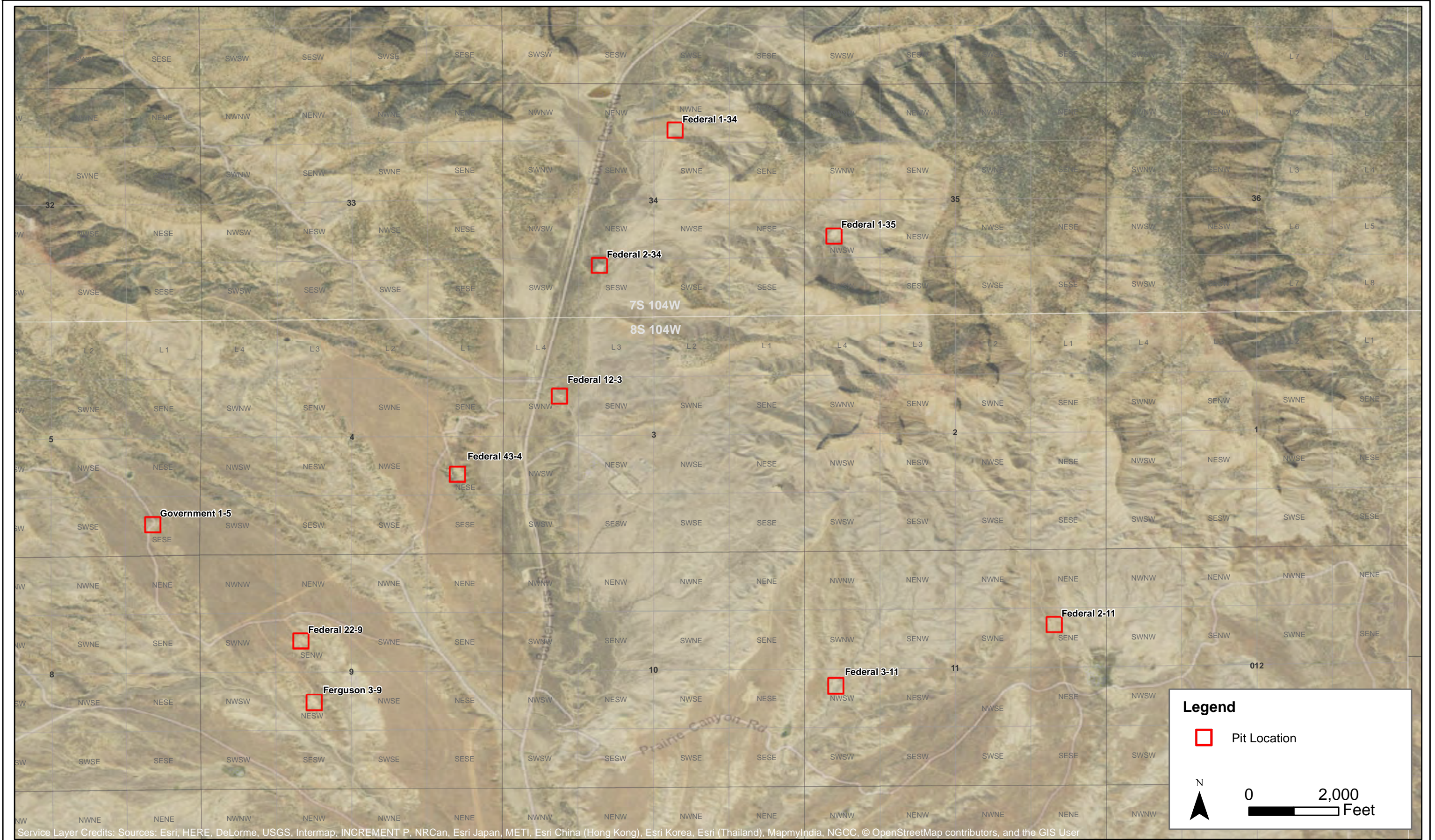


FIGURES



DATE:	September 2016
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Arnold



TASMAN
GEOSCIENCES

Tasman Geosciences, Inc.
6899 Pecos Street - Unit C
Denver, CO 80221

Foundation Energy Management, LLC
Western Slope Pit Assessment
Garfield County, Colorado

Site Locations Overview
Map

Figure
1



DATE: November 15, 2017		Foundation Energy Management, LLC Federal 12-3 SWNW, Section 3, Township 8 South, Range 104 West Garfield County, Colorado	Excavation and Soil Sample Location Map	FIGURE 2
DESIGNED BY: R. Cornez				
DRAWN BY: D. Cavinder				

ANALYTICAL TABLE

TABLE 1

**Former National Fuel Corporation Federal 12-3 Pit
Soil Sample Analytical Results
Foundation Energy Management**

Sample ID	Date Sampled	BTEX				TPH		pH	EC (mmhos/cm)	SAR
		Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)			
Table 910-1 Allowable Concentrations		0.17	85	100	175	500		6 - 9	< 4	< 12
Fed 12-3: C @ 4'	12/02/2016	< 0.0020	0.11	2.0	80	13,000	5,500	8.15	6.52	8.78
Fed 12-3: S @ 6'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.04	2.33	-
Fed 12-3: E @ 8'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.91	6.24	-
Fed 12-3: N @ 8'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.16	5.89	-
Fed 12-3: W @ 10'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.01	4.25	-
RBase01@10'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	8.36	4.84	-
RN01@9'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	9.09	0.631	-
RS01@9'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	8.03	0.993	-
RE01@9'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	8.42	2.25	-
RW01@9'	07/19/2017	< 0.10	< 10	< 10	< 10	< 50	< 50	8.82	2.24	-
CS01	07/20/2017	< 0.10	< 10	< 10	< 10	< 50	82	8.44	1.68	-
CS02	07/20/2017	< 0.10	< 10	< 10	< 10	< 50	69	8.25	1.70	-

Red Text = Constituent concentration exceeds COGCC Table 910-1 standard

Bold Text = Constituent concentration exceeds COGCC Table 910-1 inorganic standard; material located and/or backfilled below the designated root zone

< = Constituent concentration less than the listed laboratory reporting limit

- = Constituent not analyzed

mg/kg = Milligram per Kilogram

TPH = Total Petroleum Hydrocarbons

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

EC = Electrical Conductivity

mmhos/cm = millimhos per centimeter

SAR = Sodium Adsorption Ratio

**ATTACHMENT A
LABORATORY
ANALYTICAL REPORTS**

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.374.5933 - fax

December 12, 2016

Bob Cornez
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221
RE: Western Slope Pit Assessment

Enclosed are the results of analyses for samples received by Summit Scientific on 12/05/16 12:13. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, cursive script.

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 12-3: C @ 4'	1612031-01	Soil	12/02/16 09:25	12/05/16 12:13
Fed 12-3: S @ 6'	1612031-02	Soil	12/02/16 09:45	12/05/16 12:13
Fed 12-3: E @ 8'	1612031-03	Soil	12/02/16 10:08	12/05/16 12:13
Fed 12-3: N @ 8'	1612031-04	Soil	12/02/16 10:31	12/05/16 12:13
Fed 12-3: W @ 10'	1612031-05	Soil	12/02/16 09:25	12/05/16 12:13

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Summit Scientific

1612031

741 Corporate Circle, Suite J • Golden, Colorado 80401
303-277-9310 • 303-374-5933

Page 8 of 8

Client: Foundation Energy/Trinidad Project Manager: TUC
Address: _____ E-Mail: _____
City/State/Zip: _____
Phone: _____ Fax: _____ Project Name: Western Slope Pit Assessment
Sampler Name: _____ Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	G-TEXT	TPH-DRO	EC	PH		AS-Only
1	Fed 43-4: N @ 10'	02 Dec	0753	1						X				X	X	X	X		(amp) 12/5/16
2	Fed 12-3: C @ 4'		0925	2										X	X	X	X		01
3	Fed 12-3: S @ 6'		0945	1										X	X	X	X		02
4	Fed 12-3: E @ 8'		1008	1										X	X	X	X		03
5	Fed 12-3: N @ 8'		1031	1										X	X	X	X		04
6	Fed 12-3: W @ 10'		1101	1										X	X	X	X		05
7	Fed 3-11: C @ 6'		1218	2										X	X	X	X		
8	Fed 3-11: W @ 2'		1232	1										X	X	X	X		(amp) 12/5/16
9	Fed 3-11: N @ 2'		1259	1										X	X	X	X		
10	Fed 3-11: S @ 4'		1229	1										X	X	X	X		

Relinquished by: <u>[Signature]</u>	Date/Time: <u>12/5/16 1010</u>	Received by: <u>[Signature]</u>	Date/Time: <u>12-5-16 10:10</u>	Turn Around Time (Check)	Notes:
				Same Day — 72 hours	Z
				24 hours — Standard	
				48 hours —	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity:	
				Temperature Upon Receipt: <u>1.6°C</u>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Intact: <u>Yes</u> No	

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

[Signature]



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Sample Receipt Checklist

S2 Work Order: 1612031

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment

Shipped Via: Hand

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Cooler ID					
Temp (°C)	<u>1.6</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Nakita
Custodian Printed Name

MS
Signature or Initials of Custodian

12/5/16 1230
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: C @ 4'
1612031-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	5500	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		101 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	0.11	0.0050	"	"	"	"	"	"	
Ethylbenzene	2.0	0.50	"	100	"	"	"	"	
Xylenes (total)	80	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	13000	500	"	1000	"	"	"	"	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		84.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		323 %	21-167		"	"	"	"	S-02

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	1612049	12/06/16	12/08/16	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: C @ 4'
1612031-01 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (b) fluoranthene	ND	0.00500	mg/kg	1	1612049	12/06/16	12/08/16	EPA 8270D SIM	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0701	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Naphthalene	0.150	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: 12/02/16 09:25

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		37.6 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		58.3 %	30-150		"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 12/02/16 09:25

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.77	0.245	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	135	0.490	"	"	"	"	"	"	
Cadmium	0.388	0.123	"	"	"	"	"	"	
Chromium	7.68	0.613	"	"	"	"	"	"	
Copper	20.6	0.613	"	"	"	"	"	"	
Lead	27.0	0.245	"	"	"	"	"	"	
Nickel	13.8	0.123	"	"	"	"	"	"	
Selenium	0.665	0.490	"	"	"	"	"	"	
Silver	0.248	0.123	"	"	"	"	"	"	
Zinc	81.5	12.3	"	"	"	"	"	"	

Date Sampled: 12/02/16 09:25

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.77	0.245	"	"	"	"	"	"	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: C @ 4'
1612031-01 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Barium	135	0.490	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
Boron	3.43	1.23	"	"	"	"	"	"
Cadmium	0.388	0.123	"	"	"	"	"	"
Chromium	7.68	0.613	"	"	"	"	"	"
Copper	20.6	0.613	"	"	"	"	"	"
Lead	27.0	0.245	"	"	"	"	"	"
Nickel	13.8	0.123	"	"	"	"	"	"
Selenium	0.665	0.490	"	"	"	"	"	"
Silver	0.248	0.123	"	"	"	"	"	"
Zinc	81.5	12.3	"	"	"	"	"	"

Total Mercury by EPA Method 7471

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0537	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

Hexavalent Chromium by EPA 7196

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.300	mg/kg dry	1	1612064	12/07/16	12/08/16	EPA 7196	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	7.68	0.980	"	"	[CALC]	"	"	EPA 7196/3060A	

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: C @ 4'
1612031-01 (Soil)

Summit Scientific

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis

Calcium	2200	12.3 mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	389	6.13	"	"	"	"	"
Sodium	1700	6.13	"	"	"	"	"

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.78		units	"	1612082	12/08/16	12/08/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.52	0.0100 mmhos/cm		1	1612097	12/09/16	12/09/16	SM 2510B	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.15	0.100 pH Units		"	1612095	12/06/16	12/06/16	EPA 9045	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.6		%	"	1612069	12/07/16	12/07/16	% calculation	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: S @ 6'
1612031-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.33	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: S @ 6'
1612031-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 09:45

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.04	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: E @ 8'
1612031-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 10:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.24	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: E @ 8'
1612031-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/02/16 10:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.91	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: N @ 8'
1612031-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.89	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: N @ 8'
1612031-04 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 10:31

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.16	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: W @ 10'
1612031-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		94.3 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612073	12/07/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.25	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: W @ 10'
1612031-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.01	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612067 - EPA 3550A

Blank (1612067-BLK1)

Prepared: 12/07/16 Analyzed: 12/08/16

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.2 30-150

LCS (1612067-BS1)

Prepared: 12/07/16 Analyzed: 12/08/16

C10-C28 (DRO) 458 50 mg/kg 499 91.7 73-134

Surrogate: o-Terphenyl 14.1 " 12.5 113 30-150

Matrix Spike (1612067-MS1)

Source: 1612031-01

Prepared: 12/07/16 Analyzed: 12/08/16

C10-C28 (DRO) 5780 50 mg/kg 499 5510 54.7 50-148

Surrogate: o-Terphenyl 15.6 " 12.5 125 30-150

Matrix Spike Dup (1612067-MSD1)

Source: 1612031-01

Prepared: 12/07/16 Analyzed: 12/08/16

C10-C28 (DRO) 6380 50 mg/kg 499 5510 174 50-148 9.81 20 QM-07

Surrogate: o-Terphenyl 16.4 " 12.5 131 30-150

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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612073 - EPA 5030 Soil MS

Blank (1612073-BLK1)

Prepared: 12/07/16 Analyzed: 12/08/16

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0419		"	0.0400		105	23-173			
Surrogate: Toluene-d8	0.0400		"	0.0400		99.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

LCS (1612073-BS1)

Prepared: 12/07/16 Analyzed: 12/08/16

Benzene	0.121	0.0020	mg/kg	0.100		121	58-130			
Toluene	0.119	0.0050	"	0.100		119	61-134			
Ethylbenzene	0.141	0.0050	"	0.0992		142	74-150			
m,p-Xylene	0.262	0.010	"	0.200		131	73-137			
o-Xylene	0.140	0.0050	"	0.0980		143	73-150			
Xylenes (total)	0.402	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.67	0.50	"				30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	23-173			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	20-170			
Surrogate: 4-Bromofluorobenzene	0.0418		"	0.0400		104	21-167			

Matrix Spike (1612073-MS1)

Source: 1612029-01

Prepared: 12/07/16 Analyzed: 12/08/16

Benzene	0.123	0.0020	mg/kg	0.100	ND	123	30-131			
Toluene	0.124	0.0050	"	0.100	0.00396	120	30-134			
Ethylbenzene	0.144	0.0050	"	0.0992	ND	146	22-153			
m,p-Xylene	0.278	0.010	"	0.200	0.0112	134	10-159			
o-Xylene	0.146	0.0050	"	0.0980	ND	149	31-151			
Xylenes (total)	0.424	0.0050	"		0.0112		30-150			
Gasoline Range Hydrocarbons	2.72	0.50	"		ND		30-150			
Surrogate: 1,2-Dichloroethane-d4	0.0458		"	0.0400		115	23-173			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

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12/12/16 15:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control
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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612073 - EPA 5030 Soil MS

Matrix Spike Dup (1612073-MSD1)		Source: 1612029-01			Prepared: 12/07/16		Analyzed: 12/08/16			
Benzene	0.123	0.0020	mg/kg	0.100	ND	123	30-131	0.341	34	
Toluene	0.125	0.0050	"	0.100	0.00396	121	30-134	0.772	30	
Ethylbenzene	0.149	0.0050	"	0.0992	ND	150	22-153	2.93	24	
m,p-Xylene	0.282	0.010	"	0.200	0.0112	135	10-159	1.35	68	
o-Xylene	0.148	0.0050	"	0.0980	ND	151	31-151	1.36	38	
Xylenes (total)	0.430	0.0050	"		0.0112		30-150	1.36	20	
Gasoline Range Hydrocarbons	2.89	0.50	"		ND		30-150	5.99	20	
Surrogate: 1,2-Dichloroethane-d4	0.0467		"	0.0400		117	23-173			
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	21-167			

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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

Prepared: 12/06/16 Analyzed: 12/08/16

Acenaphthene	ND	0.00500	mg/kg
Anthracene	ND	0.00500	"
Benzo (a) anthracene	ND	0.00500	"
Benzo (b) fluoranthene	ND	0.00500	"
Benzo (k) fluoranthene	ND	0.00500	"
Benzo (a) pyrene	ND	0.00500	"
Chrysene	ND	0.00500	"
Dibenz (a,h) anthracene	ND	0.00500	"
Fluoranthene	ND	0.00500	"
Fluorene	ND	0.00500	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"
Naphthalene	ND	0.00500	"
Pyrene	ND	0.00500	"

Surrogate: 2-Methylnaphthalene-d10	0.0227		"	0.0333	68.0	30-150
Surrogate: Fluoranthene-d10	0.0341		"	0.0333	102	30-150

LCS (1612049-BS1)

Prepared: 12/06/16 Analyzed: 12/08/16

Acenaphthene	0.0338	0.00500	mg/kg	0.0333	101	48-131
Anthracene	0.0382	0.00500	"			48-135
Benzo (a) anthracene	0.0376	0.00500	"			37-142
Benzo (b) fluoranthene	0.0386	0.00500	"			35-139
Benzo (k) fluoranthene	0.0337	0.00500	"			30-139
Benzo (a) pyrene	0.0370	0.00500	"			41-132
Chrysene	0.0324	0.00500	"			30-136
Dibenz (a,h) anthracene	0.0345	0.00500	"			24-127
Fluoranthene	0.0346	0.00500	"			50-139
Fluorene	0.0358	0.00500	"			50-130
Indeno (1,2,3-cd) pyrene	0.0304	0.00500	"			26-139
Naphthalene	0.0321	0.00500	"			40-135
Pyrene	0.0342	0.00500	"	0.0333	103	39-141

Surrogate: 2-Methylnaphthalene-d10	0.0272		"	0.0333	81.6	50-150
Surrogate: Fluoranthene-d10	0.0396		"	0.0333	119	50-150

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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612049 - EPA 5030 Soil MS

Matrix Spike (1612049-MS1)				Source: 1612026-04		Prepared: 12/06/16		Analyzed: 12/08/16		
Acenaphthene	0.0600	0.00500	mg/kg	0.0333	ND	180	27-140			QM-07
Anthracene	0.0389	0.00500	"		ND		23-144			
Benzo (a) anthracene	0.0364	0.00500	"		ND		12-168			
Benzo (b) fluoranthene	0.0438	0.00500	"		ND		10-170			
Benzo (k) fluoranthene	0.0355	0.00500	"		ND		11-150			
Benzo (a) pyrene	0.0379	0.00500	"		ND		11-162			
Chrysene	0.0393	0.00500	"		0.00974		10-167			
Dibenz (a,h) anthracene	0.0291	0.00500	"		ND		10-128			
Fluoranthene	0.0391	0.00500	"		ND		18-157			
Fluorene	0.0692	0.00500	"		0.0432		37-133			
Indeno (1,2,3-cd) pyrene	0.0255	0.00500	"		ND		10-161			
Naphthalene	ND	0.00500	"		ND		10-157			
Pyrene	0.0366	0.00500	"	0.0333	0.00168	105	10-166			
Surrogate: 2-Methylnaphthalene-d10	0.0276		"	0.0333		82.9	50-150			
Surrogate: Fluoranthene-d10	0.0373		"	0.0333		112	50-150			

Matrix Spike Dup (1612049-MSD1)				Source: 1612026-04		Prepared: 12/06/16		Analyzed: 12/08/16		
Acenaphthene	0.0611	0.00500	mg/kg	0.0333	ND	183	27-140	1.76	15	QM-07
Anthracene	0.0396	0.00500	"		ND		23-144	1.68	29	
Benzo (a) anthracene	0.0384	0.00500	"		ND		12-168	5.33	65	
Benzo (b) fluoranthene	0.0462	0.00500	"		ND		10-170	5.25	18	
Benzo (k) fluoranthene	0.0370	0.00500	"		ND		11-150	4.33	32	
Benzo (a) pyrene	0.0400	0.00500	"		ND		11-162	5.49	27	
Chrysene	0.0389	0.00500	"		0.00974		10-167	1.08	88	
Dibenz (a,h) anthracene	0.0298	0.00500	"		ND		10-128	2.36	20	
Fluoranthene	0.0393	0.00500	"		ND		18-157	0.502	31	
Fluorene	0.0750	0.00500	"		0.0432		37-133	8.05	16	
Indeno (1,2,3-cd) pyrene	0.0274	0.00500	"		ND		10-161	6.97	22	
Naphthalene	ND	0.00500	"		ND		10-157		24	
Pyrene	0.0373	0.00500	"	0.0333	0.00168	107	10-166	1.84	57	
Surrogate: 2-Methylnaphthalene-d10	0.0322		"	0.0333		96.5	50-150			
Surrogate: Fluoranthene-d10	0.0365		"	0.0333		110	50-150			

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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Boron	ND	1.00	"
Arsenic	ND	0.200	"
Barium	ND	0.400	"
Cadmium	ND	0.100	"
Chromium	ND	0.500	"
Cadmium	ND	0.100	"
Copper	ND	0.500	"
Lead	ND	0.200	"
Chromium	ND	0.500	"
Nickel	ND	0.100	"
Selenium	ND	0.400	"
Copper	ND	0.500	"
Silver	ND	0.100	"
Zinc	ND	10.0	"
Lead	ND	0.200	"
Nickel	ND	0.100	"
Selenium	ND	0.400	"
Silver	ND	0.100	"
Zinc	ND	10.0	"

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

Arsenic	127	0.500	mg/kg wet	132	96.5	82.6-117
Barium	183	1.00	"	228	80.3	72.8-127
Boron	94.4	2.50	"	120	78.7	77.1-123
Arsenic	127	0.500	"	132	96.5	82.6-117
Cadmium	118	0.250	"	122	96.7	80.3-120
Barium	183	1.00	"	228	80.3	72.8-127
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Cadmium	118	0.250	"	122	96.7	80.3-120
Copper	195	1.25	"	212	91.9	85.4-115
Lead	94.7	0.500	"	108	87.7	81.1-119
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Nickel	264	0.250	"	284	92.8	88-112
Selenium	72.0	1.00	"	80.5	89.4	73.7-127
Copper	195	1.25	"	212	91.9	85.4-115
Silver	55.6	0.250	"	73.5	75.6	69.8-130

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Denver CO, 80221

Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike Level	Source		%REC		RPD	
	Result	Limit	Units		Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

Zinc	195	25.0	mg/kg wet	203	96.1	77.8-122
Lead	94.7	0.500	"	108	87.7	81.1-119
Nickel	264	0.250	"	284	92.8	88-112
Selenium	72.0	1.00	"	80.5	89.4	73.7-127
Silver	55.6	0.250	"	73.5	75.6	69.8-130
Zinc	195	25.0	"	203	96.1	77.8-122

Duplicate (1612062-DUP1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic	1.02	0.207	mg/kg dry	0.898	12.6	20	
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Boron	1.00	1.04	"	1.15	13.9	20	
Arsenic	1.02	0.207	"	0.898	12.6	20	
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Chromium	2.31	0.518	"	1.76	26.8	20	QR-03
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Copper	2.83	0.518	"	2.29	21.0	20	QR-03
Lead	12.0	0.207	"	9.99	18.5	20	
Nickel	2.48	0.104	"	2.01	21.1	20	QR-03
Chromium	2.31	0.518	"	1.76	26.8	20	QR-03
Selenium	0.313	0.415	"	0.302	3.61	20	
Silver	0.0280	0.104	"	0.0250	11.2	20	
Copper	2.83	0.518	"	2.29	21.0	20	QR-03
Zinc	15.1	10.4	"	9.58	44.9	20	QR-03
Lead	12.0	0.207	"	9.99	18.5	20	
Nickel	2.48	0.104	"	2.01	21.1	20	QR-03
Selenium	0.313	0.415	"	0.302	3.61	20	
Silver	0.0280	0.104	"	0.0250	11.2	20	
Zinc	15.1	10.4	"	9.58	44.9	20	QR-03

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

Matrix Spike (1612062-MS1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	39.2	0.207	mg/kg dry	39.0	0.898	98.3	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Boron	33.7	1.04	"	39.0	1.15	83.6	75-125			
Arsenic	39.2	0.207	"	39.0	0.898	98.3	75-125			
Cadmium	2.17	0.104	"	1.95	0.0802	107	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Chromium	38.5	0.518	"	39.0	1.76	94.4	75-125			
Copper	38.9	0.518	"	39.0	2.29	94.0	75-125			
Cadmium	2.17	0.104	"	1.95	0.0802	107	75-125			
Lead	31.8	0.207	"	19.5	9.99	112	75-125			
Nickel	37.7	0.104	"	39.0	2.01	91.6	75-125			
Chromium	38.5	0.518	"	39.0	1.76	94.4	75-125			
Selenium	3.95	0.415	"	3.90	0.302	93.5	75-125			
Silver	1.83	0.104	"	1.95	0.0250	92.5	75-125			
Copper	38.9	0.518	"	39.0	2.29	94.0	75-125			
Zinc	83.4	10.4	"	39.0	9.58	189	75-125			QM-07
Lead	31.8	0.207	"	19.5	9.99	112	75-125			
Nickel	37.7	0.104	"	39.0	2.01	91.6	75-125			
Selenium	3.95	0.415	"	3.90	0.302	93.5	75-125			
Silver	1.83	0.104	"	1.95	0.0250	92.5	75-125			
Zinc	83.4	10.4	"	39.0	9.58	189	75-125			QM-07

Matrix Spike Dup (1612062-MSD1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	42.6	0.207	mg/kg dry	40.5	0.898	103	75-125	8.37	25	
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25	
Boron	35.8	1.04	"	40.5	1.15	85.6	75-125	6.00	25	
Arsenic	42.6	0.207	"	40.5	0.898	103	75-125	8.37	25	
Cadmium	2.21	0.104	"	2.02	0.0802	105	75-125	1.66	25	
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25	
Chromium	42.3	0.518	"	40.5	1.76	100	75-125	9.44	25	
Copper	41.5	0.518	"	40.5	2.29	96.8	75-125	6.39	25	
Cadmium	2.21	0.104	"	2.02	0.0802	105	75-125	1.66	25	
Lead	33.4	0.207	"	20.2	9.99	116	75-125	4.91	25	
Nickel	41.4	0.104	"	40.5	2.01	97.3	75-125	9.36	25	
Chromium	42.3	0.518	"	40.5	1.76	100	75-125	9.44	25	
Selenium	4.29	0.415	"	4.05	0.302	98.6	75-125	8.46	25	
Silver	1.97	0.104	"	2.02	0.0250	96.2	75-125	7.66	25	
Copper	41.5	0.518	"	40.5	2.29	96.8	75-125	6.39	25	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

Matrix Spike Dup (1612062-MSD1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Zinc	59.7	10.4	mg/kg dry	40.5	9.58	124	75-125	33.0	25	QM-07
Lead	33.4	0.207	"	20.2	9.99	116	75-125	4.91	25	
Nickel	41.4	0.104	"	40.5	2.01	97.3	75-125	9.36	25	
Selenium	4.29	0.415	"	4.05	0.302	98.6	75-125	8.46	25	
Silver	1.97	0.104	"	2.02	0.0250	96.2	75-125	7.66	25	
Zinc	59.7	10.4	"	40.5	9.58	124	75-125	33.0	25	QM-07

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Total Mercury by EPA Method 7471 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury 0.525 0.0500 mg/kg wet 0.500 105 80-120

Duplicate (1612034-DUP1)

Source: 1612006-01

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury 0.474 0.0460 mg/kg dry 0.460 0.00399 102 80-120

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

Prepared: 12/05/16 Analyzed: 12/06/16

Mercury 0.455 0.0444 mg/kg dry 0.444 0.00399 102 80-120 4.00 20

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1)

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1)

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent 18.7 0.300 mg/kg wet 19.9 93.7 85-115

Duplicate (1612064-DUP1)

Source: 1612026-04

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1)

Source: 1612026-04

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg dry 23.9 ND 85-115

Matrix Spike (1612064-MS2)

Source: 1612036-01

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent 3.25 0.300 mg/kg dry 22.5 ND 14.4 85-115

Post Spike (1612064-PS1)

Source: 1612026-04

Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent 0.00400 mg/kg 0.498 0.00 0.802 85-115

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Soluble Nutrients by EPA 6020/Mod. USDA60 6(2, 3A) - Dry Weight Basis - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

Calcium	ND	10.0	mg/kg wet
Magnesium	ND	5.00	"
Sodium	ND	5.00	"

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

Calcium	590	10.0	mg/kg wet	500	118	82.9-118
Magnesium	610	5.00	"	500	122	77.1-123
Sodium	588	5.00	"	500	118	71-129

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

Calcium	1440	12.0	mg/kg dry	1370	4.57	200
Magnesium	192	6.00	"	190	0.644	200
Sodium	59.9	6.00	"	47.8	22.5	200

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

Calcium	2060	12.0	mg/kg dry	600	1370	115	75-125
Magnesium	902	6.00	"	600	190	119	75-125
Sodium	688	6.00	"	600	47.8	107	75-125

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

Calcium	2040	12.0	mg/kg dry	600	1370	112	75-125	0.803	25
Magnesium	921	6.00	"	600	190	122	75-125	2.12	25
Sodium	705	6.00	"	600	47.8	110	75-125	2.31	25

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612069 - General Preparation

Duplicate (1612069-DUP1)	Source: 1612014-01			Prepared & Analyzed: 12/07/16							
% Solids	92.3		%		93.0			0.756		20	

Batch 1612095 - General Preparation

LCS (1612095-BS1)	Prepared & Analyzed: 12/06/16										
pH	8.02	0.100	pH Units	8.00	100	95-105					
Duplicate (1612095-DUP1)	Source: 1612029-01			Prepared & Analyzed: 12/06/16							
pH	8.39	0.100	pH Units		8.31			0.958		20	

Batch 1612097 - General Preparation

Blank (1612097-BLK1)	Prepared & Analyzed: 12/09/16										
Specific Conductance (EC)	ND	0.0100	mmhos/cm								
LCS (1612097-BS1)	Prepared & Analyzed: 12/09/16										
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.2	90-110					
Duplicate (1612097-DUP1)	Source: 1612029-01			Prepared & Analyzed: 12/09/16							
Specific Conductance (EC)	11.7	0.0100	mmhos/cm		12.7			7.75		20	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Notes and Definitions

S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.

QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.374.5933 - fax

July 21, 2017

Bob Cornez
Foundation Energy, LLC
15 E 15th St
Tulsa, OK 74103
RE: Federal 12-3

Enclosed are the results of analyses for samples received by Summit Scientific on 07/20/17 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'P. Shrewsbury', with a stylized, flowing script.

Paul Shrewsbury
President



Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
RBase01@10'	1707146-01	Soil	07/19/17 11:00	07/20/17 16:30
RN01@9'	1707146-02	Soil	07/19/17 11:05	07/20/17 16:30
RS01@9'	1707146-03	Soil	07/19/17 11:10	07/20/17 16:30
RE01@9'	1707146-04	Soil	07/19/17 11:15	07/20/17 16:30
RW01@9'	1707146-05	Soil	07/19/17 11:25	07/20/17 16:30
CS01	1707146-06	Soil	07/20/17 11:30	07/20/17 16:30
CS02	1707146-07	Soil	07/20/17 11:35	07/20/17 16:30

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

Summit Scientific 170714

S₂

741 Corporate Circle, Suite J ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933

Page 1 of 1

Client: Foundation Energy

Project Manager: Bob Cornez

Address:

E-Mail: rcornez@tasman-geo.com

City/State/Zip:

Phone:

Fax:

Project Name: Federal 12-3

Sampler Name: Paul Downey

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	BTEX	TPH-GRO	TPH-DRO	PH	EC		
1	RBase01@10'	7/19/17	11:00	1			X			X				X	X	X	X	X	
2	RN01@9'		11:05	1			X			X				X	X	X	X	X	
3	RS01@9'		11:10	1			X			X				X	X	X	X	X	
4	RE01@9'		11:15	1			X			X				X	X	X	X	X	
5	RW01@9'	X	11:25	1			X			X				X	X	X	X	X	
6	CS01	7/20/17	11:30	1			X			X				X	X	X	X	X	
7	CS02	7/20/17	11:35	1			X			X				X	X	X	X	X	
8																			
9																			
10																			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>7/20/17 16:30</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7-20-17 1630</u>	Turn Around Time (Check) Same Day <u>X</u> 72 hours — 24 hours — Standard — 48 hours —	Notes: <u>only</u>
Relinquished by:	Date/Time:	Received by:	Date/Time:	Sample Integrity: Temperature Upon Receipt: <u>16.0</u> Intact: <u>yes</u> No	
Relinquished by:	Date/Time:	Received by:	Date/Time:		

www.s2scientific.com

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

[Signature]



Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

Sample Receipt Checklist

S2 Work Order: 1707146

Client: Foundation

Client Project ID: Federal 12-3

Shipped Via: _____
(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

Matrix (check all that apply): ☐ Air ☒ Soil/Solid ☐ Water ☐ Other: _____
(Describe)

Cooler ID					
Temp (°C)	<u>16.0</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ice</u>
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Logan S
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

17-20-17 16:30
Date/Time



Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RBase01@10'
1707146-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/19/17 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707185	07/20/17	07/20/17	8015M	

Date Sampled: 07/19/17 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/19/17 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707182	07/20/17	07/20/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/19/17 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.0 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/19/17 11:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.84	0.0100	mmhos/cm	1	1707189	07/20/17	07/20/17	SM 2510B	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RBase01@10'
1707146-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/19/17 11:00

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.36	0.100	pH Units	1	1707187	07/20/17	07/20/17	EPA 9045	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RN01@9'
1707146-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/19/17 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707185	07/20/17	07/20/17	8015M	

Date Sampled: 07/19/17 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		117 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/19/17 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707182	07/20/17	07/20/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/19/17 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/19/17 11:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.631	0.0100	mmhos/cm	1	1707189	07/20/17	07/20/17	SM 2510B	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RN01@9'
1707146-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/19/17 11:05

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	9.09	0.100	pH Units	1	1707187	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RS01@9'
1707146-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/19/17 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707185	07/20/17	07/20/17	8015M	

Date Sampled: **07/19/17 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		115 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/19/17 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707182	07/20/17	07/20/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/19/17 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/19/17 11:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.993	0.0100	mmhos/cm	1	1707189	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RS01@9'
1707146-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/19/17 11:10

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.03	0.100	pH Units	1	1707187	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RE01@9'
1707146-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/19/17 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707185	07/20/17	07/20/17	8015M	

Date Sampled: 07/19/17 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		117 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/19/17 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707182	07/20/17	07/20/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/19/17 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.5 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/19/17 11:15

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.25	0.0100	mmhos/cm	1	1707189	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RE01@9'
1707146-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/19/17 11:15

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.42	0.100	pH Units	1	1707187	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RW01@9'
1707146-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/19/17 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1707185	07/20/17	07/20/17	8015M	

Date Sampled: 07/19/17 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		115 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/19/17 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707182	07/20/17	07/20/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/19/17 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		113 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.7 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/19/17 11:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.24	0.0100	mmhos/cm	1	1707189	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

RW01@9'
1707146-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/19/17 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.82	0.100	pH Units	1	1707187	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

CS01
1707146-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/20/17 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	82	50	mg/kg	1	1707185	07/20/17	07/21/17	8015M	

Date Sampled: 07/20/17 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		114 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/20/17 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707182	07/20/17	07/20/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/20/17 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/20/17 11:30

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.68	0.0100	mmhos/cm	1	1707189	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

CS01
1707146-06 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/20/17 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.44	0.100	pH Units	1	1707187	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

CS02
1707146-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/20/17 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	69	50	mg/kg	1	1707185	07/20/17	07/21/17	8015M	

Date Sampled: 07/20/17 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		116 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/20/17 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.10	mg/kg	1	1707182	07/20/17	07/20/17	EPA 8260B	
Toluene	ND	10	"	"	"	"	"	"	
Ethylbenzene	ND	10	"	"	"	"	"	"	
Xylenes (total)	ND	10	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/20/17 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/20/17 11:35

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.70	0.0100	mmhos/cm	1	1707189	07/20/17	07/20/17	SM 2510B	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

CS02

1707146-07 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/20/17 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.25	0.100	pH Units	1	1707187	07/20/17	07/20/17	EPA 9045	

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1707185 - EPA 3550A

Blank (1707185-BLK1)

Prepared & Analyzed: 07/20/17

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	13.9		"	12.5	111	30-150				

LCS (1707185-BS1)

Prepared & Analyzed: 07/20/17

C10-C28 (DRO)	627	50	mg/kg	499	126	73-134				
Surrogate: o-Terphenyl	15.0		"	12.5	120	30-150				

Matrix Spike (1707185-MS1)

Source: 1707153-01

Prepared & Analyzed: 07/20/17

C10-C28 (DRO)	530	50	mg/kg	499	36.9	98.9	50-148			
Surrogate: o-Terphenyl	14.1		"	12.5	113	30-150				

Matrix Spike Dup (1707185-MSD1)

Source: 1707153-01

Prepared & Analyzed: 07/20/17

C10-C28 (DRO)	522	50	mg/kg	499	36.9	97.2	50-148	1.60	20	
Surrogate: o-Terphenyl	13.8		"	12.5	110	30-150				

Summit Scientific

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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1707182 - EPA 5030 Soil MS

Blank (1707182-BLK1)

Prepared & Analyzed: 07/20/17

Benzene	ND	0.10	mg/kg							
Toluene	ND	10	"							
Ethylbenzene	ND	10	"							
Xylenes (total)	ND	10	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0389		"	0.0400	97.3	23-173				
Surrogate: Toluene-d8	0.0401		"	0.0400	100	20-170				
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400	99.1	21-167				

LCS (1707182-BS1)

Prepared & Analyzed: 07/20/17

Benzene	0.0857	0.10	mg/kg	0.100	85.7	58-130				
Toluene	0.0986	10	"	0.100	98.6	61-134				
Ethylbenzene	0.115	10	"	0.0992	116	74-139				
m,p-Xylene	0.219	10	"	0.200	110	73-137				
o-Xylene	0.108	10	"	0.0980	110	73-141				
Surrogate: 1,2-Dichloroethane-d4	0.0401		"	0.0400	100	23-173				
Surrogate: Toluene-d8	0.0386		"	0.0400	96.5	20-170				
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400	94.2	21-167				

Matrix Spike (1707182-MS1)

Source: 1707153-01

Prepared & Analyzed: 07/20/17

Benzene	0.0862	0.10	mg/kg	0.100	ND	86.2	30-131			
Toluene	0.102	10	"	0.100	ND	102	30-134			
Ethylbenzene	0.111	10	"	0.0992	ND	112	22-153			
m,p-Xylene	0.214	10	"	0.200	ND	107	10-159			
o-Xylene	0.105	10	"	0.0980	ND	107	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0472		"	0.0400	118	23-173				
Surrogate: Toluene-d8	0.0391		"	0.0400	97.7	20-170				
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400	98.8	21-167				

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1707182 - EPA 5030 Soil MS

Matrix Spike Dup (1707182-MSD1)		Source: 1707153-01			Prepared & Analyzed: 07/20/17					
Benzene	0.0876	0.10	mg/kg	0.100	ND	87.6	30-131	1.66	34	
Toluene	0.103	10	"	0.100	ND	103	30-134	0.909	30	
Ethylbenzene	0.114	10	"	0.0992	ND	115	22-153	2.13	24	
m,p-Xylene	0.217	10	"	0.200	ND	109	10-159	1.42	68	
o-Xylene	0.107	10	"	0.0980	ND	109	31-151	1.78	38	
Surrogate: 1,2-Dichloroethane-d4	0.0495		"	0.0400		124	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.7	21-167			

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3

Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
Summit Scientific

Analyte	Reporting			Spike	Source	%REC		RPD		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1707187 - General Preparation

LCS (1707187-BS1)

Prepared & Analyzed: 07/20/17

pH	6.15	0.100	pH Units	6.00	102	95-105
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Duplicate (1707187-DUP1)

Source: 1707146-01

Prepared & Analyzed: 07/20/17

pH	8.57	0.100	pH Units	8.36	2.48	20
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Batch 1707189 - General Preparation

Blank (1707189-BLK1)

Prepared & Analyzed: 07/20/17

Specific Conductance (EC)	ND	0.0100	mmhos/cm
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LCS (1707189-BS1)

Prepared & Analyzed: 07/20/17

Specific Conductance (EC)	0.487	0.0100	mmhos/cm	0.500	97.4	90-110
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Duplicate (1707189-DUP1)

Source: 1707146-01

Prepared & Analyzed: 07/20/17

Specific Conductance (EC)	4.96	0.0100	mmhos/cm	4.84	2.43	20
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Foundation Energy, LLC
15 E 15th St
Tulsa OK, 74103

Project: Federal 12-3
Project Number: [none]
Project Manager: Bob Cornez

Reported:
07/21/17 06:37

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

A handwritten signature in black ink, appearing to be 'MSM'.

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