

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 17, 2019

Alyssa Beard
Foundation Energy
1801 Broadway, Suite 1500
Denver, CO 80202
RE: Federal 31-16

Enclosed are the results of analyses for samples received by Summit Scientific on 04/10/19 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M".

Muri Premer For Ben Shrewsbury
Laboratory Manager



Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
East @4'	1904142-01	Soil	04/07/19 00:00	04/10/19 16:00
North @4'	1904142-02	Soil	04/07/19 00:00	04/10/19 16:00
West @4'	1904142-03	Soil	04/07/19 00:00	04/10/19 16:00
South @4'	1904142-04	Soil	04/07/19 00:00	04/10/19 16:00
Base @5'	1904142-05	Soil	04/07/19 00:00	04/10/19 16:00

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1904142

Summit Scientific

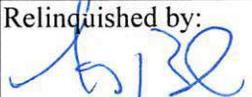
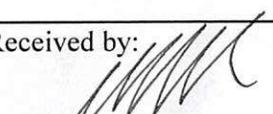
S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page (of)

Client: Foundation Energy Project Manager: Alyssa Beard
 Address: 1801 Broadway, Suite 1500 E-Mail: abeard@foundationenergy.com
 City/State/Zip: Denver, CO 80202
 Phone: 303.844.2114 720 257 2302 Project Name: Federal 31-16
 Sampler Name: Alyssa Beard Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested					Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	GBTEX	PPO	PH	EC		SAR
1	East @ 4'	4/7/19		1						X			X	X	X	X		
2	North @ 4'	4/7/19		1						X			X	X	X	X		
3	West @ 4'	4/7/19		1						X			X	X	X	X		
4	South @ 4'	4/7/19		1						X			X	X	X	X		
5	Base @ 5'	4/7/19		1						X			X	X	X	X		
6																		
7																		
8																		
9																		
10																		

Relinquished by: 	Date/Time: 4/10/19 1600	Received by:	Date/Time:	Turn Around Time (Check)	Notes: on 1st
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day _____ 72 hours	
Relinquished by:	Date/Time:	Received by:	Date/Time:	24 hours _____ Standard <input checked="" type="checkbox"/>	
Relinquished by:	Date/Time:	Received by: 	Date/Time: 4-10-19 1600	48 hours _____	
				Sample Integrity:	
				Temperature Upon Receipt: 5.2	
				Samples Intact: Yes No	

Sample Receipt Checklist

S2 Work Order 1904142

Client: Foundation Client Project ID: Federal 31-16

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

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

Temp (°C)	<u>5.2</u>
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Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>			<u>on ice</u>
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 samples with holding times due within 48 hours sample 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⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.			<input checked="" type="checkbox"/>	
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.

Custodian Printed Name or Initials

Signature of Custodian

4-10-19 1606
Date/Time



Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

East @4'
1904142-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1904178	04/11/19	04/12/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		82.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1904176	04/11/19	04/11/19	EPA 8015M	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		97.1 %	30-150		"	"	"	"	

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

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	4000	11.6	mg/kg dry	1	1904212	04/12/19	04/12/19	EPA 6020B	
Magnesium	2470	5.82	"	"	"	"	"	"	

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Foundation Energy
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Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

East @4'
1904142-01 (Soil)

Summit Scientific

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

Sodium	76.9	5.82	mg/kg dry	1	1904212	04/12/19	04/12/19	EPA 6020B
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Calculated Analysis

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.236	0.100	units	1	1904263	04/16/19	04/17/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.9		%	1	1904197	04/12/19	04/12/19	Calculation	
pH	8.84		pH Units	"	1904242	04/12/19	04/12/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.624	0.0100	mmhos/cm	1	1904243	04/16/19	04/17/19	EPA 120.1	

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Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

North @4'
1904142-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1904178	04/11/19	04/12/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		80.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.9 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1904176	04/11/19	04/12/19	EPA 8015M	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

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

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	6820	11.1	mg/kg dry	1	1904212	04/12/19	04/12/19	EPA 6020B	
Magnesium	2010	5.57	"	"	"	"	"	"	
Sodium	47.2	5.57	"	"	"	"	"	"	

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1801 Broadway, Suite 1500
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Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

North @4'
1904142-02 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.129	0.100	units	1	1904263	04/16/19	04/17/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.7		%	1	1904197	04/12/19	04/12/19	Calculation	
pH	8.93		pH Units	"	1904242	04/12/19	04/12/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.382	0.0100	mmhos/cm	1	1904243	04/16/19	04/17/19	EPA 120.1	

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Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

West @4'
1904142-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1904178	04/11/19	04/12/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		81.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1904176	04/11/19	04/12/19	EPA 8015M	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		106 %	30-150		"	"	"	"	

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

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	10700	11.7	mg/kg dry	1	1904212	04/12/19	04/12/19	EPA 6020B	
Magnesium	3250	5.84	"	"	"	"	"	"	
Sodium	72.3	5.84	"	"	"	"	"	"	

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Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

West @4'
1904142-03 (Soil)

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

Calculated Analysis

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.157	0.100	units	1	1904263	04/16/19	04/17/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.7		%	1	1904197	04/12/19	04/12/19	Calculation	
pH	8.76		pH Units	"	1904242	04/12/19	04/12/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.403	0.0100	mmhos/cm	1	1904243	04/16/19	04/17/19	EPA 120.1	

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Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

South @4'
1904142-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1904178	04/11/19	04/12/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		85.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1904176	04/11/19	04/12/19	EPA 8015M	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		99.6 %	30-150		"	"	"	"	

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

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	7650	11.2	mg/kg dry	1	1904212	04/12/19	04/12/19	EPA 6020B	
Magnesium	2310	5.61	"	"	"	"	"	"	
Sodium	22.9	5.61	"	"	"	"	"	"	

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 1801 Broadway, Suite 1500
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Project: Federal 31-16

Project Number: [none]
 Project Manager: Alyssa Beard

Reported:
 04/17/19 15:39

South @4'
1904142-04 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	ND	0.100	units	1	1904263	04/16/19	04/17/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.2		%	1	1904197	04/12/19	04/12/19	Calculation	
pH	8.55		pH Units	"	1904242	04/12/19	04/12/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.690	0.0100	mmhos/cm	1	1904243	04/16/19	04/17/19	EPA 120.1	

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1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

Base @5'
1904142-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1904178	04/11/19	04/12/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		86.0 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.5 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1904176	04/11/19	04/12/19	EPA 8015M	

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		103 %	30-150		"	"	"	"	

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

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	18600	13.1	mg/kg dry	1	1904212	04/12/19	04/12/19	EPA 6020B	
Magnesium	5540	6.53	"	"	"	"	"	"	
Sodium	81.0	6.53	"	"	"	"	"	"	

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1801 Broadway, Suite 1500
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Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

Base @5'
1904142-05 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.134	0.100	units	1	1904263	04/16/19	04/17/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	76.6		%	1	1904197	04/12/19	04/12/19	Calculation	
pH	8.29		pH Units	"	1904242	04/12/19	04/12/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **04/07/19 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.528	0.0100	mmhos/cm	1	1904243	04/16/19	04/17/19	EPA 120.1	

Summit Scientific

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Foundation Energy
1801 Broadway, Suite 1500
Denver CO, 80202

Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1904178 - EPA 5030 Soil MS

Blank (1904178-BLK1)

Prepared: 04/11/19 Analyzed: 04/12/19

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0344		"	0.0400		85.9	23-173				
Surrogate: Toluene-d8	0.0403		"	0.0400		101	20-170				
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	21-167				

LCS (1904178-BS1)

Prepared: 04/11/19 Analyzed: 04/12/19

Benzene	0.102	0.0020	mg/kg	0.100		102	70-130				
Toluene	0.109	0.0050	"	0.100		109	70-130				
Ethylbenzene	0.111	0.0050	"	0.100		111	70-130				
m,p-Xylene	0.225	0.010	"	0.200		112	70-130				
o-Xylene	0.114	0.0050	"	0.100		114	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0315		"	0.0400		78.8	23-173				
Surrogate: Toluene-d8	0.0409		"	0.0400		102	20-170				
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	21-167				

Matrix Spike (1904178-MS1)

Source: 1904142-01

Prepared: 04/11/19 Analyzed: 04/12/19

Benzene	0.0789	0.0020	mg/kg	0.100	ND	78.9	70-130				
Toluene	0.0842	0.0050	"	0.100	ND	84.2	70-130				
Ethylbenzene	0.0808	0.0050	"	0.100	ND	80.8	70-130				
m,p-Xylene	0.162	0.010	"	0.200	ND	81.2	70-130				
o-Xylene	0.0833	0.0050	"	0.100	ND	83.3	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0334		"	0.0400		83.4	23-173				
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170				
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167				

Summit Scientific

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Foundation Energy
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Denver CO, 80202

Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1904178 - EPA 5030 Soil MS

Matrix Spike Dup (1904178-MSD1)

Source: 1904142-01

Prepared: 04/11/19 Analyzed: 04/12/19

Benzene	0.0931	0.0020	mg/kg	0.100	ND	93.1	70-130	16.4	30	
Toluene	0.0989	0.0050	"	0.100	ND	98.9	70-130	16.0	30	
Ethylbenzene	0.0944	0.0050	"	0.100	ND	94.4	70-130	15.5	30	
m,p-Xylene	0.190	0.010	"	0.200	ND	95.0	70-130	15.6	30	
o-Xylene	0.0970	0.0050	"	0.100	ND	97.0	70-130	15.1	30	
Surrogate: 1,2-Dichloroethane-d4	0.0326		"	0.0400		81.4	23-173			
Surrogate: Toluene-d8	0.0422		"	0.0400		106	20-170			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.4	21-167			

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Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1904176 - EPA 3550A

Blank (1904176-BLK1)

Prepared & Analyzed: 04/11/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1904176-BS1)

Prepared & Analyzed: 04/11/19

C10-C28 (DRO) 530 50 mg/kg 500 106 70-130

Matrix Spike (1904176-MS1)

Source: 1904135-01

Prepared & Analyzed: 04/11/19

C10-C28 (DRO) 694 50 mg/kg 500 68.3 125 70-130

Matrix Spike Dup (1904176-MSD1)

Source: 1904135-01

Prepared & Analyzed: 04/11/19

C10-C28 (DRO) 600 50 mg/kg 500 68.3 106 70-130 14.5 20

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Foundation Energy
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Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

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

Summit Scientific

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

Batch 1904212 - General Preparation

Blank (1904212-BLK1)

Prepared & Analyzed: 04/12/19

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

LCS (1904212-BS1)

Prepared & Analyzed: 04/12/19

Calcium	473	10.0	mg/kg wet	500		94.7	70-130			
Magnesium	499	5.00	"	500		99.7	70-130			
Sodium	493	5.00	"	500		98.6	70-130			

Duplicate (1904212-DUP1)

Source: 1904142-01

Prepared & Analyzed: 04/12/19

Calcium	4200	11.6	mg/kg dry		4000			4.87	20	
Magnesium	2280	5.82	"		2470			7.78	20	
Sodium	88.5	5.82	"		76.9			14.0	20	

Matrix Spike (1904212-MS1)

Source: 1904142-01

Prepared & Analyzed: 04/12/19

Calcium	4550	11.6	mg/kg dry	582	4000	94.0	70-130			
Magnesium	2880	5.82	"	582	2470	70.5	70-130			
Sodium	594	5.82	"	582	76.9	88.8	70-130			

Matrix Spike Dup (1904212-MSD1)

Source: 1904142-01

Prepared & Analyzed: 04/12/19

Calcium	4580	11.6	mg/kg dry	582	4000	99.2	70-130	0.661	25	
Magnesium	2880	5.82	"	582	2470	71.6	70-130	0.220	25	
Sodium	601	5.82	"	582	76.9	90.0	70-130	1.17	25	

Summit Scientific

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Foundation Energy
 1801 Broadway, Suite 1500
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Project: Federal 31-16

Project Number: [none]
 Project Manager: Alyssa Beard

Reported:
 04/17/19 15:39

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

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

Batch 1904197 - General Preparation

Duplicate (1904197-DUP1)		Source: 1904137-01			Prepared & Analyzed: 04/12/19					
% Solids	88.8		%		88.8			0.00	20	

Batch 1904242 - General Preparation

LCS (1904242-BS1)		Prepared & Analyzed: 04/12/19								
pH	9.37		pH Units	9.23		102	95-105			
Duplicate (1904242-DUP1)		Source: 1904142-01			Prepared & Analyzed: 04/12/19					
pH	8.89		pH Units	8.84		0.564		20		

Summit Scientific

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Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 1904243 - General Preparation

Blank (1904243-BLK1)

Prepared: 04/16/19 Analyzed: 04/17/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1904243-BS1)

Prepared: 04/16/19 Analyzed: 04/17/19

Specific Conductance (EC) 0.769 0.0100 mmhos/cm 0.750 103 90-110

Duplicate (1904243-DUP1)

Source: 1904142-01

Prepared: 04/16/19 Analyzed: 04/17/19

Specific Conductance (EC) 0.529 0.0100 mmhos/cm 0.624 16.4 20

Summit Scientific

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Foundation Energy
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Denver CO, 80202

Project: Federal 31-16

Project Number: [none]
Project Manager: Alyssa Beard

Reported:
04/17/19 15:39

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