10:10	Soil	Composite	2-6	Field Sample	TAL Metals + Tin
	P047-S004-0612-01	BE2K7	6/27/2018	11:20	Soil	Composite	6-12	Field Sample	TAL Metals + Tin
	P047-S004-1218-01	BE2K8	6/27/2018	11:31	Soil	Composite	12-18	Field Sample	TAL Metals + Tin
	P047-S004-1824-01	BE2K9	6/27/2018	11:36	Soil	Composite	18-24	Field Sample	TAL Metals + Tin

Notes:
RST 3 = Removal Support Team 3.
No. = Number.
TAL = Target Analyte List.
DI = De-ionized.
NA = Not Applicable.
*Matrix Spike/Matrix Spike Duplicate.

Table 2A: Property P044, Validated Analytical Results Summary Table - TAL Metals plus Tin
Eighteen Mile Creek Site
Niagara County, New York
June 26, 2018

RST 3 Sample No.	EPA RML Residential Soil[1] (mg/kg)	P044-S001-0002-01	P044-S001-0206-01	P044-S001-0612-01	P044-S001-1218-01	P044-S001-1824-01	P044-S002-0002-01	P044-S002-0206-01	P044-S002-0612-01	P044-S002-1218-01	P044-S002-1824-01	P044-S003-0002-01
Sample Depth (inches)		0-2	2-6	6-12	12-18	18-24	0-2	2-6	6-12	12-18	18-24	0-2
CLP Sample No.		MBE2F7	MBE2F8	MBE2F9	MBE2G0	MBE2G1	MBE2G2	MBE2G3	MBE2G4	MBE2G5	MBE2G6	MBE2G7
Sample Date		6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TAL Metal												
Aluminum	77,000	17,600	18,200	19,100	20,300	17,900	16,400	17,700	17,400	17,900	15,200	19,000
Antimony	31	0.69 J	0.71 J	0.72 J	0.72 J	0.63 J	0.7 J	0.72 J	0.62 J	0.49 J	0.51 J	0.75 J
Arsenic	68	13.8	14.8	14.3	14.6	9.6	13.5	16.5	13.8	13.5	7.5	17.4
Barium	15,000	111	129	114	116	70	92.6	116	86.2	78.8	57.8	127
Beryllium	160	0.79	0.85	0.83	0.85	0.65	0.69	0.76	0.7	0.73	0.58	0.89
Cadmium	71	1.5	1.5	1.4	1.5	1.1	1.3	1.5	1.3	1.2	0.98	1.6
Calcium	NS	8,750	87,20	9,380	9,500	61,600	16,500	12,700	17,200	21,000	68,800	10,500
Chromium	NS	17.3	18.4	20.5	19.4	14.4	16.2	17.2	16.8	15.9	12.4 J	18.3
Cobalt	23	7.9	8	8.3	8.6	6.5	6.8	7.4	7.1	7.6	6.3 J	8.4
Copper	3,100	34.4	41	34.1	33.9	23.6	30.6	35	30.5	29.2	19.6	37.6
Iron	55,000	17,600	18,300	18,500	18,900	15,400	16,700	17,600	16,500	17,400	14,900 J	19,400
Lead	400	114	141	103	92.3	40.6	136	188	122	58.7	20.1	142
Magnesium	NS	3,660	3,560	3,700	3,570	10,400	6,460	4,910	3,620	3,860	6,580	3,870
Manganese	1,800	1210	1210	1240	1400	1050	902	1050	917	1060	832 J	1570
Nickel	1,500	25.2	24.9	24.4	23.8	18.4	22.4	24.2	22.5	21.2	18	27
Potassium	NS	3,160	3,110	2,980	3,120	3,570	2,980	3,060	2,920	3,070	3,210	3,590
Selenium	390	0.90 J	1.2 J	1 J	0.98 J	0.46 J	0.61 J	0.64 J	0.39 J	0.37 J	3.3 U	1.1 J
Silver	390	0.94 U	0.96 U	0.99 U	0.97 U	0.97 U	0.98 U	0.99 U	0.93 U	0.96 U	0.94 U	0.99 U
Sodium	NS	75.6 J	74 J	73.4 J	70.3 J	102 J	87.1 J	81.4 J	76 J	72.1 J	94.1 J	74.3 J
Thallium	0.78	2.4 U	2.4 U	2.5 U	2.4 U	2.4 U	2.5 U	2.5 U	2.3 U	2.4 U	2.4 U	2.5 U
Vanadium	390	22.6	23.9	24.1	24.1	19.7	23.1	23.2	20.8	21.3	18.9	24.1
Zinc	23,000	181	214	142	143	82	146	174	124	92.8	65.6	193
Tin	47,000	5.2	5.1	5.0 U	4.9 U	4.9 U	4.90 U	5.0 U	4.7 U	4.8 U	4.7 U	5.0 U

Notes:
RST 3: Removal Support Team 3.
TAL: Target Analyte List.
No.: Number; NS: Not specified.
mg/kg: milligrams per kilograms.
U: Non-detect.
J: Estimated result; J+: Estimated result biased high; J-: Estimated result biased low.
R: Rejected result.
[1] U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for residential soil corresponding to a 10^{-4} target risk (TR) level for carcinogens or a target hazard quotient (THQ) of 1 for non-carcinogens, May 2016.

Table 2A: Property P044, Validated Analytical Results Summary Table - TAL Metals plus Tin
Eighteen Mile Creek Site
Niagara County, New York
June 26, 2018

RST 3 Sample No.	EPA RML Residential Soil[1] (mg/kg)	P044-S003-0002-02	P044-S003-0206-01	P044-S003-0612-01	P044-S003-1218-01	P044-S003-1824-01	P044-S004-0002-01	P044-S004-0206-01	P044-S004-0612-01	P044-S004-1218-01	P044-S004-1824-01
Sample Depth (inches)		**0-2**	**2-6**	**6-12**	**12-18**	**18-24**	**0-2**	**2-6**	**6-12**	**12-18**	**18-24**
CLP Sample No.		**MBE2G8**	**MBE2G9**	**MBE2H0**	**MBE2H1**	**MBE2H2**	**MBE2H3**	**MBE2H4**	**MBE2H5**	**MBE2H6**	**MBE2H7**
Sample Date		**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**
Matrix		**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
TAL Metal											
Aluminum	77,000	19,700	19,900	20,500	19,500	19,500	16,400	17,200	17,800	16,000	15,200
Antimony	31	0.70 J	0.84 J	0.86 J	0.61 J	0.56 J	0.67 J	0.85 J	0.80 J	0.70 J	0.51 J
Arsenic	68	17.6	19.7	18.3	17.3	14.1	12.7	14.2	12.7	8.6	7.5
Barium	15,000	124	128	120	95.1	93.1	96.4	106	104	75.7	69.4
Beryllium	160	0.90	0.95	0.95	0.86	0.81	0.75	0.81	0.78	0.71	0.66
Cadmium	71	1.6	1.6	1.6	1.5	1.3	1.3	1.4	1.3	1.1	1.0
Calcium	NS	9,890	10,700	9,490	14,900	41,800 J	6,150	6,830	9,110	17,300	25,200
Chromium	NS	18.2	18.7	18.6	16.9	16.8	15.7	18.7	16.4	16.6	13.7
Cobalt	23	8.2	8.4	8.5	7.7	7.0	7.3	7.5	7.3	6.2	5.7
Copper	3,100	37.5	38.2	34.2	31.1	28.6	34.0	41.8	36.3	28.6	26.6
Iron	55,000	19,000	19,800	20,900	19,900	18,400	17,900	18,800	18,600	16,500	16,100
Lead	400	137	136	104	72.2	72.9	81.8	85.6	68.9	38.6	26.1
Magnesium	NS	3,600	3,630	3,530	4,710	8,290	2,970	3,230	3,410	4,060	6,470
Manganese	1,800	1,470	1,560 J	1,760 J	1,670 J	1,470	1,180	1,310	1,330	1,140	1,010
Nickel	1,500	26.2	27.3	25.3	22.5	21.5	23.0	25.2	21.0	21.0	17.9
Potassium	NS	3,670	3,370	3,150	3,080	3,410	3,000	3,010	3,060	2,570	2,630
Selenium	390	1.1 J	1.1 J	1.0 J	0.82 J	0.55 J	0.97 J	1.0 J	0.82 J	0.56 J	0.62 J
Silver	390	0.97 U	0.97 U	0.99 U	0.95 U	99 U	0.93 U	0.95 U	0.95 U	0.83 U	0.93 U
Sodium	NS	74.3 J	74.0 J	66.8 J	69.7 J	87.7 J	62.5 J	63.3 J	61.3 J	75.5 J	85.7 J
Thallium	0.78	2.4 U	2.4 U	2.5 U	2.4 U	2.5 U	2.3 U	2.4 U	2.4 U	2.1 U	2.3 U
Vanadium	390	23.8	24.6	24.3	22.7	22.2	21.4	22.3	21.8	18.5	17.7
Zinc	23,000	183	184	155	120	113	125	131	113	77.2	66.7
Tin	47,000	5.1	4.9 U	5.0 U	4.8 U	5.0 U	4.6 U	4.8 U	4.8 U	4.2 U	4.7 U

Notes:
RST 3: Removal Support Team 3.
TAL: Target Analyte List.
No.: Number; NS: Not specified.
mg/kg: milligrams per kilograms.
U: Non-detect.
J: Estimated result; J+: Estimated result biased high; J-: Estimated result biased low.
R: Rejected result.
[1] U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for residential soil corresponding to a 10^{-4} target risk (TR) level for carcinogens or a target hazard quotient (THQ) of 1 for non-carcinogens, May 2016.

Table 2B: Property P045, Validated Analytical Results Summary Table - TAL Metals plus Tin
Eighteen Mile Creek Site
Niagara County, New York
June 26, 2018

RST 3 Sample No.	EPA RML Residential Soil[1] (mg/kg)	P045-S001-0002-01	P045-S001-0206-01	P045-S001-0612-01	P045-S001-1218-01	P045-S001-1824-01	P045-S002-0002-01	P045-S002-0206-01	P045-S002-0206-02	P045-S002-0612-01	P045-S002-1218-01	P045-S002-1824-01
Sample Depth (inches)		0-2	2-6	6-12	12-18	18-24	0-2	2-6	2-6	6-12	12-18	18-24
CLP Sample No.		MBE2D6	MBE2D7	MBE2D8	MBE2D9	MBE2E0	MBE2E1	MBE2E2	MBE2E3	MBE2E4	MBE2E5	MBE2E6
Sample Date		6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018	6/26/2018
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TAL Metal												
Aluminum	77,000	14,200	14,400	15,400	15,200	16,400	16,300	16,200	14,400	17,200	16,400	17,600
Antimony	31	0.76 J	0.82 J	1.0 J	0.74 J	0.69 J	0.75 J	0.99 J	0.84 J	0.84 J	0.59 J	0.79 J
Arsenic	68	14.9	17.9	17.6	17.3	13.5	16.4	19.8	17.0 J+	20.1	15.5	16.9
Barium	15,000	202	190	258	259	156	174	177	176 J	189	146	146
Beryllium	160	0.80	0.84	0.84	0.86	0.84	0.86	0.87	0.78	0.90	0.81	0.88
Cadmium	71	2.3	2.3	2.3	2.1	1.6	1.8	1.9	1.8	1.8	1.5	1.6
Calcium	NS	17,700	19,300	27,100	29,700	14,000	10,400	10,300	10,200 J	12,100	8,200	9,160
Chromium	NS	20.9	20.5	24.6	24.2	20.1	23.3	21.4	20.1 J	20.9	18.5	20.4
Cobalt	23	8.4	7.9	9.0	8.8	8.7	10.1	9.8	8.6 J	10.3	9.1	10.6
Copper	3,100	53.3	62.3	65.0	69.5	44.6	53.9	56.1	52.6 J	52.4	41.7	42.4
Iron	55,000	18,500	17,900	19,700	19,200	19,000	19,400	19,100	17,100 J	19,500	16,700	19,300
Lead	400	**971**	**988**	**1240**	**1120**	**434**	399	**413**	**420**	**419**	299	262
Magnesium	NS	6,490	6,250	6,170	5,310	3,800	4,220	3,900	3,620 J	3,840	2,950	3,390
Manganese	1,800	1,370 J	1,140	1,420	1,380 J	2,150	1,690	1,770	1,570 J	**1,930**	**2,160**	**2,080**
Nickel	1,500	29.7	30.5	29.9	25.9	21.5	30.5	29.8	25.5	25.2	21.6	23.9
Potassium	NS	2670	2390	2830	2580	2950	3100	2870	2550 J	2900	2690	3050
Selenium	390	1.1 J	1.2 J	1.2 J	1.2 J	1.2 J	1.5 J	1.4 J	1.3 J-	1.2 J	0.96 J	1.1 J
Silver	390	0.85 U	0.67 U	0.99 U	0.86 U	0.99 U	0.91 U	0.85 U	0.75 U	0.90 U	0.71 U	0.94 U
Sodium	NS	91.5 J	90.5 J	107 J	116 J	91.9 J	83.1 J	80.4 J	74.7 J	86.7 J	72.6 J	77.4 J
Thallium	0.78	2.1 U	1.7 U	2.5 U	2.2 U	2.5 U	2.3 U	2.1 U	1.9 U	2.3 U	1.8 U	2.4 U
Vanadium	390	22.3	21.4	24.0	23.2	22.2	24.9	23.9	21.2 J	24.3	20.5	22.5
Zinc	23,000	462	439	517	437	221	302	308	328	296	225	208
Tin	47,000	11.7	10.9	16.8	17.1	10.1	9.5	10.2	9.5	9.6	6.1	6.0

Notes:
RST 3: Removal Support Team 3.
TAL: Target Analyte List.
No.: Number; NS: Not specified.
mg/kg: milligrams per kilograms.
U: Non-detect.
J: Estimated result; J+: Estimated result biased high; J-: Estimated result biased low.
R: Rejected result.
[1] U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for residential soil corresponding to a 10^{-4} target risk (TR) level for carcinogens or a target hazard quotient (THQ) of 1 for non-carcinogens, May 2016.

Table 2B: Property P045, Validated Analytical Results Summary Table - TAL Metals plus Tin
Eighteen Mile Creek Site
Niagara County, New York
June 26, 2018

RST 3 Sample No.	EPA RML Residential Soil[1] (mg/kg)	P045-S003-0002-02	P045-S003-0206-01	P045-S003-0612-01	P045-S003-1218-01	P045-S003-1824-01	P045-S004-0002-01	P045-S004-0206-01	P045-S004-0612-01	P045-S004-1218-01	P045-S004-1824-01
Sample Depth (inches)		**0-2**	**2-6**	**6-12**	**12-18**	**18-24**	**0-2**	**2-6**	**6-12**	**12-18**	**18-24**
CLP Sample No.		**MBE2E7**	**MBE2E8**	**MBE2E9**	**MBE2F0**	**MBE2F1**	**MBE2F2**	**MBE2F3**	**MBE2F4**	**MBE2F5**	**MBE2F6**
Sample Date		**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**	**6/26/2018**
Matrix		**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**	**Soil**
Units		**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**	**mg/kg**
TAL Metal											
Aluminum	77,000	15,300	15,800	17,700	17,800	18,200	14,300	14,000	15,400	16,000	18,600
Antimony	31	0.72 J	0.70 J	0.74 J	0.71 J	0.52 J	0.78 J	0.54 J	0.85 J	0.82 J	0.63 J
Arsenic	68	17.0	19.2	21.0	18.8	19.0	14.8	15.4	15.7	12.7	9.8
Barium	15,000	149	155	165	132	108	138	133	152	160	102
Beryllium	160	0.83	0.86	0.93	0.86	0.82	0.79	0.77	0.80	0.75	0.75
Cadmium	71	1.7	1.7	1.7	1.5	1.5	1.8	1.7	1.7	1.4	1.2
Calcium	NS	10,400	11,600	11,300	18,600	21,400	12,000	12,400	16,800	15,200	14,100
Chromium	NS	19.4	20.9	21.6	17.8	17.1	20.1	19.4	20.2	18.3	16.2
Cobalt	23	9.1	9.5	10.0	9.7	10.8	8.6	8.1	9.0	8.5	8.0
Copper	3,100	48.4	54.8	50.1	42.7	48.0	47.3	46.6	52.1	42.5	34.1
Iron	55,000	18,100	19,000	19,800	18,300	18,200	18,100	16,900	19,500	17,600	17,600
Lead	400	356	**423**	**471**	240	164	**416**	386	**419**	369	108
Magnesium	NS	4,600	4,950	4,460	6,000	4,160	4,600	4,180	4,270	3,560	3,470
Manganese	1,800	**1,810**	1,560	1,790 J	**2,210**	**2,850**	1,380	1,310	1,500	1,700	1,420
Nickel	1,500	28.7	28.7	28.1	22.9	23.4	28.8	27.4	23.7	19.4	18.9
Potassium	NS	2,730	2,620	2,740	2,590	2,800	2,710	2,440	2,620	2,480	3,290
Selenium	390	1.1 J	1.1 J	1.3 J	1.1 J	0.90 J	1.2 J	1.2 J	1.2 J	0.78 J	0.62 J
Silver	390	0.92 U	1.0 U	0.92 U	0.85 U	0.82 U	0.96 U	0.83 U	0.99 U	0.90 U	0.43 J
Sodium	NS	76.5 J	80.6 J	82.1 J	84.9 J	82.4 J	83.0 J	78.9 J	86.9 J	72.8 J	75.4 J
Thallium	0.78	2.3 U	2.5 U	2.3 U	2.1 U	2.0 U	2.4 U	2.1 U	2.5 U	2.3 U	2.5 U
Vanadium	390	23.1	23.9	24.9	22.3	21.3	22.4	21.1	22.6	21.0	20.2
Zinc	23,000	241	238	237	173	138	288	261	266	205	113
Tin	47,000	7.9	8.2	7.8	5.4	4.1 U	12.7	10.7	17.0	9.3	5.6

Notes:
RST 3: Removal Support Team 3.
TAL: Target Analyte List.
No.: Number; NS: Not specified.
mg/kg: milligrams per kilograms.
U: Non-detect.
J: Estimated result; J+: Estimated result biased high; J-: Estimated result biased low.
R: Rejected result.
[1] U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for residential soil corresponding to a 10^{-4} target risk (TR) level for carcinogens or a target hazard quotient (THQ) of 1 for non-carcinogens, May 2016.

Table 2C: Property P046, Validated Analytical Results Summary Table - TAL Metals plus Tin
Eighteen Mile Creek Site
Niagara County, New York
June 27, 2018

RST 3 Sample No.	EPA RML Residential Soil[1] (mg/kg)	P046-S001-0002-01	P046-S001-0206-01	P046-S001-0612-01	P046-S001-1218-01	P046-S001-1824-01	P046-S002-0002-01	P046-S002-0206-01	P046-S002-0612-01	P046-S002-1218-01	P046-S002-1824-01	P046-S003-0002-01
Sample Depth (inches)		0-2	2-6	6-12	12-18	18-24	0-2	2-6	6-12	12-18	18-24	0-2
CLP Sample No.		MBE2L0	MBE2L1	MBE2L2	MBE2L3	MBE2L4	MBE2L5	MBE2L6	MBE2L7	MBE2L8	MBE2L9	MBE2M0
Sample Date		6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TAL Metal												
Aluminum	77,000	13,600	13,800	14,900	14,600	15,500	13,900	15,600	14,800	14,300	14,900	14,400
Antimony	31	0.68 J	0.76 J	0.92 J	0.95 J	0.72 J	1.0 J	0.90 J	1.2 J	0.96 J	0.81 J	0.97 J
Arsenic	68	10.0	11.2	12.0	9.0	8.6	16.9	20.5	20.9	16.9	13.1	14.0
Barium	15,000	173	174	202	150	136	260	263	260	187	180	231
Beryllium	160	0.65	0.65	0.68	0.64	0.65	0.82	0.89	0.82	0.71	0.73	0.81
Cadmium	71	1.4	1.4	1.5	1.2	1.2	1.6	1.8	1.6	1.3	1.3	1.9
Calcium	NS	11,200	19,600	19,500	14,600	11,900	18,100	18,700	21,300	21,800	37,000	17,600
Chromium	NS	20.9	19.8	20.6	19.0	17.9	25.4	26.5	25.6	21.8	20.4	23.0
Cobalt	23	6.7	7.0	7.3	7.1	7.1	7.6	7.9	7.8	7.2	7.2	8.5
Copper	3,100	52.9	66.6	52.6	45.0	33.6	70.4	83.0	75.1	52.1	46.5	77.6
Iron	55,000	17,300	17,300	18,400	17,600	17,300	18,400	19,100	18,800	17,400	17,300	17,600
Lead	400	366	368	**415**	257	150	**588**	**624**	**569**	347	267	386
Magnesium	NS	4,860	4,950	4,650	4,050	3,460	6,120	5,890	5,750	5,970	7,170	4,830
Manganese	1,800	1,030	1,050	1,030	1,040	1,370	820	860	884	947	1,060	1,120
Nickel	1,500	20.8	21.8	21.8	20.0	19.4	26.1	28.1	24.4	21.2	20.6	27.9
Potassium	NS	2,600	2480	2,490	2,380	2,200	2,750	2,850	2,730	2,660	2,930	2,920
Selenium	390	1.3 J	0.95 J	0.94 J	1.0 J	0.92 J	1.4 J	1.1 J	1.5 J	0.91 J	0.85 J	1.5 J
Silver	390	0.99 U	0.95 U	0.93 U	0.98 U	0.93 U	0.98 U	0.88 U	0.94 U	0.93 U	0.99 U	0.97 U
Sodium	NS	495 U	476 U	467 J	490 U	467 U	490 U	439 U	472 J	467 U	495 U	485 U
Thallium	0.78	2.5 U	2.4 U	2.3 U	2.5 U	2.3 U	2.5 U	2.2 U	2.4 U	2.3 U	2.5 U	2.4 U
Vanadium	390	22.1	21.7	22.6	22.1	21.8	23.3	24.4	23.8	21.4	20.9	24.5
Zinc	23,000	340	330	392	226	167	452	481	441	274	222	449
Tin	47,000	13.9	12.9	49.9	20.4	6.8	21.8	21.4	22.8	14.4	12.5	17.4

Notes:
RST 3: Removal Support Team 3.
TAL: Target Analyte List.
No.: Number; NS: Not specified.
mg/kg: milligrams per kilograms.
U: Non-detect.
J: Estimated result; J+: Estimated result biased high; J-: Estimated result biased low.
R: Rejected result.
[1] U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for residential soil corresponding to a 10^{-4} target risk (TR) level for carcinogens or a target hazard quotient (THQ) of 1 for non-carcinogens, May 2016.

Table 2C: Property P046, Validated Analytical Results Summary Table - TAL Metals plus Tin
Eighteen Mile Creek Site
Niagara County, New York
June 27, 2018

RST 3 Sample No.	EPA RML Residential Soil[1] (mg/kg)	P046-S003-0206-01	P046-S003-0206-02	P046-S003-0612-01	P046-S003-1218-01	P046-S003-1824-01	P046-S004-0002-01	P046-S004-0206-01	P046-S004-0612-01	P046-S004-1218-01	P046-S004-1824-01
Sample Depth (inches)		2-6	2-6	6-12	12-18	18-24	0-2	2-6	6-12	12-18	18-24
CLP Sample No.		MBE2M1	MBE2M2	MBE2M3	MBE2M4	MBE2M5	MBE2M6	MBE2M7	MBE2M8	MBE2M9	MBE2N0
Sample Date		6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TAL Metal											
Aluminum	77,000	15,100	15,000	16,500	16,100	12,700	13,800	13,400	14,500	16,200	16,300
Antimony	31	0.93 J	1.1 J	0.83 J	0.85 J	0.61 J	399	0.54 J	1.2 J	0.66 J	0.62 J
Arsenic	68	15.0	14.9	15.9	13.7	7.4	206	13.4	12.8	10.9	10.3
Barium	15,000	261	222 J	190	159	103	1560	177	166	144	137
Beryllium	160	0.84	0.83	0.82	0.76	0.53	36.5	0.83	0.83	0.74	0.74
Cadmium	71	2.0	1.9	1.7	1.5	0.93	96.4	1.9	1.6	1.4	1.4
Calcium	NS	20,600	17,300 J	19,200	27,000	70,100 J	18,900	5,990	7,160	6,430	5,440
Chromium	NS	23.2	21.8 J	22.4	18.5	12.9	541	65.2	39.7	27.2	29.8
Cobalt	23	8.7	8.4 J	8.6	7.8	5.0	235	7.8	7.5	7.9	7.9
Copper	3,100	89.8	69.2	54.6	170	27.7	521	72.1	52.3	39.7	38.3
Iron	55,000	18,000	18,200 J	19,100	17,900	13,900	12,300	16,500	15,700	16,600	16,400
Lead	400	**436**	357	280	208	84.4	**537**	**566**	**462**	315	261
Magnesium	NS	4,760	4,610 J	5,080	5,500	9,980	19,100	2,870	3,130	3,200	2,910
Manganese	1,800	1,120	1,100 J	1,290	1,210	771	878	962	1,040	1,300	1,320
Nickel	1,500	28.2	26.8	24.6	20.9	13.4	380	36.5	26.9	21.1	22.1
Potassium	NS	2,980	2880 J	3,090	3,080	3,130	13,400	2,080	1,930	2,130	2,130
Selenium	390	1.5 J	1.2 J	1.1 J	0.96 J	0.33 J	342	0.99 J	1.0 J	0.85 J	0.70 J
Silver	390	0.96 U	0.97 U	0.99 U	0.99 U	0.97 U	50.9	1.0 U	0.80 U	0.91 U	0.95 U
Sodium	NS	481 U	485 U	495 U	495 U	485 U	12100	500 U	400 U	455 U	476 U
Thallium	0.78	2.4 U	2.4 U	2.5 U	2.5 U	2.4 U	375	2.5 U	2.0 J	2.3 U	2.4 U
Vanadium	390	25.1	24.2 J	24.2	22.6	16.9	376	23.0	21.9	22.1	22.3
Zinc	23,000	480	395	294	410	124	1550	351	270	183	172
Tin	47,000	19.8	16.3	12.3	9.2	4.9 U	188	24.6 J	24.3	12.2	11.0

Notes:
RST 3: Removal Support Team 3.
TAL: Target Analyte List.
No.: Number; NS: Not specified.
mg/kg: milligrams per kilograms.
U: Non-detect.
J: Estimated result; J+: Estimated result biased high; J-: Estimated result biased low.
R: Rejected result.
[1] U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for residential soil corresponding to a 10^{-4} target risk (TR) level for carcinogens or a target hazard quotient (THQ) of 1 for non-carcinogens, May 2016.

Table 2D: Property P047, Validated Analytical Results Summary Table - TAL Metals plus Tin
Eighteen Mile Creek Site
Niagara County, New York
June 27, 2018

RST 3 Sample No.	EPA RML Residential Soil[1] (mg/kg)	P047-S001-0002-01	P047-S001-0206-01	P047-S001-0612-01	P047-S001-1218-01	P047-S001-1218-02	P047-S001-1824-01	P047-S002-0002-01	P047-S002-0206-01	P047-S002-0612-01	P047-S002-1218-01	P047-S002-1824-01
Sample Depth (inches)		0-2	2-6	6-12	12-18	12-18	18-24	0-2	2-6	6-12	12-18	18-24
CLP Sample No.		MBE2H9	MBE2J0	MBE2J1	MBE2J2	MBE2J3	MBE2J4	MBE2J5	MBE2J6	MBE2J7	MBE2J8	MBE2J9
Sample Date		6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TAL Metal												
Aluminum	77,000	13,300	9,110	14,400	16,400	15,300	14,900	12,800	13,700	14,500	14,500	14,500
Antimony	31	0.78 J	0.48 J	0.90 J	0.86 J	0.79 J	0.61 J	0.70 J	0.71 J	0.73 J	0.63 J	0.56 J
Arsenic	68	12.1	11.1	18.5	13.9	14.2	10.7	9.9	10.7	11.9	10.2	10.5
Barium	15,000	156	139	187	183	188 J	257	166	148	177	151	148
Beryllium	160	0.73	0.65	0.80	0.74	0.72	0.65	0.59	0.63	0.64	0.60	0.59
Cadmium	71	1.3	1.1	1.5	1.3	1.3	1.2	1.4	1.4	1.5	1.3	1.2
Calcium	NS	15,800	16,600	19,100	18,100	19,500 J	25,400	29,600	32,100	40,400	46,200	51,300
Chromium	NS	21.5	18.0	29.1	24.9	23.3 J	19.3	22.2	21.5	24.2	17.7	18.3
Cobalt	23	6.7	5.3	7.8	7.4	7.4 J	6.6	6.1	6.5	6.5	5.9	5.6
Copper	3,100	46.4	43.5	61.2	49.0	50.3	39.3	66.1	65.9	77.4	55.0	61.9
Iron	55,000	16,500	11,300	18,500	18,200	17,100 J	15,800	14,200	15,200	15,600	14,000	13,300
Lead	400	219	207	277	197	215	194	277	221	308	191	165
Magnesium	NS	5,540	4,660	4,830	5,030	5,140 J	6,990	7,910	8,200	8,480	8,900	9,330
Manganese	1,800	529	433	580	664	655 J	1160	598	808	713	680	661
Nickel	1,500	29.4	23.7	32.3	27.4	25.5	20.4	24.1	24.7	26.0	20.4	19.1
Potassium	NS	1,940	1,130	1,810	2,080	1,990	2,070	2,290	2,310	2,400	2,300	2,280
Selenium	390	1.2 J	1.3 J	1.3 J	1.2 J	1.1 J	1.1 J	1.1 J	0.83 J	0.89 J	0.64 J	0.94 J
Silver	390	1.0 U	0.78 U	0.83 U	0.95 U	1.0 U	0.95 U	0.99 U	0.94 U	0.93 U	0.79 U	0.92 U
Sodium	NS	500 U	391 U	417 U	476 U	500 U	476 U	495 U	472 U	467 U	394 U	459 U
Thallium	0.78	2.5 U	2.0 U	2.1 U	2.4 U	2.5 U	2.4 U	2.5 U	2.4 U	2.3 U	2.0 U	2.3 U
Vanadium	390	21.6	15.8	23.7	24.3	23.4	21.1	19.7	19.7	20.3	17.9	17.6
Zinc	23,000	209	187	220	175	183	155	282	272	295	193	181
Tin	47,000	9.7	10.5	10.6	8.7	9.0	7.8	18.6	13.8	26.5	15.2	14.9

Notes:
RST 3: Removal Support Team 3.
TAL: Target Analyte List.
No.: Number; NS: Not specified.
mg/kg: milligrams per kilograms.
U: Non-detect.
J: Estimated result; J+: Estimated result biased high; J-: Estimated result biased low.
R: Rejected result.
[1] U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for residential soil corresponding to a 10^{-4} target risk (TR) level for carcinogens or a target hazard quotient (THQ) of 1 for non-carcinogens, May 2016.

Table 2D: Property P047, Validated Analytical Results Summary Table - TAL Metals plus Tin
Eighteen Mile Creek Site
Niagara County, New York
June 27, 2018

RST 3 Sample No.	EPA RML Residential Soil[1] (mg/kg)	P047-S003-0002-01	P047-S003-0206-01	P047-S003-0612-01	P047-S003-1218-01	P047-S003-1824-01	P047-S004-0002-01	P047-S004-0206-01	P047-S004-0612-01	P047-S004-1218-01	P047-S004-1824-01
Sample Depth (inches)		0-2	2-6	6-12	12-18	18-24	0-2	2-6	6-12	12-18	18-24
CLP Sample No.		MBE2K0	MBE2K1	MBE2K2	MBE2K3	MBE2K4	MBE2K5	MBE2K6	MBE2K7	MBE2K8	MBE2K9
Sample Date		6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018	6/27/2018
Matrix		Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil	Soil
Units		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TAL Metal											
Aluminum	77,000	11,900	11,200	7,460	12,100	13,400	13,200	14,100	13,900	13,600	13,800
Antimony	31	0.49 J	0.37 J	0.34 J	0.36 J	0.35 J	0.60 J	0.73 J	0.71 J	0.68 J	0.63 J
Arsenic	68	6.1	6.6	5.4	6.8	9.1	10.3	12.3	12.8	10.7	10.7
Barium	15,000	62.8	62.0	50.2	69.9	88.6	133	152	177	156	153
Beryllium	160	0.46	0.44	0.39 U	0.49	0.58	0.60	0.66	0.67	0.61	0.63
Cadmium	71	0.90	0.93	0.84	1.0	1.2	1.2	1.4	1.4	1.2	1.3
Calcium	NS	17,900	27,500	46,300	35,400	42,800	14,200	13,900	15,900	22,400	24,300
Chromium	NS	12.3	12.3	8.5	12.9	16.5	16.2	17.2	17.7	16.7	18.6
Cobalt	23	5.7	5.6	4.5	5.8	6.1	6.8	7.2	7.6	7.1	7.3
Copper	3,100	29.5	29.5	21.8	29.6	47.7	40.1	52.8	46.6	38.0	43.0
Iron	55,000	12,800	12,800	9,690	13,900	14,200	15,600	16,800	17,500	17,000	17,100
Lead	400	46.6	48.4	39.4	46.6	63.9	174	197	192	112	147
Magnesium	NS	6,960	10,100	16,400	12,300	12,100	5,500	5,160	5,270	6,190	6,730
Manganese	1,800	660	695	649	803	845	852	966	1120	1110	956
Nickel	1,500	16.2	16.2	12.4	16.7	19.5	22.2	24.6	23.1	21.8	23.5
Potassium	NS	2,070	1,880	1,140	2,060	2,250	2,100	2,010	2,270	2,280	2,430
Selenium	390	0.33 J	0.36 J	0.43 J	0.40 J	0.66 J	0.73 J	0.73 J	1.1 J	0.93 J	0.78 J
Silver	390	0.83 U	0.91 U	0.79 U	0.93 U	0.90 U	0.90 U	0.82 U	0.93 U	0.99 U	0.97 U
Sodium	NS	413 U	455 U	394 U	463 U	450 U	450 U	410 U	467 U	495 U	485 U
Thallium	0.78	2.1 U	2.1 U	2.0 U	2.3 U	2.3 U	2.3 U	2.0 U	2.3 U	2.5 U	2.4 U
Vanadium	390	16.8	15.8	10.4	17.2	17.8	20.0	21.0	22.0	21.5	21.8
Zinc	23,000	87.7	91.8	105	105	127	168	187	188	129	155
Tin	47,000	4.1 U	4.2 U	3.9 U	4.6 U	4.5 U	6.8	8.4	7.0	5.2	6.0

Notes:
RST 3: Removal Support Team 3.
TAL: Target Analyte List.
No.: Number; NS: Not specified.
mg/kg: milligrams per kilograms.
U: Non-detect.
J: Estimated result; J+: Estimated result biased high; J-: Estimated result biased low.
R: Rejected result.
[1] U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for residential soil corresponding to a 10^{-4} target risk (TR) level for carcinogens or a target hazard quotient (THQ) of 1 for non-carcinogens, May 2016.

ATTACHMENT C

Chains of Custody Records

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 1

No: 2-062918-085223-0016
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P044-S001-0002-01	MBE2F7	Soil/ RST 3	Composite	ICP-AES(42)	1602 (None) (1)	S001	06/26/2018 14:15	
P044-S001-0206-01	MBE2F8	Soil/ RST 3	Composite	ICP-AES(42)	1603 (None) (1)	S001	06/26/2018 14:17	
P044-S001-0612-01	MBE2F9	Soil/ RST 3	Composite	ICP-AES(42)	1604 (None) (1)	S001	06/26/2018 14:24	
P044-S001-1218-01	MBE2G0	Soil/ RST 3	Composite	ICP-AES(42)	1605 (None) (1)	S001	06/26/2018 14:47	
P044-S001-1824-01	MBE2G1	Soil/ RST 3	Composite	ICP-AES(42)	1606 (None) (1)	S001	06/26/2018 14:50	
P044-S002-0002-01	MBE2G2	Soil/ RST 3	Composite	ICP-AES(42)	1607 (None) (1)	S002	06/26/2018 15:20	
P044-S002-0206-01	MBE2G3	Soil/ RST 3	Composite	ICP-AES(42)	1608 (None) (1)	S002	06/26/2018 15:25	
P044-S002-0612-01	MBE2G4	Soil/ RST 3	Composite	ICP-AES(42)	1609 (None) (1)	S002	06/26/2018 15:30	
P044-S002-1218-01	MBE2G5	Soil/ RST 3	Composite	ICP-AES(42)	1610 (None) (1)	S002	06/26/2018 15:38	
P044-S002-1824-01	MBE2G6	Soil/ RST 3	Composite	ICP-AES(42)	1611 (None) (1)	S002	06/26/2018 15:40	

Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All Samples All analyses	Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 1

No: 2-062918-085223-0016
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P044-S003-0002-01	MBE2G7	Soil/ RST 3	Composite	ICP-AES(42)	1612 (None) (1)	S003	06/26/2018 15:29	
P044-S003-0002-02	MBE2G8	Soil/ RST 3	Composite	ICP-AES(42)	1613 (None) (2)	S003	06/26/2018 15:29	
P044-S003-0206-01	MBE2G9	Soil/ RST 3	Composite	ICP-AES(42)	1614 (None) (1)	S003	06/26/2018 15:35	
P044-S003-0612-01	MBE2H0	Soil/ RST 3	Composite	ICP-AES(42)	1615 (None) (1)	S003	06/26/2018 15:40	
P044-S003-1218-01	MBE2H1	Soil/ RST 3	Composite	ICP-AES(42)	1616 (None) (1)	S003	06/26/2018 16:25	
P044-S003-1824-01	MBE2H2	Soil/ RST 3	Composite	ICP-AES(42)	1617 (None) (1)	S003	06/26/2018 16:31	
P044-S004-0002-01	MBE2H3	Soil/ RST 3	Composite	ICP-AES(42)	1618 (None) (1)	S004	06/26/2018 13:30	
P044-S004-0206-01	MBE2H4	Soil/ RST 3	Composite	ICP-AES(42)	1619 (None) (1)	S004	06/26/2018 13:37	
P044-S004-0612-01	MBE2H5	Soil/ RST 3	Composite	ICP-AES(42)	1620 (None) (1)	S004	06/26/2018 13:53	
P044-S004-1218-01	MBE2H6	Soil/ RST 3	Composite	ICP-AES(42)	1621 (None) (1)	S004	06/26/2018 14:10	

Sample(s) to be used for Lab QC: P044-S003-0002-02 Tag 1613 - Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	M. Marr Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 1

No: 2-062918-085223-0016
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P044-S004-1824-01	MBE2H7	Soil/ RST 3	Composite	ICP-AES(42)	1622 (None) (1)	S004	06/26/2018 14:15	
RB-180626	MBE2H8	Aqueous/ RST 3	Grab	ICP-AES(42)	1623 (HNO3 pH<2) (1)	RB-180626	06/26/2018 17:15	

Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	M. Mar Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 2

No: 2-062918-092540-0017
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P045-S001-0002-01	MBE2D6	Soil/ RST 3	Composite	ICP-AES(42)	1581 (None) (1)	S001	06/26/2018 08:48	
P045-S001-0206-01	MBE2D7	Soil/ RST 3	Composite	ICP-AES(42)	1582 (None) (1)	S001	06/26/2018 08:50	
P045-S001-0612-01	MBE2D8	Soil/ RST 3	Composite	ICP-AES(42)	1583 (None) (1)	S001	06/26/2018 08:56	
P045-S001-1218-01	MBE2D9	Soil/ RST 3	Composite	ICP-AES(42)	1584 (None) (1)	S001	06/26/2018 09:15	
P045-S001-1824-01	MBE2E0	Soil/ RST 3	Composite	ICP-AES(42)	1585 (None) (1)	S001	06/26/2018 09:29	
P045-S002-0002-01	MBE2E1	Soil/ RST 3	Composite	ICP-AES(42)	1586 (None) (1)	S002	06/26/2018 09:58	
P045-S002-0206-01	MBE2E2	Soil/ RST 3	Composite	ICP-AES(42)	1587 (None) (1)	S002	06/26/2018 10:26	
P045-S002-0206-02	MBE2E3	Soil/ RST 3	Composite	ICP-AES(42)	1588 (None) (2)	S002	06/26/2018 10:26	
P045-S002-0612-01	MBE2E4	Soil/ RST 3	Composite	ICP-AES(42)	1589 (None) (1)	S002	06/26/2018 10:36	
P045-S002-1218-01	MBE2E5	Soil/ RST 3	Composite	ICP-AES(42)	1590 (None) (1)	S002	06/26/2018 10:40	

Sample(s) to be used for Lab QC: P045-S002-0206-02 Tag 1588 - Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	M. Myers Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 2

No: 2-062918-092540-0017
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P045-S002-1824-01	MBE2E6	Soil/ RST 3	Composite	ICP-AES(42)	1591 (None) (1)	S002	06/26/2018 10:45	
P045-S003-0002-01	MBE2E7	Soil/ RST 3	Composite	ICP-AES(42)	1592 (None) (1)	S003	06/26/2018 11:00	
P045-S003-0206-01	MBE2E8	Soil/ RST 3	Composite	ICP-AES(42)	1593 (None) (1)	S003	06/26/2018 11:04	
P045-S003-0612-01	MBE2E9	Soil/ RST 3	Composite	ICP-AES(42)	1594 (None) (1)	S003	06/26/2018 11:20	
P045-S003-1218-01	MBE2F0	Soil/ RST 3	Composite	ICP-AES(42)	1595 (None) (1)	S003	06/26/2018 11:25	
P045-S003-1824-01	MBE2F1	Soil/ RST 3	Composite	ICP-AES(42)	1596 (None) (1)	S003	06/26/2018 11:30	
P045-S004-0002-01	MBE2F2	Soil/ RST 3	Composite	ICP-AES(42)	1597 (None) (1)	S004	06/26/2018 09:20	
P045-S004-0206-01	MBE2F3	Soil/ RST 3	Composite	ICP-AES(42)	1598 (None) (1)	S004	06/26/2018 09:25	
P045-S004-0612-01	MBE2F4	Soil/ RST 3	Composite	ICP-AES(42)	1599 (None) (1)	S004	06/26/2018 10:00	
P045-S004-1218-01	MBE2F5	Soil/ RST 3	Composite	ICP-AES(42)	1600 (None) (1)	S004	06/26/2018 10:05	

Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	M. Mann Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 2

No: 2-062918-092540-0017
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P045-S004-1824-01	MBE2F6	Soil/ RST 3	Composite	ICP-AES(42)	1601 (None) (1)	S004	06/26/2018 10:10	

Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 3

No: 2-062918-092613-0018
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P046-S001-0002-01	MBE2L0	Soil/ RST 3	Composite	ICP-AES(42)	1645 (None) (1)	S001	06/27/2018 13:37	
P046-S001-0206-01	MBE2L1	Soil/ RST 3	Composite	ICP-AES(42)	1646 (None) (1)	S001	06/27/2018 13:40	
P046-S001-0612-01	MBE2L2	Soil/ RST 3	Composite	ICP-AES(42)	1647 (None) (1)	S001	06/27/2018 14:10	
P046-S001-1218-01	MBE2L3	Soil/ RST 3	Composite	ICP-AES(42)	1648 (None) (1)	S001	06/27/2018 14:17	
P046-S001-1824-01	MBE2L4	Soil/ RST 3	Composite	ICP-AES(42)	1649 (None) (1)	S001	06/27/2018 14:27	
P046-S002-0002-01	MBE2L5	Soil/ RST 3	Composite	ICP-AES(42)	1650 (None) (1)	S002	06/27/2018 14:10	
P046-S002-0206-01	MBE2L6	Soil/ RST 3	Composite	ICP-AES(42)	1651 (None) (1)	S002	06/27/2018 14:15	
P046-S002-0612-01	MBE2L7	Soil/ RST 3	Composite	ICP-AES(42)	1652 (None) (1)	S002	06/27/2018 14:35	
P046-S002-1218-01	MBE2L8	Soil/ RST 3	Composite	ICP-AES(42)	1653 (None) (1)	S002	06/27/2018 14:40	
P046-S002-1824-01	MBE2L9	Soil/ RST 3	Composite	ICP-AES(42)	1654 (None) (1)	S002	06/27/2018 15:30	

Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 3

No: 2-062918-092613-0018
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P046-S003-0002-01	MBE2M0	Soil/ RST 3	Composite	ICP-AES(42)	1655 (None) (1)	S003	06/27/2018 14:45	
P046-S003-0206-01	MBE2M1	Soil/ RST 3	Composite	ICP-AES(42)	1656 (None) (1)	S003	06/27/2018 15:02	
P046-S003-0206-02	MBE2M2	Soil/ RST 3	Composite	ICP-AES(42)	1657 (None) (2)	S003	06/27/2018 15:02	
P046-S003-0612-01	MBE2M3	Soil/ RST 3	Composite	ICP-AES(42)	1658 (None) (1)	S003	06/27/2018 15:13	
P046-S003-1218-01	MBE2M4	Soil/ RST 3	Composite	ICP-AES(42)	1659 (None) (1)	S003	06/27/2018 15:38	
P046-S003-1824-01	MBE2M5	Soil/ RST 3	Composite	ICP-AES(42)	1660 (None) (1)	S003	06/27/2018 15:50	
P046-S004-0002-01	MBE2M6	Soil/ RST 3	Composite	ICP-AES(42)	1661 (None) (1)	S004	06/27/2018 16:00	
P046-S004-0206-01	MBE2M7	Soil/ RST 3	Composite	ICP-AES(42)	1662 (None) (1)	S004	06/27/2018 16:08	
P046-S004-0612-01	MBE2M8	Soil/ RST 3	Composite	ICP-AES(42)	1663 (None) (1)	S004	06/27/2018 16:10	
P046-S004-1218-01	MBE2M9	Soil/ RST 3	Composite	ICP-AES(42)	1664 (None) (1)	S004	06/27/2018 16:13	

Sample(s) to be used for Lab QC: P046-S003-0206-02 Tag 1657 - Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	M. Martin Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 3

No: 2-062918-092613-0018
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P046-S004-1824-01	MBE2N0	Soil/ RST 3	Composite	ICP-AES(42)	1665 (None) (1)	S004	06/27/2018 16:30	
RB-180627	MBE2N1	Aqueous/ RST 3	Grab	ICP-AES(42)	1666 (HNO3 pH<2) (1)	RB-180627	06/27/2018 16:43	

Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	M. Martin Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 4

No: 2-062918-092635-0019
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P047-S001-0002-01	MBE2H9	Soil/ RST 3	Composite	ICP-AES(42)	1624 (None) (1)	S001	06/27/2018 08:21	
P047-S001-0206-01	MBE2J0	Soil/ RST 3	Composite	ICP-AES(42)	1625 (None) (1)	S001	06/27/2018 08:28	
P047-S001-0612-01	MBE2J1	Soil/ RST 3	Composite	ICP-AES(42)	1626 (None) (1)	S001	06/27/2018 08:39	
P047-S001-1218-01	MBE2J2	Soil/ RST 3	Composite	ICP-AES(42)	1627 (None) (1)	S001	06/27/2018 08:55	
P047-S001-1218-02	MBE2J3	Soil/ RST 3	Composite	ICP-AES(42)	1628 (None) (2)	S001	06/27/2018 08:55	
P047-S001-1824-01	MBE2J4	Soil/ RST 3	Composite	ICP-AES(42)	1629 (None) (1)	S001	06/27/2018 09:00	
P047-S002-0002-01	MBE2J5	Soil/ RST 3	Composite	ICP-AES(42)	1630 (None) (1)	S002	06/27/2018 08:45	
P047-S002-0206-01	MBE2J6	Soil/ RST 3	Composite	ICP-AES(42)	1631 (None) (1)	S002	06/27/2018 08:50	
P047-S002-0612-01	MBE2J7	Soil/ RST 3	Composite	ICP-AES(42)	1632 (None) (1)	S002	06/27/2018 08:55	
P047-S002-1218-01	MBE2J8	Soil/ RST 3	Composite	ICP-AES(42)	1633 (None) (1)	S002	06/27/2018 09:24	

Sample(s) to be used for Lab QC: P047-S001-1218-02 Tag 1628 - Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	M. Mann Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 4

No: 2-062918-092635-0019
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P047-S002-1824-01	MBE2J9	Soil/ RST 3	Composite	ICP-AES(42)	1634 (None) (1)	S002	06/27/2018 09:32	
P047-S003-0002-01	MBE2K0	Soil/ RST 3	Composite	ICP-AES(42)	1635 (None) (1)	S003	06/27/2018 09:30	
P047-S003-0206-01	MBE2K1	Soil/ RST 3	Composite	ICP-AES(42)	1636 (None) (1)	S003	06/27/2018 09:35	
P047-S003-0612-01	MBE2K2	Soil/ RST 3	Composite	ICP-AES(42)	1637 (None) (1)	S003	06/27/2018 10:13	
P047-S003-1218-01	MBE2K3	Soil/ RST 3	Composite	ICP-AES(42)	1638 (None) (1)	S003	06/27/2018 10:44	
P047-S003-1824-01	MBE2K4	Soil/ RST 3	Composite	ICP-AES(42)	1639 (None) (1)	S003	06/27/2018 11:00	
P047-S004-0002-01	MBE2K5	Soil/ RST 3	Composite	ICP-AES(42)	1640 (None) (1)	S004	06/27/2018 10:05	
P047-S004-0206-01	MBE2K6	Soil/ RST 3	Composite	ICP-AES(42)	1641 (None) (1)	S004	06/27/2018 10:10	
P047-S004-0612-01	MBE2K7	Soil/ RST 3	Composite	ICP-AES(42)	1642 (None) (1)	S004	06/27/2018 11:20	
P047-S004-1218-01	MBE2K8	Soil/ RST 3	Composite	ICP-AES(42)	1643 (None) (1)	S004	06/27/2018 11:31	

Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	M. M Weston RST 3	6/29/18 11:00			

USEPA CLP COC (LAB COPY)
DateShipped: 6/29/2018
Carrier Name: FedEx
AirbillNo: 8066 7287 2625

CHAIN OF CUSTODY RECORD

Case #: 47720
Cooler #: 4

No: 2-062918-092635-0019
Lab: Bonner Analytical Testing Company
Lab Contact: Chris Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
P047-S004-1824-01	MBE2K9	Soil/ RST 3	Composite	ICP-AES(42)	1644 (None) (1)	S004	06/27/2018 11:36	

Special Instructions: Please analyze all samples for ICP-AES Analysis Plus Tin (Sn) using MA 2731.2 and MA 2822.0. Please send results to S.Sumbaly@WestonSolutions.com.

TAT: 21 day preliminary/42 day validated.

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: ICP-AES=CLP ICP-AES Metals

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
All samples All analyses	M. M Weston RST 3	6/29/18 11:00			

ATTACHMENT D

Validated Data Package

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

EXECUTIVE NARRATIVE

Case No.: 47720
Site: Eighteenmile Creek
Number of Samples: 20 (Soil)
Analysis: Metals (ICP-AES, MA# 2822.0)

SDG No.: MBE2D6
Laboratory: Bonner Analytical Testing Co.
Sampling dates: 06/26/2018
Validation SOP: HW-3a (Rev 1)

QAPP
Contractor: Weston Solutions
Reference: DCN: RST3-04-D-0200

SUMMARY OF DEFINITIONS:

Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
Samples MBE2E3, MBE2D6, MBE2D9, MBE2E9 have analytes that have been qualified J, J+ or J-.

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENT:	One or more detected and non-detected analytes exceeded the removal levels of resident soil for one or more samples.

Reviewer Name(s): Jianwei Huang

Approver's Signature: **Date: 08/09/2018**

Name: Russell Arnone

Affiliation: USEPA/R2/HWSB/HWSS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	**Explanation**		
	INORGANICS	**ORGANICS**	**CHLORINATED DIOXIN/FURAN**
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: METALS ICP-AES

The current SOP HW-3a (Rev 1) September 2016, USEPA Region II for the evaluation of ICP-AES metals generated through Statement of Work ISOM02.2, and any future editorial revisions of ISOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

The following samples have analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Silver MBE2D6, MBE2D7, MBE2D8, MBE2D9, MBE2E0, MBE2E1, MBE2E2, MBE2E3, MBE2E4, MBE2E5, MBE2E6, MBE2E7, MBE2E8, MBE2E9, MBE2F0, MBE2F1, MBE2F2, MBE2F3, MBE2F4, MBE2F5

Thallium MBE2D7, MBE2D8, MBE2E0, MBE2E1, MBE2E2, MBE2E3, MBE2E4, MBE2E5, MBE2E6, MBE2E7, MBE2E9, MBE2F0, MBE2F1, MBE2F3

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated ICB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Silver MBE2D6, MBE2D7, MBE2D8, MBE2D9, MBE2E0, MBE2E1, MBE2E2, MBE2E3, MBE2E4, MBE2E5, MBE2E6, MBE2E7, MBE2E8, MBE2E9, MBE2F0, MBE2F1, MBE2F2, MBE2F3, MBE2F4, MBE2F5

Thallium MBE2D7, MBE2D8, MBE2E0, MBE2E1, MBE2E2, MBE2E3, MBE2E4, MBE2E5, MBE2E6, MBE2E7, MBE2E9, MBE2F0, MBE2F1, MBE2F3

The following sample has analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated PB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Tin MBE2F1

Field Blank- MBE2H8

No additional qualification is required for the Field Blank contamination.

4. **INTERFERENCE CHECK SAMPLE**

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not

present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

The following sample is associated with Matrix Spike sample that has spike analyte %R <30% and Post-digestion spike analyte %R greater than or equal to 75%. Detects are qualified as J. Non-detects are qualified as UJ.

Antimony MBE2E3

The following sample is associated with Matrix Spike sample that has spike analyte %R greater than 125% and no Post-digestion spike was performed. Detects are qualified as J+. Non-detects are not qualified.

Arsenic MBE2E3

The following sample is associated with Matrix Spike sample that has spike analyte %R within 30 - 74% and Post-digestion spike analyte %R < 75%. Detects are qualified as J-. Non-detects are qualified as UJ.

Selenium MBE2E3

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 35% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

7. FIELD DUPLICATE (MBE2E2/MBE2E3)

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 50% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of 2x the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

No problems were found for this criterion.

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by Inductively Coupled Plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 15. For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

The following sample is associated with Serial Dilution (SD) sample that has analyte percent difference %D greater than 15% but less than 120%. The original sample analyte concentrations are greater than 50xMDLs. Detects are qualified as estimated J. Non-detects are not qualified.

Barium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Potassium and Vanadium MBE2E3

10. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

11. OTHER PROBLEMS

The following samples have analyte results greater than the upper limit of calibration range and proper dilution is not performed. Use Professional Judgment, detects as estimated J.

Manganese MBE2D6, MBE2D9, MBE2E9

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: LCS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	38.4		mg/kg	38.4		1	YES	S3VEM
Antimony	Spike	11.9		mg/kg	11.9		1	YES	S3VEM
Arsenic	Spike	1.6		mg/kg	1.6		1	YES	S3VEM
Barium	Spike	40.6		mg/kg	40.6		1	YES	S3VEM
Beryllium	Spike	0.93		mg/kg	0.93		1	YES	S3VEM
Cadmium	Spike	0.96		mg/kg	0.96		1	YES	S3VEM
Calcium	Spike	1040		mg/kg	1040		1	YES	S3VEM
Chromium	Spike	2.1		mg/kg	2.1		1	YES	S3VEM
Cobalt	Spike	10.3		mg/kg	10.3		1	YES	S3VEM
Copper	Spike	4.8		mg/kg	4.8		1	YES	S3VEM
Iron	Spike	21.3		mg/kg	21.3		1	YES	S3VEM
Lead	Spike	2.1		mg/kg	2.1		1	YES	S3VEM
Magnesium	Spike	948		mg/kg	948		1	YES	S3VEM
Manganese	Spike	3.1		mg/kg	3.1		1	YES	S3VEM
Nickel	Spike	8.0		mg/kg	8.0		1	YES	S3VEM
Potassium	Spike	986		mg/kg	986		1	YES	S3VEM
Selenium	Spike	6.4		mg/kg	6.4		1	YES	S3VEM
Silver	Spike	1.9		mg/kg	1.9		1	YES	S3VEM
Sodium	Spike	1000		mg/kg	1000		1	YES	S3VEM
Thallium	Spike	4.9		mg/kg	4.9		1	YES	S3VEM
Vanadium	Spike	10.2		mg/kg	10.2		1	YES	S3VEM
Zinc	Spike	11.6		mg/kg	11.6		1	YES	S3VEM
Tin	Spike	11.9		mg/kg	11.9		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2D6	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 08:48:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14200		mg/kg	14200		1	YES	S3VEM
Antimony	Target	0.76	J	mg/kg	0.76	J*	1	YES	S3VEM
Arsenic	Target	14.9		mg/kg	14.9	*	1	YES	S3VEM
Barium	Target	202		mg/kg	202	*	1	YES	S3VEM
Beryllium	Target	0.80		mg/kg	0.80		1	YES	S3VEM
Cadmium	Target	2.3		mg/kg	2.3		1	YES	S3VEM
Calcium	Target	17700		mg/kg	17700	*	1	YES	S3VEM
Chromium	Target	20.9		mg/kg	20.9	*	1	YES	S3VEM
Cobalt	Target	8.4		mg/kg	8.4	*	1	YES	S3VEM
Copper	Target	53.3		mg/kg	53.3	*	1	YES	S3VEM
Iron	Target	18500		mg/kg	18500	*	1	YES	S3VEM
Lead	Target	971		mg/kg	971		1	YES	S3VEM
Magnesium	Target	6490		mg/kg	6490	*	1	YES	S3VEM
Manganese	Target	1370	J	mg/kg	1370	*	1	YES	S3VEM
Nickel	Target	29.7		mg/kg	29.7	*	1	YES	S3VEM
Potassium	Target	2670		mg/kg	2670	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J*	1	YES	S3VEM
Silver	Target	0.85	U	mg/kg	0.46	J	1	YES	S3VEM
Sodium	Target	91.5	J	mg/kg	91.5	J	1	YES	S3VEM
Thallium	Target	2.1	U	mg/kg	2.1	U	1	YES	S3VEM
Vanadium	Target	22.3		mg/kg	22.3	*	1	YES	S3VEM
Zinc	Target	462		mg/kg	462		1	YES	S3VEM
Tin	Target	11.7		mg/kg	11.7	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2D7	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 08:50:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14400		mg/kg	14400		1	YES	S3VEM
Antimony	Target	0.82	J	mg/kg	0.82	J*	1	YES	S3VEM
Arsenic	Target	17.9		mg/kg	17.9	*	1	YES	S3VEM
Barium	Target	190		mg/kg	190	*	1	YES	S3VEM
Beryllium	Target	0.84		mg/kg	0.84		1	YES	S3VEM
Cadmium	Target	2.3		mg/kg	2.3		1	YES	S3VEM
Calcium	Target	19300		mg/kg	19300	*	1	YES	S3VEM
Chromium	Target	20.5		mg/kg	20.5	*	1	YES	S3VEM
Cobalt	Target	7.9		mg/kg	7.9	*	1	YES	S3VEM
Copper	Target	62.3		mg/kg	62.3	*	1	YES	S3VEM
Iron	Target	17900		mg/kg	17900	*	1	YES	S3VEM
Lead	Target	988		mg/kg	988		1	YES	S3VEM
Magnesium	Target	6250		mg/kg	6250	*	1	YES	S3VEM
Manganese	Target	1140		mg/kg	1140	D*	2	YES	S3VEM
Nickel	Target	30.5		mg/kg	30.5	*	1	YES	S3VEM
Potassium	Target	2390		mg/kg	2390	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Silver	Target	0.67	U	mg/kg	0.50	J	1	YES	S3VEM
Sodium	Target	90.5	J	mg/kg	90.5	J	1	YES	S3VEM
Thallium	Target	1.7	U	mg/kg	0.18	J	1	YES	S3VEM
Vanadium	Target	21.4		mg/kg	21.4	*	1	YES	S3VEM
Zinc	Target	439		mg/kg	439		1	YES	S3VEM
Tin	Target	10.9		mg/kg	10.9	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2D8	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 08:56:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15400		mg/kg	15400		1	YES	S3VEM
Antimony	Target	1.0	J	mg/kg	1.0	J*	1	YES	S3VEM
Arsenic	Target	17.6		mg/kg	17.6	*	1	YES	S3VEM
Barium	Target	258		mg/kg	258	*	1	YES	S3VEM
Beryllium	Target	0.84		mg/kg	0.84		1	YES	S3VEM
Cadmium	Target	2.3		mg/kg	2.3		1	YES	S3VEM
Calcium	Target	27100		mg/kg	27100	*	1	YES	S3VEM
Chromium	Target	24.6		mg/kg	24.6	*	1	YES	S3VEM
Cobalt	Target	9.0		mg/kg	9.0	*	1	YES	S3VEM
Copper	Target	65.0		mg/kg	65.0	*	1	YES	S3VEM
Iron	Target	19700		mg/kg	19700	*	1	YES	S3VEM
Lead	Target	1240		mg/kg	1240		1	YES	S3VEM
Magnesium	Target	6170		mg/kg	6170	*	1	YES	S3VEM
Manganese	Target	1420		mg/kg	1420	*	1	YES	S3VEM
Nickel	Target	29.9		mg/kg	29.9	*	1	YES	S3VEM
Potassium	Target	2830		mg/kg	2830	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.57	J	1	YES	S3VEM
Sodium	Target	107	J	mg/kg	107	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	0.10	J	1	YES	S3VEM
Vanadium	Target	24.0		mg/kg	24.0	*	1	YES	S3VEM
Zinc	Target	517		mg/kg	517		1	YES	S3VEM
Tin	Target	16.8		mg/kg	16.8	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2D9	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 09:15:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15200		mg/kg	15200		1	YES	S3VEM
Antimony	Target	0.74	J	mg/kg	0.74	J*	1	YES	S3VEM
Arsenic	Target	17.3		mg/kg	17.3	*	1	YES	S3VEM
Barium	Target	259		mg/kg	259	*	1	YES	S3VEM
Beryllium	Target	0.86		mg/kg	0.86		1	YES	S3VEM
Cadmium	Target	2.1		mg/kg	2.1		1	YES	S3VEM
Calcium	Target	29700		mg/kg	29700	*	1	YES	S3VEM
Chromium	Target	24.2		mg/kg	24.2	*	1	YES	S3VEM
Cobalt	Target	8.8		mg/kg	8.8	*	1	YES	S3VEM
Copper	Target	69.5		mg/kg	69.5	*	1	YES	S3VEM
Iron	Target	19200		mg/kg	19200	*	1	YES	S3VEM
Lead	Target	1120		mg/kg	1120		1	YES	S3VEM
Magnesium	Target	5310		mg/kg	5310	*	1	YES	S3VEM
Manganese	Target	1380	J	mg/kg	1380	*	1	YES	S3VEM
Nickel	Target	25.9		mg/kg	25.9	*	1	YES	S3VEM
Potassium	Target	2580		mg/kg	2580	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Silver	Target	0.86	U	mg/kg	0.57	J	1	YES	S3VEM
Sodium	Target	116	J	mg/kg	116	J	1	YES	S3VEM
Thallium	Target	2.2	U	mg/kg	2.2	U	1	YES	S3VEM
Vanadium	Target	23.2		mg/kg	23.2	*	1	YES	S3VEM
Zinc	Target	437		mg/kg	437		1	YES	S3VEM
Tin	Target	17.1		mg/kg	17.1	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E0	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 09:29:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16400		mg/kg	16400		1	YES	S3VEM
Antimony	Target	0.69	J	mg/kg	0.69	J*	1	YES	S3VEM
Arsenic	Target	13.5		mg/kg	13.5	*	1	YES	S3VEM
Barium	Target	156		mg/kg	156	*	1	YES	S3VEM
Beryllium	Target	0.84		mg/kg	0.84		1	YES	S3VEM
Cadmium	Target	1.6		mg/kg	1.6		1	YES	S3VEM
Calcium	Target	14000		mg/kg	14000	*	1	YES	S3VEM
Chromium	Target	20.1		mg/kg	20.1	*	1	YES	S3VEM
Cobalt	Target	8.7		mg/kg	8.7	*	1	YES	S3VEM
Copper	Target	44.6		mg/kg	44.6	*	1	YES	S3VEM
Iron	Target	19000		mg/kg	19000	*	1	YES	S3VEM
Lead	Target	434		mg/kg	434		1	YES	S3VEM
Magnesium	Target	3800		mg/kg	3800	*	1	YES	S3VEM
Manganese	Target	2150		mg/kg	2150	D*	2	YES	S3VEM
Nickel	Target	21.5		mg/kg	21.5	*	1	YES	S3VEM
Potassium	Target	2950		mg/kg	2950	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.51	J	1	YES	S3VEM
Sodium	Target	91.9	J	mg/kg	91.9	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	0.11	J	1	YES	S3VEM
Vanadium	Target	22.2		mg/kg	22.2	*	1	YES	S3VEM
Zinc	Target	221		mg/kg	221		1	YES	S3VEM
Tin	Target	10.1		mg/kg	10.1	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E1	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 09:58:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16300		mg/kg	16300		1	YES	S3VEM
Antimony	Target	0.75	J	mg/kg	0.75	J*	1	YES	S3VEM
Arsenic	Target	16.4		mg/kg	16.4	*	1	YES	S3VEM
Barium	Target	174		mg/kg	174	*	1	YES	S3VEM
Beryllium	Target	0.86		mg/kg	0.86		1	YES	S3VEM
Cadmium	Target	1.8		mg/kg	1.8		1	YES	S3VEM
Calcium	Target	10400		mg/kg	10400	*	1	YES	S3VEM
Chromium	Target	23.3		mg/kg	23.3	*	1	YES	S3VEM
Cobalt	Target	10.1		mg/kg	10.1	*	1	YES	S3VEM
Copper	Target	53.9		mg/kg	53.9	*	1	YES	S3VEM
Iron	Target	19400		mg/kg	19400	*	1	YES	S3VEM
Lead	Target	399		mg/kg	399		1	YES	S3VEM
Magnesium	Target	4220		mg/kg	4220	*	1	YES	S3VEM
Manganese	Target	1690		mg/kg	1690	D*	2	YES	S3VEM
Nickel	Target	30.5		mg/kg	30.5	*	1	YES	S3VEM
Potassium	Target	3100		mg/kg	3100	*	1	YES	S3VEM
Selenium	Target	1.5	J	mg/kg	1.5	J*	1	YES	S3VEM
Silver	Target	0.91	U	mg/kg	0.59	J	1	YES	S3VEM
Sodium	Target	83.1	J	mg/kg	83.1	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	0.23	J	1	YES	S3VEM
Vanadium	Target	24.9		mg/kg	24.9	*	1	YES	S3VEM
Zinc	Target	302		mg/kg	302		1	YES	S3VEM
Tin	Target	9.5		mg/kg	9.5	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E2	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 10:26:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16200		mg/kg	16200		1	YES	S3VEM
Antimony	Target	0.99	J	mg/kg	0.99	J*	1	YES	S3VEM
Arsenic	Target	19.8		mg/kg	19.8	*	1	YES	S3VEM
Barium	Target	177		mg/kg	177	*	1	YES	S3VEM
Beryllium	Target	0.87		mg/kg	0.87		1	YES	S3VEM
Cadmium	Target	1.9		mg/kg	1.9		1	YES	S3VEM
Calcium	Target	10300		mg/kg	10300	*	1	YES	S3VEM
Chromium	Target	21.4		mg/kg	21.4	*	1	YES	S3VEM
Cobalt	Target	9.8		mg/kg	9.8	*	1	YES	S3VEM
Copper	Target	56.1		mg/kg	56.1	*	1	YES	S3VEM
Iron	Target	19100		mg/kg	19100	*	1	YES	S3VEM
Lead	Target	413		mg/kg	413		1	YES	S3VEM
Magnesium	Target	3900		mg/kg	3900	*	1	YES	S3VEM
Manganese	Target	1770		mg/kg	1770	D*	2	YES	S3VEM
Nickel	Target	29.8		mg/kg	29.8	*	1	YES	S3VEM
Potassium	Target	2870		mg/kg	2870	*	1	YES	S3VEM
Selenium	Target	1.4	J	mg/kg	1.4	J*	1	YES	S3VEM
Silver	Target	0.85	U	mg/kg	0.58	J	1	YES	S3VEM
Sodium	Target	80.4	J	mg/kg	80.4	J	1	YES	S3VEM
Thallium	Target	2.1	U	mg/kg	0.21	J	1	YES	S3VEM
Vanadium	Target	23.9		mg/kg	23.9	*	1	YES	S3VEM
Zinc	Target	308		mg/kg	308		1	YES	S3VEM
Tin	Target	10.2		mg/kg	10.2	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E3	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 10:26:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14400		mg/kg	14400		1	YES	S3VEM
Antimony	Target	0.84	J	mg/kg	0.84	J*	1	YES	S3VEM
Arsenic	Target	17.0	J+	mg/kg	17.0	*	1	YES	S3VEM
Barium	Target	176	J	mg/kg	176	*	1	YES	S3VEM
Beryllium	Target	0.78		mg/kg	0.78		1	YES	S3VEM
Cadmium	Target	1.8		mg/kg	1.8		1	YES	S3VEM
Calcium	Target	10200	J	mg/kg	10200	*	1	YES	S3VEM
Chromium	Target	20.1	J	mg/kg	20.1	*	1	YES	S3VEM
Cobalt	Target	8.6	J	mg/kg	8.6	*	1	YES	S3VEM
Copper	Target	52.6	J	mg/kg	52.6	*	1	YES	S3VEM
Iron	Target	17100	J	mg/kg	17100	*	1	YES	S3VEM
Lead	Target	420		mg/kg	420		1	YES	S3VEM
Magnesium	Target	3620	J	mg/kg	3620	*	1	YES	S3VEM
Manganese	Target	1570	J	mg/kg	1570	D*	2	YES	S3VEM
Nickel	Target	25.5		mg/kg	25.5	*	1	YES	S3VEM
Potassium	Target	2550	J	mg/kg	2550	*	1	YES	S3VEM
Selenium	Target	1.3	J-	mg/kg	1.3	J*	1	YES	S3VEM
Silver	Target	0.75	U	mg/kg	0.60	J	1	YES	S3VEM
Sodium	Target	74.7	J	mg/kg	74.7	J	1	YES	S3VEM
Thallium	Target	1.9	U	mg/kg	0.23	J	1	YES	S3VEM
Vanadium	Target	21.2	J	mg/kg	21.2	*	1	YES	S3VEM
Zinc	Target	328		mg/kg	328		1	YES	S3VEM
Tin	Target	9.5		mg/kg	9.5	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E3A	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/26/2018	Sample Time: 10:26:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	7.8		mg/kg	7.8		1	YES	S3VEM
Arsenic	Spike	52.6		mg/kg	52.6		1	YES	S3VEM
Selenium	Spike	4.9		mg/kg	4.9	*	1	YES	S3VEM
Tin	Spike	24.3		mg/kg	24.3		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E3D	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/26/2018	Sample Time: 10:26:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16400		mg/kg	16400		1	YES	S3VEM
Antimony	Target	0.88	J	mg/kg	0.88	J	1	YES	S3VEM
Arsenic	Target	19.9		mg/kg	19.9		1	YES	S3VEM
Barium	Target	199		mg/kg	199		1	YES	S3VEM
Beryllium	Target	0.90		mg/kg	0.90		1	YES	S3VEM
Cadmium	Target	2.1		mg/kg	2.1		1	YES	S3VEM
Calcium	Target	11400		mg/kg	11400		1	YES	S3VEM
Chromium	Target	22.8		mg/kg	22.8		1	YES	S3VEM
Cobalt	Target	9.8		mg/kg	9.8		1	YES	S3VEM
Copper	Target	59.8		mg/kg	59.8		1	YES	S3VEM
Iron	Target	18900		mg/kg	18900		1	YES	S3VEM
Lead	Target	485		mg/kg	485		1	YES	S3VEM
Magnesium	Target	4030		mg/kg	4030		1	YES	S3VEM
Manganese	Target	1740		mg/kg	1740	D	2	YES	S3VEM
Nickel	Target	31.4		mg/kg	31.4	*	1	YES	S3VEM
Potassium	Target	2730		mg/kg	2730		1	YES	S3VEM
Selenium	Target	1.4	J	mg/kg	1.4	J	1	YES	S3VEM
Silver	Target	0.65	J	mg/kg	0.65	J	1	YES	S3VEM
Sodium	Target	82.9	J	mg/kg	82.9	J	1	YES	S3VEM
Thallium	Target	0.091	J	mg/kg	0.091	J	1	YES	S3VEM
Vanadium	Target	23.2		mg/kg	23.2		1	YES	S3VEM
Zinc	Target	380		mg/kg	380		1	YES	S3VEM
Tin	Target	11.1		mg/kg	11.1		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E3L	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14300		mg/kg	14300		5	YES	S3VEM
Antimony	Target	22.6	U	mg/kg	22.6	U	5	YES	S3VEM
Arsenic	Target	16.7		mg/kg	16.7		5	YES	S3VEM
Barium	Target	213		mg/kg	213	*	5	YES	S3VEM
Beryllium	Target	0.80	J	mg/kg	0.80	J	5	YES	S3VEM
Cadmium	Target	1.8	J	mg/kg	1.8	J	5	YES	S3VEM
Calcium	Target	12800		mg/kg	12800	*	5	YES	S3VEM
Chromium	Target	25.0		mg/kg	25.0	*	5	YES	S3VEM
Cobalt	Target	11.2	J	mg/kg	11.2	J*	5	YES	S3VEM
Copper	Target	61.1		mg/kg	61.1	*	5	YES	S3VEM
Iron	Target	21500		mg/kg	21500	*	5	YES	S3VEM
Lead	Target	440		mg/kg	440		5	YES	S3VEM
Magnesium	Target	4490		mg/kg	4490	*	5	YES	S3VEM
Manganese	Target	2070		mg/kg	2070	D*	10	YES	S3VEM
Nickel	Target	25.8		mg/kg	25.8		5	YES	S3VEM
Potassium	Target	3060		mg/kg	3060	*	5	YES	S3VEM
Selenium	Target	1.7	J	mg/kg	1.7	J	5	YES	S3VEM
Silver	Target	0.77	J	mg/kg	0.77	J	5	YES	S3VEM
Sodium	Target	1880	U	mg/kg	1880	U	5	YES	S3VEM
Thallium	Target	0.50	J	mg/kg	0.50	J	5	YES	S3VEM
Vanadium	Target	25.8		mg/kg	25.8	*	5	YES	S3VEM
Zinc	Target	336		mg/kg	336		5	YES	S3VEM
Tin	Target	12.3	J	mg/kg	12.3	J	5	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E3S	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/26/2018	Sample Time: 10:26:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	4.6		mg/kg	4.6		1	YES	S3VEM
Arsenic	Spike	26.0		mg/kg	26.0		1	YES	S3VEM
Barium	Spike	429		mg/kg	429		1	YES	S3VEM
Beryllium	Spike	7.8		mg/kg	7.8		1	YES	S3VEM
Cadmium	Spike	9.5		mg/kg	9.5		1	YES	S3VEM
Chromium	Spike	47.1		mg/kg	47.1		1	YES	S3VEM
Cobalt	Spike	67.1		mg/kg	67.1		1	YES	S3VEM
Copper	Spike	90.2		mg/kg	90.2		1	YES	S3VEM
Lead	Spike	484		mg/kg	484		1	YES	S3VEM
Manganese	Spike	1840		mg/kg	1840	D	2	YES	S3VEM
Nickel	Spike	106		mg/kg	106		1	YES	S3VEM
Selenium	Spike	11.8		mg/kg	11.8		1	YES	S3VEM
Silver	Spike	6.3		mg/kg	6.3		1	YES	S3VEM
Thallium	Spike	7.3		mg/kg	7.3		1	YES	S3VEM
Vanadium	Spike	82.9		mg/kg	82.9		1	YES	S3VEM
Zinc	Spike	448		mg/kg	448		1	YES	S3VEM
Tin	Spike	63.7		mg/kg	63.7		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E4	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 10:36:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17200		mg/kg	17200		1	YES	S3VEM
Antimony	Target	0.84	J	mg/kg	0.84	J*	1	YES	S3VEM
Arsenic	Target	20.1		mg/kg	20.1	*	1	YES	S3VEM
Barium	Target	189		mg/kg	189	*	1	YES	S3VEM
Beryllium	Target	0.90		mg/kg	0.90		1	YES	S3VEM
Cadmium	Target	1.8		mg/kg	1.8		1	YES	S3VEM
Calcium	Target	12100		mg/kg	12100	*	1	YES	S3VEM
Chromium	Target	20.9		mg/kg	20.9	*	1	YES	S3VEM
Cobalt	Target	10.3		mg/kg	10.3	*	1	YES	S3VEM
Copper	Target	52.4		mg/kg	52.4	*	1	YES	S3VEM
Iron	Target	19500		mg/kg	19500	*	1	YES	S3VEM
Lead	Target	419		mg/kg	419		1	YES	S3VEM
Magnesium	Target	3840		mg/kg	3840	*	1	YES	S3VEM
Manganese	Target	1930		mg/kg	1930	D*	2	YES	S3VEM
Nickel	Target	25.2		mg/kg	25.2	*	1	YES	S3VEM
Potassium	Target	2900		mg/kg	2900	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Silver	Target	0.90	U	mg/kg	0.62	J	1	YES	S3VEM
Sodium	Target	86.7	J	mg/kg	86.7	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	0.10	J	1	YES	S3VEM
Vanadium	Target	24.3		mg/kg	24.3	*	1	YES	S3VEM
Zinc	Target	296		mg/kg	296		1	YES	S3VEM
Tin	Target	9.6		mg/kg	9.6	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E5	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 10:40:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16400		mg/kg	16400		1	YES	S3VEM
Antimony	Target	0.59	J	mg/kg	0.59	J*	1	YES	S3VEM
Arsenic	Target	15.5		mg/kg	15.5	*	1	YES	S3VEM
Barium	Target	146		mg/kg	146	*	1	YES	S3VEM
Beryllium	Target	0.81		mg/kg	0.81		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5		1	YES	S3VEM
Calcium	Target	8200		mg/kg	8200	*	1	YES	S3VEM
Chromium	Target	18.5		mg/kg	18.5	*	1	YES	S3VEM
Cobalt	Target	9.1		mg/kg	9.1	*	1	YES	S3VEM
Copper	Target	41.7		mg/kg	41.7	*	1	YES	S3VEM
Iron	Target	16700		mg/kg	16700	*	1	YES	S3VEM
Lead	Target	299		mg/kg	299		1	YES	S3VEM
Magnesium	Target	2950		mg/kg	2950	*	1	YES	S3VEM
Manganese	Target	2160		mg/kg	2160	D*	3	YES	S3VEM
Nickel	Target	21.6		mg/kg	21.6	*	1	YES	S3VEM
Potassium	Target	2690		mg/kg	2690	*	1	YES	S3VEM
Selenium	Target	0.96	J	mg/kg	0.96	J*	1	YES	S3VEM
Silver	Target	0.71	U	mg/kg	0.56	J	1	YES	S3VEM
Sodium	Target	72.6	J	mg/kg	72.6	J	1	YES	S3VEM
Thallium	Target	1.8	U	mg/kg	0.19	J	1	YES	S3VEM
Vanadium	Target	20.5		mg/kg	20.5	*	1	YES	S3VEM
Zinc	Target	225		mg/kg	225		1	YES	S3VEM
Tin	Target	6.1		mg/kg	6.1	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E6	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 10:45:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17600		mg/kg	17600		1	YES	S3VEM
Antimony	Target	0.79	J	mg/kg	0.79	J*	1	YES	S3VEM
Arsenic	Target	16.9		mg/kg	16.9	*	1	YES	S3VEM
Barium	Target	146		mg/kg	146	*	1	YES	S3VEM
Beryllium	Target	0.88		mg/kg	0.88		1	YES	S3VEM
Cadmium	Target	1.6		mg/kg	1.6		1	YES	S3VEM
Calcium	Target	9160		mg/kg	9160	*	1	YES	S3VEM
Chromium	Target	20.4		mg/kg	20.4	*	1	YES	S3VEM
Cobalt	Target	10.6		mg/kg	10.6	*	1	YES	S3VEM
Copper	Target	42.4		mg/kg	42.4	*	1	YES	S3VEM
Iron	Target	19300		mg/kg	19300	*	1	YES	S3VEM
Lead	Target	262		mg/kg	262		1	YES	S3VEM
Magnesium	Target	3390		mg/kg	3390	*	1	YES	S3VEM
Manganese	Target	2080		mg/kg	2080	D*	2	YES	S3VEM
Nickel	Target	23.9		mg/kg	23.9	*	1	YES	S3VEM
Potassium	Target	3050		mg/kg	3050	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J*	1	YES	S3VEM
Silver	Target	0.94	U	mg/kg	0.64	J	1	YES	S3VEM
Sodium	Target	77.4	J	mg/kg	77.4	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	0.21	J	1	YES	S3VEM
Vanadium	Target	22.5		mg/kg	22.5	*	1	YES	S3VEM
Zinc	Target	208		mg/kg	208		1	YES	S3VEM
Tin	Target	6.0		mg/kg	6.0	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E7	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 11:00:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15300		mg/kg	15300		1	YES	S3VEM
Antimony	Target	0.72	J	mg/kg	0.72	J*	1	YES	S3VEM
Arsenic	Target	17.0		mg/kg	17.0	*	1	YES	S3VEM
Barium	Target	149		mg/kg	149	*	1	YES	S3VEM
Beryllium	Target	0.83		mg/kg	0.83		1	YES	S3VEM
Cadmium	Target	1.7		mg/kg	1.7		1	YES	S3VEM
Calcium	Target	10400		mg/kg	10400	*	1	YES	S3VEM
Chromium	Target	19.4		mg/kg	19.4	*	1	YES	S3VEM
Cobalt	Target	9.1		mg/kg	9.1	*	1	YES	S3VEM
Copper	Target	48.4		mg/kg	48.4	*	1	YES	S3VEM
Iron	Target	18100		mg/kg	18100	*	1	YES	S3VEM
Lead	Target	356		mg/kg	356		1	YES	S3VEM
Magnesium	Target	4600		mg/kg	4600	*	1	YES	S3VEM
Manganese	Target	1810		mg/kg	1810	D*	2	YES	S3VEM
Nickel	Target	28.7		mg/kg	28.7	*	1	YES	S3VEM
Potassium	Target	2730		mg/kg	2730	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J*	1	YES	S3VEM
Silver	Target	0.92	U	mg/kg	0.50	J	1	YES	S3VEM
Sodium	Target	76.5	J	mg/kg	76.5	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	0.16	J	1	YES	S3VEM
Vanadium	Target	23.1		mg/kg	23.1	*	1	YES	S3VEM
Zinc	Target	241		mg/kg	241		1	YES	S3VEM
Tin	Target	7.9		mg/kg	7.9	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E8	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 11:04:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15800		mg/kg	15800		1	YES	S3VEM
Antimony	Target	0.70	J	mg/kg	0.70	J*	1	YES	S3VEM
Arsenic	Target	19.2		mg/kg	19.2	*	1	YES	S3VEM
Barium	Target	155		mg/kg	155	*	1	YES	S3VEM
Beryllium	Target	0.86		mg/kg	0.86		1	YES	S3VEM
Cadmium	Target	1.7		mg/kg	1.7		1	YES	S3VEM
Calcium	Target	11600		mg/kg	11600	*	1	YES	S3VEM
Chromium	Target	20.9		mg/kg	20.9	*	1	YES	S3VEM
Cobalt	Target	9.5		mg/kg	9.5	*	1	YES	S3VEM
Copper	Target	54.8		mg/kg	54.8	*	1	YES	S3VEM
Iron	Target	19000		mg/kg	19000	*	1	YES	S3VEM
Lead	Target	423		mg/kg	423		1	YES	S3VEM
Magnesium	Target	4950		mg/kg	4950	*	1	YES	S3VEM
Manganese	Target	1560		mg/kg	1560	*	1	YES	S3VEM
Nickel	Target	28.7		mg/kg	28.7	*	1	YES	S3VEM
Potassium	Target	2620		mg/kg	2620	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J*	1	YES	S3VEM
Silver	Target	1.0	U	mg/kg	0.52	J	1	YES	S3VEM
Sodium	Target	80.6	J	mg/kg	80.6	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	23.9		mg/kg	23.9	*	1	YES	S3VEM
Zinc	Target	238		mg/kg	238		1	YES	S3VEM
Tin	Target	8.2		mg/kg	8.2	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2E9	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 11:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17700		mg/kg	17700		1	YES	S3VEM
Antimony	Target	0.74	J	mg/kg	0.74	J*	1	YES	S3VEM
Arsenic	Target	21.0		mg/kg	21.0	*	1	YES	S3VEM
Barium	Target	165		mg/kg	165	*	1	YES	S3VEM
Beryllium	Target	0.93		mg/kg	0.93		1	YES	S3VEM
Cadmium	Target	1.7		mg/kg	1.7		1	YES	S3VEM
Calcium	Target	11300		mg/kg	11300	*	1	YES	S3VEM
Chromium	Target	21.6		mg/kg	21.6	*	1	YES	S3VEM
Cobalt	Target	10.0		mg/kg	10.0	*	1	YES	S3VEM
Copper	Target	50.1		mg/kg	50.1	*	1	YES	S3VEM
Iron	Target	19800		mg/kg	19800	*	1	YES	S3VEM
Lead	Target	471		mg/kg	471		1	YES	S3VEM
Magnesium	Target	4460		mg/kg	4460	*	1	YES	S3VEM
Manganese	Target	1790	J	mg/kg	1790	*	1	YES	S3VEM
Nickel	Target	28.1		mg/kg	28.1	*	1	YES	S3VEM
Potassium	Target	2740		mg/kg	2740	*	1	YES	S3VEM
Selenium	Target	1.3	J	mg/kg	1.3	J*	1	YES	S3VEM
Silver	Target	0.92	U	mg/kg	0.55	J	1	YES	S3VEM
Sodium	Target	82.1	J	mg/kg	82.1	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	0.20	J	1	YES	S3VEM
Vanadium	Target	24.9		mg/kg	24.9	*	1	YES	S3VEM
Zinc	Target	237		mg/kg	237		1	YES	S3VEM
Tin	Target	7.8		mg/kg	7.8	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F0	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 11:25:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17800		mg/kg	17800		1	YES	S3VEM
Antimony	Target	0.71	J	mg/kg	0.71	J*	1	YES	S3VEM
Arsenic	Target	18.8		mg/kg	18.8	*	1	YES	S3VEM
Barium	Target	132		mg/kg	132	*	1	YES	S3VEM
Beryllium	Target	0.86		mg/kg	0.86		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5		1	YES	S3VEM
Calcium	Target	18600		mg/kg	18600	*	1	YES	S3VEM
Chromium	Target	17.8		mg/kg	17.8	*	1	YES	S3VEM
Cobalt	Target	9.7		mg/kg	9.7	*	1	YES	S3VEM
Copper	Target	42.7		mg/kg	42.7	*	1	YES	S3VEM
Iron	Target	18300		mg/kg	18300	*	1	YES	S3VEM
Lead	Target	240		mg/kg	240		1	YES	S3VEM
Magnesium	Target	6000		mg/kg	6000	*	1	YES	S3VEM
Manganese	Target	2210		mg/kg	2210	D*	3	YES	S3VEM
Nickel	Target	22.9		mg/kg	22.9	*	1	YES	S3VEM
Potassium	Target	2590		mg/kg	2590	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J*	1	YES	S3VEM
Silver	Target	0.85	U	mg/kg	0.57	J	1	YES	S3VEM
Sodium	Target	84.9	J	mg/kg	84.9	J	1	YES	S3VEM
Thallium	Target	2.1	U	mg/kg	0.18	J	1	YES	S3VEM
Vanadium	Target	22.3		mg/kg	22.3	*	1	YES	S3VEM
Zinc	Target	173		mg/kg	173		1	YES	S3VEM
Tin	Target	5.4		mg/kg	5.4	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F1	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 11:30:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	18200		mg/kg	18200		1	YES	S3VEM
Antimony	Target	0.52	J	mg/kg	0.52	J*	1	YES	S3VEM
Arsenic	Target	19.0		mg/kg	19.0	*	1	YES	S3VEM
Barium	Target	108		mg/kg	108	*	1	YES	S3VEM
Beryllium	Target	0.82		mg/kg	0.82		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5		1	YES	S3VEM
Calcium	Target	21400		mg/kg	21400	*	1	YES	S3VEM
Chromium	Target	17.1		mg/kg	17.1	*	1	YES	S3VEM
Cobalt	Target	10.8		mg/kg	10.8	*	1	YES	S3VEM
Copper	Target	48.0		mg/kg	48.0	*	1	YES	S3VEM
Iron	Target	18200		mg/kg	18200	*	1	YES	S3VEM
Lead	Target	164		mg/kg	164		1	YES	S3VEM
Magnesium	Target	4160		mg/kg	4160	*	1	YES	S3VEM
Manganese	Target	2850		mg/kg	2850	D*	3	YES	S3VEM
Nickel	Target	23.4		mg/kg	23.4	*	1	YES	S3VEM
Potassium	Target	2800		mg/kg	2800	*	1	YES	S3VEM
Selenium	Target	0.90	J	mg/kg	0.90	J*	1	YES	S3VEM
Silver	Target	0.82	U	mg/kg	0.58	J	1	YES	S3VEM
Sodium	Target	82.4	J	mg/kg	82.4	J	1	YES	S3VEM
Thallium	Target	2.0	U	mg/kg	0.25	J	1	YES	S3VEM
Vanadium	Target	21.3		mg/kg	21.3	*	1	YES	S3VEM
Zinc	Target	138		mg/kg	138		1	YES	S3VEM
Tin	Target	4.1	U	mg/kg	3.0	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F2	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 09:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14300		mg/kg	14300		1	YES	S3VEM
Antimony	Target	0.78	J	mg/kg	0.78	J*	1	YES	S3VEM
Arsenic	Target	14.8		mg/kg	14.8	*	1	YES	S3VEM
Barium	Target	138		mg/kg	138	*	1	YES	S3VEM
Beryllium	Target	0.79		mg/kg	0.79		1	YES	S3VEM
Cadmium	Target	1.8		mg/kg	1.8		1	YES	S3VEM
Calcium	Target	12000		mg/kg	12000	*	1	YES	S3VEM
Chromium	Target	20.1		mg/kg	20.1	*	1	YES	S3VEM
Cobalt	Target	8.6		mg/kg	8.6	*	1	YES	S3VEM
Copper	Target	47.3		mg/kg	47.3	*	1	YES	S3VEM
Iron	Target	18100		mg/kg	18100	*	1	YES	S3VEM
Lead	Target	416		mg/kg	416		1	YES	S3VEM
Magnesium	Target	4600		mg/kg	4600	*	1	YES	S3VEM
Manganese	Target	1380		mg/kg	1380	*	1	YES	S3VEM
Nickel	Target	28.8		mg/kg	28.8	*	1	YES	S3VEM
Potassium	Target	2710		mg/kg	2710	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Silver	Target	0.96	U	mg/kg	0.57	J	1	YES	S3VEM
Sodium	Target	83.0	J	mg/kg	83.0	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	22.4		mg/kg	22.4	*	1	YES	S3VEM
Zinc	Target	288		mg/kg	288		1	YES	S3VEM
Tin	Target	12.7		mg/kg	12.7	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F3	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 09:25:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14000		mg/kg	14000		1	YES	S3VEM
Antimony	Target	0.54	J	mg/kg	0.54	J*	1	YES	S3VEM
Arsenic	Target	15.4		mg/kg	15.4	*	1	YES	S3VEM
Barium	Target	133		mg/kg	133	*	1	YES	S3VEM
Beryllium	Target	0.77		mg/kg	0.77		1	YES	S3VEM
Cadmium	Target	1.7		mg/kg	1.7		1	YES	S3VEM
Calcium	Target	12400		mg/kg	12400	*	1	YES	S3VEM
Chromium	Target	19.4		mg/kg	19.4	*	1	YES	S3VEM
Cobalt	Target	8.1		mg/kg	8.1	*	1	YES	S3VEM
Copper	Target	46.6		mg/kg	46.6	*	1	YES	S3VEM
Iron	Target	16900		mg/kg	16900	*	1	YES	S3VEM
Lead	Target	386		mg/kg	386		1	YES	S3VEM
Magnesium	Target	4180		mg/kg	4180	*	1	YES	S3VEM
Manganese	Target	1310		mg/kg	1310	*	1	YES	S3VEM
Nickel	Target	27.4		mg/kg	27.4	*	1	YES	S3VEM
Potassium	Target	2440		mg/kg	2440	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Silver	Target	0.83	U	mg/kg	0.53	J	1	YES	S3VEM
Sodium	Target	78.9	J	mg/kg	78.9	J	1	YES	S3VEM
Thallium	Target	2.1	U	mg/kg	0.098	J	1	YES	S3VEM
Vanadium	Target	21.1		mg/kg	21.1	*	1	YES	S3VEM
Zinc	Target	261		mg/kg	261		1	YES	S3VEM
Tin	Target	10.7		mg/kg	10.7	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F4	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 10:00:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15400		mg/kg	15400		1	YES	S3VEM
Antimony	Target	0.85	J	mg/kg	0.85	J*	1	YES	S3VEM
Arsenic	Target	15.7		mg/kg	15.7	*	1	YES	S3VEM
Barium	Target	152		mg/kg	152	*	1	YES	S3VEM
Beryllium	Target	0.80		mg/kg	0.80		1	YES	S3VEM
Cadmium	Target	1.7		mg/kg	1.7		1	YES	S3VEM
Calcium	Target	16800		mg/kg	16800	*	1	YES	S3VEM
Chromium	Target	20.2		mg/kg	20.2	*	1	YES	S3VEM
Cobalt	Target	9.0		mg/kg	9.0	*	1	YES	S3VEM
Copper	Target	52.1		mg/kg	52.1	*	1	YES	S3VEM
Iron	Target	19500		mg/kg	19500	*	1	YES	S3VEM
Lead	Target	419		mg/kg	419		1	YES	S3VEM
Magnesium	Target	4270		mg/kg	4270	*	1	YES	S3VEM
Manganese	Target	1500		mg/kg	1500	*	1	YES	S3VEM
Nickel	Target	23.7		mg/kg	23.7	*	1	YES	S3VEM
Potassium	Target	2620		mg/kg	2620	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.71	J	1	YES	S3VEM
Sodium	Target	86.9	J	mg/kg	86.9	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	22.6		mg/kg	22.6	*	1	YES	S3VEM
Zinc	Target	266		mg/kg	266		1	YES	S3VEM
Tin	Target	17.0		mg/kg	17.0	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F5	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 10:05:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16000		mg/kg	16000		1	YES	S3VEM
Antimony	Target	0.82	J	mg/kg	0.82	J*	1	YES	S3VEM
Arsenic	Target	12.7		mg/kg	12.7	*	1	YES	S3VEM
Barium	Target	160		mg/kg	160	*	1	YES	S3VEM
Beryllium	Target	0.75		mg/kg	0.75		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4		1	YES	S3VEM
Calcium	Target	15200		mg/kg	15200	*	1	YES	S3VEM
Chromium	Target	18.3		mg/kg	18.3	*	1	YES	S3VEM
Cobalt	Target	8.5		mg/kg	8.5	*	1	YES	S3VEM
Copper	Target	42.5		mg/kg	42.5	*	1	YES	S3VEM
Iron	Target	17600		mg/kg	17600	*	1	YES	S3VEM
Lead	Target	369		mg/kg	369		1	YES	S3VEM
Magnesium	Target	3560		mg/kg	3560	*	1	YES	S3VEM
Manganese	Target	1700		mg/kg	1700	D*	2	YES	S3VEM
Nickel	Target	19.4		mg/kg	19.4	*	1	YES	S3VEM
Potassium	Target	2480		mg/kg	2480	*	1	YES	S3VEM
Selenium	Target	0.78	J	mg/kg	0.78	J*	1	YES	S3VEM
Silver	Target	0.90	U	mg/kg	0.56	J	1	YES	S3VEM
Sodium	Target	72.8	J	mg/kg	72.8	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	21.0		mg/kg	21.0	*	1	YES	S3VEM
Zinc	Target	205		mg/kg	205		1	YES	S3VEM
Tin	Target	9.3		mg/kg	9.3	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2D6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	0.71	J	mg/kg	0.71	J	1	YES	S3VEM
Antimony	Target	6.0	U	mg/kg	6.0	U	1	YES	S3VEM
Arsenic	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Barium	Target	20.0	U	mg/kg	20.0	U	1	YES	S3VEM
Beryllium	Target			mg/kg	-0.0090	J	1	YES	S3VEM
Cadmium	Target			mg/kg	-0.011	J	1	YES	S3VEM
Calcium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Chromium	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Cobalt	Target	-0.026	J	mg/kg	-0.026	J	1	YES	S3VEM
Copper	Target	0.16	J	mg/kg	0.16	J	1	YES	S3VEM
Iron	Target	10.0	U	mg/kg	10.0	U	1	YES	S3VEM
Lead	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Magnesium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Manganese	Target	1.5	U	mg/kg	1.5	U	1	YES	S3VEM
Nickel	Target			mg/kg	-0.063	J	1	YES	S3VEM
Potassium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Selenium	Target	3.5	U	mg/kg	3.5	U	1	YES	S3VEM
Silver	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Sodium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Thallium	Target			mg/kg	-0.17	J	1	YES	S3VEM
Vanadium	Target	5.0	U	mg/kg	5.0	U	1	YES	S3VEM
Zinc	Target	0.16	J	mg/kg	0.16	J	1	YES	S3VEM
Tin	Target	0.81	J	mg/kg	0.81	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project | **GroupID: 47720/EPW14029/MBE2D6** | **Lab Name: Bonner Analytical Testing Co.**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

EXECUTIVE NARRATIVE

Case No.: 47720
Site: Eighteenmile Creek
Number of Samples: 20 (Soil)
Analysis: Metals (ICP-AES MA # 2822.0)

SDG No.: MBE2F6
Laboratory: Bonner Analytical Services Co.
Sampling dates: 6/26/18
Validation SOP: HW-3a (Rev.1)

QAPP
Contractor: Weston Solutions
Reference: DCN RST3-04-D-0200

SUMMARY OF DEFINITIONS:

Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
Samples MBE2G6, MBE2G9, MBE2H0, MBE2H1 and MBE2H2 have analytes that have been qualified J, J+ or J-.

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENT:	One or more non-detected analytes exceeded the removal levels of resident soil for one or more samples.

Reviewer Name(s): Israel Okwuonu

Approver's Signature: **Date: 08/09/2018**

Name: Russell Arnone

Affiliation: USEPA/R2/HWSB/HWSS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	**Explanation**		
	INORGANICS	**ORGANICS**	**CHLORINATED DIOXIN/FURAN**
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: METALS ICP-AES

The current SOP HW-3a (Revision 1) September, 2016 USEPA Region II for the evaluation of ICP-AES metals generated through Statement of Work ISOM02.2, any future editorial revisions of ISOM02.2, has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated PB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Tin MBE2F9, MBE2G0, MBE2G1, MBE2G2, MBE2G3, MBE2G4, MBE2G5, MBE2G6, MBE2G7, MBE2G9, MBE2H0, MBE2H1, MBE2H2, MBE2H3, MBE2H4, MBE2H5

Field Blank: MBE2H8

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated field blank analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Silver MBE2F6, MBE2F7, MBE2F8, MBE2F9, MBE2G0, MBE2G1, MBE2G2, MBE2G3, MBE2G4, MBE2G5, MBE2G6, MBE2G7, MBE2G8, MBE2G9, MBE2H0, MBE2H1, MBE2H2, MBE2H3, MBE2H4, MBE2H5

4. **INTERFERENCE CHECK SAMPLE**

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix

spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

The following sample is associated with Matrix Spike sample that has spike analyte %R within 30 - 74 and Post-digestion spike analyte %R less than 75%. Detects are qualified as J-. Non-detects are qualified as UJ.

Tin MBE2G6

The following sample is associated with Matrix Spike sample that has spike analyte %R less than 30% and Post-digestion spike analyte %R greater than 75%. Detects are qualified as J. Non-detects are qualified as UJ.

Antimony MBE2G6

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 35% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

7. FIELD DUPLICATE MBE2G7/MBE2G8

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 35% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

No problems were found for this criterion.

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by Inductively Coupled Plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration

is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 15%. For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

The following soil/sediment sample is associated with Serial Dilution (SD) sample that has analyte percent different %D greater than 15% but less than 120%. The original sample analyte concentrations are greater than 50x MDLs. Detects are qualified as estimated J. Non-detects are not qualified.

Chromium, Cobalt, Iron, Manganese MBE2G6

10. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

OTHER PROBLEMS:

The following samples have analyte results greater than the upper limit of calibration range and proper dilution is not performed. Detects as estimated J.

Calcium MBE2H2

Manganese MBE2G9, MBE2H0, MBE2H1

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: LCS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	39.7		mg/kg	39.7		1	YES	S3VEM
Antimony	Spike	11.9		mg/kg	11.9		1	YES	S3VEM
Arsenic	Spike	1.6		mg/kg	1.6		1	YES	S3VEM
Barium	Spike	41.4		mg/kg	41.4		1	YES	S3VEM
Beryllium	Spike	0.91		mg/kg	0.91		1	YES	S3VEM
Cadmium	Spike	0.93		mg/kg	0.93		1	YES	S3VEM
Calcium	Spike	963		mg/kg	963		1	YES	S3VEM
Chromium	Spike	2.0		mg/kg	2.0		1	YES	S3VEM
Cobalt	Spike	10.2		mg/kg	10.2		1	YES	S3VEM
Copper	Spike	5.0		mg/kg	5.0		1	YES	S3VEM
Iron	Spike	20.4		mg/kg	20.4		1	YES	S3VEM
Lead	Spike	2.1		mg/kg	2.1		1	YES	S3VEM
Magnesium	Spike	897		mg/kg	897		1	YES	S3VEM
Manganese	Spike	2.9		mg/kg	2.9		1	YES	S3VEM
Nickel	Spike	7.9		mg/kg	7.9		1	YES	S3VEM
Potassium	Spike	952		mg/kg	952		1	YES	S3VEM
Selenium	Spike	6.5		mg/kg	6.5		1	YES	S3VEM
Silver	Spike	1.9		mg/kg	1.9		1	YES	S3VEM
Sodium	Spike	962		mg/kg	962		1	YES	S3VEM
Thallium	Spike	4.7		mg/kg	4.7		1	YES	S3VEM
Vanadium	Spike	9.9		mg/kg	9.9		1	YES	S3VEM
Zinc	Spike	11.6		mg/kg	11.6		1	YES	S3VEM
Tin	Spike	11.6		mg/kg	11.6		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F6	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 10:10:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	18600		mg/kg	18600	*	1	YES	S3VEM
Antimony	Target	0.63	J	mg/kg	0.63	J*	1	YES	S3VEM
Arsenic	Target	9.8		mg/kg	9.8		1	YES	S3VEM
Barium	Target	102		mg/kg	102	*	1	YES	S3VEM
Beryllium	Target	0.75		mg/kg	0.75		1	YES	S3VEM
Cadmium	Target	1.2		mg/kg	1.2	*	1	YES	S3VEM
Calcium	Target	14100		mg/kg	14100		1	YES	S3VEM
Chromium	Target	16.2		mg/kg	16.2	*	1	YES	S3VEM
Cobalt	Target	8.0		mg/kg	8.0	*	1	YES	S3VEM
Copper	Target	34.1		mg/kg	34.1		1	YES	S3VEM
Iron	Target	17600		mg/kg	17600	*	1	YES	S3VEM
Lead	Target	108		mg/kg	108		1	YES	S3VEM
Magnesium	Target	3470		mg/kg	3470	*	1	YES	S3VEM
Manganese	Target	1420		mg/kg	1420	*	1	YES	S3VEM
Nickel	Target	18.9		mg/kg	18.9		1	YES	S3VEM
Potassium	Target	3290		mg/kg	3290		1	YES	S3VEM
Selenium	Target	0.62	J	mg/kg	0.62	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.43	J	1	YES	S3VEM
Sodium	Target	75.4	J	mg/kg	75.4	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	20.2		mg/kg	20.2	*	1	YES	S3VEM
Zinc	Target	113		mg/kg	113		1	YES	S3VEM
Tin	Target	5.6		mg/kg	5.6	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F7	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 14:15:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17600		mg/kg	17600	*	1	YES	S3VEM
Antimony	Target	0.69	J	mg/kg	0.69	J*	1	YES	S3VEM
Arsenic	Target	13.8		mg/kg	13.8		1	YES	S3VEM
Barium	Target	111		mg/kg	111	*	1	YES	S3VEM
Beryllium	Target	0.79		mg/kg	0.79		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5	*	1	YES	S3VEM
Calcium	Target	8750		mg/kg	8750		1	YES	S3VEM
Chromium	Target	17.3		mg/kg	17.3	*	1	YES	S3VEM
Cobalt	Target	7.9		mg/kg	7.9	*	1	YES	S3VEM
Copper	Target	34.4		mg/kg	34.4		1	YES	S3VEM
Iron	Target	17600		mg/kg	17600	*	1	YES	S3VEM
Lead	Target	114		mg/kg	114		1	YES	S3VEM
Magnesium	Target	3660		mg/kg	3660	*	1	YES	S3VEM
Manganese	Target	1210		mg/kg	1210	*	1	YES	S3VEM
Nickel	Target	25.2		mg/kg	25.2		1	YES	S3VEM
Potassium	Target	3160		mg/kg	3160		1	YES	S3VEM
Selenium	Target	0.90	J	mg/kg	0.90	J	1	YES	S3VEM
Silver	Target	0.94	U	mg/kg	0.35	J	1	YES	S3VEM
Sodium	Target	75.6	J	mg/kg	75.6	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	22.6		mg/kg	22.6	*	1	YES	S3VEM
Zinc	Target	181		mg/kg	181		1	YES	S3VEM
Tin	Target	5.2		mg/kg	5.2	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F8	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 14:17:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	18200		mg/kg	18200	*	1	YES	S3VEM
Antimony	Target	0.71	J	mg/kg	0.71	J*	1	YES	S3VEM
Arsenic	Target	14.8		mg/kg	14.8		1	YES	S3VEM
Barium	Target	129		mg/kg	129	*	1	YES	S3VEM
Beryllium	Target	0.85		mg/kg	0.85		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5	*	1	YES	S3VEM
Calcium	Target	8720		mg/kg	8720		1	YES	S3VEM
Chromium	Target	18.4		mg/kg	18.4	*	1	YES	S3VEM
Cobalt	Target	8.0		mg/kg	8.0	*	1	YES	S3VEM
Copper	Target	41.0		mg/kg	41.0		1	YES	S3VEM
Iron	Target	18300		mg/kg	18300	*	1	YES	S3VEM
Lead	Target	141		mg/kg	141		1	YES	S3VEM
Magnesium	Target	3560		mg/kg	3560	*	1	YES	S3VEM
Manganese	Target	1210		mg/kg	1210	*	1	YES	S3VEM
Nickel	Target	24.9		mg/kg	24.9		1	YES	S3VEM
Potassium	Target	3110		mg/kg	3110		1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J	1	YES	S3VEM
Silver	Target	0.96	U	mg/kg	0.38	J	1	YES	S3VEM
Sodium	Target	74.0	J	mg/kg	74.0	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	23.9		mg/kg	23.9	*	1	YES	S3VEM
Zinc	Target	214		mg/kg	214		1	YES	S3VEM
Tin	Target	5.1		mg/kg	5.1	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2F9	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 14:24:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	19100		mg/kg	19100	*	1	YES	S3VEM
Antimony	Target	0.72	J	mg/kg	0.72	J*	1	YES	S3VEM
Arsenic	Target	14.3		mg/kg	14.3		1	YES	S3VEM
Barium	Target	114		mg/kg	114	*	1	YES	S3VEM
Beryllium	Target	0.83		mg/kg	0.83		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4	*	1	YES	S3VEM
Calcium	Target	9380		mg/kg	9380		1	YES	S3VEM
Chromium	Target	20.5		mg/kg	20.5	*	1	YES	S3VEM
Cobalt	Target	8.3		mg/kg	8.3	*	1	YES	S3VEM
Copper	Target	34.1		mg/kg	34.1		1	YES	S3VEM
Iron	Target	18500		mg/kg	18500	*	1	YES	S3VEM
Lead	Target	103		mg/kg	103		1	YES	S3VEM
Magnesium	Target	3700		mg/kg	3700	*	1	YES	S3VEM
Manganese	Target	1240		mg/kg	1240	*	1	YES	S3VEM
Nickel	Target	24.4		mg/kg	24.4		1	YES	S3VEM
Potassium	Target	2980		mg/kg	2980		1	YES	S3VEM
Selenium	Target	1.0	J	mg/kg	1.0	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.36	J	1	YES	S3VEM
Sodium	Target	73.4	J	mg/kg	73.4	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	24.1		mg/kg	24.1	*	1	YES	S3VEM
Zinc	Target	142		mg/kg	142		1	YES	S3VEM
Tin	Target	5.0	U	mg/kg	5.0	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G0	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 14:47:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20300		mg/kg	20300	*	1	YES	S3VEM
Antimony	Target	0.72	J	mg/kg	0.72	J*	1	YES	S3VEM
Arsenic	Target	14.6		mg/kg	14.6		1	YES	S3VEM
Barium	Target	116		mg/kg	116	*	1	YES	S3VEM
Beryllium	Target	0.85		mg/kg	0.85		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5	*	1	YES	S3VEM
Calcium	Target	9500		mg/kg	9500		1	YES	S3VEM
Chromium	Target	19.4		mg/kg	19.4	*	1	YES	S3VEM
Cobalt	Target	8.6		mg/kg	8.6	*	1	YES	S3VEM
Copper	Target	33.9		mg/kg	33.9		1	YES	S3VEM
Iron	Target	18900		mg/kg	18900	*	1	YES	S3VEM
Lead	Target	92.3		mg/kg	92.3		1	YES	S3VEM
Magnesium	Target	3570		mg/kg	3570	*	1	YES	S3VEM
Manganese	Target	1400		mg/kg	1400	*	1	YES	S3VEM
Nickel	Target	23.8		mg/kg	23.8		1	YES	S3VEM
Potassium	Target	3120		mg/kg	3120		1	YES	S3VEM
Selenium	Target	0.98	J	mg/kg	0.98	J	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.42	J	1	YES	S3VEM
Sodium	Target	70.3	J	mg/kg	70.3	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	24.1		mg/kg	24.1	*	1	YES	S3VEM
Zinc	Target	143		mg/kg	143		1	YES	S3VEM
Tin	Target	4.9	U	mg/kg	3.5	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G1	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/26/2018	Sample Time: 14:50:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17900		mg/kg	17900	*	1	YES	S3VEM
Antimony	Target	0.63	J	mg/kg	0.63	J*	1	YES	S3VEM
Arsenic	Target	9.6		mg/kg	9.6		1	YES	S3VEM
Barium	Target	70.0		mg/kg	70.0	*	1	YES	S3VEM
Beryllium	Target	0.65		mg/kg	0.65		1	YES	S3VEM
Cadmium	Target	1.1		mg/kg	1.1	*	1	YES	S3VEM
Calcium	Target	61600		mg/kg	61600	D	2	YES	S3VEM
Chromium	Target	14.4		mg/kg	14.4	*	1	YES	S3VEM
Cobalt	Target	6.5		mg/kg	6.5	*	1	YES	S3VEM
Copper	Target	23.6		mg/kg	23.6		1	YES	S3VEM
Iron	Target	15400		mg/kg	15400	*	1	YES	S3VEM
Lead	Target	40.6		mg/kg	40.6		1	YES	S3VEM
Magnesium	Target	10400		mg/kg	10400	*	1	YES	S3VEM
Manganese	Target	1050		mg/kg	1050	*	1	YES	S3VEM
Nickel	Target	18.4		mg/kg	18.4		1	YES	S3VEM
Potassium	Target	3570		mg/kg	3570		1	YES	S3VEM
Selenium	Target	0.46	J	mg/kg	0.46	J	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.27	J	1	YES	S3VEM
Sodium	Target	102	J	mg/kg	102	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	19.7		mg/kg	19.7	*	1	YES	S3VEM
Zinc	Target	82.0		mg/kg	82.0		1	YES	S3VEM
Tin	Target	4.9	U	mg/kg	1.8	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G2	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 15:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16400		mg/kg	16400	*	1	YES	S3VEM
Antimony	Target	0.70	J	mg/kg	0.70	J*	1	YES	S3VEM
Arsenic	Target	13.5		mg/kg	13.5		1	YES	S3VEM
Barium	Target	92.6		mg/kg	92.6	*	1	YES	S3VEM
Beryllium	Target	0.69		mg/kg	0.69		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3	*	1	YES	S3VEM
Calcium	Target	16500		mg/kg	16500		1	YES	S3VEM
Chromium	Target	16.2		mg/kg	16.2	*	1	YES	S3VEM
Cobalt	Target	6.8		mg/kg	6.8	*	1	YES	S3VEM
Copper	Target	30.6		mg/kg	30.6		1	YES	S3VEM
Iron	Target	16700		mg/kg	16700	*	1	YES	S3VEM
Lead	Target	136		mg/kg	136		1	YES	S3VEM
Magnesium	Target	6460		mg/kg	6460	*	1	YES	S3VEM
Manganese	Target	902		mg/kg	902	*	1	YES	S3VEM
Nickel	Target	22.4		mg/kg	22.4		1	YES	S3VEM
Potassium	Target	2980		mg/kg	2980		1	YES	S3VEM
Selenium	Target	0.61	J	mg/kg	0.61	J	1	YES	S3VEM
Silver	Target	0.98	U	mg/kg	0.32	J	1	YES	S3VEM
Sodium	Target	87.1	J	mg/kg	87.1	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	23.1		mg/kg	23.1	*	1	YES	S3VEM
Zinc	Target	146		mg/kg	146		1	YES	S3VEM
Tin	Target	4.9	U	mg/kg	3.5	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G3	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 15:25:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17700		mg/kg	17700	*	1	YES	S3VEM
Antimony	Target	0.72	J	mg/kg	0.72	J*	1	YES	S3VEM
Arsenic	Target	16.5		mg/kg	16.5		1	YES	S3VEM
Barium	Target	116		mg/kg	116	*	1	YES	S3VEM
Beryllium	Target	0.76		mg/kg	0.76		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5	*	1	YES	S3VEM
Calcium	Target	12700		mg/kg	12700		1	YES	S3VEM
Chromium	Target	17.2		mg/kg	17.2	*	1	YES	S3VEM
Cobalt	Target	7.4		mg/kg	7.4	*	1	YES	S3VEM
Copper	Target	35.0		mg/kg	35.0		1	YES	S3VEM
Iron	Target	17600		mg/kg	17600	*	1	YES	S3VEM
Lead	Target	188		mg/kg	188		1	YES	S3VEM
Magnesium	Target	4910		mg/kg	4910	*	1	YES	S3VEM
Manganese	Target	1050		mg/kg	1050	*	1	YES	S3VEM
Nickel	Target	24.2		mg/kg	24.2		1	YES	S3VEM
Potassium	Target	3060		mg/kg	3060		1	YES	S3VEM
Selenium	Target	0.64	J	mg/kg	0.64	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.36	J	1	YES	S3VEM
Sodium	Target	81.4	J	mg/kg	81.4	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	23.2		mg/kg	23.2	*	1	YES	S3VEM
Zinc	Target	174		mg/kg	174		1	YES	S3VEM
Tin	Target	5.0	U	mg/kg	4.5	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G4	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 15:30:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17400		mg/kg	17400	*	1	YES	S3VEM
Antimony	Target	0.62	J	mg/kg	0.62	J*	1	YES	S3VEM
Arsenic	Target	13.8		mg/kg	13.8		1	YES	S3VEM
Barium	Target	86.2		mg/kg	86.2	*	1	YES	S3VEM
Beryllium	Target	0.70		mg/kg	0.70		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3	*	1	YES	S3VEM
Calcium	Target	17200		mg/kg	17200		1	YES	S3VEM
Chromium	Target	16.8		mg/kg	16.8	*	1	YES	S3VEM
Cobalt	Target	7.1		mg/kg	7.1	*	1	YES	S3VEM
Copper	Target	30.5		mg/kg	30.5		1	YES	S3VEM
Iron	Target	16500		mg/kg	16500	*	1	YES	S3VEM
Lead	Target	122		mg/kg	122		1	YES	S3VEM
Magnesium	Target	3620		mg/kg	3620	*	1	YES	S3VEM
Manganese	Target	917		mg/kg	917	*	1	YES	S3VEM
Nickel	Target	22.5		mg/kg	22.5		1	YES	S3VEM
Potassium	Target	2920		mg/kg	2920		1	YES	S3VEM
Selenium	Target	0.39	J	mg/kg	0.39	J	1	YES	S3VEM
Silver	Target	0.93	U	mg/kg	0.31	J	1	YES	S3VEM
Sodium	Target	76.0	J	mg/kg	76.0	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	20.8		mg/kg	20.8	*	1	YES	S3VEM
Zinc	Target	124		mg/kg	124		1	YES	S3VEM
Tin	Target	4.7	U	mg/kg	3.4	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G5	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 15:38:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17900		mg/kg	17900	*	1	YES	S3VEM
Antimony	Target	0.49	J	mg/kg	0.49	J*	1	YES	S3VEM
Arsenic	Target	13.5		mg/kg	13.5		1	YES	S3VEM
Barium	Target	78.8		mg/kg	78.8	*	1	YES	S3VEM
Beryllium	Target	0.73		mg/kg	0.73		1	YES	S3VEM
Cadmium	Target	1.2		mg/kg	1.2	*	1	YES	S3VEM
Calcium	Target	21000		mg/kg	21000		1	YES	S3VEM
Chromium	Target	15.9		mg/kg	15.9	*	1	YES	S3VEM
Cobalt	Target	7.6		mg/kg	7.6	*	1	YES	S3VEM
Copper	Target	29.2		mg/kg	29.2		1	YES	S3VEM
Iron	Target	17400		mg/kg	17400	*	1	YES	S3VEM
Lead	Target	58.7		mg/kg	58.7		1	YES	S3VEM
Magnesium	Target	3860		mg/kg	3860	*	1	YES	S3VEM
Manganese	Target	1060		mg/kg	1060	*	1	YES	S3VEM
Nickel	Target	21.2		mg/kg	21.2		1	YES	S3VEM
Potassium	Target	3070		mg/kg	3070		1	YES	S3VEM
Selenium	Target	0.37	J	mg/kg	0.37	J	1	YES	S3VEM
Silver	Target	0.96	U	mg/kg	0.32	J	1	YES	S3VEM
Sodium	Target	72.1	J	mg/kg	72.1	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	21.3		mg/kg	21.3	*	1	YES	S3VEM
Zinc	Target	92.8		mg/kg	92.8		1	YES	S3VEM
Tin	Target	4.8	U	mg/kg	2.0	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G6	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/26/2018	Sample Time: 15:40:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15200		mg/kg	15200	*	1	YES	S3VEM
Antimony	Target	0.51	J	mg/kg	0.51	J*	1	YES	S3VEM
Arsenic	Target	7.5		mg/kg	7.5		1	YES	S3VEM
Barium	Target	57.8		mg/kg	57.8	*	1	YES	S3VEM
Beryllium	Target	0.58		mg/kg	0.58		1	YES	S3VEM
Cadmium	Target	0.98		mg/kg	0.98	*	1	YES	S3VEM
Calcium	Target	68800		mg/kg	68800	D	2	YES	S3VEM
Chromium	Target	12.4	J	mg/kg	12.4	*	1	YES	S3VEM
Cobalt	Target	6.3	J	mg/kg	6.3	*	1	YES	S3VEM
Copper	Target	19.6		mg/kg	19.6		1	YES	S3VEM
Iron	Target	14900	J	mg/kg	14900	*	1	YES	S3VEM
Lead	Target	20.1		mg/kg	20.1		1	YES	S3VEM
Magnesium	Target	6580		mg/kg	6580	*	1	YES	S3VEM
Manganese	Target	832	J	mg/kg	832	*	1	YES	S3VEM
Nickel	Target	18.0		mg/kg	18.0		1	YES	S3VEM
Potassium	Target	3210		mg/kg	3210		1	YES	S3VEM
Selenium	Target	3.3	U	mg/kg	3.3	U	1	YES	S3VEM
Silver	Target	0.94	U	mg/kg	0.18	J	1	YES	S3VEM
Sodium	Target	94.1	J	mg/kg	94.1	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	18.9		mg/kg	18.9	*	1	YES	S3VEM
Zinc	Target	65.6		mg/kg	65.6		1	YES	S3VEM
Tin	Target	4.7	UJ	mg/kg	1.3	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G6A	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/26/2018	Sample Time: 15:40:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	11.6		mg/kg	11.6		1	YES	S3VEM
Tin	Spike	9.5		mg/kg	9.5	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G6D	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/26/2018	Sample Time: 15:40:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16000		mg/kg	16000		1	YES	S3VEM
Antimony	Target	0.48	J	mg/kg	0.48	J	1	YES	S3VEM
Arsenic	Target	7.5		mg/kg	7.5		1	YES	S3VEM
Barium	Target	58.3		mg/kg	58.3		1	YES	S3VEM
Beryllium	Target	0.58		mg/kg	0.58		1	YES	S3VEM
Cadmium	Target	0.98		mg/kg	0.98		1	YES	S3VEM
Calcium	Target	69500		mg/kg	69500	D	2	YES	S3VEM
Chromium	Target	12.8		mg/kg	12.8		1	YES	S3VEM
Cobalt	Target	6.4		mg/kg	6.4		1	YES	S3VEM
Copper	Target	20.3		mg/kg	20.3		1	YES	S3VEM
Iron	Target	15100		mg/kg	15100		1	YES	S3VEM
Lead	Target	19.9		mg/kg	19.9		1	YES	S3VEM
Magnesium	Target	6730		mg/kg	6730		1	YES	S3VEM
Manganese	Target	836		mg/kg	836		1	YES	S3VEM
Nickel	Target	17.8		mg/kg	17.8		1	YES	S3VEM
Potassium	Target	3420		mg/kg	3420		1	YES	S3VEM
Selenium	Target	3.3	U	mg/kg	3.3	U	1	YES	S3VEM
Silver	Target	0.14	J	mg/kg	0.14	J	1	YES	S3VEM
Sodium	Target	98.0	J	mg/kg	98.0	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	19.6		mg/kg	19.6		1	YES	S3VEM
Zinc	Target	65.9		mg/kg	65.9		1	YES	S3VEM
Tin	Target	1.2	J	mg/kg	1.2	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G6L	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13500		mg/kg	13500	*	5	YES	S3VEM
Antimony	Target	28.3	U	mg/kg	28.3	U	5	YES	S3VEM
Arsenic	Target	6.1		mg/kg	6.1		5	YES	S3VEM
Barium	Target	64.1	J	mg/kg	64.1	J*	5	YES	S3VEM
Beryllium	Target	0.54	J	mg/kg	0.54	J	5	YES	S3VEM
Cadmium	Target	0.86	J	mg/kg	0.86	J*	5	YES	S3VEM
Calcium	Target	74400		mg/kg	74400	D	10	YES	S3VEM
Chromium	Target	14.4		mg/kg	14.4	*	5	YES	S3VEM
Cobalt	Target	7.6	J	mg/kg	7.6	J*	5	YES	S3VEM
Copper	Target	21.3		mg/kg	21.3		5	YES	S3VEM
Iron	Target	17600		mg/kg	17600	*	5	YES	S3VEM
Lead	Target	19.3		mg/kg	19.3		5	YES	S3VEM
Magnesium	Target	7550		mg/kg	7550	*	5	YES	S3VEM
Manganese	Target	970		mg/kg	970	*	5	YES	S3VEM
Nickel	Target	17.0	J	mg/kg	17.0	J	5	YES	S3VEM
Potassium	Target	3510		mg/kg	3510		5	YES	S3VEM
Selenium	Target	16.5	U	mg/kg	16.5	U	5	YES	S3VEM
Silver	Target	4.7	U	mg/kg	4.7	U	5	YES	S3VEM
Sodium	Target	2360	U	mg/kg	2360	U	5	YES	S3VEM
Thallium	Target	11.8	U	mg/kg	11.8	U	5	YES	S3VEM
Vanadium	Target	21.2	J	mg/kg	21.2	J*	5	YES	S3VEM
Zinc	Target	63.5		mg/kg	63.5		5	YES	S3VEM
Tin	Target	23.6	U	mg/kg	23.6	U	5	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G6S	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/26/2018	Sample Time: 15:40:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	5.5	J	mg/kg	5.5	J	1	YES	S3VEM
Arsenic	Spike	15.8		mg/kg	15.8		1	YES	S3VEM
Barium	Spike	378		mg/kg	378		1	YES	S3VEM
Beryllium	Spike	9.3		mg/kg	9.3		1	YES	S3VEM
Cadmium	Spike	10.3		mg/kg	10.3		1	YES	S3VEM
Chromium	Spike	43.1		mg/kg	43.1		1	YES	S3VEM
Cobalt	Spike	78.6		mg/kg	78.6		1	YES	S3VEM
Copper	Spike	60.4		mg/kg	60.4		1	YES	S3VEM
Lead	Spike	23.4		mg/kg	23.4		1	YES	S3VEM
Manganese	Spike	897		mg/kg	897		1	YES	S3VEM
Nickel	Spike	113		mg/kg	113		1	YES	S3VEM
Selenium	Spike	14.7		mg/kg	14.7		1	YES	S3VEM
Silver	Spike	8.1		mg/kg	8.1		1	YES	S3VEM
Thallium	Spike	7.6		mg/kg	7.6		1	YES	S3VEM
Vanadium	Spike	95.5		mg/kg	95.5		1	YES	S3VEM
Zinc	Spike	159		mg/kg	159		1	YES	S3VEM
Tin	Spike	63.0		mg/kg	63.0		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G7	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 15:29:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	19000		mg/kg	19000	*	1	YES	S3VEM
Antimony	Target	0.75	J	mg/kg	0.75	J*	1	YES	S3VEM
Arsenic	Target	17.4		mg/kg	17.4		1	YES	S3VEM
Barium	Target	127		mg/kg	127	*	1	YES	S3VEM
Beryllium	Target	0.89		mg/kg	0.89		1	YES	S3VEM
Cadmium	Target	1.6		mg/kg	1.6	*	1	YES	S3VEM
Calcium	Target	10500		mg/kg	10500		1	YES	S3VEM
Chromium	Target	18.3		mg/kg	18.3	*	1	YES	S3VEM
Cobalt	Target	8.4		mg/kg	8.4	*	1	YES	S3VEM
Copper	Target	37.6		mg/kg	37.6		1	YES	S3VEM
Iron	Target	19400		mg/kg	19400	*	1	YES	S3VEM
Lead	Target	142		mg/kg	142		1	YES	S3VEM
Magnesium	Target	3870		mg/kg	3870	*	1	YES	S3VEM
Manganese	Target	1570		mg/kg	1570	*	1	YES	S3VEM
Nickel	Target	27.0		mg/kg	27.0		1	YES	S3VEM
Potassium	Target	3590		mg/kg	3590		1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.41	J	1	YES	S3VEM
Sodium	Target	74.3	J	mg/kg	74.3	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	24.1		mg/kg	24.1	*	1	YES	S3VEM
Zinc	Target	193		mg/kg	193		1	YES	S3VEM
Tin	Target	5.0	U	mg/kg	4.4	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G8	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 15:29:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	19700		mg/kg	19700	*	1	YES	S3VEM
Antimony	Target	0.70	J	mg/kg	0.70	J*	1	YES	S3VEM
Arsenic	Target	17.6		mg/kg	17.6		1	YES	S3VEM
Barium	Target	124		mg/kg	124	*	1	YES	S3VEM
Beryllium	Target	0.90		mg/kg	0.90		1	YES	S3VEM
Cadmium	Target	1.6		mg/kg	1.6	*	1	YES	S3VEM
Calcium	Target	9890		mg/kg	9890		1	YES	S3VEM
Chromium	Target	18.2		mg/kg	18.2	*	1	YES	S3VEM
Cobalt	Target	8.2		mg/kg	8.2	*	1	YES	S3VEM
Copper	Target	37.5		mg/kg	37.5		1	YES	S3VEM
Iron	Target	19000		mg/kg	19000	*	1	YES	S3VEM
Lead	Target	137		mg/kg	137		1	YES	S3VEM
Magnesium	Target	3600		mg/kg	3600	*	1	YES	S3VEM
Manganese	Target	1470		mg/kg	1470	*	1	YES	S3VEM
Nickel	Target	26.2		mg/kg	26.2		1	YES	S3VEM
Potassium	Target	3670		mg/kg	3670		1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.38	J	1	YES	S3VEM
Sodium	Target	74.3	J	mg/kg	74.3	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	23.8		mg/kg	23.8	*	1	YES	S3VEM
Zinc	Target	183		mg/kg	183		1	YES	S3VEM
Tin	Target	5.1		mg/kg	5.1	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2G9	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 15:35:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	19900		mg/kg	19900	*	1	YES	S3VEM
Antimony	Target	0.84	J	mg/kg	0.84	J*	1	YES	S3VEM
Arsenic	Target	19.7		mg/kg	19.7		1	YES	S3VEM
Barium	Target	128		mg/kg	128	*	1	YES	S3VEM
Beryllium	Target	0.95		mg/kg	0.95		1	YES	S3VEM
Cadmium	Target	1.6		mg/kg	1.6	*	1	YES	S3VEM
Calcium	Target	10700		mg/kg	10700		1	YES	S3VEM
Chromium	Target	18.7		mg/kg	18.7	*	1	YES	S3VEM
Cobalt	Target	8.4		mg/kg	8.4	*	1	YES	S3VEM
Copper	Target	38.2		mg/kg	38.2		1	YES	S3VEM
Iron	Target	19800		mg/kg	19800	*	1	YES	S3VEM
Lead	Target	136		mg/kg	136		1	YES	S3VEM
Magnesium	Target	3630		mg/kg	3630	*	1	YES	S3VEM
Manganese	Target	1560	J	mg/kg	1560	*	1	YES	S3VEM
Nickel	Target	27.3		mg/kg	27.3		1	YES	S3VEM
Potassium	Target	3370		mg/kg	3370		1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.43	J	1	YES	S3VEM
Sodium	Target	74.0	J	mg/kg	74.0	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	24.6		mg/kg	24.6	*	1	YES	S3VEM
Zinc	Target	184		mg/kg	184		1	YES	S3VEM
Tin	Target	4.9	U	mg/kg	4.1	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2H0	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 15:40:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20500		mg/kg	20500	*	1	YES	S3VEM
Antimony	Target	0.86	J	mg/kg	0.86	J*	1	YES	S3VEM
Arsenic	Target	18.3		mg/kg	18.3		1	YES	S3VEM
Barium	Target	120		mg/kg	120	*	1	YES	S3VEM
Beryllium	Target	0.95		mg/kg	0.95		1	YES	S3VEM
Cadmium	Target	1.6		mg/kg	1.6	*	1	YES	S3VEM
Calcium	Target	9490		mg/kg	9490		1	YES	S3VEM
Chromium	Target	18.6		mg/kg	18.6	*	1	YES	S3VEM
Cobalt	Target	8.5		mg/kg	8.5	*	1	YES	S3VEM
Copper	Target	34.2		mg/kg	34.2		1	YES	S3VEM
Iron	Target	20900		mg/kg	20900	*	1	YES	S3VEM
Lead	Target	104		mg/kg	104		1	YES	S3VEM
Magnesium	Target	3530		mg/kg	3530	*	1	YES	S3VEM
Manganese	Target	1760	J	mg/kg	1760	*	1	YES	S3VEM
Nickel	Target	25.3		mg/kg	25.3		1	YES	S3VEM
Potassium	Target	3150		mg/kg	3150		1	YES	S3VEM
Selenium	Target	1.0	J	mg/kg	1.0	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.46	J	1	YES	S3VEM
Sodium	Target	66.8	J	mg/kg	66.8	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	24.3		mg/kg	24.3	*	1	YES	S3VEM
Zinc	Target	155		mg/kg	155		1	YES	S3VEM
Tin	Target	5.0	U	mg/kg	3.2	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2H1	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 16:25:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	19500		mg/kg	19500	*	1	YES	S3VEM
Antimony	Target	0.61	J	mg/kg	0.61	J*	1	YES	S3VEM
Arsenic	Target	17.3		mg/kg	17.3		1	YES	S3VEM
Barium	Target	95.1		mg/kg	95.1	*	1	YES	S3VEM
Beryllium	Target	0.86		mg/kg	0.86		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5	*	1	YES	S3VEM
Calcium	Target	14900		mg/kg	14900		1	YES	S3VEM
Chromium	Target	16.9		mg/kg	16.9	*	1	YES	S3VEM
Cobalt	Target	7.7		mg/kg	7.7	*	1	YES	S3VEM
Copper	Target	31.1		mg/kg	31.1		1	YES	S3VEM
Iron	Target	19900		mg/kg	19900	*	1	YES	S3VEM
Lead	Target	72.2		mg/kg	72.2		1	YES	S3VEM
Magnesium	Target	4710		mg/kg	4710	*	1	YES	S3VEM
Manganese	Target	1670	J	mg/kg	1670	*	1	YES	S3VEM
Nickel	Target	22.5		mg/kg	22.5		1	YES	S3VEM
Potassium	Target	3080		mg/kg	3080		1	YES	S3VEM
Selenium	Target	0.82	J	mg/kg	0.82	J	1	YES	S3VEM
Silver	Target	0.95	U	mg/kg	0.37	J	1	YES	S3VEM
Sodium	Target	69.7	J	mg/kg	69.7	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	22.7		mg/kg	22.7	*	1	YES	S3VEM
Zinc	Target	120		mg/kg	120		1	YES	S3VEM
Tin	Target	4.8	U	mg/kg	2.3	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2H2	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/26/2018	Sample Time: 16:31:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	19500		mg/kg	19500	*	1	YES	S3VEM
Antimony	Target	0.56	J	mg/kg	0.56	J*	1	YES	S3VEM
Arsenic	Target	14.1		mg/kg	14.1		1	YES	S3VEM
Barium	Target	93.1		mg/kg	93.1	*	1	YES	S3VEM
Beryllium	Target	0.81		mg/kg	0.81		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3	*	1	YES	S3VEM
Calcium	Target	41800	J	mg/kg	41800		1	YES	S3VEM
Chromium	Target	16.8		mg/kg	16.8	*	1	YES	S3VEM
Cobalt	Target	7.0		mg/kg	7.0	*	1	YES	S3VEM
Copper	Target	28.6		mg/kg	28.6		1	YES	S3VEM
Iron	Target	18400		mg/kg	18400	*	1	YES	S3VEM
Lead	Target	72.9		mg/kg	72.9		1	YES	S3VEM
Magnesium	Target	8290		mg/kg	8290	*	1	YES	S3VEM
Manganese	Target	1470		mg/kg	1470	*	1	YES	S3VEM
Nickel	Target	21.5		mg/kg	21.5		1	YES	S3VEM
Potassium	Target	3410		mg/kg	3410		1	YES	S3VEM
Selenium	Target	0.55	J	mg/kg	0.55	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.34	J	1	YES	S3VEM
Sodium	Target	87.7	J	mg/kg	87.7	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	22.2		mg/kg	22.2	*	1	YES	S3VEM
Zinc	Target	113		mg/kg	113		1	YES	S3VEM
Tin	Target	5.0	U	mg/kg	2.4	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2H3	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 13:30:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16400		mg/kg	16400	*	1	YES	S3VEM
Antimony	Target	0.67	J	mg/kg	0.67	J*	1	YES	S3VEM
Arsenic	Target	12.7		mg/kg	12.7		1	YES	S3VEM
Barium	Target	96.4		mg/kg	96.4	*	1	YES	S3VEM
Beryllium	Target	0.75		mg/kg	0.75		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3	*	1	YES	S3VEM
Calcium	Target	6150		mg/kg	6150		1	YES	S3VEM
Chromium	Target	15.7		mg/kg	15.7	*	1	YES	S3VEM
Cobalt	Target	7.3		mg/kg	7.3	*	1	YES	S3VEM
Copper	Target	34.0		mg/kg	34.0		1	YES	S3VEM
Iron	Target	17900		mg/kg	17900	*	1	YES	S3VEM
Lead	Target	81.8		mg/kg	81.8		1	YES	S3VEM
Magnesium	Target	2970		mg/kg	2970	*	1	YES	S3VEM
Manganese	Target	1180		mg/kg	1180	*	1	YES	S3VEM
Nickel	Target	23.0		mg/kg	23.0		1	YES	S3VEM
Potassium	Target	3000		mg/kg	3000		1	YES	S3VEM
Selenium	Target	0.97	J	mg/kg	0.97	J	1	YES	S3VEM
Silver	Target	0.93	U	mg/kg	0.26	J	1	YES	S3VEM
Sodium	Target	62.5	J	mg/kg	62.5	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	21.4		mg/kg	21.4	*	1	YES	S3VEM
Zinc	Target	125		mg/kg	125		1	YES	S3VEM
Tin	Target	4.6	U	mg/kg	3.6	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2H4	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 13:37:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17200		mg/kg	17200	*	1	YES	S3VEM
Antimony	Target	0.85	J	mg/kg	0.85	J*	1	YES	S3VEM
Arsenic	Target	14.2		mg/kg	14.2		1	YES	S3VEM
Barium	Target	106		mg/kg	106	*	1	YES	S3VEM
Beryllium	Target	0.81		mg/kg	0.81		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4	*	1	YES	S3VEM
Calcium	Target	6830		mg/kg	6830		1	YES	S3VEM
Chromium	Target	18.7		mg/kg	18.7	*	1	YES	S3VEM
Cobalt	Target	7.5		mg/kg	7.5	*	1	YES	S3VEM
Copper	Target	41.8		mg/kg	41.8		1	YES	S3VEM
Iron	Target	18800		mg/kg	18800	*	1	YES	S3VEM
Lead	Target	85.6		mg/kg	85.6		1	YES	S3VEM
Magnesium	Target	3230		mg/kg	3230	*	1	YES	S3VEM
Manganese	Target	1310		mg/kg	1310	*	1	YES	S3VEM
Nickel	Target	25.2		mg/kg	25.2		1	YES	S3VEM
Potassium	Target	3010		mg/kg	3010		1	YES	S3VEM
Selenium	Target	1.0	J	mg/kg	1.0	J	1	YES	S3VEM
Silver	Target	0.95	U	mg/kg	0.30	J	1	YES	S3VEM
Sodium	Target	63.3	J	mg/kg	63.3	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	22.3		mg/kg	22.3	*	1	YES	S3VEM
Zinc	Target	131		mg/kg	131		1	YES	S3VEM
Tin	Target	4.8	U	mg/kg	3.9	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2H5	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 13:53:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17800		mg/kg	17800	*	1	YES	S3VEM
Antimony	Target	0.80	J	mg/kg	0.80	J*	1	YES	S3VEM
Arsenic	Target	12.7		mg/kg	12.7		1	YES	S3VEM
Barium	Target	104		mg/kg	104	*	1	YES	S3VEM
Beryllium	Target	0.78		mg/kg	0.78		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3	*	1	YES	S3VEM
Calcium	Target	9110		mg/kg	9110		1	YES	S3VEM
Chromium	Target	16.4		mg/kg	16.4	*	1	YES	S3VEM
Cobalt	Target	7.3		mg/kg	7.3	*	1	YES	S3VEM
Copper	Target	36.3		mg/kg	36.3		1	YES	S3VEM
Iron	Target	18600		mg/kg	18600	*	1	YES	S3VEM
Lead	Target	68.9		mg/kg	68.9		1	YES	S3VEM
Magnesium	Target	3410		mg/kg	3410	*	1	YES	S3VEM
Manganese	Target	1330		mg/kg	1330	*	1	YES	S3VEM
Nickel	Target	21.0		mg/kg	21.0		1	YES	S3VEM
Potassium	Target	3060		mg/kg	3060		1	YES	S3VEM
Selenium	Target	0.82	J	mg/kg	0.82	J	1	YES	S3VEM
Silver	Target	0.95	U	mg/kg	0.30	J	1	YES	S3VEM
Sodium	Target	61.3	J	mg/kg	61.3	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	21.8		mg/kg	21.8	*	1	YES	S3VEM
Zinc	Target	113		mg/kg	113		1	YES	S3VEM
Tin	Target	4.8	U	mg/kg	3.1	J*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2F6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20.0	U	mg/kg	20.0	U	1	YES	S3VEM
Antimony	Target	6.0	U	mg/kg	6.0	U	1	YES	S3VEM
Arsenic	Target			mg/kg	-0.31	J	1	YES	S3VEM
Barium	Target	20.0	U	mg/kg	20.0	U	1	YES	S3VEM
Beryllium	Target	0.50	U	mg/kg	0.50	U	1	YES	S3VEM
Cadmium	Target			mg/kg	-0.016	J	1	YES	S3VEM
Calcium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Chromium	Target	0.028	J	mg/kg	0.028	J	1	YES	S3VEM
Cobalt	Target	5.0	U	mg/kg	5.0	U	1	YES	S3VEM
Copper	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Iron	Target	10.0	U	mg/kg	10.0	U	1	YES	S3VEM
Lead	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Magnesium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Manganese	Target	1.5	U	mg/kg	1.5	U	1	YES	S3VEM
Nickel	Target			mg/kg	-0.12	J	1	YES	S3VEM
Potassium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Selenium	Target	3.5	U	mg/kg	3.5	U	1	YES	S3VEM
Silver	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Sodium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Thallium	Target			mg/kg	-0.19	J	1	YES	S3VEM
Vanadium	Target	5.0	U	mg/kg	5.0	U	1	YES	S3VEM
Zinc	Target	0.16	J	mg/kg	0.16	J	1	YES	S3VEM
Tin	Target	1.0	J	mg/kg	1.0	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project | **GroupID: 47720/EPW14029/MBE2F6** | **Lab Name: Bonner Analytical Testing Co.**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

EXECUTIVE NARRATIVE

Case No.: 47720
Site: Eighteenmile Creek
Number of Samples: 20 (Soil)
Analysis: Metals (ICP-AES, MA# 2822.0)

SDG No.: MBE2H6
Laboratory: Bonner Analytical Testing Co.
Sampling dates: 6/26/18 and 6/27/18
Validation SOP: HW-3a (Rev 1)

QAPP
Contractor: Weston Solutions
Reference: DCN: RST3-04-D-0200

SUMMARY OF DEFINITIONS:

Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
Sample MBE2J3 has analytes that have been qualified J, J+ or J-.

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENT:	One or more non-detected analytes exceeded the removal levels of resident soil for one or more samples.

Reviewer Name(s): Jianwei Huang

Approver's Signature: **Date: 08/10/2018**

Name: **Narendra Kumar**

Affiliation: USEPA/R2/HWSB/HWSS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	**Explanation**		
	INORGANICS	**ORGANICS**	**CHLORINATED DIOXIN/FURAN**
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: METALS ICP-AES

The current SOP HW-3a (Rev 1) September 2016, USEPA Region II for the evaluation of ICP-AES metals generated through Statement of Work ISOM02.2, and any future editorial revisions of ISOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

The following sample has analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Beryllium MBE2K2

The following sample has analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated ICB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Beryllium MBE2K2

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated PB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Tin MBE2H6, MBE2H7, MBE2K0, MBE2K1, MBE2K2, MBE2K3, MBE2K4

Field Blank- MBE2H8, MBE2N1

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated Field Blank analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Silver MBE2H6, MBE2H7, MBE2H9, MBE2J0, MBE2J1, MBE2J2, MBE2J3, MBE2J4, MBE2J5, MBE2J6, MBE2J7, MBE2J8, MBE2J9, MBE2K0, MBE2K1, MBE2K3, MBE2K4, MBE2K5, MBE2K6

Sodium MBE2H9, MBE2J0, MBE2J1, MBE2J2, MBE2J3, MBE2J4, MBE2J5, MBE2J6, MBE2J7, MBE2J8, MBE2J9, MBE2K0, MBE2K1, MBE2K3, MBE2K4, MBE2K5, MBE2K6

4. **INTERFERENCE CHECK SAMPLE**

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the

samples exists. In general, ICP sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

The following sample is associated with Matrix Spike sample that has spike analyte %R <30% and Post-digestion spike analyte %R greater than or equal to 75%. Detects are qualified as J. Non-detects are qualified as UJ.

Antimony MBE2J3

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 35% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

7. FIELD DUPLICATE (MBE2J2/MBE2J3)

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 50% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of 2x the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

No problems were found for this criterion.

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by Inductively Coupled Plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 15. For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

The following sample is associated with Serial Dilution (SD) sample that has analyte percent difference %D greater than 15% but less than 120%. The original sample analyte concentrations are greater than 50xMDLs. Detects are qualified as estimated J. Non-detects are not qualified.

Barium, Calcium, Chromium, Cobalt, Iron, Magnesium and Manganese MBE2J3

10. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: LCS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	39.4		mg/kg	39.4		1	YES	S3VEM
Antimony	Spike	11.9		mg/kg	11.9		1	YES	S3VEM
Arsenic	Spike	1.7		mg/kg	1.7		1	YES	S3VEM
Barium	Spike	41.8		mg/kg	41.8		1	YES	S3VEM
Beryllium	Spike	0.96		mg/kg	0.96		1	YES	S3VEM
Cadmium	Spike	0.97		mg/kg	0.97		1	YES	S3VEM
Calcium	Spike	1030		mg/kg	1030		1	YES	S3VEM
Chromium	Spike	2.1		mg/kg	2.1		1	YES	S3VEM
Cobalt	Spike	10.3		mg/kg	10.3		1	YES	S3VEM
Copper	Spike	5.9		mg/kg	5.9		1	YES	S3VEM
Iron	Spike	21.4		mg/kg	21.4		1	YES	S3VEM
Lead	Spike	2.1		mg/kg	2.1		1	YES	S3VEM
Magnesium	Spike	961		mg/kg	961		1	YES	S3VEM
Manganese	Spike	3.1		mg/kg	3.1		1	YES	S3VEM
Nickel	Spike	8.1		mg/kg	8.1		1	YES	S3VEM
Potassium	Spike	979		mg/kg	979		1	YES	S3VEM
Selenium	Spike	6.7		mg/kg	6.7		1	YES	S3VEM
Silver	Spike	1.9		mg/kg	1.9		1	YES	S3VEM
Sodium	Spike	985		mg/kg	985		1	YES	S3VEM
Thallium	Spike	4.9		mg/kg	4.9		1	YES	S3VEM
Vanadium	Spike	10.4		mg/kg	10.4		1	YES	S3VEM
Zinc	Spike	12.8		mg/kg	12.8		1	YES	S3VEM
Tin	Spike	11.9		mg/kg	11.9		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2H6	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 14:10:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16000		mg/kg	16000		1	YES	S3VEM
Antimony	Target	0.70	J	mg/kg	0.70	J*	1	YES	S3VEM
Arsenic	Target	8.6		mg/kg	8.6	*	1	YES	S3VEM
Barium	Target	75.7		mg/kg	75.7	*	1	YES	S3VEM
Beryllium	Target	0.71		mg/kg	0.71		1	YES	S3VEM
Cadmium	Target	1.1		mg/kg	1.1	*	1	YES	S3VEM
Calcium	Target	17300		mg/kg	17300	*	1	YES	S3VEM
Chromium	Target	16.6		mg/kg	16.6	*	1	YES	S3VEM
Cobalt	Target	6.2		mg/kg	6.2	*	1	YES	S3VEM
Copper	Target	28.6		mg/kg	28.6		1	YES	S3VEM
Iron	Target	16500		mg/kg	16500	*	1	YES	S3VEM
Lead	Target	38.6		mg/kg	38.6		1	YES	S3VEM
Magnesium	Target	4060		mg/kg	4060	*	1	YES	S3VEM
Manganese	Target	1140		mg/kg	1140	*	1	YES	S3VEM
Nickel	Target	21.0		mg/kg	21.0		1	YES	S3VEM
Potassium	Target	2570		mg/kg	2570	*	1	YES	S3VEM
Selenium	Target	0.56	J	mg/kg	0.56	J	1	YES	S3VEM
Silver	Target	0.83	U	mg/kg	0.25	J	1	YES	S3VEM
Sodium	Target	75.5	J	mg/kg	75.5	J	1	YES	S3VEM
Thallium	Target	2.1	U	mg/kg	2.1	U	1	YES	S3VEM
Vanadium	Target	18.5		mg/kg	18.5	*	1	YES	S3VEM
Zinc	Target	77.2		mg/kg	77.2		1	YES	S3VEM
Tin	Target	4.2	U	mg/kg	2.2	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2H7	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/26/2018	Sample Time: 14:15:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15200		mg/kg	15200		1	YES	S3VEM
Antimony	Target	0.51	J	mg/kg	0.51	J*	1	YES	S3VEM
Arsenic	Target	7.5		mg/kg	7.5	*	1	YES	S3VEM
Barium	Target	69.4		mg/kg	69.4	*	1	YES	S3VEM
Beryllium	Target	0.66		mg/kg	0.66		1	YES	S3VEM
Cadmium	Target	1.0		mg/kg	1.0	*	1	YES	S3VEM
Calcium	Target	25200		mg/kg	25200	*	1	YES	S3VEM
Chromium	Target	13.7		mg/kg	13.7	*	1	YES	S3VEM
Cobalt	Target	5.7		mg/kg	5.7	*	1	YES	S3VEM
Copper	Target	26.6		mg/kg	26.6		1	YES	S3VEM
Iron	Target	16100		mg/kg	16100	*	1	YES	S3VEM
Lead	Target	26.1		mg/kg	26.1		1	YES	S3VEM
Magnesium	Target	6470		mg/kg	6470	*	1	YES	S3VEM
Manganese	Target	1010		mg/kg	1010	*	1	YES	S3VEM
Nickel	Target	17.9		mg/kg	17.9		1	YES	S3VEM
Potassium	Target	2630		mg/kg	2630	*	1	YES	S3VEM
Selenium	Target	0.62	J	mg/kg	0.62	J	1	YES	S3VEM
Silver	Target	0.93	U	mg/kg	0.23	J	1	YES	S3VEM
Sodium	Target	85.7	J	mg/kg	85.7	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	17.7		mg/kg	17.7	*	1	YES	S3VEM
Zinc	Target	66.7		mg/kg	66.7		1	YES	S3VEM
Tin	Target	4.7	U	mg/kg	1.8	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2H9	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 08:21:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13300		mg/kg	13300		1	YES	S3VEM
Antimony	Target	0.78	J	mg/kg	0.78	J*	1	YES	S3VEM
Arsenic	Target	12.1		mg/kg	12.1	*	1	YES	S3VEM
Barium	Target	156		mg/kg	156	*	1	YES	S3VEM
Beryllium	Target	0.73		mg/kg	0.73		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3	*	1	YES	S3VEM
Calcium	Target	15800		mg/kg	15800	*	1	YES	S3VEM
Chromium	Target	21.5		mg/kg	21.5	*	1	YES	S3VEM
Cobalt	Target	6.7		mg/kg	6.7	*	1	YES	S3VEM
Copper	Target	46.4		mg/kg	46.4		1	YES	S3VEM
Iron	Target	16500		mg/kg	16500	*	1	YES	S3VEM
Lead	Target	219		mg/kg	219		1	YES	S3VEM
Magnesium	Target	5540		mg/kg	5540	*	1	YES	S3VEM
Manganese	Target	529		mg/kg	529	*	1	YES	S3VEM
Nickel	Target	29.4		mg/kg	29.4		1	YES	S3VEM
Potassium	Target	1940		mg/kg	1940	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J	1	YES	S3VEM
Silver	Target	1.00	U	mg/kg	0.35	J	1	YES	S3VEM
Sodium	Target	500	U	mg/kg	119	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	21.6		mg/kg	21.6	*	1	YES	S3VEM
Zinc	Target	209		mg/kg	209		1	YES	S3VEM
Tin	Target	9.7		mg/kg	9.7		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J0	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 08:28:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	9110		mg/kg	9110		1	YES	S3VEM
Antimony	Target	0.48	J	mg/kg	0.48	J*	1	YES	S3VEM
Arsenic	Target	11.1		mg/kg	11.1	*	1	YES	S3VEM
Barium	Target	139		mg/kg	139	*	1	YES	S3VEM
Beryllium	Target	0.65		mg/kg	0.65		1	YES	S3VEM
Cadmium	Target	1.1		mg/kg	1.1	*	1	YES	S3VEM
Calcium	Target	16600		mg/kg	16600	*	1	YES	S3VEM
Chromium	Target	18.0		mg/kg	18.0	*	1	YES	S3VEM
Cobalt	Target	5.3		mg/kg	5.3	*	1	YES	S3VEM
Copper	Target	43.5		mg/kg	43.5		1	YES	S3VEM
Iron	Target	11300		mg/kg	11300	*	1	YES	S3VEM
Lead	Target	207		mg/kg	207		1	YES	S3VEM
Magnesium	Target	4660		mg/kg	4660	*	1	YES	S3VEM
Manganese	Target	433		mg/kg	433	*	1	YES	S3VEM
Nickel	Target	23.7		mg/kg	23.7		1	YES	S3VEM
Potassium	Target	1130		mg/kg	1130	*	1	YES	S3VEM
Selenium	Target	1.3	J	mg/kg	1.3	J	1	YES	S3VEM
Silver	Target	0.78	U	mg/kg	0.32	J	1	YES	S3VEM
Sodium	Target	391	U	mg/kg	94.7	J	1	YES	S3VEM
Thallium	Target	2.0	U	mg/kg	2.0	U	1	YES	S3VEM
Vanadium	Target	15.8		mg/kg	15.8	*	1	YES	S3VEM
Zinc	Target	187		mg/kg	187		1	YES	S3VEM
Tin	Target	10.5		mg/kg	10.5		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J1	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 08:39:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14400		mg/kg	14400		1	YES	S3VEM
Antimony	Target	0.90	J	mg/kg	0.90	J*	1	YES	S3VEM
Arsenic	Target	18.5		mg/kg	18.5	*	1	YES	S3VEM
Barium	Target	187		mg/kg	187	*	1	YES	S3VEM
Beryllium	Target	0.80		mg/kg	0.80		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5	*	1	YES	S3VEM
Calcium	Target	19100		mg/kg	19100	*	1	YES	S3VEM
Chromium	Target	29.1		mg/kg	29.1	*	1	YES	S3VEM
Cobalt	Target	7.8		mg/kg	7.8	*	1	YES	S3VEM
Copper	Target	61.2		mg/kg	61.2		1	YES	S3VEM
Iron	Target	18500		mg/kg	18500	*	1	YES	S3VEM
Lead	Target	277		mg/kg	277		1	YES	S3VEM
Magnesium	Target	4830		mg/kg	4830	*	1	YES	S3VEM
Manganese	Target	580		mg/kg	580	*	1	YES	S3VEM
Nickel	Target	32.3		mg/kg	32.3		1	YES	S3VEM
Potassium	Target	1810		mg/kg	1810	*	1	YES	S3VEM
Selenium	Target	1.3	J	mg/kg	1.3	J	1	YES	S3VEM
Silver	Target	0.83	U	mg/kg	0.47	J	1	YES	S3VEM
Sodium	Target	417	U	mg/kg	129	J	1	YES	S3VEM
Thallium	Target	2.1	U	mg/kg	2.1	U	1	YES	S3VEM
Vanadium	Target	23.7		mg/kg	23.7	*	1	YES	S3VEM
Zinc	Target	220		mg/kg	220		1	YES	S3VEM
Tin	Target	10.6		mg/kg	10.6		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J2	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 08:55:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16400		mg/kg	16400		1	YES	S3VEM
Antimony	Target	0.86	J	mg/kg	0.86	J*	1	YES	S3VEM
Arsenic	Target	13.9		mg/kg	13.9	*	1	YES	S3VEM
Barium	Target	183		mg/kg	183	*	1	YES	S3VEM
Beryllium	Target	0.74		mg/kg	0.74		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3	*	1	YES	S3VEM
Calcium	Target	18100		mg/kg	18100	*	1	YES	S3VEM
Chromium	Target	24.9		mg/kg	24.9	*	1	YES	S3VEM
Cobalt	Target	7.4		mg/kg	7.4	*	1	YES	S3VEM
Copper	Target	49.0		mg/kg	49.0		1	YES	S3VEM
Iron	Target	18200		mg/kg	18200	*	1	YES	S3VEM
Lead	Target	197		mg/kg	197		1	YES	S3VEM
Magnesium	Target	5030		mg/kg	5030	*	1	YES	S3VEM
Manganese	Target	664		mg/kg	664	*	1	YES	S3VEM
Nickel	Target	27.4		mg/kg	27.4		1	YES	S3VEM
Potassium	Target	2080		mg/kg	2080	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J	1	YES	S3VEM
Silver	Target	0.95	U	mg/kg	0.41	J	1	YES	S3VEM
Sodium	Target	476	U	mg/kg	121	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	24.3		mg/kg	24.3	*	1	YES	S3VEM
Zinc	Target	175		mg/kg	175		1	YES	S3VEM
Tin	Target	8.7		mg/kg	8.7		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J3	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 08:55:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15300		mg/kg	15300		1	YES	S3VEM
Antimony	Target	0.79	J	mg/kg	0.79	J*	1	YES	S3VEM
Arsenic	Target	14.2		mg/kg	14.2	*	1	YES	S3VEM
Barium	Target	188	J	mg/kg	188	*	1	YES	S3VEM
Beryllium	Target	0.72		mg/kg	0.72		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3	*	1	YES	S3VEM
Calcium	Target	19500	J	mg/kg	19500	*	1	YES	S3VEM
Chromium	Target	23.3	J	mg/kg	23.3	*	1	YES	S3VEM
Cobalt	Target	7.4	J	mg/kg	7.4	*	1	YES	S3VEM
Copper	Target	50.3		mg/kg	50.3		1	YES	S3VEM
Iron	Target	17100	J	mg/kg	17100	*	1	YES	S3VEM
Lead	Target	215		mg/kg	215		1	YES	S3VEM
Magnesium	Target	5140	J	mg/kg	5140	*	1	YES	S3VEM
Manganese	Target	655	J	mg/kg	655	*	1	YES	S3VEM
Nickel	Target	25.5		mg/kg	25.5		1	YES	S3VEM
Potassium	Target	1990		mg/kg	1990	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	1.00	U	mg/kg	0.39	J	1	YES	S3VEM
Sodium	Target	500	U	mg/kg	122	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	23.4		mg/kg	23.4	*	1	YES	S3VEM
Zinc	Target	183		mg/kg	183		1	YES	S3VEM
Tin	Target	9.0		mg/kg	9.0		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J3A	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/27/2018	Sample Time: 08:55:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	11.9		mg/kg	11.9		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J3D	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/27/2018	Sample Time: 08:55:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15500		mg/kg	15500		1	YES	S3VEM
Antimony	Target	0.73	J	mg/kg	0.73	J	1	YES	S3VEM
Arsenic	Target	14.0		mg/kg	14.0		1	YES	S3VEM
Barium	Target	192		mg/kg	192		1	YES	S3VEM
Beryllium	Target	0.73		mg/kg	0.73		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3		1	YES	S3VEM
Calcium	Target	19600		mg/kg	19600		1	YES	S3VEM
Chromium	Target	23.5		mg/kg	23.5		1	YES	S3VEM
Cobalt	Target	7.4		mg/kg	7.4		1	YES	S3VEM
Copper	Target	49.7		mg/kg	49.7		1	YES	S3VEM
Iron	Target	17200		mg/kg	17200		1	YES	S3VEM
Lead	Target	217		mg/kg	217		1	YES	S3VEM
Magnesium	Target	5170		mg/kg	5170		1	YES	S3VEM
Manganese	Target	668		mg/kg	668		1	YES	S3VEM
Nickel	Target	26.3		mg/kg	26.3		1	YES	S3VEM
Potassium	Target	2030		mg/kg	2030		1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.39	J	mg/kg	0.39	J	1	YES	S3VEM
Sodium	Target	125	J	mg/kg	125	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	23.5		mg/kg	23.5		1	YES	S3VEM
Zinc	Target	182		mg/kg	182		1	YES	S3VEM
Tin	Target	9.2		mg/kg	9.2		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J3L	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14400		mg/kg	14400		5	YES	S3VEM
Antimony	Target	30.0	U	mg/kg	30.0	U	5	YES	S3VEM
Arsenic	Target	12.3		mg/kg	12.3	*	5	YES	S3VEM
Barium	Target	219		mg/kg	219	*	5	YES	S3VEM
Beryllium	Target	0.71	J	mg/kg	0.71	J	5	YES	S3VEM
Cadmium	Target	1.2	J	mg/kg	1.2	J*	5	YES	S3VEM
Calcium	Target	23300		mg/kg	23300	*	5	YES	S3VEM
Chromium	Target	27.2		mg/kg	27.2	*	5	YES	S3VEM
Cobalt	Target	8.6	J	mg/kg	8.6	J*	5	YES	S3VEM
Copper	Target	54.8		mg/kg	54.8		5	YES	S3VEM
Iron	Target	20700		mg/kg	20700	*	5	YES	S3VEM
Lead	Target	207		mg/kg	207		5	YES	S3VEM
Magnesium	Target	6080		mg/kg	6080	*	5	YES	S3VEM
Manganese	Target	787		mg/kg	787	*	5	YES	S3VEM
Nickel	Target	23.8		mg/kg	23.8		5	YES	S3VEM
Potassium	Target	2290	J	mg/kg	2290	J*	5	YES	S3VEM
Selenium	Target	17.5	U	mg/kg	17.5	U	5	YES	S3VEM
Silver	Target	0.46	J	mg/kg	0.46	J	5	YES	S3VEM
Sodium	Target	140	J	mg/kg	140	J	5	YES	S3VEM
Thallium	Target	12.5	U	mg/kg	12.5	U	5	YES	S3VEM
Vanadium	Target	26.7		mg/kg	26.7	*	5	YES	S3VEM
Zinc	Target	171		mg/kg	171		5	YES	S3VEM
Tin	Target	10.6	J	mg/kg	10.6	J	5	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J3S	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/27/2018	Sample Time: 08:55:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	6.5		mg/kg	6.5		1	YES	S3VEM
Arsenic	Spike	22.1		mg/kg	22.1		1	YES	S3VEM
Barium	Spike	527		mg/kg	527		1	YES	S3VEM
Beryllium	Spike	9.9		mg/kg	9.9		1	YES	S3VEM
Cadmium	Spike	11.1		mg/kg	11.1		1	YES	S3VEM
Chromium	Spike	55.3		mg/kg	55.3		1	YES	S3VEM
Cobalt	Spike	86.1		mg/kg	86.1		1	YES	S3VEM
Copper	Spike	94.1		mg/kg	94.1		1	YES	S3VEM
Lead	Spike	213		mg/kg	213		1	YES	S3VEM
Manganese	Spike	739		mg/kg	739		1	YES	S3VEM
Nickel	Spike	126		mg/kg	126		1	YES	S3VEM
Selenium	Spike	16.0		mg/kg	16.0		1	YES	S3VEM
Silver	Spike	8.4		mg/kg	8.4		1	YES	S3VEM
Thallium	Spike	7.7		mg/kg	7.7		1	YES	S3VEM
Vanadium	Spike	104		mg/kg	104		1	YES	S3VEM
Zinc	Spike	277		mg/kg	277		1	YES	S3VEM
Tin	Spike	83.5		mg/kg	83.5		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J4	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 09:00:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14900		mg/kg	14900		1	YES	S3VEM
Antimony	Target	0.61	J	mg/kg	0.61	J*	1	YES	S3VEM
Arsenic	Target	10.7		mg/kg	10.7	*	1	YES	S3VEM
Barium	Target	257		mg/kg	257	*	1	YES	S3VEM
Beryllium	Target	0.65		mg/kg	0.65		1	YES	S3VEM
Cadmium	Target	1.2		mg/kg	1.2	*	1	YES	S3VEM
Calcium	Target	25400		mg/kg	25400	*	1	YES	S3VEM
Chromium	Target	19.3		mg/kg	19.3	*	1	YES	S3VEM
Cobalt	Target	6.6		mg/kg	6.6	*	1	YES	S3VEM
Copper	Target	39.3		mg/kg	39.3		1	YES	S3VEM
Iron	Target	15800		mg/kg	15800	*	1	YES	S3VEM
Lead	Target	194		mg/kg	194		1	YES	S3VEM
Magnesium	Target	6990		mg/kg	6990	*	1	YES	S3VEM
Manganese	Target	1160		mg/kg	1160	*	1	YES	S3VEM
Nickel	Target	20.4		mg/kg	20.4		1	YES	S3VEM
Potassium	Target	2070		mg/kg	2070	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.95	U	mg/kg	0.48	J	1	YES	S3VEM
Sodium	Target	476	U	mg/kg	116	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	21.1		mg/kg	21.1	*	1	YES	S3VEM
Zinc	Target	155		mg/kg	155		1	YES	S3VEM
Tin	Target	7.8		mg/kg	7.8		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J5	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 08:45:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12800		mg/kg	12800		1	YES	S3VEM
Antimony	Target	0.70	J	mg/kg	0.70	J*	1	YES	S3VEM
Arsenic	Target	9.9		mg/kg	9.9	*	1	YES	S3VEM
Barium	Target	166		mg/kg	166	*	1	YES	S3VEM
Beryllium	Target	0.59		mg/kg	0.59		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4	*	1	YES	S3VEM
Calcium	Target	29600		mg/kg	29600	*	1	YES	S3VEM
Chromium	Target	22.2		mg/kg	22.2	*	1	YES	S3VEM
Cobalt	Target	6.1		mg/kg	6.1	*	1	YES	S3VEM
Copper	Target	66.1		mg/kg	66.1		1	YES	S3VEM
Iron	Target	14200		mg/kg	14200	*	1	YES	S3VEM
Lead	Target	277		mg/kg	277		1	YES	S3VEM
Magnesium	Target	7910		mg/kg	7910	*	1	YES	S3VEM
Manganese	Target	598		mg/kg	598	*	1	YES	S3VEM
Nickel	Target	24.1		mg/kg	24.1		1	YES	S3VEM
Potassium	Target	2290		mg/kg	2290	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.43	J	1	YES	S3VEM
Sodium	Target	495	U	mg/kg	127	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	19.7		mg/kg	19.7	*	1	YES	S3VEM
Zinc	Target	282		mg/kg	282		1	YES	S3VEM
Tin	Target	18.6		mg/kg	18.6		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J6	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 08:50:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13700		mg/kg	13700		1	YES	S3VEM
Antimony	Target	0.71	J	mg/kg	0.71	J*	1	YES	S3VEM
Arsenic	Target	10.7		mg/kg	10.7	*	1	YES	S3VEM
Barium	Target	148		mg/kg	148	*	1	YES	S3VEM
Beryllium	Target	0.63		mg/kg	0.63		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4	*	1	YES	S3VEM
Calcium	Target	32100		mg/kg	32100	*	1	YES	S3VEM
Chromium	Target	21.5		mg/kg	21.5	*	1	YES	S3VEM
Cobalt	Target	6.5		mg/kg	6.5	*	1	YES	S3VEM
Copper	Target	65.9		mg/kg	65.9		1	YES	S3VEM
Iron	Target	15200		mg/kg	15200	*	1	YES	S3VEM
Lead	Target	221		mg/kg	221		1	YES	S3VEM
Magnesium	Target	8200		mg/kg	8200	*	1	YES	S3VEM
Manganese	Target	808		mg/kg	808	*	1	YES	S3VEM
Nickel	Target	24.7		mg/kg	24.7		1	YES	S3VEM
Potassium	Target	2310		mg/kg	2310	*	1	YES	S3VEM
Selenium	Target	0.83	J	mg/kg	0.83	J	1	YES	S3VEM
Silver	Target	0.94	U	mg/kg	0.59	J	1	YES	S3VEM
Sodium	Target	472	U	mg/kg	120	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	19.7		mg/kg	19.7	*	1	YES	S3VEM
Zinc	Target	272		mg/kg	272		1	YES	S3VEM
Tin	Target	13.8		mg/kg	13.8		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J7	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 08:55:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14500		mg/kg	14500		1	YES	S3VEM
Antimony	Target	0.73	J	mg/kg	0.73	J*	1	YES	S3VEM
Arsenic	Target	11.9		mg/kg	11.9	*	1	YES	S3VEM
Barium	Target	177		mg/kg	177	*	1	YES	S3VEM
Beryllium	Target	0.64		mg/kg	0.64		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5	*	1	YES	S3VEM
Calcium	Target	40400		mg/kg	40400	D*	2	YES	S3VEM
Chromium	Target	24.2		mg/kg	24.2	*	1	YES	S3VEM
Cobalt	Target	6.5		mg/kg	6.5	*	1	YES	S3VEM
Copper	Target	77.4		mg/kg	77.4		1	YES	S3VEM
Iron	Target	15600		mg/kg	15600	*	1	YES	S3VEM
Lead	Target	308		mg/kg	308		1	YES	S3VEM
Magnesium	Target	8480		mg/kg	8480	*	1	YES	S3VEM
Manganese	Target	713		mg/kg	713	*	1	YES	S3VEM
Nickel	Target	26.0		mg/kg	26.0		1	YES	S3VEM
Potassium	Target	2400		mg/kg	2400	*	1	YES	S3VEM
Selenium	Target	0.89	J	mg/kg	0.89	J	1	YES	S3VEM
Silver	Target	0.93	U	mg/kg	0.54	J	1	YES	S3VEM
Sodium	Target	467	U	mg/kg	127	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	20.3		mg/kg	20.3	*	1	YES	S3VEM
Zinc	Target	295		mg/kg	295		1	YES	S3VEM
Tin	Target	26.5		mg/kg	26.5		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J8	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 09:24:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14500		mg/kg	14500		1	YES	S3VEM
Antimony	Target	0.63	J	mg/kg	0.63	J*	1	YES	S3VEM
Arsenic	Target	10.2		mg/kg	10.2	*	1	YES	S3VEM
Barium	Target	151		mg/kg	151	*	1	YES	S3VEM
Beryllium	Target	0.60		mg/kg	0.60		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3	*	1	YES	S3VEM
Calcium	Target	46200		mg/kg	46200	D*	2	YES	S3VEM
Chromium	Target	17.7		mg/kg	17.7	*	1	YES	S3VEM
Cobalt	Target	5.9		mg/kg	5.9	*	1	YES	S3VEM
Copper	Target	55.0		mg/kg	55.0		1	YES	S3VEM
Iron	Target	14000		mg/kg	14000	*	1	YES	S3VEM
Lead	Target	191		mg/kg	191		1	YES	S3VEM
Magnesium	Target	8900		mg/kg	8900	*	1	YES	S3VEM
Manganese	Target	680		mg/kg	680	*	1	YES	S3VEM
Nickel	Target	20.4		mg/kg	20.4		1	YES	S3VEM
Potassium	Target	2300		mg/kg	2300	*	1	YES	S3VEM
Selenium	Target	0.64	J	mg/kg	0.64	J	1	YES	S3VEM
Silver	Target	0.79	U	mg/kg	0.43	J	1	YES	S3VEM
Sodium	Target	394	U	mg/kg	123	J	1	YES	S3VEM
Thallium	Target	2.0	U	mg/kg	2.0	U	1	YES	S3VEM
Vanadium	Target	17.9		mg/kg	17.9	*	1	YES	S3VEM
Zinc	Target	193		mg/kg	193		1	YES	S3VEM
Tin	Target	15.2		mg/kg	15.2		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2J9	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 09:32:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14500		mg/kg	14500		1	YES	S3VEM
Antimony	Target	0.56	J	mg/kg	0.56	J*	1	YES	S3VEM
Arsenic	Target	10.5		mg/kg	10.5	*	1	YES	S3VEM
Barium	Target	148		mg/kg	148	*	1	YES	S3VEM
Beryllium	Target	0.59		mg/kg	0.59		1	YES	S3VEM
Cadmium	Target	1.2		mg/kg	1.2	*	1	YES	S3VEM
Calcium	Target	51300		mg/kg	51300	D*	2	YES	S3VEM
Chromium	Target	18.3		mg/kg	18.3	*	1	YES	S3VEM
Cobalt	Target	5.6		mg/kg	5.6	*	1	YES	S3VEM
Copper	Target	61.9		mg/kg	61.9		1	YES	S3VEM
Iron	Target	13300		mg/kg	13300	*	1	YES	S3VEM
Lead	Target	165		mg/kg	165		1	YES	S3VEM
Magnesium	Target	9330		mg/kg	9330	*	1	YES	S3VEM
Manganese	Target	661		mg/kg	661	*	1	YES	S3VEM
Nickel	Target	19.1		mg/kg	19.1		1	YES	S3VEM
Potassium	Target	2280		mg/kg	2280	*	1	YES	S3VEM
Selenium	Target	0.94	J	mg/kg	0.94	J	1	YES	S3VEM
Silver	Target	0.92	U	mg/kg	0.38	J	1	YES	S3VEM
Sodium	Target	459	U	mg/kg	130	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	17.6		mg/kg	17.6	*	1	YES	S3VEM
Zinc	Target	181		mg/kg	181		1	YES	S3VEM
Tin	Target	14.9		mg/kg	14.9		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K0	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 09:30:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	11900		mg/kg	11900		1	YES	S3VEM
Antimony	Target	0.49	J	mg/kg	0.49	J*	1	YES	S3VEM
Arsenic	Target	6.1		mg/kg	6.1	*	1	YES	S3VEM
Barium	Target	62.8		mg/kg	62.8	*	1	YES	S3VEM
Beryllium	Target	0.46		mg/kg	0.46		1	YES	S3VEM
Cadmium	Target	0.90		mg/kg	0.90	*	1	YES	S3VEM
Calcium	Target	17900		mg/kg	17900	*	1	YES	S3VEM
Chromium	Target	12.3		mg/kg	12.3	*	1	YES	S3VEM
Cobalt	Target	5.7		mg/kg	5.7	*	1	YES	S3VEM
Copper	Target	29.5		mg/kg	29.5		1	YES	S3VEM
Iron	Target	12800		mg/kg	12800	*	1	YES	S3VEM
Lead	Target	46.6		mg/kg	46.6		1	YES	S3VEM
Magnesium	Target	6960		mg/kg	6960	*	1	YES	S3VEM
Manganese	Target	660		mg/kg	660	*	1	YES	S3VEM
Nickel	Target	16.2		mg/kg	16.2		1	YES	S3VEM
Potassium	Target	2070		mg/kg	2070	*	1	YES	S3VEM
Selenium	Target	0.33	J	mg/kg	0.33	J	1	YES	S3VEM
Silver	Target	0.83	U	mg/kg	0.18	J	1	YES	S3VEM
Sodium	Target	413	U	mg/kg	102	J	1	YES	S3VEM
Thallium	Target	2.1	U	mg/kg	2.1	U	1	YES	S3VEM
Vanadium	Target	16.8		mg/kg	16.8	*	1	YES	S3VEM
Zinc	Target	87.7		mg/kg	87.7		1	YES	S3VEM
Tin	Target	4.1	U	mg/kg	3.1	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K1	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 09:35:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	11200		mg/kg	11200		1	YES	S3VEM
Antimony	Target	0.37	J	mg/kg	0.37	J*	1	YES	S3VEM
Arsenic	Target	6.6		mg/kg	6.6	*	1	YES	S3VEM
Barium	Target	62.0		mg/kg	62.0	*	1	YES	S3VEM
Beryllium	Target	0.44		mg/kg	0.44		1	YES	S3VEM
Cadmium	Target	0.93		mg/kg	0.93	*	1	YES	S3VEM
Calcium	Target	27500		mg/kg	27500	*	1	YES	S3VEM
Chromium	Target	12.3		mg/kg	12.3	*	1	YES	S3VEM
Cobalt	Target	5.6		mg/kg	5.6	*	1	YES	S3VEM
Copper	Target	29.5		mg/kg	29.5		1	YES	S3VEM
Iron	Target	12800		mg/kg	12800	*	1	YES	S3VEM
Lead	Target	48.4		mg/kg	48.4		1	YES	S3VEM
Magnesium	Target	10100		mg/kg	10100	*	1	YES	S3VEM
Manganese	Target	695		mg/kg	695	*	1	YES	S3VEM
Nickel	Target	16.2		mg/kg	16.2		1	YES	S3VEM
Potassium	Target	1880		mg/kg	1880	*	1	YES	S3VEM
Selenium	Target	0.36	J	mg/kg	0.36	J	1	YES	S3VEM
Silver	Target	0.91	U	mg/kg	0.20	J	1	YES	S3VEM
Sodium	Target	455	U	mg/kg	98.7	J	1	YES	S3VEM
Thallium	Target	2.1	U	mg/kg	2.1	U	1	YES	S3VEM
Vanadium	Target	15.8		mg/kg	15.8	*	1	YES	S3VEM
Zinc	Target	91.8		mg/kg	91.8		1	YES	S3VEM
Tin	Target	4.2	U	mg/kg	2.6	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K2	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 10:13:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	7460		mg/kg	7460		1	YES	S3VEM
Antimony	Target	0.34	J	mg/kg	0.34	J*	1	YES	S3VEM
Arsenic	Target	5.4		mg/kg	5.4	*	1	YES	S3VEM
Barium	Target	50.2		mg/kg	50.2	*	1	YES	S3VEM
Beryllium	Target	0.39	U	mg/kg	0.36	J	1	YES	S3VEM
Cadmium	Target	0.84		mg/kg	0.84	*	1	YES	S3VEM
Calcium	Target	46300		mg/kg	46300	D*	2	YES	S3VEM
Chromium	Target	8.5		mg/kg	8.5	*	1	YES	S3VEM
Cobalt	Target	4.5		mg/kg	4.5	*	1	YES	S3VEM
Copper	Target	21.8		mg/kg	21.8		1	YES	S3VEM
Iron	Target	9690		mg/kg	9690	*	1	YES	S3VEM
Lead	Target	39.4		mg/kg	39.4		1	YES	S3VEM
Magnesium	Target	16400		mg/kg	16400	*	1	YES	S3VEM
Manganese	Target	649		mg/kg	649	*	1	YES	S3VEM
Nickel	Target	12.4		mg/kg	12.4		1	YES	S3VEM
Potassium	Target	1140		mg/kg	1140	*	1	YES	S3VEM
Selenium	Target	0.43	J	mg/kg	0.43	J	1	YES	S3VEM
Silver	Target	0.79	U	mg/kg	0.17	J	1	YES	S3VEM
Sodium	Target	394	U	mg/kg	92.4	J	1	YES	S3VEM
Thallium	Target	2.0	U	mg/kg	2.0	U	1	YES	S3VEM
Vanadium	Target	10.4		mg/kg	10.4	*	1	YES	S3VEM
Zinc	Target	105		mg/kg	105		1	YES	S3VEM
Tin	Target	3.9	U	mg/kg	3.3	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K3	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 10:44:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12100		mg/kg	12100		1	YES	S3VEM
Antimony	Target	0.36	J	mg/kg	0.36	J*	1	YES	S3VEM
Arsenic	Target	6.8		mg/kg	6.8	*	1	YES	S3VEM
Barium	Target	69.9		mg/kg	69.9	*	1	YES	S3VEM
Beryllium	Target	0.49		mg/kg	0.49		1	YES	S3VEM
Cadmium	Target	1.0		mg/kg	1.0	*	1	YES	S3VEM
Calcium	Target	35400		mg/kg	35400	*	1	YES	S3VEM
Chromium	Target	12.9		mg/kg	12.9	*	1	YES	S3VEM
Cobalt	Target	5.8		mg/kg	5.8	*	1	YES	S3VEM
Copper	Target	29.6		mg/kg	29.6		1	YES	S3VEM
Iron	Target	13900		mg/kg	13900	*	1	YES	S3VEM
Lead	Target	46.6		mg/kg	46.6		1	YES	S3VEM
Magnesium	Target	12300		mg/kg	12300	*	1	YES	S3VEM
Manganese	Target	803		mg/kg	803	*	1	YES	S3VEM
Nickel	Target	16.7		mg/kg	16.7		1	YES	S3VEM
Potassium	Target	2060		mg/kg	2060	*	1	YES	S3VEM
Selenium	Target	0.40	J	mg/kg	0.40	J	1	YES	S3VEM
Silver	Target	0.93	U	mg/kg	0.21	J	1	YES	S3VEM
Sodium	Target	463	U	mg/kg	113	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	17.2		mg/kg	17.2	*	1	YES	S3VEM
Zinc	Target	105		mg/kg	105		1	YES	S3VEM
Tin	Target	4.6	U	mg/kg	3.0	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K4	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 11:00:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13400		mg/kg	13400		1	YES	S3VEM
Antimony	Target	0.35	J	mg/kg	0.35	J*	1	YES	S3VEM
Arsenic	Target	9.1		mg/kg	9.1	*	1	YES	S3VEM
Barium	Target	88.6		mg/kg	88.6	*	1	YES	S3VEM
Beryllium	Target	0.58		mg/kg	0.58		1	YES	S3VEM
Cadmium	Target	1.2		mg/kg	1.2	*	1	YES	S3VEM
Calcium	Target	42800		mg/kg	42800	D*	2	YES	S3VEM
Chromium	Target	16.5		mg/kg	16.5	*	1	YES	S3VEM
Cobalt	Target	6.1		mg/kg	6.1	*	1	YES	S3VEM
Copper	Target	47.7		mg/kg	47.7		1	YES	S3VEM
Iron	Target	14200		mg/kg	14200	*	1	YES	S3VEM
Lead	Target	63.9		mg/kg	63.9		1	YES	S3VEM
Magnesium	Target	12100		mg/kg	12100	*	1	YES	S3VEM
Manganese	Target	845		mg/kg	845	*	1	YES	S3VEM
Nickel	Target	19.5		mg/kg	19.5		1	YES	S3VEM
Potassium	Target	2250		mg/kg	2250	*	1	YES	S3VEM
Selenium	Target	0.66	J	mg/kg	0.66	J	1	YES	S3VEM
Silver	Target	0.90	U	mg/kg	0.26	J	1	YES	S3VEM
Sodium	Target	450	U	mg/kg	125	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	17.8		mg/kg	17.8	*	1	YES	S3VEM
Zinc	Target	127		mg/kg	127		1	YES	S3VEM
Tin	Target	4.5	U	mg/kg	3.6	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K5	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 10:05:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13200		mg/kg	13200		1	YES	S3VEM
Antimony	Target	0.60	J	mg/kg	0.60	J*	1	YES	S3VEM
Arsenic	Target	10.3		mg/kg	10.3	*	1	YES	S3VEM
Barium	Target	133		mg/kg	133	*	1	YES	S3VEM
Beryllium	Target	0.60		mg/kg	0.60		1	YES	S3VEM
Cadmium	Target	1.2		mg/kg	1.2	*	1	YES	S3VEM
Calcium	Target	14200		mg/kg	14200	*	1	YES	S3VEM
Chromium	Target	16.2		mg/kg	16.2	*	1	YES	S3VEM
Cobalt	Target	6.8		mg/kg	6.8	*	1	YES	S3VEM
Copper	Target	40.1		mg/kg	40.1		1	YES	S3VEM
Iron	Target	15600		mg/kg	15600	*	1	YES	S3VEM
Lead	Target	174		mg/kg	174		1	YES	S3VEM
Magnesium	Target	5500		mg/kg	5500	*	1	YES	S3VEM
Manganese	Target	852		mg/kg	852	*	1	YES	S3VEM
Nickel	Target	22.2		mg/kg	22.2		1	YES	S3VEM
Potassium	Target	2100		mg/kg	2100	*	1	YES	S3VEM
Selenium	Target	0.73	J	mg/kg	0.73	J	1	YES	S3VEM
Silver	Target	0.90	U	mg/kg	0.33	J	1	YES	S3VEM
Sodium	Target	450	U	mg/kg	105	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	20.0		mg/kg	20.0	*	1	YES	S3VEM
Zinc	Target	168		mg/kg	168		1	YES	S3VEM
Tin	Target	6.8		mg/kg	6.8		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K6	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 10:10:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14100		mg/kg	14100		1	YES	S3VEM
Antimony	Target	0.73	J	mg/kg	0.73	J*	1	YES	S3VEM
Arsenic	Target	12.3		mg/kg	12.3	*	1	YES	S3VEM
Barium	Target	152		mg/kg	152	*	1	YES	S3VEM
Beryllium	Target	0.66		mg/kg	0.66		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4	*	1	YES	S3VEM
Calcium	Target	13900		mg/kg	13900	*	1	YES	S3VEM
Chromium	Target	17.2		mg/kg	17.2	*	1	YES	S3VEM
Cobalt	Target	7.2		mg/kg	7.2	*	1	YES	S3VEM
Copper	Target	52.8		mg/kg	52.8		1	YES	S3VEM
Iron	Target	16800		mg/kg	16800	*	1	YES	S3VEM
Lead	Target	197		mg/kg	197		1	YES	S3VEM
Magnesium	Target	5160		mg/kg	5160	*	1	YES	S3VEM
Manganese	Target	966		mg/kg	966	*	1	YES	S3VEM
Nickel	Target	24.6		mg/kg	24.6		1	YES	S3VEM
Potassium	Target	2010		mg/kg	2010	*	1	YES	S3VEM
Selenium	Target	0.73	J	mg/kg	0.73	J	1	YES	S3VEM
Silver	Target	0.82	U	mg/kg	0.34	J	1	YES	S3VEM
Sodium	Target	410	U	mg/kg	101	J	1	YES	S3VEM
Thallium	Target	2.0	U	mg/kg	2.0	U	1	YES	S3VEM
Vanadium	Target	21.0		mg/kg	21.0	*	1	YES	S3VEM
Zinc	Target	187		mg/kg	187		1	YES	S3VEM
Tin	Target	8.4		mg/kg	8.4		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2H6** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20.0	U	mg/kg	20.0	U	1	YES	S3VEM
Antimony	Target	6.0	U	mg/kg	6.0	U	1	YES	S3VEM
Arsenic	Target			mg/kg	-0.24	J	1	YES	S3VEM
Barium	Target	20.0	U	mg/kg	20.0	U	1	YES	S3VEM
Beryllium	Target	0.50	U	mg/kg	0.50	U	1	YES	S3VEM
Cadmium	Target			mg/kg	-0.017	J	1	YES	S3VEM
Calcium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Chromium	Target	0.031	J	mg/kg	0.031	J	1	YES	S3VEM
Cobalt	Target			mg/kg	-0.033	J	1	YES	S3VEM
Copper	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Iron	Target	10.0	U	mg/kg	10.0	U	1	YES	S3VEM
Lead	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Magnesium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Manganese	Target	1.5	U	mg/kg	1.5	U	1	YES	S3VEM
Nickel	Target			mg/kg	-0.065	J	1	YES	S3VEM
Potassium	Target	7.8	J	mg/kg	7.8	J	1	YES	S3VEM
Selenium	Target	3.5	U	mg/kg	3.5	U	1	YES	S3VEM
Silver	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Sodium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Thallium	Target			mg/kg	-0.21	J	1	YES	S3VEM
Vanadium	Target	5.0	U	mg/kg	5.0	U	1	YES	S3VEM
Zinc	Target	0.18	J	mg/kg	0.18	J	1	YES	S3VEM
Tin	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project | **GroupID: 47720/EPW14029/MBE2H6** | **Lab Name: Bonner Analytical Testing Co.**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

EXECUTIVE NARRATIVE

Case No.: 47720
Site: Eighteenmile Creek
Number of Samples: 20 (Soil)
Analysis: Metals (ICP-AES MA # 2822.0)

SDG No.: MBE2K7
Laboratory: Bonner Analytical Services Co.
Sampling dates: 6/27/18
Validation SOP: HW-3a (Rev.1)

QAPP
Contractor: Weston Solutions
Reference: DCN RST3-04-D-0200

SUMMARY OF DEFINITIONS:

Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
Samples MBE2M2 and MBE2M5 have analytes that have been qualified J, J+ or J-.

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENT:	One or more detected and non-detected analytes exceeded the removal levels of resident soil for one or more samples.

Reviewer Name(s): Israel Okwuonu

Approver's Signature: **Date: 08/10/2018**

Name: **Narendra Kumar**

Affiliation: USEPA/R2/HWSB/HWSS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	**Explanation**		
	INORGANICS	**ORGANICS**	**CHLORINATED DIOXIN/FURAN**
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: METALS ICP-AES

The current SOP HW-3a (Revision 1) September, 2016 USEPA Region II for the evaluation of ICP-AES metals generated through Statement of Work ISOM02.2, any future editorial revisions of ISOM02.2, has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

The following sample has analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated PB analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Tin MBE2M5

Field Blank: MBE2N1

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated field blank analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Silver, Sodium MBE2K7, MBE2K8, MBE2K9, MBE2L0, MBE2L1, MBE2L2, MBE2L3, MBE2L4, MBE2L5, MBE2L6, MBE2L7, MBE2L8, MBE2L9, MBE2M0, MBE2M1, MBE2M2, MBE2M3, MBE2M4, MBE2M5

4. **INTERFERENCE CHECK SAMPLE**

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

The following sample is associated with Matrix Spike sample that has spike analyte %R less than 30% and Post-digestion spike analyte %R greater than 75%. Detects are qualified as J. Non-detects are qualified as UJ.

Antimony MBE2M2

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 35% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

7. FIELD DUPLICATE MBE2M1/MBE2M2

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 35% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

No problems were found for this criterion.

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by Inductively Coupled Plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 15%. For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

The following soil/sediment sample is associated with Serial Dilution (SD) sample that has analyte percent different %D greater than 15% but less than 120%. The original sample analyte concentrations are greater than 50x MDLs. Detects are qualified as estimated J. Non-detects are not qualified.

Barium, Calcium, Chromium, Cobalt, Iron, Magnesium, Manganese, Potassium, vanadium MBE2M2

10. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

OTHER PROBLEMS:

The following sample has analyte results greater than the upper limit of calibration range and proper dilution is not performed. Detects as estimated J.

Calcium MBE2M5

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: LCS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	35.8		mg/kg	35.8		1	YES	S3VEM
Antimony	Spike	12.0		mg/kg	12.0		1	YES	S3VEM
Arsenic	Spike	1.7		mg/kg	1.7		1	YES	S3VEM
Barium	Spike	41.7		mg/kg	41.7		1	YES	S3VEM
Beryllium	Spike	0.93		mg/kg	0.93		1	YES	S3VEM
Cadmium	Spike	0.92		mg/kg	0.92		1	YES	S3VEM
Calcium	Spike	1000		mg/kg	1000		1	YES	S3VEM
Chromium	Spike	2.1		mg/kg	2.1		1	YES	S3VEM
Cobalt	Spike	10.3		mg/kg	10.3		1	YES	S3VEM
Copper	Spike	4.9		mg/kg	4.9		1	YES	S3VEM
Iron	Spike	20.3		mg/kg	20.3		1	YES	S3VEM
Lead	Spike	1.8		mg/kg	1.8		1	YES	S3VEM
Magnesium	Spike	948		mg/kg	948		1	YES	S3VEM
Manganese	Spike	3.1		mg/kg	3.1		1	YES	S3VEM
Nickel	Spike	7.6		mg/kg	7.6		1	YES	S3VEM
Potassium	Spike	974		mg/kg	974		1	YES	S3VEM
Selenium	Spike	6.6		mg/kg	6.6		1	YES	S3VEM
Silver	Spike	1.9		mg/kg	1.9		1	YES	S3VEM
Sodium	Spike	981		mg/kg	981		1	YES	S3VEM
Thallium	Spike	4.8		mg/kg	4.8		1	YES	S3VEM
Vanadium	Spike	9.9		mg/kg	9.9		1	YES	S3VEM
Zinc	Spike	11.7		mg/kg	11.7		1	YES	S3VEM
Tin	Spike	11.6		mg/kg	11.6		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K7	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 11:20:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13900		mg/kg	13900		1	YES	S3VEM
Antimony	Target	0.71	J	mg/kg	0.71	J*	1	YES	S3VEM
Arsenic	Target	12.8		mg/kg	12.8		1	YES	S3VEM
Barium	Target	177		mg/kg	177	*	1	YES	S3VEM
Beryllium	Target	0.67		mg/kg	0.67		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4		1	YES	S3VEM
Calcium	Target	15900		mg/kg	15900	*	1	YES	S3VEM
Chromium	Target	17.7		mg/kg	17.7	*	1	YES	S3VEM
Cobalt	Target	7.6		mg/kg	7.6	*	1	YES	S3VEM
Copper	Target	46.6		mg/kg	46.6	*	1	YES	S3VEM
Iron	Target	17500		mg/kg	17500	*	1	YES	S3VEM
Lead	Target	192		mg/kg	192		1	YES	S3VEM
Magnesium	Target	5270		mg/kg	5270	*	1	YES	S3VEM
Manganese	Target	1120		mg/kg	1120	*	1	YES	S3VEM
Nickel	Target	23.1		mg/kg	23.1		1	YES	S3VEM
Potassium	Target	2270		mg/kg	2270	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.93	U	mg/kg	0.28	J	1	YES	S3VEM
Sodium	Target	467	U	mg/kg	85.9	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	22.0		mg/kg	22.0	*	1	YES	S3VEM
Zinc	Target	188		mg/kg	188		1	YES	S3VEM
Tin	Target	7.0		mg/kg	7.0		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K8	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 11:31:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13600		mg/kg	13600		1	YES	S3VEM
Antimony	Target	0.68	J	mg/kg	0.68	J*	1	YES	S3VEM
Arsenic	Target	10.7		mg/kg	10.7		1	YES	S3VEM
Barium	Target	156		mg/kg	156	*	1	YES	S3VEM
Beryllium	Target	0.61		mg/kg	0.61		1	YES	S3VEM
Cadmium	Target	1.2		mg/kg	1.2		1	YES	S3VEM
Calcium	Target	22400		mg/kg	22400	*	1	YES	S3VEM
Chromium	Target	16.7		mg/kg	16.7	*	1	YES	S3VEM
Cobalt	Target	7.1		mg/kg	7.1	*	1	YES	S3VEM
Copper	Target	38.0		mg/kg	38.0	*	1	YES	S3VEM
Iron	Target	17000		mg/kg	17000	*	1	YES	S3VEM
Lead	Target	112		mg/kg	112		1	YES	S3VEM
Magnesium	Target	6190		mg/kg	6190	*	1	YES	S3VEM
Manganese	Target	1110		mg/kg	1110	*	1	YES	S3VEM
Nickel	Target	21.8		mg/kg	21.8		1	YES	S3VEM
Potassium	Target	2280		mg/kg	2280	*	1	YES	S3VEM
Selenium	Target	0.93	J	mg/kg	0.93	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.24	J	1	YES	S3VEM
Sodium	Target	495	U	mg/kg	88.9	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	21.5		mg/kg	21.5	*	1	YES	S3VEM
Zinc	Target	129		mg/kg	129		1	YES	S3VEM
Tin	Target	5.2		mg/kg	5.2		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2K9	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 11:36:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13800		mg/kg	13800		1	YES	S3VEM
Antimony	Target	0.63	J	mg/kg	0.63	J*	1	YES	S3VEM
Arsenic	Target	10.7		mg/kg	10.7		1	YES	S3VEM
Barium	Target	153		mg/kg	153	*	1	YES	S3VEM
Beryllium	Target	0.63		mg/kg	0.63		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3		1	YES	S3VEM
Calcium	Target	24300		mg/kg	24300	*	1	YES	S3VEM
Chromium	Target	18.6		mg/kg	18.6	*	1	YES	S3VEM
Cobalt	Target	7.3		mg/kg	7.3	*	1	YES	S3VEM
Copper	Target	43.0		mg/kg	43.0	*	1	YES	S3VEM
Iron	Target	17100		mg/kg	17100	*	1	YES	S3VEM
Lead	Target	147		mg/kg	147		1	YES	S3VEM
Magnesium	Target	6730		mg/kg	6730	*	1	YES	S3VEM
Manganese	Target	956		mg/kg	956	*	1	YES	S3VEM
Nickel	Target	23.5		mg/kg	23.5		1	YES	S3VEM
Potassium	Target	2430		mg/kg	2430	*	1	YES	S3VEM
Selenium	Target	0.78	J	mg/kg	0.78	J	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.24	J	1	YES	S3VEM
Sodium	Target	485	U	mg/kg	97.7	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	21.8		mg/kg	21.8	*	1	YES	S3VEM
Zinc	Target	155		mg/kg	155		1	YES	S3VEM
Tin	Target	6.0		mg/kg	6.0		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L0	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 13:37:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13600		mg/kg	13600		1	YES	S3VEM
Antimony	Target	0.68	J	mg/kg	0.68	J*	1	YES	S3VEM
Arsenic	Target	10.0		mg/kg	10.0		1	YES	S3VEM
Barium	Target	173		mg/kg	173	*	1	YES	S3VEM
Beryllium	Target	0.65		mg/kg	0.65		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4		1	YES	S3VEM
Calcium	Target	11200		mg/kg	11200	*	1	YES	S3VEM
Chromium	Target	20.9		mg/kg	20.9	*	1	YES	S3VEM
Cobalt	Target	6.7		mg/kg	6.7	*	1	YES	S3VEM
Copper	Target	52.9		mg/kg	52.9	*	1	YES	S3VEM
Iron	Target	17300		mg/kg	17300	*	1	YES	S3VEM
Lead	Target	366		mg/kg	366		1	YES	S3VEM
Magnesium	Target	4860		mg/kg	4860	*	1	YES	S3VEM
Manganese	Target	1030		mg/kg	1030	*	1	YES	S3VEM
Nickel	Target	20.8		mg/kg	20.8		1	YES	S3VEM
Potassium	Target	2600		mg/kg	2600	*	1	YES	S3VEM
Selenium	Target	1.3	J	mg/kg	1.3	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.31	J	1	YES	S3VEM
Sodium	Target	495	U	mg/kg	89.0	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	22.1		mg/kg	22.1	*	1	YES	S3VEM
Zinc	Target	340		mg/kg	340		1	YES	S3VEM
Tin	Target	13.9		mg/kg	13.9		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L1	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 13:40:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13800		mg/kg	13800		1	YES	S3VEM
Antimony	Target	0.76	J	mg/kg	0.76	J*	1	YES	S3VEM
Arsenic	Target	11.2		mg/kg	11.2		1	YES	S3VEM
Barium	Target	174		mg/kg	174	*	1	YES	S3VEM
Beryllium	Target	0.65		mg/kg	0.65		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4		1	YES	S3VEM
Calcium	Target	19600		mg/kg	19600	*	1	YES	S3VEM
Chromium	Target	19.8		mg/kg	19.8	*	1	YES	S3VEM
Cobalt	Target	7.0		mg/kg	7.0	*	1	YES	S3VEM
Copper	Target	66.6		mg/kg	66.6	*	1	YES	S3VEM
Iron	Target	17300		mg/kg	17300	*	1	YES	S3VEM
Lead	Target	368		mg/kg	368		1	YES	S3VEM
Magnesium	Target	4950		mg/kg	4950	*	1	YES	S3VEM
Manganese	Target	1050		mg/kg	1050	*	1	YES	S3VEM
Nickel	Target	21.8		mg/kg	21.8		1	YES	S3VEM
Potassium	Target	2480		mg/kg	2480	*	1	YES	S3VEM
Selenium	Target	0.95	J	mg/kg	0.95	J	1	YES	S3VEM
Silver	Target	0.95	U	mg/kg	0.34	J	1	YES	S3VEM
Sodium	Target	476	U	mg/kg	89.5	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	21.7		mg/kg	21.7	*	1	YES	S3VEM
Zinc	Target	330		mg/kg	330		1	YES	S3VEM
Tin	Target	12.9		mg/kg	12.9		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L2	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 14:10:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14900		mg/kg	14900		1	YES	S3VEM
Antimony	Target	0.92	J	mg/kg	0.92	J*	1	YES	S3VEM
Arsenic	Target	12.0		mg/kg	12.0		1	YES	S3VEM
Barium	Target	202		mg/kg	202	*	1	YES	S3VEM
Beryllium	Target	0.68		mg/kg	0.68		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5		1	YES	S3VEM
Calcium	Target	19500		mg/kg	19500	*	1	YES	S3VEM
Chromium	Target	20.6		mg/kg	20.6	*	1	YES	S3VEM
Cobalt	Target	7.3		mg/kg	7.3	*	1	YES	S3VEM
Copper	Target	52.6		mg/kg	52.6	*	1	YES	S3VEM
Iron	Target	18400		mg/kg	18400	*	1	YES	S3VEM
Lead	Target	415		mg/kg	415		1	YES	S3VEM
Magnesium	Target	4650		mg/kg	4650	*	1	YES	S3VEM
Manganese	Target	1030		mg/kg	1030	*	1	YES	S3VEM
Nickel	Target	21.8		mg/kg	21.8		1	YES	S3VEM
Potassium	Target	2490		mg/kg	2490	*	1	YES	S3VEM
Selenium	Target	0.94	J	mg/kg	0.94	J	1	YES	S3VEM
Silver	Target	0.93	U	mg/kg	0.31	J	1	YES	S3VEM
Sodium	Target	467	U	mg/kg	92.4	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	22.6		mg/kg	22.6	*	1	YES	S3VEM
Zinc	Target	392		mg/kg	392		1	YES	S3VEM
Tin	Target	49.9		mg/kg	49.9		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L3	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 14:17:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14600		mg/kg	14600		1	YES	S3VEM
Antimony	Target	0.95	J	mg/kg	0.95	J*	1	YES	S3VEM
Arsenic	Target	9.0		mg/kg	9.0		1	YES	S3VEM
Barium	Target	150		mg/kg	150	*	1	YES	S3VEM
Beryllium	Target	0.64		mg/kg	0.64		1	YES	S3VEM
Cadmium	Target	1.2		mg/kg	1.2		1	YES	S3VEM
Calcium	Target	14600		mg/kg	14600	*	1	YES	S3VEM
Chromium	Target	19.0		mg/kg	19.0	*	1	YES	S3VEM
Cobalt	Target	7.1		mg/kg	7.1	*	1	YES	S3VEM
Copper	Target	45.0		mg/kg	45.0	*	1	YES	S3VEM
Iron	Target	17600		mg/kg	17600	*	1	YES	S3VEM
Lead	Target	257		mg/kg	257		1	YES	S3VEM
Magnesium	Target	4050		mg/kg	4050	*	1	YES	S3VEM
Manganese	Target	1040		mg/kg	1040	*	1	YES	S3VEM
Nickel	Target	20.0		mg/kg	20.0		1	YES	S3VEM
Potassium	Target	2380		mg/kg	2380	*	1	YES	S3VEM
Selenium	Target	1.0	J	mg/kg	1.0	J	1	YES	S3VEM
Silver	Target	0.98	U	mg/kg	0.24	J	1	YES	S3VEM
Sodium	Target	490	U	mg/kg	83.1	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	22.1		mg/kg	22.1	*	1	YES	S3VEM
Zinc	Target	226		mg/kg	226		1	YES	S3VEM
Tin	Target	20.4		mg/kg	20.4		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L4	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S001	pH:	Sample Date: 06/27/2018	Sample Time: 14:27:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15500		mg/kg	15500		1	YES	S3VEM
Antimony	Target	0.72	J	mg/kg	0.72	J*	1	YES	S3VEM
Arsenic	Target	8.6		mg/kg	8.6		1	YES	S3VEM
Barium	Target	136		mg/kg	136	*	1	YES	S3VEM
Beryllium	Target	0.65		mg/kg	0.65		1	YES	S3VEM
Cadmium	Target	1.2		mg/kg	1.2		1	YES	S3VEM
Calcium	Target	11900		mg/kg	11900	*	1	YES	S3VEM
Chromium	Target	17.9		mg/kg	17.9	*	1	YES	S3VEM
Cobalt	Target	7.1		mg/kg	7.1	*	1	YES	S3VEM
Copper	Target	33.6		mg/kg	33.6	*	1	YES	S3VEM
Iron	Target	17300		mg/kg	17300	*	1	YES	S3VEM
Lead	Target	150		mg/kg	150		1	YES	S3VEM
Magnesium	Target	3460		mg/kg	3460	*	1	YES	S3VEM
Manganese	Target	1370		mg/kg	1370	*	1	YES	S3VEM
Nickel	Target	19.4		mg/kg	19.4		1	YES	S3VEM
Potassium	Target	2200		mg/kg	2200	*	1	YES	S3VEM
Selenium	Target	0.92	J	mg/kg	0.92	J	1	YES	S3VEM
Silver	Target	0.93	U	mg/kg	0.27	J	1	YES	S3VEM
Sodium	Target	467	U	mg/kg	71.6	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	21.8		mg/kg	21.8	*	1	YES	S3VEM
Zinc	Target	167		mg/kg	167		1	YES	S3VEM
Tin	Target	6.8		mg/kg	6.8		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L5	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 14:10:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13900		mg/kg	13900		1	YES	S3VEM
Antimony	Target	1.0	J	mg/kg	1.0	J*	1	YES	S3VEM
Arsenic	Target	16.9		mg/kg	16.9		1	YES	S3VEM
Barium	Target	260		mg/kg	260	*	1	YES	S3VEM
Beryllium	Target	0.82		mg/kg	0.82		1	YES	S3VEM
Cadmium	Target	1.6		mg/kg	1.6		1	YES	S3VEM
Calcium	Target	18100		mg/kg	18100	*	1	YES	S3VEM
Chromium	Target	25.4		mg/kg	25.4	*	1	YES	S3VEM
Cobalt	Target	7.6		mg/kg	7.6	*	1	YES	S3VEM
Copper	Target	70.4		mg/kg	70.4	*	1	YES	S3VEM
Iron	Target	18400		mg/kg	18400	*	1	YES	S3VEM
Lead	Target	588		mg/kg	588		1	YES	S3VEM
Magnesium	Target	6120		mg/kg	6120	*	1	YES	S3VEM
Manganese	Target	820		mg/kg	820	*	1	YES	S3VEM
Nickel	Target	26.1		mg/kg	26.1		1	YES	S3VEM
Potassium	Target	2750		mg/kg	2750	*	1	YES	S3VEM
Selenium	Target	1.4	J	mg/kg	1.4	J	1	YES	S3VEM
Silver	Target	0.98	U	mg/kg	0.50	J	1	YES	S3VEM
Sodium	Target	490	U	mg/kg	120	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	23.3		mg/kg	23.3	*	1	YES	S3VEM
Zinc	Target	452		mg/kg	452		1	YES	S3VEM
Tin	Target	21.8		mg/kg	21.8		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L6	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 14:15:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15600		mg/kg	15600		1	YES	S3VEM
Antimony	Target	0.90	J	mg/kg	0.90	J*	1	YES	S3VEM
Arsenic	Target	20.5		mg/kg	20.5		1	YES	S3VEM
Barium	Target	263		mg/kg	263	*	1	YES	S3VEM
Beryllium	Target	0.89		mg/kg	0.89		1	YES	S3VEM
Cadmium	Target	1.8		mg/kg	1.8		1	YES	S3VEM
Calcium	Target	18700		mg/kg	18700	*	1	YES	S3VEM
Chromium	Target	26.5		mg/kg	26.5	*	1	YES	S3VEM
Cobalt	Target	7.9		mg/kg	7.9	*	1	YES	S3VEM
Copper	Target	83.0		mg/kg	83.0	*	1	YES	S3VEM
Iron	Target	19100		mg/kg	19100	*	1	YES	S3VEM
Lead	Target	624		mg/kg	624		1	YES	S3VEM
Magnesium	Target	5890		mg/kg	5890	*	1	YES	S3VEM
Manganese	Target	860		mg/kg	860	*	1	YES	S3VEM
Nickel	Target	28.1		mg/kg	28.1		1	YES	S3VEM
Potassium	Target	2850		mg/kg	2850	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.88	U	mg/kg	0.54	J	1	YES	S3VEM
Sodium	Target	439	U	mg/kg	112	J	1	YES	S3VEM
Thallium	Target	2.2	U	mg/kg	2.2	U	1	YES	S3VEM
Vanadium	Target	24.4		mg/kg	24.4	*	1	YES	S3VEM
Zinc	Target	481		mg/kg	481		1	YES	S3VEM
Tin	Target	21.4		mg/kg	21.4		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L7	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 14:35:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14800		mg/kg	14800		1	YES	S3VEM
Antimony	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Arsenic	Target	20.9		mg/kg	20.9		1	YES	S3VEM
Barium	Target	260		mg/kg	260	*	1	YES	S3VEM
Beryllium	Target	0.82		mg/kg	0.82		1	YES	S3VEM
Cadmium	Target	1.6		mg/kg	1.6		1	YES	S3VEM
Calcium	Target	21300		mg/kg	21300	*	1	YES	S3VEM
Chromium	Target	25.6		mg/kg	25.6	*	1	YES	S3VEM
Cobalt	Target	7.8		mg/kg	7.8	*	1	YES	S3VEM
Copper	Target	75.1		mg/kg	75.1	*	1	YES	S3VEM
Iron	Target	18800		mg/kg	18800	*	1	YES	S3VEM
Lead	Target	569		mg/kg	569		1	YES	S3VEM
Magnesium	Target	5750		mg/kg	5750	*	1	YES	S3VEM
Manganese	Target	884		mg/kg	884	*	1	YES	S3VEM
Nickel	Target	24.4		mg/kg	24.4		1	YES	S3VEM
Potassium	Target	2730		mg/kg	2730	*	1	YES	S3VEM
Selenium	Target	1.5	J	mg/kg	1.5	J	1	YES	S3VEM
Silver	Target	0.94	U	mg/kg	0.49	J	1	YES	S3VEM
Sodium	Target	472	U	mg/kg	111	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	23.8		mg/kg	23.8	*	1	YES	S3VEM
Zinc	Target	441		mg/kg	441		1	YES	S3VEM
Tin	Target	22.8		mg/kg	22.8		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L8	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 14:40:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14300		mg/kg	14300		1	YES	S3VEM
Antimony	Target	0.96	J	mg/kg	0.96	J*	1	YES	S3VEM
Arsenic	Target	16.9		mg/kg	16.9		1	YES	S3VEM
Barium	Target	187		mg/kg	187	*	1	YES	S3VEM
Beryllium	Target	0.71		mg/kg	0.71		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3		1	YES	S3VEM
Calcium	Target	21800		mg/kg	21800	*	1	YES	S3VEM
Chromium	Target	21.8		mg/kg	21.8	*	1	YES	S3VEM
Cobalt	Target	7.2		mg/kg	7.2	*	1	YES	S3VEM
Copper	Target	52.1		mg/kg	52.1	*	1	YES	S3VEM
Iron	Target	17400		mg/kg	17400	*	1	YES	S3VEM
Lead	Target	347		mg/kg	347		1	YES	S3VEM
Magnesium	Target	5970		mg/kg	5970	*	1	YES	S3VEM
Manganese	Target	947		mg/kg	947	*	1	YES	S3VEM
Nickel	Target	21.2		mg/kg	21.2		1	YES	S3VEM
Potassium	Target	2660		mg/kg	2660	*	1	YES	S3VEM
Selenium	Target	0.91	J	mg/kg	0.91	J	1	YES	S3VEM
Silver	Target	0.93	U	mg/kg	0.38	J	1	YES	S3VEM
Sodium	Target	467	U	mg/kg	89.2	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	21.4		mg/kg	21.4	*	1	YES	S3VEM
Zinc	Target	274		mg/kg	274		1	YES	S3VEM
Tin	Target	14.4		mg/kg	14.4		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2L9	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S002	pH:	Sample Date: 06/27/2018	Sample Time: 15:30:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14900		mg/kg	14900		1	YES	S3VEM
Antimony	Target	0.81	J	mg/kg	0.81	J*	1	YES	S3VEM
Arsenic	Target	13.1		mg/kg	13.1		1	YES	S3VEM
Barium	Target	180		mg/kg	180	*	1	YES	S3VEM
Beryllium	Target	0.73		mg/kg	0.73		1	YES	S3VEM
Cadmium	Target	1.3		mg/kg	1.3		1	YES	S3VEM
Calcium	Target	37000		mg/kg	37000	*	1	YES	S3VEM
Chromium	Target	20.4		mg/kg	20.4	*	1	YES	S3VEM
Cobalt	Target	7.2		mg/kg	7.2	*	1	YES	S3VEM
Copper	Target	46.5		mg/kg	46.5	*	1	YES	S3VEM
Iron	Target	17300		mg/kg	17300	*	1	YES	S3VEM
Lead	Target	267		mg/kg	267		1	YES	S3VEM
Magnesium	Target	7170		mg/kg	7170	*	1	YES	S3VEM
Manganese	Target	1060		mg/kg	1060	*	1	YES	S3VEM
Nickel	Target	20.6		mg/kg	20.6		1	YES	S3VEM
Potassium	Target	2930		mg/kg	2930	*	1	YES	S3VEM
Selenium	Target	0.85	J	mg/kg	0.85	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.37	J	1	YES	S3VEM
Sodium	Target	495	U	mg/kg	101	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	20.9		mg/kg	20.9	*	1	YES	S3VEM
Zinc	Target	222		mg/kg	222		1	YES	S3VEM
Tin	Target	12.5		mg/kg	12.5		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M0	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 14:45:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14400		mg/kg	14400		1	YES	S3VEM
Antimony	Target	0.97	J	mg/kg	0.97	J*	1	YES	S3VEM
Arsenic	Target	14.0		mg/kg	14.0		1	YES	S3VEM
Barium	Target	231		mg/kg	231	*	1	YES	S3VEM
Beryllium	Target	0.81		mg/kg	0.81		1	YES	S3VEM
Cadmium	Target	1.9		mg/kg	1.9		1	YES	S3VEM
Calcium	Target	17600		mg/kg	17600	*	1	YES	S3VEM
Chromium	Target	23.0		mg/kg	23.0	*	1	YES	S3VEM
Cobalt	Target	8.5		mg/kg	8.5	*	1	YES	S3VEM
Copper	Target	77.6		mg/kg	77.6	*	1	YES	S3VEM
Iron	Target	17600		mg/kg	17600	*	1	YES	S3VEM
Lead	Target	386		mg/kg	386		1	YES	S3VEM
Magnesium	Target	4830		mg/kg	4830	*	1	YES	S3VEM
Manganese	Target	1120		mg/kg	1120	*	1	YES	S3VEM
Nickel	Target	27.9		mg/kg	27.9		1	YES	S3VEM
Potassium	Target	2920		mg/kg	2920	*	1	YES	S3VEM
Selenium	Target	1.5	J	mg/kg	1.5	J	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.52	J	1	YES	S3VEM
Sodium	Target	485	U	mg/kg	97.6	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	24.5		mg/kg	24.5	*	1	YES	S3VEM
Zinc	Target	449		mg/kg	449		1	YES	S3VEM
Tin	Target	17.4		mg/kg	17.4		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M1	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 15:02:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15100		mg/kg	15100		1	YES	S3VEM
Antimony	Target	0.93	J	mg/kg	0.93	J*	1	YES	S3VEM
Arsenic	Target	15.0		mg/kg	15.0		1	YES	S3VEM
Barium	Target	261		mg/kg	261	*	1	YES	S3VEM
Beryllium	Target	0.84		mg/kg	0.84		1	YES	S3VEM
Cadmium	Target	2.0		mg/kg	2.0		1	YES	S3VEM
Calcium	Target	20600		mg/kg	20600	*	1	YES	S3VEM
Chromium	Target	23.2		mg/kg	23.2	*	1	YES	S3VEM
Cobalt	Target	8.7		mg/kg	8.7	*	1	YES	S3VEM
Copper	Target	89.8		mg/kg	89.8	*	1	YES	S3VEM
Iron	Target	18000		mg/kg	18000	*	1	YES	S3VEM
Lead	Target	436		mg/kg	436		1	YES	S3VEM
Magnesium	Target	4760		mg/kg	4760	*	1	YES	S3VEM
Manganese	Target	1120		mg/kg	1120	*	1	YES	S3VEM
Nickel	Target	28.2		mg/kg	28.2		1	YES	S3VEM
Potassium	Target	2980		mg/kg	2980	*	1	YES	S3VEM
Selenium	Target	1.5	J	mg/kg	1.5	J	1	YES	S3VEM
Silver	Target	0.96	U	mg/kg	0.54	J	1	YES	S3VEM
Sodium	Target	481	U	mg/kg	105	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	25.1		mg/kg	25.1	*	1	YES	S3VEM
Zinc	Target	480		mg/kg	480		1	YES	S3VEM
Tin	Target	19.8		mg/kg	19.8		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M2	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 15:02:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15000		mg/kg	15000		1	YES	S3VEM
Antimony	Target	1.1	J	mg/kg	1.1	J*	1	YES	S3VEM
Arsenic	Target	14.9		mg/kg	14.9		1	YES	S3VEM
Barium	Target	222	J	mg/kg	222	*	1	YES	S3VEM
Beryllium	Target	0.83		mg/kg	0.83		1	YES	S3VEM
Cadmium	Target	1.9		mg/kg	1.9		1	YES	S3VEM
Calcium	Target	17300	J	mg/kg	17300	*	1	YES	S3VEM
Chromium	Target	21.8	J	mg/kg	21.8	*	1	YES	S3VEM
Cobalt	Target	8.4	J	mg/kg	8.4	*	1	YES	S3VEM
Copper	Target	69.2		mg/kg	69.2	*	1	YES	S3VEM
Iron	Target	18200	J	mg/kg	18200	*	1	YES	S3VEM
Lead	Target	357		mg/kg	357		1	YES	S3VEM
Magnesium	Target	4610	J	mg/kg	4610	*	1	YES	S3VEM
Manganese	Target	1100	J	mg/kg	1100	*	1	YES	S3VEM
Nickel	Target	26.8		mg/kg	26.8		1	YES	S3VEM
Potassium	Target	2880	J	mg/kg	2880	*	1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.48	J	1	YES	S3VEM
Sodium	Target	485	U	mg/kg	93.6	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	24.2	J	mg/kg	24.2	*	1	YES	S3VEM
Zinc	Target	395		mg/kg	395		1	YES	S3VEM
Tin	Target	16.3		mg/kg	16.3		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M2A	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/27/2018	Sample Time: 15:02:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	10.4		mg/kg	10.4		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M2D	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/27/2018	Sample Time: 15:02:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15900		mg/kg	15900		1	YES	S3VEM
Antimony	Target	0.97	J	mg/kg	0.97	J	1	YES	S3VEM
Arsenic	Target	15.7		mg/kg	15.7		1	YES	S3VEM
Barium	Target	229		mg/kg	229		1	YES	S3VEM
Beryllium	Target	0.85		mg/kg	0.85		1	YES	S3VEM
Cadmium	Target	1.9		mg/kg	1.9		1	YES	S3VEM
Calcium	Target	17200		mg/kg	17200		1	YES	S3VEM
Chromium	Target	22.2		mg/kg	22.2		1	YES	S3VEM
Cobalt	Target	8.7		mg/kg	8.7		1	YES	S3VEM
Copper	Target	71.4		mg/kg	71.4		1	YES	S3VEM
Iron	Target	18200		mg/kg	18200		1	YES	S3VEM
Lead	Target	367		mg/kg	367		1	YES	S3VEM
Magnesium	Target	4620		mg/kg	4620		1	YES	S3VEM
Manganese	Target	1100		mg/kg	1100		1	YES	S3VEM
Nickel	Target	28.1		mg/kg	28.1		1	YES	S3VEM
Potassium	Target	3040		mg/kg	3040		1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.52	J	mg/kg	0.52	J	1	YES	S3VEM
Sodium	Target	96.4	J	mg/kg	96.4	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	25.0		mg/kg	25.0		1	YES	S3VEM
Zinc	Target	400		mg/kg	400		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M2L	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14100		mg/kg	14100		5	YES	S3VEM
Antimony	Target	29.1	U	mg/kg	29.1	U	5	YES	S3VEM
Arsenic	Target	13.4		mg/kg	13.4		5	YES	S3VEM
Barium	Target	263		mg/kg	263	*	5	YES	S3VEM
Beryllium	Target	0.89	J	mg/kg	0.89	J	5	YES	S3VEM
Cadmium	Target	1.7	J	mg/kg	1.7	J	5	YES	S3VEM
Calcium	Target	21200		mg/kg	21200	*	5	YES	S3VEM
Chromium	Target	26.2		mg/kg	26.2	*	5	YES	S3VEM
Cobalt	Target	10.4	J	mg/kg	10.4	J*	5	YES	S3VEM
Copper	Target	77.7		mg/kg	77.7	*	5	YES	S3VEM
Iron	Target	22500		mg/kg	22500	*	5	YES	S3VEM
Lead	Target	350		mg/kg	350		5	YES	S3VEM
Magnesium	Target	5600		mg/kg	5600	*	5	YES	S3VEM
Manganese	Target	1350		mg/kg	1350	*	5	YES	S3VEM
Nickel	Target	25.4		mg/kg	25.4		5	YES	S3VEM
Potassium	Target	3400		mg/kg	3400	*	5	YES	S3VEM
Selenium	Target	17.0	U	mg/kg	17.0	U	5	YES	S3VEM
Silver	Target	0.52	J	mg/kg	0.52	J	5	YES	S3VEM
Sodium	Target	2430	U	mg/kg	2430	U	5	YES	S3VEM
Thallium	Target	12.1	U	mg/kg	12.1	U	5	YES	S3VEM
Vanadium	Target	28.7		mg/kg	28.7	*	5	YES	S3VEM
Zinc	Target	383		mg/kg	383		5	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M2S	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/27/2018	Sample Time: 15:02:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	6.2		mg/kg	6.2		1	YES	S3VEM
Arsenic	Spike	22.7		mg/kg	22.7		1	YES	S3VEM
Barium	Spike	539		mg/kg	539		1	YES	S3VEM
Beryllium	Spike	9.8		mg/kg	9.8		1	YES	S3VEM
Cadmium	Spike	11.3		mg/kg	11.3		1	YES	S3VEM
Chromium	Spike	53.0		mg/kg	53.0		1	YES	S3VEM
Cobalt	Spike	84.4		mg/kg	84.4		1	YES	S3VEM
Copper	Spike	112		mg/kg	112		1	YES	S3VEM
Lead	Spike	360		mg/kg	360		1	YES	S3VEM
Manganese	Spike	1160		mg/kg	1160		1	YES	S3VEM
Nickel	Spike	122		mg/kg	122		1	YES	S3VEM
Selenium	Spike	15.8		mg/kg	15.8		1	YES	S3VEM
Silver	Spike	8.4		mg/kg	8.4		1	YES	S3VEM
Thallium	Spike	8.0		mg/kg	8.0		1	YES	S3VEM
Vanadium	Spike	101		mg/kg	101		1	YES	S3VEM
Zinc	Spike	490		mg/kg	490		1	YES	S3VEM
Tin	Spike	89.5		mg/kg	89.5		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M3	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 15:13:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16500		mg/kg	16500		1	YES	S3VEM
Antimony	Target	0.83	J	mg/kg	0.83	J*	1	YES	S3VEM
Arsenic	Target	15.9		mg/kg	15.9		1	YES	S3VEM
Barium	Target	190		mg/kg	190	*	1	YES	S3VEM
Beryllium	Target	0.82		mg/kg	0.82		1	YES	S3VEM
Cadmium	Target	1.7		mg/kg	1.7		1	YES	S3VEM
Calcium	Target	19200		mg/kg	19200	*	1	YES	S3VEM
Chromium	Target	22.4		mg/kg	22.4	*	1	YES	S3VEM
Cobalt	Target	8.6		mg/kg	8.6	*	1	YES	S3VEM
Copper	Target	54.6		mg/kg	54.6	*	1	YES	S3VEM
Iron	Target	19100		mg/kg	19100	*	1	YES	S3VEM
Lead	Target	280		mg/kg	280		1	YES	S3VEM
Magnesium	Target	5080		mg/kg	5080	*	1	YES	S3VEM
Manganese	Target	1290		mg/kg	1290	*	1	YES	S3VEM
Nickel	Target	24.6		mg/kg	24.6		1	YES	S3VEM
Potassium	Target	3090		mg/kg	3090	*	1	YES	S3VEM
Selenium	Target	1.1	J	mg/kg	1.1	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.46	J	1	YES	S3VEM
Sodium	Target	495	U	mg/kg	87.9	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	24.2		mg/kg	24.2	*	1	YES	S3VEM
Zinc	Target	294		mg/kg	294		1	YES	S3VEM
Tin	Target	12.3		mg/kg	12.3		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M4	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 15:38:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16100		mg/kg	16100		1	YES	S3VEM
Antimony	Target	0.85	J	mg/kg	0.85	J*	1	YES	S3VEM
Arsenic	Target	13.7		mg/kg	13.7		1	YES	S3VEM
Barium	Target	159		mg/kg	159	*	1	YES	S3VEM
Beryllium	Target	0.76		mg/kg	0.76		1	YES	S3VEM
Cadmium	Target	1.5		mg/kg	1.5		1	YES	S3VEM
Calcium	Target	27000		mg/kg	27000	*	1	YES	S3VEM
Chromium	Target	18.5		mg/kg	18.5	*	1	YES	S3VEM
Cobalt	Target	7.8		mg/kg	7.8	*	1	YES	S3VEM
Copper	Target	170		mg/kg	170	*	1	YES	S3VEM
Iron	Target	17900		mg/kg	17900	*	1	YES	S3VEM
Lead	Target	208		mg/kg	208		1	YES	S3VEM
Magnesium	Target	5500		mg/kg	5500	*	1	YES	S3VEM
Manganese	Target	1210		mg/kg	1210	*	1	YES	S3VEM
Nickel	Target	20.9		mg/kg	20.9		1	YES	S3VEM
Potassium	Target	3080		mg/kg	3080	*	1	YES	S3VEM
Selenium	Target	0.96	J	mg/kg	0.96	J	1	YES	S3VEM
Silver	Target	0.99	U	mg/kg	0.45	J	1	YES	S3VEM
Sodium	Target	495	U	mg/kg	84.7	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	22.6		mg/kg	22.6	*	1	YES	S3VEM
Zinc	Target	410		mg/kg	410		1	YES	S3VEM
Tin	Target	9.2		mg/kg	9.2		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M5	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S003	pH:	Sample Date: 06/27/2018	Sample Time: 15:50:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12700		mg/kg	12700		1	YES	S3VEM
Antimony	Target	0.61	J	mg/kg	0.61	J*	1	YES	S3VEM
Arsenic	Target	7.4		mg/kg	7.4		1	YES	S3VEM
Barium	Target	103		mg/kg	103	*	1	YES	S3VEM
Beryllium	Target	0.53		mg/kg	0.53		1	YES	S3VEM
Cadmium	Target	0.93		mg/kg	0.93		1	YES	S3VEM
Calcium	Target	70100	J	mg/kg	70100	*	1	YES	S3VEM
Chromium	Target	12.9		mg/kg	12.9	*	1	YES	S3VEM
Cobalt	Target	5.0		mg/kg	5.0	*	1	YES	S3VEM
Copper	Target	27.7		mg/kg	27.7	*	1	YES	S3VEM
Iron	Target	13900		mg/kg	13900	*	1	YES	S3VEM
Lead	Target	84.4		mg/kg	84.4		1	YES	S3VEM
Magnesium	Target	9980		mg/kg	9980	*	1	YES	S3VEM
Manganese	Target	771		mg/kg	771	*	1	YES	S3VEM
Nickel	Target	13.4		mg/kg	13.4		1	YES	S3VEM
Potassium	Target	3130		mg/kg	3130	*	1	YES	S3VEM
Selenium	Target	0.33	J	mg/kg	0.33	J	1	YES	S3VEM
Silver	Target	0.97	U	mg/kg	0.18	J	1	YES	S3VEM
Sodium	Target	485	U	mg/kg	90.4	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	16.9		mg/kg	16.9	*	1	YES	S3VEM
Zinc	Target	124		mg/kg	124		1	YES	S3VEM
Tin	Target	4.9	U	mg/kg	4.2	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M6	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 16:00:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13800		mg/kg	13800		1	YES	S3VEM
Antimony	Target	399		mg/kg	399	*	1	YES	S3VEM
Arsenic	Target	206		mg/kg	206		1	YES	S3VEM
Barium	Target	1560		mg/kg	1560	*	1	YES	S3VEM
Beryllium	Target	36.5		mg/kg	36.5		1	YES	S3VEM
Cadmium	Target	96.4		mg/kg	96.4		1	YES	S3VEM
Calcium	Target	18900		mg/kg	18900	*	1	YES	S3VEM
Chromium	Target	541		mg/kg	541	*	1	YES	S3VEM
Cobalt	Target	235		mg/kg	235	*	1	YES	S3VEM
Copper	Target	521		mg/kg	521	*	1	YES	S3VEM
Iron	Target	12300		mg/kg	12300	*	1	YES	S3VEM
Lead	Target	537		mg/kg	537		1	YES	S3VEM
Magnesium	Target	19100		mg/kg	19100	*	1	YES	S3VEM
Manganese	Target	878		mg/kg	878	*	1	YES	S3VEM
Nickel	Target	380		mg/kg	380		1	YES	S3VEM
Potassium	Target	13400		mg/kg	13400	*	1	YES	S3VEM
Selenium	Target	342		mg/kg	342		1	YES	S3VEM
Silver	Target	50.9		mg/kg	50.9		1	YES	S3VEM
Sodium	Target	12100		mg/kg	12100		1	YES	S3VEM
Thallium	Target	375		mg/kg	375		1	YES	S3VEM
Vanadium	Target	376		mg/kg	376	*	1	YES	S3VEM
Zinc	Target	1550		mg/kg	1550		1	YES	S3VEM
Tin	Target	188		mg/kg	188		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	20.0	U	mg/kg	20.0	U	1	YES	S3VEM
Antimony	Target	6.0	U	mg/kg	6.0	U	1	YES	S3VEM
Arsenic	Target	-0.22	J	mg/kg	-0.22	J	1	YES	S3VEM
Barium	Target	20.0	U	mg/kg	20.0	U	1	YES	S3VEM
Beryllium	Target	0.50	U	mg/kg	0.50	U	1	YES	S3VEM
Cadmium	Target			mg/kg	-0.015	J	1	YES	S3VEM
Calcium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Chromium	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Cobalt	Target			mg/kg	-0.036	J	1	YES	S3VEM
Copper	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Iron	Target			mg/kg	-0.69	J	1	YES	S3VEM
Lead	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Magnesium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Manganese	Target			mg/kg	-0.073	J	1	YES	S3VEM
Nickel	Target			mg/kg	-0.083	J	1	YES	S3VEM
Potassium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Selenium	Target	3.5	U	mg/kg	3.5	U	1	YES	S3VEM
Silver	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Sodium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Thallium	Target			mg/kg	-0.18	J	1	YES	S3VEM
Vanadium	Target	5.0	U	mg/kg	5.0	U	1	YES	S3VEM
Zinc	Target	6.0	U	mg/kg	6.0	U	1	YES	S3VEM
Tin	Target	0.71	J	mg/kg	0.71	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2K7** **Lab Name: Bonner Analytical Testing Co.**

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

EXECUTIVE NARRATIVE

Case No.: 47720
Site: Eighteenmile Creek
Number of Samples: 4 (Soil)
Analysis: Metals (ICP-AES, MA# 2822.0)

SDG No.: MBE2M7
Laboratory: Bonner Analytical Testing Co.
Sampling dates: 06/27/2018
Validation SOP: HW-3a (Rev 1)

QAPP
Contractor: Weston Solutions
Reference: DCN: RST3-04-D-0200

SUMMARY OF DEFINITIONS:

Critical: Results have an unacceptable level of uncertainty and should not be used for making decisions. Data have been qualified "R" rejected.
Major: A level of uncertainty exists that may not meet the data quality objectives for the project. A bias is likely to be present in the results. Data has been qualified "J" estimated. "J+" and "J-" represent likely direction of the bias.
Minor: The level of uncertainty is acceptable. No significant bias in the data was observed.

Critical Findings:
None

Major Findings:
Sample MBE2M7 has analytes that have been qualified J, J+ or J-.

Minor Findings:
One or more analytes in one or more samples are qualified "J" due to results between MDL and CRQL.

COMMENT:	One or more detected and non-detected analytes exceeded the removal levels of resident soil for one or more samples.

Reviewer Name(s): Dharmesh Patel

Approver's Signature: **Date: 08/08/2018**

Name: **Narendra Kumar**

Affiliation: USEPA/R2/HWSB/HWSS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
DESA/HWSB/HWSS
2890, Woodbridge Avenue, Edison, NJ 08837

Data Qualifier Definitions (National Functional Guidelines)			
Qualifier Symbol	**Explanation**		
	INORGANICS	**ORGANICS**	**CHLORINATED DIOXIN/FURAN**
U	The analyte was analyzed for, but was not detected above the level of the reported quantitation limit.	The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the adjusted Contract Required Quantitation Limit (CRQL) for sample and method	The analyte was analyzed for but not detected. The value preceding the "U" may represent the adjusted Contract Required Quantitation Limit (see DLM02.X, Exhibit D, Section 1.2 and Table 2), or the sample specific estimated detection limit (EDL, see Method 8290A, Section 11.9.5).
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to the quality of the data generated because certain quality control criteria were not met, or the concentration of the analyte was below the CRQL.	The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample (due either to an issue with the quality of the data generated because certain QC criteria were not met, or the concentration of the analyte was below the adjusted CRQL).
J+	The result is an estimated quantity, but the result may be biased high.	The result is an estimated quantity, but the result may be biased high.	
J–	The result is an estimated quantity, but the result may be biased low.	The result is an estimated quantity, but the result may be biased low.	
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.	The analyte was not detected at a level greater than or equal to the adjusted CRQL. However, the reported adjusted CRQL is approximate and may be inaccurate or imprecise.	The analyte was not detected (see definition of "U" flag, above). The reported value should be considered approximate.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.	The sample results are unusable due to the quality of the data generated because certain criteria were not met. The analyte may or may not be present in the sample.
N		The analysis indicates the presence of an analyte for which there is presumptive evidence to make a “tentative identification”.	
NJ		The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	
C		This qualifier applies to pesticide and Aroclor results when the identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).	
X		This qualifier applies to pesticide and Aroclor results when GC/MS analysis was attempted but was unsuccessful.	

DATA ASSESSMENT

ANALYSIS: METALS ICP-AES (MA# 2815.0)

The current SOP HW-3a (Rev 1) September 2016, USEPA Region II for the evaluation of ICP-AES metals generated through Statement of Work ISOM02.2, and any future editorial revisions of ISOM02.2 has been applied. Data have been reviewed according to TDF specifications, the National Functional Guidelines Report and the CCS Semi- Automated Screening Results Report.

1. HOLDING TIME AND PRESERVATION

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples are not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding time (180 days) or pH (≤2) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. CALIBRATION

Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals on the Inorganic Target Analyte List (TAL). Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the CRQL. The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution(s).
The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks (ICB and CCB) are used to ensure a stable instrument baseline before and during the analysis of analytical samples. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

The following samples have analyte results less than or equal to CRQLs. The associated CCB analyte results are less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Sodium MBE2M7, MBE2M8, MBE2M9, MBE2N0.

Field Blank- MBE2N1

The following samples have analyte results greater than or equal to MDLs and less than or equal to CRQLs. The associated Field Blank analyte results are greater than or equal to MDLs and less than or equal to CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Silver MBE2M7, MBE2M8, MBE2M9, MBE2N0.
Sodium MBE2M7, MBE2M8, MBE2M9, MBE2N0.
Thallium MBE2M8.

4. **INTERFERENCE CHECK SAMPLE**

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of Al, Ca, Fe, and Mg in the sample are found to be less than or equal to their respective concentrations in the ICS. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike Percent Recovery (%R) shall be within the established acceptance limits of 75 – 125%. However, spike recovery limits do not apply when the sample concentration is ≥ 4x the spike added. For a matrix spike analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

The following sample has matrix spike recovery in the range of 30 – 74% and the post digestion spike sample has percent recovery greater than or equal to 75%. Detects are qualified as J. Nondetects are qualified as UJ.

Selenium, Tin MBE2M7

The following sample has matrix spike percent recovery less than 30% and Post-digestion spike sample has percent recovery greater than or equal to 75%. Detects are qualified as J. Nondetects are qualified as UJ.

Antimony MBE2M7

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 35% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

No problems were found for this criterion.

7. FIELD DUPLICATE

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 50% for the Relative Percent Difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the Contract Required Quantitation Limit (CRQL). A control limit of 2x the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

The duplicate or the parent sample of the field duplicate was not identified in this SDG.

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including the sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS Percent Recoveries (%R) must fall within the control limits of 70-130%, except for Sb and Ag which must fall within the control limits of 50-150%. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by Inductively Coupled Plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 50 times (50x) the Method Detection Limit (MDL)], the Percent Difference (%D) between the original determination and the serial dilution

analysis (a five-fold dilution) after correction for dilution shall be less than 15. For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

No problems were found for this criterion.

10. PERCENT SOLIDS

The laboratory is required to perform the percent solids determination prior to sample preparation and analysis. All results of a sample with percent solids less than 50% are qualified estimated, "J". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: LCS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	36.0		mg/kg	36.0		1	YES	S3VEM
Antimony	Spike	11.4		mg/kg	11.4		1	YES	S3VEM
Arsenic	Spike	1.7		mg/kg	1.7		1	YES	S3VEM
Barium	Spike	41.4		mg/kg	41.4		1	YES	S3VEM
Beryllium	Spike	0.99		mg/kg	0.99		1	YES	S3VEM
Cadmium	Spike	0.99		mg/kg	0.99		1	YES	S3VEM
Calcium	Spike	1010		mg/kg	1010		1	YES	S3VEM
Chromium	Spike	2.1		mg/kg	2.1		1	YES	S3VEM
Cobalt	Spike	10.3		mg/kg	10.3		1	YES	S3VEM
Copper	Spike	4.7		mg/kg	4.7		1	YES	S3VEM
Iron	Spike	20.5		mg/kg	20.5		1	YES	S3VEM
Lead	Spike	1.9		mg/kg	1.9		1	YES	S3VEM
Magnesium	Spike	927		mg/kg	927		1	YES	S3VEM
Manganese	Spike	3.0		mg/kg	3.0		1	YES	S3VEM
Nickel	Spike	8.2		mg/kg	8.2		1	YES	S3VEM
Potassium	Spike	957		mg/kg	957		1	YES	S3VEM
Selenium	Spike	6.5		mg/kg	6.5		1	YES	S3VEM
Silver	Spike	1.9		mg/kg	1.9		1	YES	S3VEM
Sodium	Spike	955		mg/kg	955		1	YES	S3VEM
Thallium	Spike	4.9		mg/kg	4.9		1	YES	S3VEM
Vanadium	Spike	10.3		mg/kg	10.3		1	YES	S3VEM
Zinc	Spike	11.9		mg/kg	11.9		1	YES	S3VEM
Tin	Spike	11.8		mg/kg	11.8		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M7	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 16:08:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13400		mg/kg	13400	*	1	YES	S3VEM
Antimony	Target	0.54	J	mg/kg	0.54	J*	1	YES	S3VEM
Arsenic	Target	13.4		mg/kg	13.4	*	1	YES	S3VEM
Barium	Target	177		mg/kg	177	*	1	YES	S3VEM
Beryllium	Target	0.83		mg/kg	0.83		1	YES	S3VEM
Cadmium	Target	1.9		mg/kg	1.9	*	1	YES	S3VEM
Calcium	Target	5990		mg/kg	5990	*	1	YES	S3VEM
Chromium	Target	65.2		mg/kg	65.2	*	1	YES	S3VEM
Cobalt	Target	7.8		mg/kg	7.8	*	1	YES	S3VEM
Copper	Target	72.1		mg/kg	72.1		1	YES	S3VEM
Iron	Target	16500		mg/kg	16500	*	1	YES	S3VEM
Lead	Target	566		mg/kg	566		1	YES	S3VEM
Magnesium	Target	2870		mg/kg	2870	*	1	YES	S3VEM
Manganese	Target	962		mg/kg	962	*	1	YES	S3VEM
Nickel	Target	36.5		mg/kg	36.5		1	YES	S3VEM
Potassium	Target	2080		mg/kg	2080	*	1	YES	S3VEM
Selenium	Target	0.99	J	mg/kg	0.99	J*	1	YES	S3VEM
Silver	Target	1.0	U	mg/kg	0.46	J	1	YES	S3VEM
Sodium	Target	500	U	mg/kg	181	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	23.0		mg/kg	23.0	*	1	YES	S3VEM
Zinc	Target	351		mg/kg	351		1	YES	S3VEM
Tin	Target	24.6	J	mg/kg	24.6	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M7A	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/27/2018	Sample Time: 16:08:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	12.3		mg/kg	12.3		1	YES	S3VEM
Selenium	Spike	7.1		mg/kg	7.1		1	YES	S3VEM
Tin	Spike	68.1		mg/kg	68.1	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M7D	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/27/2018	Sample Time: 16:08:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13600		mg/kg	13600		1	YES	S3VEM
Antimony	Target	0.57	J	mg/kg	0.57	J	1	YES	S3VEM
Arsenic	Target	13.3		mg/kg	13.3		1	YES	S3VEM
Barium	Target	177		mg/kg	177		1	YES	S3VEM
Beryllium	Target	0.84		mg/kg	0.84		1	YES	S3VEM
Cadmium	Target	1.9		mg/kg	1.9		1	YES	S3VEM
Calcium	Target	5990		mg/kg	5990		1	YES	S3VEM
Chromium	Target	65.1		mg/kg	65.1		1	YES	S3VEM
Cobalt	Target	7.8		mg/kg	7.8		1	YES	S3VEM
Copper	Target	72.3		mg/kg	72.3		1	YES	S3VEM
Iron	Target	16600		mg/kg	16600		1	YES	S3VEM
Lead	Target	576		mg/kg	576		1	YES	S3VEM
Magnesium	Target	2890		mg/kg	2890		1	YES	S3VEM
Manganese	Target	966		mg/kg	966		1	YES	S3VEM
Nickel	Target	35.2		mg/kg	35.2		1	YES	S3VEM
Potassium	Target	2120		mg/kg	2120		1	YES	S3VEM
Selenium	Target	1.2	J	mg/kg	1.2	J	1	YES	S3VEM
Silver	Target	0.48	J	mg/kg	0.48	J	1	YES	S3VEM
Sodium	Target	176	J	mg/kg	176	J	1	YES	S3VEM
Thallium	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Vanadium	Target	23.4		mg/kg	23.4		1	YES	S3VEM
Zinc	Target	353		mg/kg	353		1	YES	S3VEM
Tin	Target	24.2		mg/kg	24.2		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M7L	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12000		mg/kg	12000	*	5	YES	S3VEM
Antimony	Target	30.0	U	mg/kg	30.0	U	5	YES	S3VEM
Arsenic	Target	11.9		mg/kg	11.9	*	5	YES	S3VEM
Barium	Target	196		mg/kg	196	*	5	YES	S3VEM
Beryllium	Target	0.82	J	mg/kg	0.82	J	5	YES	S3VEM
Cadmium	Target	1.7	J	mg/kg	1.7	J*	5	YES	S3VEM
Calcium	Target	6870		mg/kg	6870	*	5	YES	S3VEM
Chromium	Target	73.4		mg/kg	73.4	*	5	YES	S3VEM
Cobalt	Target	9.0	J	mg/kg	9.0	J*	5	YES	S3VEM
Copper	Target	76.8		mg/kg	76.8		5	YES	S3VEM
Iron	Target	19000		mg/kg	19000	*	5	YES	S3VEM
Lead	Target	527		mg/kg	527		5	YES	S3VEM
Magnesium	Target	3280		mg/kg	3280	*	5	YES	S3VEM
Manganese	Target	1090		mg/kg	1090	*	5	YES	S3VEM
Nickel	Target	33.0		mg/kg	33.0		5	YES	S3VEM
Potassium	Target	2320	J	mg/kg	2320	J*	5	YES	S3VEM
Selenium	Target	17.5	U	mg/kg	17.5	U	5	YES	S3VEM
Silver	Target	0.62	J	mg/kg	0.62	J	5	YES	S3VEM
Sodium	Target	199	J	mg/kg	199	J	5	YES	S3VEM
Thallium	Target	12.5	U	mg/kg	12.5	U	5	YES	S3VEM
Vanadium	Target	25.5		mg/kg	25.5	*	5	YES	S3VEM
Zinc	Target	320		mg/kg	320		5	YES	S3VEM
Tin	Target	28.7		mg/kg	28.7	*	5	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M7S	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date: 06/27/2018	Sample Time: 16:08:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	5.9	J	mg/kg	5.9	J	1	YES	S3VEM
Arsenic	Spike	21.7		mg/kg	21.7		1	YES	S3VEM
Barium	Spike	509		mg/kg	509		1	YES	S3VEM
Beryllium	Spike	11.2		mg/kg	11.2		1	YES	S3VEM
Cadmium	Spike	12.1		mg/kg	12.1		1	YES	S3VEM
Chromium	Spike	101		mg/kg	101		1	YES	S3VEM
Cobalt	Spike	87.4		mg/kg	87.4		1	YES	S3VEM
Copper	Spike	117		mg/kg	117		1	YES	S3VEM
Lead	Spike	582		mg/kg	582		1	YES	S3VEM
Manganese	Spike	1070		mg/kg	1070		1	YES	S3VEM
Nickel	Spike	138		mg/kg	138		1	YES	S3VEM
Selenium	Spike	15.4		mg/kg	15.4		1	YES	S3VEM
Silver	Spike	8.3		mg/kg	8.3		1	YES	S3VEM
Thallium	Spike	10.0		mg/kg	10.0		1	YES	S3VEM
Vanadium	Spike	107		mg/kg	107		1	YES	S3VEM
Zinc	Spike	459		mg/kg	459		1	YES	S3VEM
Tin	Spike	98.7		mg/kg	98.7		1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M8	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 16:10:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14500		mg/kg	14500	*	1	YES	S3VEM
Antimony	Target	1.2	J	mg/kg	1.2	J*	1	YES	S3VEM
Arsenic	Target	12.8		mg/kg	12.8	*	1	YES	S3VEM
Barium	Target	166		mg/kg	166	*	1	YES	S3VEM
Beryllium	Target	0.83		mg/kg	0.83		1	YES	S3VEM
Cadmium	Target	1.6		mg/kg	1.6	*	1	YES	S3VEM
Calcium	Target	7160		mg/kg	7160	*	1	YES	S3VEM
Chromium	Target	39.7		mg/kg	39.7	*	1	YES	S3VEM
Cobalt	Target	7.5		mg/kg	7.5	*	1	YES	S3VEM
Copper	Target	52.3		mg/kg	52.3		1	YES	S3VEM
Iron	Target	15700		mg/kg	15700	*	1	YES	S3VEM
Lead	Target	462		mg/kg	462		1	YES	S3VEM
Magnesium	Target	3130		mg/kg	3130	*	1	YES	S3VEM
Manganese	Target	1040		mg/kg	1040	*	1	YES	S3VEM
Nickel	Target	26.9		mg/kg	26.9		1	YES	S3VEM
Potassium	Target	1930		mg/kg	1930	*	1	YES	S3VEM
Selenium	Target	1.0	J	mg/kg	1.0	J*	1	YES	S3VEM
Silver	Target	0.80	U	mg/kg	0.42	J	1	YES	S3VEM
Sodium	Target	400	U	mg/kg	254	J	1	YES	S3VEM
Thallium	Target	2.0	U	mg/kg	0.15	J	1	YES	S3VEM
Vanadium	Target	21.9		mg/kg	21.9	*	1	YES	S3VEM
Zinc	Target	270		mg/kg	270		1	YES	S3VEM
Tin	Target	24.3		mg/kg	24.3	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2M9	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 16:13:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16200		mg/kg	16200	*	1	YES	S3VEM
Antimony	Target	0.66	J	mg/kg	0.66	J*	1	YES	S3VEM
Arsenic	Target	10.9		mg/kg	10.9	*	1	YES	S3VEM
Barium	Target	144		mg/kg	144	*	1	YES	S3VEM
Beryllium	Target	0.74		mg/kg	0.74		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4	*	1	YES	S3VEM
Calcium	Target	6430		mg/kg	6430	*	1	YES	S3VEM
Chromium	Target	27.2		mg/kg	27.2	*	1	YES	S3VEM
Cobalt	Target	7.9		mg/kg	7.9	*	1	YES	S3VEM
Copper	Target	39.7		mg/kg	39.7		1	YES	S3VEM
Iron	Target	16600		mg/kg	16600	*	1	YES	S3VEM
Lead	Target	315		mg/kg	315		1	YES	S3VEM
Magnesium	Target	3200		mg/kg	3200	*	1	YES	S3VEM
Manganese	Target	1300		mg/kg	1300	*	1	YES	S3VEM
Nickel	Target	21.1		mg/kg	21.1		1	YES	S3VEM
Potassium	Target	2130		mg/kg	2130	*	1	YES	S3VEM
Selenium	Target	0.85	J	mg/kg	0.85	J*	1	YES	S3VEM
Silver	Target	0.91	U	mg/kg	0.42	J	1	YES	S3VEM
Sodium	Target	455	U	mg/kg	280	J	1	YES	S3VEM
Thallium	Target	2.3	U	mg/kg	2.3	U	1	YES	S3VEM
Vanadium	Target	22.1		mg/kg	22.1	*	1	YES	S3VEM
Zinc	Target	183		mg/kg	183		1	YES	S3VEM
Tin	Target	12.2		mg/kg	12.2	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MBE2N0	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location: S004	pH:	Sample Date: 06/27/2018	Sample Time: 16:30:00
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16300		mg/kg	16300	*	1	YES	S3VEM
Antimony	Target	0.62	J	mg/kg	0.62	J*	1	YES	S3VEM
Arsenic	Target	10.3		mg/kg	10.3	*	1	YES	S3VEM
Barium	Target	137		mg/kg	137	*	1	YES	S3VEM
Beryllium	Target	0.74		mg/kg	0.74		1	YES	S3VEM
Cadmium	Target	1.4		mg/kg	1.4	*	1	YES	S3VEM
Calcium	Target	5440		mg/kg	5440	*	1	YES	S3VEM
Chromium	Target	29.8		mg/kg	29.8	*	1	YES	S3VEM
Cobalt	Target	7.9		mg/kg	7.9	*	1	YES	S3VEM
Copper	Target	38.3		mg/kg	38.3		1	YES	S3VEM
Iron	Target	16400		mg/kg	16400	*	1	YES	S3VEM
Lead	Target	261		mg/kg	261		1	YES	S3VEM
Magnesium	Target	2910		mg/kg	2910	*	1	YES	S3VEM
Manganese	Target	1320		mg/kg	1320	*	1	YES	S3VEM
Nickel	Target	22.1		mg/kg	22.1		1	YES	S3VEM
Potassium	Target	2130		mg/kg	2130	*	1	YES	S3VEM
Selenium	Target	0.70	J	mg/kg	0.70	J*	1	YES	S3VEM
Silver	Target	0.95	U	mg/kg	0.44	J	1	YES	S3VEM
Sodium	Target	476	U	mg/kg	253	J	1	YES	S3VEM
Thallium	Target	2.4	U	mg/kg	2.4	U	1	YES	S3VEM
Vanadium	Target	22.3		mg/kg	22.3	*	1	YES	S3VEM
Zinc	Target	172		mg/kg	172		1	YES	S3VEM
Tin	Target	11.0		mg/kg	11.0	*	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project **GroupID: 47720/EPW14029/MBE2M7** **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number: 2822.0
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	0.67	J	mg/kg	0.67	J	1	YES	S3VEM
Antimony	Target	6.0	U	mg/kg	6.0	U	1	YES	S3VEM
Arsenic	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Barium	Target	20.0	U	mg/kg	20.0	U	1	YES	S3VEM
Beryllium	Target			mg/kg	-0.018	J	1	YES	S3VEM
Cadmium	Target			mg/kg	-0.0074	J	1	YES	S3VEM
Calcium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Chromium	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Cobalt	Target	5.0	U	mg/kg	5.0	U	1	YES	S3VEM
Copper	Target	2.5	U	mg/kg	2.5	U	1	YES	S3VEM
Iron	Target	10.0	U	mg/kg	10.0	U	1	YES	S3VEM
Lead	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Magnesium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Manganese	Target	1.5	U	mg/kg	1.5	U	1	YES	S3VEM
Nickel	Target			mg/kg	-0.059	J	1	YES	S3VEM
Potassium	Target	6.5	J	mg/kg	6.5	J	1	YES	S3VEM
Selenium	Target	3.5	U	mg/kg	3.5	U	1	YES	S3VEM
Silver	Target	1.0	U	mg/kg	1.0	U	1	YES	S3VEM
Sodium	Target	500	U	mg/kg	500	U	1	YES	S3VEM
Thallium	Target			mg/kg	-0.15	J	1	YES	S3VEM
Vanadium	Target	5.0	U	mg/kg	5.0	U	1	YES	S3VEM
Zinc	Target	0.13	J	mg/kg	0.13	J	1	YES	S3VEM
Tin	Target	0.89	J	mg/kg	0.89	J	1	YES	S3VEM

Sample Summary Report

Project Name: EIGHTEENMILE CREEK Project | **GroupID: 47720/EPW14029/MBE2M7** | **Lab Name: Bonner Analytical Testing Co.**