

# Summit Scientific

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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 11:11. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



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 15:33

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 1-34: E @ 8'	1612026-01	Soil	12/01/16 08:28	12/05/16 11:11
Fed 1-34: N @ 8'	1612026-02	Soil	12/01/16 08:56	12/05/16 11:11
Fed 1-34: S @ 6'	1612026-03	Soil	12/01/16 09:21	12/05/16 11:11
Fed 1-34: C @ 3.5'	1612026-04	Soil	12/01/16 09:06	12/05/16 11:11
Fed 1-34: W @ 8'	1612026-05	Soil	12/01/16 09:55	12/05/16 11:11

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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 15:33

# Summit Scientific

S<sub>2</sub>

1612026

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

Page 1 of 11

Client: Foundation Energy / Tasman Project Manager: ZMC  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Project Name: Western Slope Pit assessment  
Sampler Name: Bob Cornez 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)	Fed. Table 910-1	GBTEX	TPH - DRC	EC		PH
1	Fed 1-34: E @ 8'	01-Dec	0828	1						X			X	X	X	X		01
2	Fed 1-34: N @ 8'		0856	1									X	X	X	X		02
3	Fed 1-34: S @ 8'		0921	1									X	X	X	X		03
4	Fed 1-34: C @ 3.5'		0906	2								X	X	X	X	X		04
5	Fed 1-34: W @ 8'		0955	1									X	X	X	X		05
6	North Camp		1518	1													X	
7	Fed 1-35: N @ 5'		1113	1								X	X	X	X	X		
8	Fed 1-35: W @ 7'		1121	1								X	X	X	X	X		
9	Fed 1-35: S @ 5'		1139	1								X	X	X	X	X		
10	Fed 1-35: E @ 2'		1146	1								X	X	X	X	X		

Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: E. [Signature] Date/Time: 12-5-16 10:10  
Turn Around Time (Check): Same Day \_\_\_\_\_ 72 hours \_\_\_\_\_ 24 hours \_\_\_\_\_ Standard  48 hours \_\_\_\_\_  
Sample Integrity: Temperature Upon Receipt: 1.6°C  
Intact:  Yes  No

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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 15:33

**Sample Receipt Checklist**

S2 Work Order: 1612026  
 Client: Foundation/Tasman Client Project ID: Western Slope Pit Assessment (Fed 1-34)  
 Shipped Via: Hand Airbill #: \_\_\_\_\_  
(UPS, FedEx, Hand Delivered, Pick-up, etc)  
 Matrix (check all that apply):  Air  Soil/Solid  Water  Other: \_\_\_\_\_  
(Describe)

Cooler ID					
Temp (°C)	1.6				

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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<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) <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?			<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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

Nakita  
Custodian Printed Name

[Signature]  
Signature of Initials of Custodian

12/5/16 1240  
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 15:33

**Fed 1-34: E @ 8'**  
**1612026-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 08:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: 12/01/16 08:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		95.9 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/16 08:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	12/06/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/01/16 08:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 08:28

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>9.74</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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Project: Western Slope Pit Assessment

Project Number: [none]  
 Project Manager: Bob Cornez

**Reported:**  
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**Fed 1-34: E @ 8'**  
**1612026-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 08:28

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.96	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: N @ 8'**  
**1612026-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 08:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: 12/01/16 08:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.8 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/16 08:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	12/06/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/01/16 08:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 08:56

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>11.1</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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Project: Western Slope Pit Assessment

Project Number: [none]  
 Project Manager: Bob Cornez

**Reported:**  
 12/12/16 15:33

**Fed 1-34: N @ 8'**  
**1612026-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 08:56

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.09	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: S @ 6'**  
**1612026-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 09:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: 12/01/16 09:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		95.4 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/16 09:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	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: 12/01/16 09:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 09:21

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>12.6</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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Project Number: [none]  
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**Reported:**  
 12/12/16 15:33

**Fed 1-34: S @ 6'**  
**1612026-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 09:21

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.08	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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Project Number: [none]  
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**Reported:**  
12/12/16 15:33

**Fed 1-34: C @ 3.5'**  
**1612026-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1800	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: 12/01/16 09:06

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0038	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.19	0.0050	"	"	"	"	"	"	
Xylenes (total)	2.5	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1500	50	"	100	"	"	12/07/16	"	

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	12/07/16	"	
Surrogate: Toluene-d8		85.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		302 %	21-167		"	"	"	"	S-02

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: 12/01/16 09:06

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	"	"	"	"	"	"	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:33

**Fed 1-34: C @ 3.5'**  
**1612026-04 (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	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.00974</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0432</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Naphthalene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		126 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		108 %	30-150		"	"	"	"	

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>28.9</b>	0.240	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
<b>Barium</b>	<b>105</b>	0.480	"	"	"	"	"	"	
<b>Boron</b>	<b>3.14</b>	1.20	"	"	"	"	"	"	
Cadmium	ND	0.120	"	"	"	"	"	"	
<b>Chromium</b>	<b>9.69</b>	0.600	"	"	"	"	"	"	
<b>Copper</b>	<b>19.3</b>	0.600	"	"	"	"	"	"	
<b>Lead</b>	<b>18.4</b>	0.240	"	"	"	"	"	"	
<b>Nickel</b>	<b>18.7</b>	0.120	"	"	"	"	"	"	
<b>Selenium</b>	<b>1.52</b>	0.480	"	"	"	"	"	"	
Silver	ND	0.120	"	"	"	"	"	"	
<b>Zinc</b>	<b>75.9</b>	12.0	"	"	"	"	"	"	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: C @ 3.5'**  
**1612026-04 (Soil)**

**Summit Scientific**

**Total Mercury by EPA Method 7471**

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0600	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: 12/01/16 09:06

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: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Trivalent Chromium</b>	<b>9.69</b>	0.959	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>1370</b>	12.0	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
<b>Magnesium</b>	<b>190</b>	6.00	"	"	"	"	"	"	
<b>Sodium</b>	<b>47.8</b>	6.00	"	"	"	"	"	"	

Date Sampled: 12/01/16 09:06

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>0.321</b>		units	"	1612082	12/08/16	12/08/16	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: C @ 3.5'**  
**1612026-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 09:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.32</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

Date Sampled: **12/01/16 09:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.33</b>	0.100	pH Units	"	1612086	12/07/16	12/07/16	EPA 9045	

Date Sampled: **12/01/16 09:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>83.4</b>		%	"	1612069	12/07/16	12/07/16	% calculation	

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**Fed 1-34: W @ 8'**  
**1612026-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: 12/01/16 09:55

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/16 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	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: 12/01/16 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		107 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 09:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>13.5</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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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 15:33

**Fed 1-34: W @ 8'**  
**1612026-05 (Soil)**

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**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 09:55

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.22	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:33

**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 1612033 - EPA 3550A**

**Blank (1612033-BLK1)**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	<i>11.8</i>		"	<i>12.5</i>		<i>94.7</i>	<i>30-150</i>				

**LCS (1612033-BS1)**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	485	50	mg/kg	499		97.2	73-134				
<i>Surrogate: o-Terphenyl</i>	<i>15.6</i>		"	<i>12.5</i>		<i>125</i>	<i>30-150</i>				

**Matrix Spike (1612033-MS1)**

Source: 1612026-01

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	464	50	mg/kg	497	12.9	90.8	50-148				
<i>Surrogate: o-Terphenyl</i>	<i>15.0</i>		"	<i>12.5</i>		<i>120</i>	<i>30-150</i>				

**Matrix Spike Dup (1612033-MSD1)**

Source: 1612026-01

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	464	50	mg/kg	492	12.9	91.6	50-148	0.0604	20		
<i>Surrogate: o-Terphenyl</i>	<i>15.0</i>		"	<i>12.3</i>		<i>122</i>	<i>30-150</i>				

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:33

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

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

**Batch 1612057 - EPA 5030 Soil MS**

**Blank (1612057-BLK1)**

Prepared & Analyzed: 12/06/16

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

**LCS (1612057-BS1)**

Prepared & Analyzed: 12/06/16

Benzene	0.114	0.0020	mg/kg	0.100		114	58-130			
Toluene	0.112	0.0050	"	0.100		112	61-134			
Ethylbenzene	0.113	0.0050	"	0.0992		114	74-139			
m,p-Xylene	0.219	0.010	"	0.200		110	73-137			
o-Xylene	0.113	0.0050	"	0.0980		116	73-141			
Xylenes (total)	0.332	0.0050	"				30-150			
Gasoline Range Hydrocarbons	1.93	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>21-167</i>			

**Matrix Spike (1612057-MS1)**

Source: 1612009-01

Prepared & Analyzed: 12/06/16

Benzene	0.108	0.0020	mg/kg	0.100	ND	108	30-131			
Toluene	0.105	0.0050	"	0.100	ND	105	30-134			
Ethylbenzene	0.102	0.0050	"	0.0992	ND	103	22-153			
m,p-Xylene	0.198	0.010	"	0.200	ND	99.2	10-159			
o-Xylene	0.103	0.0050	"	0.0980	ND	105	31-151			
Xylenes (total)	0.301	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	1.74	0.50	"		ND		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0385</i>		<i>"</i>	<i>0.0400</i>		<i>96.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0427</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>21-167</i>			

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:33

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

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

**Batch 1612057 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1612057-MSD1)</b>	<b>Source: 1612009-01</b>			<b>Prepared &amp; Analyzed: 12/06/16</b>						
Benzene	0.102	0.0020	mg/kg	0.100	ND	102	30-131	5.67	34	
Toluene	0.0984	0.0050	"	0.100	ND	98.4	30-134	6.63	30	
Ethylbenzene	0.0967	0.0050	"	0.0992	ND	97.5	22-153	5.26	24	
m,p-Xylene	0.184	0.010	"	0.200	ND	92.3	10-159	7.14	68	
o-Xylene	0.0959	0.0050	"	0.0980	ND	97.9	31-151	7.41	38	
Xylenes (total)	0.280	0.0050	"		ND		30-150	7.23	20	
Gasoline Range Hydrocarbons	1.62	0.50	"		ND		30-150	6.95	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>			

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:33

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

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

**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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0227		"	0.0333		68.0	30-150			
<i>Surrogate: Fluoranthene-d10</i>	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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0272		"	0.0333		81.6	50-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0396		"	0.0333		119	50-150			

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:33

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

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

**Batch 1612049 - EPA 5030 Soil MS**

<b>Matrix Spike (1612049-MS1)</b>	<b>Source: 1612026-04</b>			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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0276</i>		"	<i>0.0333</i>		<i>82.9</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0373</i>		"	<i>0.0333</i>		<i>112</i>	<i>50-150</i>			

<b>Matrix Spike Dup (1612049-MSD1)</b>	<b>Source: 1612026-04</b>			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	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0322</i>		"	<i>0.0333</i>		<i>96.5</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0365</i>		"	<i>0.0333</i>		<i>110</i>	<i>50-150</i>			

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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 15:33

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

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

**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	"							
Cadmium	ND	0.100	"							
Chromium	ND	0.500	"							
Copper	ND	0.500	"							
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
Cadmium	118	0.250	"	122	96.7	80.3-120
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Copper	195	1.25	"	212	91.9	85.4-115
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	
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Chromium	2.31	0.518	"	1.76	26.8	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
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

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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 15:33

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

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

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike (1612062-MS1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>								
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					
Cadmium	2.17	0.104	"	1.95	0.0802	107	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					
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

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>								
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			
Cadmium	2.21	0.104	"	2.02	0.0802	105	75-125	1.66	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			
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 15:33

**Total Mercury by EPA Method 7471 - Quality Control**  
**Summit Scientific**

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

**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 15:33

**Hexavalent Chromium by EPA 7196 - Quality Control**  
**Summit Scientific**

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

**Batch 1612064 - 3060A\_Mod**

<b>Blank (1612064-BLK1)</b>			Prepared: 12/07/16 Analyzed: 12/08/16								
Chromium, Hexavalent	ND	0.300	mg/kg wet								
<b>LCS (1612064-BS1)</b>			Prepared: 12/07/16 Analyzed: 12/08/16								
Chromium, Hexavalent	18.7	0.300	mg/kg wet	19.9		93.7	85-115				
<b>Duplicate (1612064-DUP1)</b>			<b>Source: 1612026-04</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	ND	0.300	mg/kg dry		ND					20	
<b>Matrix Spike (1612064-MS1)</b>			<b>Source: 1612026-04</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	ND	0.300	mg/kg dry	23.9	ND		85-115				
<b>Matrix Spike (1612064-MS2)</b>			<b>Source: 1612036-01</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	3.25	0.300	mg/kg dry	22.5	ND	14.4	85-115				
<b>Post Spike (1612064-PS1)</b>			<b>Source: 1612026-04</b>		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 15:33

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

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

**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 15:33

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

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

**Batch 1612069 - General Preparation**

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

**Batch 1612086 - General Preparation**

<b>LCS (1612086-BS1)</b>								Prepared & Analyzed: 12/07/16			
pH	6.01	0.100	pH Units	6.00	100	95-105					
<b>Duplicate (1612086-DUP1)</b>		<b>Source: 1612025-01</b>			Prepared & Analyzed: 12/07/16						
pH	7.73	0.100	pH Units	7.16					7.66	20	

**Batch 1612087 - General Preparation**

<b>Blank (1612087-BLK1)</b>								Prepared & Analyzed: 12/08/16			
Specific Conductance (EC)	ND	0.0100	mmhos/cm								
<b>LCS (1612087-BS1)</b>								Prepared & Analyzed: 12/08/16			
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.3	90-110					
<b>Duplicate (1612087-DUP1)</b>		<b>Source: 1612025-01</b>			Prepared & Analyzed: 12/08/16						
Specific Conductance (EC)	0.283	0.0100	mmhos/cm	0.266					6.26	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 15:33

### 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 ♦ 303.277.9531 - fax

December 27, 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 11:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 1-35: N @ 5'	1612028-01	Soil	12/01/16 11:13	12/05/16 11:38
Fed 1-35: W @ 7'	1612028-02	Soil	12/01/16 11:21	12/05/16 11:38
Fed 1-35: S @ 5'	1612028-03	Soil	12/01/16 11:39	12/05/16 11:38
Fed 1-35: E @ 2'	1612028-04	Soil	12/01/16 11:46	12/05/16 11:38
Fed 1-35: C @ 3'	1612028-05	Soil	12/01/16 12:18	12/05/16 11:38

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:  
12/27/16 16:18

# Summit Scientific

S<sub>2</sub>

1612028.1

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

Page 1 of X 2

Client: Foundation Energy / Tasman Project Manager: ZMC  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Project Name: Western Slope Pit assessment  
Sampler Name: Bob Cornez 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 (10-)	GBTEX	TFH - DRC	EC		PH
1	<del>Fed 1-34: E@8'</del>	<del>12-15-16</del>	<del>0826</del>	<del>1</del>					X				X	X	X	X		
2	<del>Fed 1-34: N@8'</del>	<del>12-15-16</del>	<del>0856</del>	<del>1</del>									X	X	X	X		
3	<del>Fed 1-34: S@8'</del>	<del>12-15-16</del>	<del>0921</del>	<del>1</del>									X	X	X	X		
4	<del>Fed 1-34: E@5'</del>	<del>12-15-16</del>	<del>0941</del>	<del>2</del>									X	X	X	X		
5	<del>Fed 1-34: W@5'</del>	<del>12-15-16</del>	<del>0955</del>	<del>1</del>									X	X	X	X		
6	<del>North Camp</del>	<del>12-15-16</del>	<del>1518</del>	<del>1</del>														
7	Fed 1-35: N@5'	12/15/16	1113	1									X	X	X	X		01
8	Fed 1-35: W@7'	12/15/16	1121	1									X	X	X	X		02
9	Fed 1-35: S@5'	12/15/16	1139	1									X	X	X	X		03
10	Fed 1-35: E@2'	12/15/16	1146	1									X	X	X	X		04
Relinquished by: _____		Date/Time: _____	Received by: _____		Date/Time: _____	Turn Around Time (Check)		Notes:										
_____		12/15/16 10:10	_____		12-5-16 10:10	Same Day _____ 72 hours _____		_____										
_____		_____	_____		_____	24 hours _____ Standard _____		_____										
_____		_____	_____		_____	48 hours _____		_____										
_____		_____	_____		_____	Sample Integrity:		Temperature Upon Receipt: <u>1.6°C</u>										
_____		_____	_____		_____	Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		_____										

www.s2scientific.com



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

# Summit Scientific

1612028.2

S<sub>2</sub>

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303-277-9310 • 303-374-5933

2 of 2

Page 8 of X

Client: Excavation Energy / Tasman Project Manager: RMC  
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	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	F-11, T-4, S-16, S-1	GBTEX	TPH-SDD	EC <sub>2</sub>		PH	As-Only
1	Fed 1-35: C @ 3'	12-1-16	12:18	2						X			X						65
2	Fed 2-34: E @ 8'		1357	1									X	X	X	X			
3	Fed 2-34: C @ 4'		1351	2									X						
4	Fed 2-34: S @ 8'		1420	1									X	X	X	X			
5	Fed 2-34: W @ 8'		1451	1									X	X	X	X			
6	Fed 2-34: N @ 8'		1534	1									X	X	X	X			
7	Fed 4-3: E @ 4'		1637	1									X	X	X	X			
8	Fed 4-3: E @ 6'		1655	2									X	X	X	X			
9	Fed 4-3: S @ 6'		1705	1									X	X	X	X			
10	Fed 4-3: W @ 2'	12-2-16	0708	1						X			X	X	X	X			

Relinquished by: [Signature] Date/Time: 12/5/16 10:10 Received by: [Signature] Date/Time: 12-5-16 10:10  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Turn Around Time (Check)  
 Same Day \_\_\_\_\_ 72 hours \_\_\_\_\_  
 24 hours \_\_\_\_\_ Standard   
 48 hours \_\_\_\_\_  
 Sample Integrity:  
 Temperature Upon Receipt: 1.6°C  
 Intact:  Yes  No

Notes: [Handwritten note]

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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:  
12/27/16 16:18

**Sample Receipt Checklist**

S2 Work Order: 1612028  
 Client: Foundation/Tasman Client Project ID: Western Slope Pit Assessment (Fed 1-35)  
 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)	1.6				

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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<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) <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?			<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):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

12/5/16 1200  
Date/Time

[Signature]



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

**Fed 1-35: N @ 5'**  
**1612028-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/01/16 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: **12/01/16 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		95.9 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/01/16 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	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: **12/01/16 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		101 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 11:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>7.86</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	
pH	<b>8.05</b>	0.100	pH Units	"	1612086	12/07/16	12/07/16	EPA 9045	

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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:**  
12/27/16 16:18

**Fed 1-35: N @ 5'**  
**1612028-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

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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:  
12/27/16 16:18

**Fed 1-35: W @ 7'**  
**1612028-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>54</b>	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		96.3 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.0031</b>	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.037</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.081</b>	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>4.8</b>	0.50	"	"	"	"	"	"	

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		95.8 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		99.6 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		115 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 11:21**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>7.73</b>	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	
<b>Specific Conductance (EC)</b>	<b>6.72</b>	0.0100	mmhos/cm	"	1612087	12/08/16	12/08/16	SM 2510B	

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:**  
12/27/16 16:18

**Fed 1-35: S @ 5'**  
**1612028-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		95.1 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	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: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		102 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 11:39**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>7.79</b>	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	
Specific Conductance (EC)	<b>6.30</b>	0.0100	mmhos/cm	"	1612087	12/08/16	12/08/16	SM 2510B	

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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:**  
12/27/16 16:18

**Fed 1-35: E @ 2'**  
**1612028-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		95.2 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612057	12/06/16	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: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		100 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 11:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>7.96</b>	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	
Specific Conductance (EC)	<b>5.62</b>	0.0100	mmhos/cm	"	1612087	12/08/16	12/08/16	SM 2510B	

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

**Fed 1-35: C @ 3'**  
**1612028-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>88</b>	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		98.3 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.044</b>	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.30</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.018</b>	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>9.1</b>	0.50	"	"	"	"	"	"	

Date Sampled: **12/01/16 12:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		101 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		97.0 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		166 %	21-167		"	"	"	"	

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: **12/01/16 12:18**

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	"	"	"	"	"	"	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

**Fed 1-35: C @ 3'**  
**1612028-05 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (b) fluoranthene	0.00615	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	0.00804	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.00574	0.00500	"	"	"	"	"	"	
Fluorene	0.00755	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Naphthalene	0.232	0.0500	"	10	"	"	"	"	
Pyrene	ND	0.00500	"	1	"	"	"	"	

Date Sampled: 12/01/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.7 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		86.9 %	30-150		"	"	"	"	

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: 12/01/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.64	0.245	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	25.7	0.490	"	"	"	"	"	"	
Arsenic	6.64	0.245	"	"	"	"	"	"	
Boron	1.92	1.22	"	"	"	"	"	"	
Cadmium	ND	0.122	"	"	"	"	"	"	
Barium	25.7	0.490	"	"	"	"	"	"	
Chromium	5.09	0.612	"	"	"	"	"	"	
Cadmium	ND	0.122	"	"	"	"	"	"	
Copper	6.59	0.612	"	"	"	"	"	"	
Lead	8.41	0.245	"	"	"	"	"	"	
Chromium	5.09	0.612	"	"	"	"	"	"	
Nickel	9.95	0.122	"	"	"	"	"	"	
Selenium	0.717	0.490	"	"	"	"	"	"	
Copper	6.59	0.612	"	"	"	"	"	"	
Silver	ND	0.122	"	"	"	"	"	"	

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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:  
12/27/16 16:18

**Fed 1-35: C @ 3'**  
**1612028-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Zinc	35.0	12.2	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Lead	8.41	0.245	"	"	"	"	"	"	
Nickel	9.95	0.122	"	"	"	"	"	"	
Selenium	0.717	0.490	"	"	"	"	"	"	
Silver	ND	0.122	"	"	"	"	"	"	
Zinc	35.0	12.2	"	"	"	"	"	"	

**Total Mercury by EPA Method 7471**

Date Sampled: 12/01/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0612	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: 12/01/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	5.09	0.979	mg/kg dry	1	[CALC]	12/07/16	12/08/16	EPA 7196/3060A	
Chromium, Hexavalent	ND	0.300	"	"	1612064	"	"	EPA 7196	

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

Date Sampled: 12/01/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1190	12.2	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	200	6.12	"	"	"	"	"	"	
Sodium	34.8	6.12	"	"	"	"	"	"	
Sodium Adsorption Ratio	0.250		units	"	1612082	12/08/16	12/08/16	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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:**  
 12/27/16 16:18

**Fed 1-35: C @ 3'**  
**1612028-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Specific Conductance (EC)	2.60	0.0100 mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B
pH	7.90	0.100 pH Units	"	1612086	12/07/16	12/07/16	EPA 9045
% Solids	81.7	%	"	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:**  
12/27/16 16:18

**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 1612033 - EPA 3550A**

**Blank (1612033-BLK1)**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	<i>11.8</i>		"	<i>12.5</i>		<i>94.7</i>	<i>30-150</i>				

**LCS (1612033-BS1)**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	485	50	mg/kg	499		97.2	73-134				
<i>Surrogate: o-Terphenyl</i>	<i>15.6</i>		"	<i>12.5</i>		<i>125</i>	<i>30-150</i>				

**Matrix Spike (1612033-MS1)**

**Source: 1612026-01**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	464	50	mg/kg	497	12.9	90.8	50-148				
<i>Surrogate: o-Terphenyl</i>	<i>15.0</i>		"	<i>12.5</i>		<i>120</i>	<i>30-150</i>				

**Matrix Spike Dup (1612033-MSD1)**

**Source: 1612026-01**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	464	50	mg/kg	492	12.9	91.6	50-148	0.0604	20		
<i>Surrogate: o-Terphenyl</i>	<i>15.0</i>		"	<i>12.3</i>		<i>122</i>	<i>30-150</i>				

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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:  
12/27/16 16:18

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

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

**Batch 1612057 - EPA 5030 Soil MS**

**Blank (1612057-BLK1)**

Prepared & Analyzed: 12/06/16

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

**LCS (1612057-BS1)**

Prepared & Analyzed: 12/06/16

Benzene	0.114	0.0020	mg/kg	0.100		114	58-130			
Toluene	0.112	0.0050	"	0.100		112	61-134			
Ethylbenzene	0.113	0.0050	"	0.0992		114	74-139			
m,p-Xylene	0.219	0.010	"	0.200		110	73-137			
o-Xylene	0.113	0.0050	"	0.0980		116	73-141			
Xylenes (total)	0.332	0.0050	"				30-150			
Gasoline Range Hydrocarbons	1.93	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0390</i>		<i>"</i>	<i>0.0400</i>		<i>97.6</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>21-167</i>			

**Matrix Spike (1612057-MS1)**

Source: 1612009-01

Prepared & Analyzed: 12/06/16

Benzene	0.108	0.0020	mg/kg	0.100	ND	108	30-131			
Toluene	0.105	0.0050	"	0.100	ND	105	30-134			
Ethylbenzene	0.102	0.0050	"	0.0992	ND	103	22-153			
m,p-Xylene	0.198	0.010	"	0.200	ND	99.2	10-159			
o-Xylene	0.103	0.0050	"	0.0980	ND	105	31-151			
Xylenes (total)	0.301	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	1.74	0.50	"		ND		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0385</i>		<i>"</i>	<i>0.0400</i>		<i>96.3</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0406</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0427</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>21-167</i>			

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

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

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

**Batch 1612057 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1612057-MSD1)</b>	<b>Source: 1612009-01</b>			<b>Prepared &amp; Analyzed: 12/06/16</b>						
Benzene	0.102	0.0020	mg/kg	0.100	ND	102	30-131	5.67	34	
Toluene	0.0984	0.0050	"	0.100	ND	98.4	30-134	6.63	30	
Ethylbenzene	0.0967	0.0050	"	0.0992	ND	97.5	22-153	5.26	24	
m,p-Xylene	0.184	0.010	"	0.200	ND	92.3	10-159	7.14	68	
o-Xylene	0.0959	0.0050	"	0.0980	ND	97.9	31-151	7.41	38	
Xylenes (total)	0.280	0.0050	"		ND		30-150	7.23	20	
Gasoline Range Hydrocarbons	1.62	0.50	"		ND		30-150	6.95	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0376</i>		<i>"</i>	<i>0.0400</i>		<i>94.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>21-167</i>			

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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:  
12/27/16 16:18

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

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

**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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0227		"	0.0333		68.0	30-150			
<i>Surrogate: Fluoranthene-d10</i>	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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0272		"	0.0333		81.6	50-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0396		"	0.0333		119	50-150			

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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:  
12/27/16 16:18

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

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

**Batch 1612049 - EPA 5030 Soil MS**

<b>Matrix Spike (1612049-MS1)</b>	<b>Source: 1612026-04</b>			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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0276</i>		"	<i>0.0333</i>		<i>82.9</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0373</i>		"	<i>0.0333</i>		<i>112</i>	<i>50-150</i>			

<b>Matrix Spike Dup (1612049-MSD1)</b>	<b>Source: 1612026-04</b>			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	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0322</i>		"	<i>0.0333</i>		<i>96.5</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0365</i>		"	<i>0.0333</i>		<i>110</i>	<i>50-150</i>			

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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:  
12/27/16 16:18

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

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

**Batch 1612062 - EPA 3050B**

**Blank (1612062-BLK1)**

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Arsenic	ND	0.200	"
Boron	ND	1.00	"
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
Barium	183	1.00	"	228	80.3	72.8-127
Cadmium	118	0.250	"	122	96.7	80.3-120
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Copper	195	1.25	"	212	91.9	85.4-115
Cadmium	118	0.250	"	122	96.7	80.3-120
Lead	94.7	0.500	"	108	87.7	81.1-119
Nickel	264	0.250	"	284	92.8	88-112
Chromium	56.4	1.25	"	63.2	89.3	74.7-125
Selenium	72.0	1.00	"	80.5	89.4	73.7-127
Silver	55.6	0.250	"	73.5	75.6	69.8-130
Copper	195	1.25	"	212	91.9	85.4-115

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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:  
12/27/16 16:18

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

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

**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
Copper	2.83	0.518	"		2.29			21.0	20	QR-03
Cadmium	0.131	0.104	"		0.0802			48.4	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

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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:  
12/27/16 16:18

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

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

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike (1612062-MS1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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		

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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:**  
12/27/16 16:18

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

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

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/27/16 16:18

**Total Mercury by EPA Method 7471 - Quality Control**  
**Summit Scientific**

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

**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

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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:**  
12/27/16 16:18

**Hexavalent Chromium by EPA 7196 - Quality Control**  
**Summit Scientific**

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

**Batch 1612064 - 3060A\_Mod**

<b>Blank (1612064-BLK1)</b>			Prepared: 12/07/16 Analyzed: 12/08/16								
Chromium, Hexavalent	ND	0.300	mg/kg wet								
<b>LCS (1612064-BS1)</b>			Prepared: 12/07/16 Analyzed: 12/08/16								
Chromium, Hexavalent	18.7	0.300	mg/kg wet	19.9	93.7	85-115					
<b>Duplicate (1612064-DUP1)</b>			<b>Source: 1612026-04</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	ND	0.300	mg/kg dry		ND					20	
<b>Matrix Spike (1612064-MS1)</b>			<b>Source: 1612026-04</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	ND	0.300	mg/kg dry	23.9	ND	85-115					
<b>Matrix Spike (1612064-MS2)</b>			<b>Source: 1612036-01</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	3.25	0.300	mg/kg dry	22.5	ND	14.4	85-115				
<b>Post Spike (1612064-PS1)</b>			<b>Source: 1612026-04</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	0.00400		mg/kg	0.498	0.00	0.802	85-115				

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/27/16 16:18

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

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

**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

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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:**  
12/27/16 16:18

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

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

**Batch 1612069 - General Preparation**

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

**Batch 1612086 - General Preparation**

<b>LCS (1612086-BS1)</b>		<b>Prepared &amp; Analyzed: 12/07/16</b>								
pH	6.01	0.100	pH Units	6.00	100	95-105				
<b>Duplicate (1612086-DUP1)</b>		<b>Source: 1612025-01</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>					
pH	7.73	0.100	pH Units	7.16			7.66	20		

**Batch 1612087 - General Preparation**

<b>Blank (1612087-BLK1)</b>		<b>Prepared &amp; Analyzed: 12/08/16</b>								
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
<b>LCS (1612087-BS1)</b>		<b>Prepared &amp; Analyzed: 12/08/16</b>								
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.3	90-110				
<b>Duplicate (1612087-DUP1)</b>		<b>Source: 1612025-01</b>			<b>Prepared &amp; Analyzed: 12/08/16</b>					
Specific Conductance (EC)	0.283	0.0100	mmhos/cm	0.266			6.26	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:**  
12/27/16 16:18

### Notes and Definitions

- 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

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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 12:03. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



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 15:44

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 43-4:E @ 4'	1612030-01	Soil	12/01/16 16:37	12/05/16 12:03
Fed 43-4:C @ 6'	1612030-02	Soil	12/01/16 16:55	12/05/16 12:03
Fed 43-4:S @ 6'	1612030-03	Soil	12/01/16 17:05	12/05/16 12:03
Fed 43-4:W @ 2'	1612030-04	Soil	12/02/16 07:08	12/05/16 12:03
Fed 43-4:N @ 10'	1612030-05	Soil	12/02/16 07:53	12/05/16 12:03

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 15:44

# Summit Scientific

1612030.1

S<sub>2</sub>

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

1 of 2  
Page 8 of 8

Client: Excavation Energy / Tasman Project Manager: RMC  
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	GRTEX	TPH-S20	EC&		PH
1	Fed 1-35-C@ 3'	1-1-16	1218	1						X			X	X	X	X		
2	Fed 2-34-E@ 8'		1357	1									X	X	X	X		
3	Fed 2-34-C@ 4'		1351	2									X	X	X	X		
4	Fed 2-34-S@ 8'		1420	1									X	X	X	X		
5	Fed 2-34-W@ 8'		1421	1									X	X	X	X		
6	Fed 2-34-N@ 8'		1539	1									X	X	X	X		
7	Fed 43-4-E@ 4'		1637	1									X	X	X	X		01
8	Fed 43-4-C@ 6'		1655	2									X	X	X	X		02
9	Fed 43-4-S@ 6'		1705	1									X	X	X	X		03
10	Fed 43-4-W@ 2'	02-16-16	0708	1									X	X	X	X		04

Relinquished by: [Signature] Date/Time: 12/5/16 10:10 Received by: [Signature] Date/Time: 12-5-16 10:10  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_  
 Relinquished by: \_\_\_\_\_ Date/Time: \_\_\_\_\_ Received by: \_\_\_\_\_ Date/Time: \_\_\_\_\_

Turn Around Time (Check)  
 Same Day \_\_\_\_\_ 72 hours \_\_\_\_\_  
 24 hours \_\_\_\_\_ Standard   
 48 hours \_\_\_\_\_

Sample Integrity:  
 Temperature Upon Receipt: 1.6°C  
 Intact:  Yes  No

Notes:

www.s2scientific.com



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:44

# Summit Scientific

S<sub>2</sub>

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303-277-9310 • 303-374-5933

1612030.2

2 of 2  
Page 8 of 11

Client: Foundation Energy/Tasman Project Manager: T. U.C.  
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 2/10-1	GIBTEX	TPH-DPO	EC		PH	AS-Only
1	Fed 43-4: N@10'	02-Dec	0753	1						X				X	X	X	X		05
2	Fed 12-3: C@4'		0925	2										X					
3	Fed 12-3: S@6'		0946	1										X	X	X	X		
4	Fed 12-3: E@8'		1008	1										X	X	X	X		
5	Fed 12-3: N@8'		1031	1										X	X	X	X		
6	Fed 12-3: W@10'		1101	1										X	X	X	X		
7	Fed 3-4: C@6'		1218	2										X	X	X	X		
8	Fed 3-4: W@2'		1232	1										X	X	X	X		
9	Fed 3-4: N@2'		1239	1										X	X	X	X		
10	Fed 3-4: S@4'		1229	1										X	X	X	X		

*(Handwritten signature and date)*  
12/15/16

Relinquished by: [Signature] Date/Time: 12/15/16 10:10 Received by: [Signature] Date/Time: 12-5-16 10:00  
Turn Around Time (Check):  
Same Day \_\_\_\_\_ 72 hours  
24 hours \_\_\_\_\_ Standard   
48 hours \_\_\_\_\_  
Sample Integrity:  
Temperature Upon Receipt: 1.6°C  
Intact:  Yes  No

www.s2scientific.com

*(Handwritten 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 15:44

**Sample Receipt Checklist**

S2 Work Order: 1612030  
 Client: Foundation/Tasman Client Project ID: Western Slope Pit Assessment (Fed 434)  
 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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<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) <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
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 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

Nakita  
Custodian Printed Name

MA  
Signature or Initials of Custodian

12/5/16 12:10  
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 15:44

**Fed 43-4:E @ 4'**  
**1612030-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 16:37

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/01/16 16:37

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.7 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/16 16:37

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: 12/01/16 16:37

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		102 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 16:37

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.407</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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 15:44

**Fed 43-4:E @ 4'**  
**1612030-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 16:37

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	9.41	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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 15:44

**Fed 43-4:C @ 6'**  
**1612030-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2000	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		99.8 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/16 16:55

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	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	33	0.50	"	100	"	"	"	"	
Gasoline Range Hydrocarbons	9200	500	"	1000	"	"	"	"	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		85.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		276 %	21-167		"	"	"	"	S-02

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: 12/01/16 16:55

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

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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 15:44

**Fed 43-4:C @ 6'**  
**1612030-02 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Analyte	Result	Reporting 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	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Naphthalene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		64.2 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		92.4 %	30-150		"	"	"	"	

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.55	0.238	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	169	0.477	"	"	"	"	"	"	
Cadmium	0.243	0.119	"	"	"	"	"	"	
Chromium	6.54	0.596	"	"	"	"	"	"	
Copper	15.5	0.596	"	"	"	"	"	"	
Lead	12.4	0.238	"	"	"	"	"	"	
Nickel	13.0	0.119	"	"	"	"	"	"	
Selenium	ND	0.477	"	"	"	"	"	"	
Silver	ND	0.119	"	"	"	"	"	"	
Zinc	56.1	11.9	"	"	"	"	"	"	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.55	0.238	"	"	"	"	"	"	

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 15:44

**Fed 43-4:C @ 6'**  
**1612030-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	169	0.477	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Boron	ND	1.19	"	"	"	"	"	"	
Cadmium	0.243	0.119	"	"	"	"	"	"	
Chromium	6.54	0.596	"	"	"	"	"	"	
Copper	15.5	0.596	"	"	"	"	"	"	
Lead	12.4	0.238	"	"	"	"	"	"	
Nickel	13.0	0.119	"	"	"	"	"	"	
Selenium	ND	0.477	"	"	"	"	"	"	
Silver	ND	0.119	"	"	"	"	"	"	
Zinc	56.1	11.9	"	"	"	"	"	"	

**Total Mercury by EPA Method 7471**

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0596	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: 12/01/16 16:55

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: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	6.54	0.954	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 15:44

**Fed 43-4:C @ 6'**  
**1612030-02 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1240	11.9	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	319	5.96	"	"	"	"	"	"	
Sodium	45.0	5.96	"	"	"	"	"	"	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.295		units	"	1612082	12/08/16	12/08/16	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.674	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.51	0.100	pH Units	"	1612086	12/07/16	12/07/16	EPA 9045	

Date Sampled: 12/01/16 16:55

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.9		%	"	1612069	12/07/16	12/07/16	% calculation	

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 15:44

**Fed 43-4:S @ 6'**  
**1612030-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/01/16 17:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/01/16 17:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		93.9 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/01/16 17:05

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: 12/01/16 17:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/01/16 17:05

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.51</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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 15:44

**Fed 43-4:S @ 6'**  
**1612030-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 17:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	<b>8.88</b>	0.100	pH Units	1	1612086	12/07/16	12/07/16	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 15:44

**Fed 43-4:W @ 2'**  
**1612030-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 07:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/02/16 07:08

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/16 07:08

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 07:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/02/16 07:08

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.744</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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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 15:44

**Fed 43-4:W @ 2'**  
**1612030-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/02/16 07:08**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	9.27	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:44

**Fed 43-4:N @ 10'**  
**1612030-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 07:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612033	12/05/16	12/08/16	8015M	

Date Sampled: 12/02/16 07:53

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/16 07:53

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 07:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.1 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/02/16 07:53

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>2.09</b>	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

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 Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
 Project Manager: Bob Cornez

**Reported:**  
 12/12/16 15:44

**Fed 43-4:N @ 10'**  
**1612030-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/02/16 07:53

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.61	0.100	pH Units	1	1612086	12/07/16	12/07/16	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 15:44

**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 1612033 - EPA 3550A**

**Blank (1612033-BLK1)**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	<i>11.8</i>		"	<i>12.5</i>		<i>94.7</i>	<i>30-150</i>				

**LCS (1612033-BS1)**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	485	50	mg/kg	499		97.2	73-134				
<i>Surrogate: o-Terphenyl</i>	<i>15.6</i>		"	<i>12.5</i>		<i>125</i>	<i>30-150</i>				

**Matrix Spike (1612033-MS1)**

**Source: 1612026-01**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	464	50	mg/kg	497	12.9	90.8	50-148				
<i>Surrogate: o-Terphenyl</i>	<i>15.0</i>		"	<i>12.5</i>		<i>120</i>	<i>30-150</i>				

**Matrix Spike Dup (1612033-MSD1)**

**Source: 1612026-01**

Prepared: 12/05/16 Analyzed: 12/07/16

C10-C28 (DRO)	464	50	mg/kg	492	12.9	91.6	50-148	0.0604	20		
<i>Surrogate: o-Terphenyl</i>	<i>15.0</i>		"	<i>12.3</i>		<i>122</i>	<i>30-150</i>				

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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 15:44

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

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

**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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0419</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>99.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

**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			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0429</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0427</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0418</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

**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			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0458</i>		<i>"</i>	<i>0.0400</i>		<i>115</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>21-167</i>			

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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 15:44

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

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

**Batch 1612073 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1612073-MSD1)</b>	<b>Source: 1612029-01</b>			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	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0467</i>		<i>"</i>	<i>0.0400</i>		<i>117</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

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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 15:44

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

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

**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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0227		"	0.0333		68.0	30-150			
<i>Surrogate: Fluoranthene-d10</i>	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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0272		"	0.0333		81.6	50-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0396		"	0.0333		119	50-150			

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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 15:44

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

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

**Batch 1612049 - EPA 5030 Soil MS**

<b>Matrix Spike (1612049-MS1)</b>	<b>Source: 1612026-04</b>			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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0276</i>		"	<i>0.0333</i>		<i>82.9</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0373</i>		"	<i>0.0333</i>		<i>112</i>	<i>50-150</i>			

<b>Matrix Spike Dup (1612049-MSD1)</b>	<b>Source: 1612026-04</b>			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	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0322</i>		"	<i>0.0333</i>		<i>96.5</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0365</i>		"	<i>0.0333</i>		<i>110</i>	<i>50-150</i>			

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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 15:44

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

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

**Batch 1612062 - EPA 3050B**

**Blank (1612062-BLK1)**

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Arsenic	ND	0.200	"							
Boron	ND	1.00	"							
Cadmium	ND	0.100	"							
Barium	ND	0.400	"							
Chromium	ND	0.500	"							
Copper	ND	0.500	"							
Cadmium	ND	0.100	"							
Lead	ND	0.200	"							
Nickel	ND	0.100	"							
Chromium	ND	0.500	"							
Selenium	ND	0.400	"							
Silver	ND	0.100	"							
Copper	ND	0.500	"							
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
Arsenic	127	0.500	"	132	96.5	82.6-117
Boron	94.4	2.50	"	120	78.7	77.1-123
Barium	183	1.00	"	228	80.3	72.8-127
Cadmium	118	0.250	"	122	96.7	80.3-120
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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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:44

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

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

**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
Copper	2.83	0.518	"		2.29			21.0	20	QR-03
Cadmium	0.131	0.104	"		0.0802			48.4	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

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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 15:44

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

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

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike (1612062-MS1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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				
Cadmium	2.17	0.104	"	1.95	0.0802	107	75-125				
Copper	38.9	0.518	"	39.0	2.29	94.0	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

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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		
Arsenic	42.6	0.207	"	40.5	0.898	103	75-125	8.37	25		
Boron	35.8	1.04	"	40.5	1.15	85.6	75-125	6.00	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 15:44

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

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

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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

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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 15:44

**Total Mercury by EPA Method 7471 - Quality Control**  
**Summit Scientific**

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

**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 15:44

**Hexavalent Chromium by EPA 7196 - Quality Control**  
**Summit Scientific**

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

**Batch 1612064 - 3060A\_Mod**

<b>Blank (1612064-BLK1)</b>			Prepared: 12/07/16 Analyzed: 12/08/16								
Chromium, Hexavalent	ND	0.300	mg/kg wet								
<b>LCS (1612064-BS1)</b>			Prepared: 12/07/16 Analyzed: 12/08/16								
Chromium, Hexavalent	18.7	0.300	mg/kg wet	19.9	93.7	85-115					
<b>Duplicate (1612064-DUP1)</b>			<b>Source: 1612026-04</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	ND	0.300	mg/kg dry		ND					20	
<b>Matrix Spike (1612064-MS1)</b>			<b>Source: 1612026-04</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	ND	0.300	mg/kg dry	23.9	ND	85-115					
<b>Matrix Spike (1612064-MS2)</b>			<b>Source: 1612036-01</b>		Prepared: 12/07/16 Analyzed: 12/08/16						
Chromium, Hexavalent	3.25	0.300	mg/kg dry	22.5	ND	14.4	85-115				
<b>Post Spike (1612064-PS1)</b>			<b>Source: 1612026-04</b>		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 15:44

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

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

**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 15:44

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

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

**Batch 1612069 - General Preparation**

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

**Batch 1612086 - General Preparation**

<b>LCS (1612086-BS1)</b>				Prepared & Analyzed: 12/07/16							
pH	6.01	0.100	pH Units	6.00		100	95-105				
<b>Duplicate (1612086-DUP1)</b>	<b>Source: 1612025-01</b>			Prepared & Analyzed: 12/07/16							
pH	7.73	0.100	pH Units	7.16					7.66	20	

**Batch 1612087 - General Preparation**

<b>Blank (1612087-BLK1)</b>				Prepared & Analyzed: 12/08/16							
Specific Conductance (EC)	ND	0.0100	mmhos/cm								
<b>LCS (1612087-BS1)</b>				Prepared & Analyzed: 12/08/16							
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750		99.3	90-110				
<b>Duplicate (1612087-DUP1)</b>	<b>Source: 1612025-01</b>			Prepared & Analyzed: 12/08/16							
Specific Conductance (EC)	0.283	0.0100	mmhos/cm	0.266					6.26	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 15:44

### 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

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,



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

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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

# Summit Scientific

1612031

S<sub>2</sub>

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

1 of 1  
Page 8 of 8

Client: Foundation Energy/Tasman Project Manager: Bob Cornez  
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	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table #10-1	GT-TEX	TPH-DRO	EC		PH	AS-Only
1	<del>Fed 43-4: N@10'</del>	<del>02 Dec</del>	<del>0753</del>	1					X				X	X	X	X	X	(amp) 12/16	
2	Fed 12-3: C@4'		0925	2									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	<del>Fed 3-11: C@6'</del>		<del>1218</del>	2									X						
8	<del>Fed 3-11: W@2'</del>		<del>1232</del>	1									X	X	X	X		(amp) 12/16	
9	<del>Fed 3-11: N@2'</del>		<del>1259</del>	1									X	X	X	X			
10	<del>Fed 3-11: S@4'</del>		<del>1229</del>	1									X	X	X	X			
Relinquished by: <u>[Signature]</u>		Date/Time: <u>12/16/16 1010</u>	Received by: <u>[Signature]</u>		Date/Time: <u>12-5-16 10:06</u>	Turn Around Time (Check)		Same Day <input type="checkbox"/>		72 hours <input type="checkbox"/>		24 hours <input type="checkbox"/>		Standard <input checked="" type="checkbox"/>		48 hours <input type="checkbox"/>		Notes:	
Relinquished by: _____		Date/Time: _____	Received by: _____		Date/Time: _____	Sample Integrity:		Temperature Upon Receipt: <u>1.6°C</u>		Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No									

www.s2scientific.com



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 (Fed 12-3)  
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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<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) <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?			<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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

Nakita  
Custodian Printed Name

[Signature]  
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

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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: 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	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0701</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>0.150</b>	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: 12/02/16 09:25

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

Date Sampled: 12/02/16 09:25

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>7.77</b>	0.245	"	"	"	"	"	"	

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

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

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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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**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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	

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

**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: <i>o</i> -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
<b>Specific Conductance (EC)</b>	<b>2.33</b>	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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

**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

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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: 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: <i>o</i> -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
<b>Specific Conductance (EC)</b>	<b>6.24</b>	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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

**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	

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

**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
<b>Specific Conductance (EC)</b>	<b>5.89</b>	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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

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

**Summit Scientific**

**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	<b>8.16</b>	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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

**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: <i>o</i> -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	

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

**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	

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

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch 1612067 - EPA 3550A**

**Blank (1612067-BLK1)**

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

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	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				
<i>Surrogate: o-Terphenyl</i>	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				
<i>Surrogate: o-Terphenyl</i>	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
<i>Surrogate: o-Terphenyl</i>	16.4		"	12.5		131	30-150				

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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

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

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

**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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0419</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>99.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

**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			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0429</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0427</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0418</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

**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			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0458</i>		<i>"</i>	<i>0.0400</i>		<i>115</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>21-167</i>			

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

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

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

**Batch 1612073 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1612073-MSD1)</b>	<b>Source: 1612029-01</b>			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	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0467</i>		<i>"</i>	<i>0.0400</i>		<i>117</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

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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

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

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

**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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0227</i>		<i>"</i>	<i>0.0333</i>		<i>68.0</i>	<i>30-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0341</i>		<i>"</i>	<i>0.0333</i>		<i>102</i>	<i>30-150</i>			

**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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0272</i>		<i>"</i>	<i>0.0333</i>		<i>81.6</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0396</i>		<i>"</i>	<i>0.0333</i>		<i>119</i>	<i>50-150</i>			

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

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**Semivolatile Organic Compounds by EPA Method 8270D SIM - Quality Control**  
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Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

**Batch 1612049 - EPA 5030 Soil MS**

<b>Matrix Spike (1612049-MS1)</b>	<b>Source: 1612026-04</b>			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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0276</i>		"	<i>0.0333</i>		<i>82.9</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0373</i>		"	<i>0.0333</i>		<i>112</i>	<i>50-150</i>			

<b>Matrix Spike Dup (1612049-MSD1)</b>	<b>Source: 1612026-04</b>			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	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0322</i>		"	<i>0.0333</i>		<i>96.5</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0365</i>		"	<i>0.0333</i>		<i>110</i>	<i>50-150</i>			

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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

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

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

**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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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	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD		

**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

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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	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike (1612062-MS1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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

*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		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit		

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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

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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 Mercury by EPA Method 7471 - Quality Control**  
**Summit Scientific**

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

**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		Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

**Batch 1612064 - 3060A\_Mod**

<b>Blank (1612064-BLK1)</b>										
Chromium, Hexavalent	ND	0.300	mg/kg wet							Prepared: 12/07/16 Analyzed: 12/08/16
<b>LCS (1612064-BS1)</b>										
Chromium, Hexavalent	18.7	0.300	mg/kg wet	19.9		93.7	85-115			Prepared: 12/07/16 Analyzed: 12/08/16
<b>Duplicate (1612064-DUP1)</b>										
Chromium, Hexavalent	ND	0.300	mg/kg dry		ND				20	Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16
<b>Matrix Spike (1612064-MS1)</b>										
Chromium, Hexavalent	ND	0.300	mg/kg dry	23.9	ND		85-115			Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16
<b>Matrix Spike (1612064-MS2)</b>										
Chromium, Hexavalent	3.25	0.300	mg/kg dry	22.5	ND	14.4	85-115			Source: 1612036-01 Prepared: 12/07/16 Analyzed: 12/08/16
<b>Post Spike (1612064-PS1)</b>										
Chromium, Hexavalent	0.00400		mg/kg	0.498	0.00	0.802	85-115			Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16

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 Level	Source Result	%REC		RPD		Notes
	Result	Limit			Units	%REC	Limits	RPD	

**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	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD		

**Batch 1612069 - General Preparation**

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

**Batch 1612095 - General Preparation**

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

**Batch 1612097 - General Preparation**

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

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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 12:22. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



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 15:49

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 3-11: C @ 6'	1612032-01	Soil	12/02/16 12:18	12/05/16 12:22
Fed 3-11: W @ 2'	1612032-02	Soil	12/02/16 12:32	12/05/16 12:22
Fed 3-11: N @ 2'	1612032-03	Soil	12/02/16 12:59	12/05/16 12:22
Fed 3-11: S @ 4'	1612032-04	Soil	12/02/16 12:29	12/05/16 12:22
Fed 3-11: E @ 6'	1612032-05	Soil	12/02/16 13:43	12/05/16 12:22

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 15:49

# Summit Scientific

1412032.1

S<sub>2</sub>

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303-277-9310 ♦ 303-374-5933

1 of 2  
~~2 of 2~~

Page 8 of 8

Client: Foundation Energy/Truman 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	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table D10-1	G-BTEX	TPH-DRO	EC		PH
1	Fed 4B-4: H@10'	02-1-16	0757	1						X			X	X	X	X		
2	Fed 12-3: C@4'		0925	2									X	X	X	X		
3	Fed 12-3: S@6'		0946	1									X	X	X	X		
4	Fed 12-3: E@8'		1008	1									X	X	X	X		
5	Fed 12-3: N@8'		1031	1									X	X	X	X		
6	Fed 12-3: W@10'		1101	1									X	X	X	X		
7	Fed 3-11: C@6'		1218	2									X	X	X	X		01
8	Fed 3-11: W@2'		1232	1									X	X	X	X		02
9	Fed 3-11: N@2'		1259	1									X	X	X	X		03
10	Fed 3-11: S@4'		1229	1									X	X	X	X		04

(tmp)  
12/5/16

Relinquished by: [Signature] Date/Time: 12/14/16 10:10 Received by: [Signature] Date/Time: 12-5-16 10:10  
Turn Around Time (Check):  
Same Day — 72 hours  
24 hours — Standard   
48 hours —  
Sample Integrity:  
Temperature Upon Receipt: 1.6°C  
Intact:  Yes  No

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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 15:49

# Summit Scientific

S<sub>2</sub>

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303-277-9310 • 303-374-5933

11612032.2

2 2  
Page 4 of 8

Client: Foundation Energy / Tasman Project Manager: RUC  
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)	Foil Talle 1/16"	GIBEX	TPH-DRO	EC		PH	HS - Only
1	Fed 3-11: E06'	02-Dec	1343	1						X				X	X	X	X	05	
2	Fed 3-11: E02'		1416	1										X					
3	Soil Heart Comp		1530	1															
4	Fed 3-11: WE6'		1527	1										X	X	X	X		
5	Fed 3-11: S2'		1657	1										X	X	X	X		
6	Fed 3-11: N08'		1638	1										X	X	X	X		
7	Fed 3-11: E02'		1657	1										X	X	X	X		
8	Fed 3-9: C08'	03-Dec	0946	2										X	X	X	X		
9	Fed 3-9: N08'		0609	1										X	X	X	X		
10	Fed 3-9: E010'		0830	1										X	X	X	X		
Relinquished by:		Date/Time: 12/5/16 10:00	Received by:		Date/Time: 12-5-16 10:00	Turn Around Time (Check)		Same Day		72 hours		24 hours		Standard		48 hours		Notes:	
Relinquished by:		Date/Time:	Received by:		Date/Time:	Sample Integrity:		Temperature Upon Receipt: 1.6°C		Intact: Yes		No							

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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 15:49

**Sample Receipt Checklist**

S2 Work Order: 1612032  
Client: Foundation/Tasman Client Project ID: Western slope Pit Assessment (Fed 3-11)  
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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<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) <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
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 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
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):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Nakita  
Custodian Printed Name

MA  
Signature or Initials of Custodian

12/5/16 12:30  
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 15:49

**Fed 3-11: C @ 6'**  
**1612032-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1100	50	mg/kg	1	1612067	12/07/16	12/08/16	8015M	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		98.4 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2.0	0.20	mg/kg	100	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	8.8	0.50	"	"	"	"	"	"	
Ethylbenzene	17	0.50	"	"	"	"	"	"	
Xylenes (total)	170	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	9000	50	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		85.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		249 %	21-167		"	"	"	"	S-02

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: 12/02/16 12:18

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

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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 15:49

**Fed 3-11: C @ 6'**  
**1612032-01 (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	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.0636</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>2.38</b>	0.500	"	100	"	"	"	"	
Pyrene	ND	0.00500	"	1	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		88.8 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		98.5 %	30-150		"	"	"	"	

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>11.0</b>	0.244	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
<b>Barium</b>	<b>130</b>	0.489	"	"	"	"	"	"	
<b>Cadmium</b>	<b>0.321</b>	0.122	"	"	"	"	"	"	
<b>Chromium</b>	<b>7.14</b>	0.611	"	"	"	"	"	"	
<b>Copper</b>	<b>15.8</b>	0.611	"	"	"	"	"	"	
<b>Lead</b>	<b>15.8</b>	0.244	"	"	"	"	"	"	
<b>Nickel</b>	<b>14.5</b>	0.122	"	"	"	"	"	"	
<b>Selenium</b>	<b>1.80</b>	0.489	"	"	"	"	"	"	
<b>Silver</b>	<b>0.150</b>	0.122	"	"	"	"	"	"	
<b>Zinc</b>	<b>74.3</b>	12.2	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>11.0</b>	0.244	"	"	"	"	"	"	

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 15:49

**Fed 3-11: C @ 6'**  
**1612032-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Barium	130	0.489	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Boron	3.40	1.22	"	"	"	"	"	"	
Cadmium	0.321	0.122	"	"	"	"	"	"	
Chromium	7.14	0.611	"	"	"	"	"	"	
Copper	15.8	0.611	"	"	"	"	"	"	
Lead	15.8	0.244	"	"	"	"	"	"	
Nickel	14.5	0.122	"	"	"	"	"	"	
Selenium	1.80	0.489	"	"	"	"	"	"	
Silver	0.150	0.122	"	"	"	"	"	"	
Zinc	74.3	12.2	"	"	"	"	"	"	

**Total Mercury by EPA Method 7471**

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0556	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: 12/02/16 12:18

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 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	7.14	0.978	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 15:49

**Fed 3-11: C @ 6'**  
**1612032-01 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1390	12.2	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	198	6.11	"	"	"	"	"	"	
Sodium	3950	6.11	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	26.6		units	"	1612082	12/08/16	12/08/16	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	15.3	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.36	0.100	pH Units	"	1612095	12/06/16	12/06/16	EPA 9045	

Date Sampled: 12/02/16 12:18

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.8		%	"	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 15:49

**Fed 3-11: W @ 2'**  
**1612032-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 12:32

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 12:32

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 12:32

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	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/02/16 12:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>7.50</b>	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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 Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
 Project Manager: Bob Cornez

**Reported:**  
 12/12/16 15:49

**Fed 3-11: W @ 2'**  
**1612032-02 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/02/16 12:32

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.79	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:49

**Fed 3-11: N @ 2'**  
**1612032-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 12:59

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 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		93.1 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/16 12:59

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	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	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 12:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>12.4</b>	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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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 15:49

**Fed 3-11: N @ 2'**  
**1612032-03 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/02/16 12:59**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	<b>7.84</b>	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 15:49

**Fed 3-11: S @ 4'**  
**1612032-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 12:29

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 12:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		93.3 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/16 12:29

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	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/02/16 12:29

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>21.5</b>	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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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 15:49

**Fed 3-11: S @ 4'**  
**1612032-04 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/02/16 12:29**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.97	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 15:49

**Fed 3-11: E @ 6'**  
**1612032-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: 12/02/16 13:43

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 13:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		93.4 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: 12/02/16 13:43

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	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 13:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/02/16 13:43

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>22.0</b>	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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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 15:49

**Fed 3-11: E @ 6'**  
**1612032-05 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: 12/02/16 13:43

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.03	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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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 15:49

**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 1612067 - EPA 3550A**

**Blank (1612067-BLK1)**

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

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	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				
<i>Surrogate: o-Terphenyl</i>	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				
<i>Surrogate: o-Terphenyl</i>	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
<i>Surrogate: o-Terphenyl</i>	16.4		"	12.5		131	30-150				

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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 15:49

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

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

**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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0419</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>99.9</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

**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			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0429</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0427</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0418</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

**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			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0458</i>		<i>"</i>	<i>0.0400</i>		<i>115</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>21-167</i>			

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 15:49

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

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

**Batch 1612073 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1612073-MSD1)</b>	<b>Source: 1612029-01</b>			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	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0467</i>		<i>"</i>	<i>0.0400</i>		<i>117</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0409</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0425</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>21-167</i>			

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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 15:49

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

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

**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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0227		"	0.0333		68.0	30-150			
<i>Surrogate: Fluoranthene-d10</i>	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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0272		"	0.0333		81.6	50-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0396		"	0.0333		119	50-150			

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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 15:49

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

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

**Batch 1612049 - EPA 5030 Soil MS**

<b>Matrix Spike (1612049-MS1)</b>	<b>Source: 1612026-04</b>			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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0276</i>		"	<i>0.0333</i>		<i>82.9</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0373</i>		"	<i>0.0333</i>		<i>112</i>	<i>50-150</i>			

<b>Matrix Spike Dup (1612049-MSD1)</b>	<b>Source: 1612026-04</b>			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	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0322</i>		"	<i>0.0333</i>		<i>96.5</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0365</i>		"	<i>0.0333</i>		<i>110</i>	<i>50-150</i>			

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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 15:49

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

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

**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	"							
Cadmium	ND	0.100	"							
Barium	ND	0.400	"							
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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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/12/16 15:49

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

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

**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
Copper	2.83	0.518	"		2.29			21.0	20	QR-03
Cadmium	0.131	0.104	"		0.0802			48.4	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

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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 15:49

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

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

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike (1612062-MS1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>								
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

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>								
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			

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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 15:49

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

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

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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

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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 15:49

**Total Mercury by EPA Method 7471 - Quality Control**  
**Summit Scientific**

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

**Batch 1612034 - EPA 7471A**

<b>Blank (1612034-BLK1)</b>										
					Prepared: 12/05/16 Analyzed: 12/06/16					
Mercury	ND	0.0500	mg/kg wet							
<b>LCS (1612034-BS1)</b>										
					Prepared: 12/05/16 Analyzed: 12/06/16					
Mercury	0.525	0.0500	mg/kg wet	0.500		105	80-120			
<b>Duplicate (1612034-DUP1)</b>										
					<b>Source: 1612006-01</b>		Prepared: 12/05/16 Analyzed: 12/06/16			
Mercury	0.00401	0.0460	mg/kg dry		0.00399			0.564	20	
<b>Matrix Spike (1612034-MS1)</b>										
					<b>Source: 1612006-01</b>		Prepared: 12/05/16 Analyzed: 12/06/16			
Mercury	0.474	0.0460	mg/kg dry	0.460	0.00399	102	80-120			
<b>Matrix Spike Dup (1612034-MSD1)</b>										
					<b>Source: 1612006-01</b>		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	

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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 15:49

**Hexavalent Chromium by EPA 7196 - Quality Control**  
**Summit Scientific**

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

**Batch 1612064 - 3060A\_Mod**

<b>Blank (1612064-BLK1)</b>										
Prepared: 12/07/16 Analyzed: 12/08/16										
Chromium, Hexavalent	ND	0.300	mg/kg wet							
<b>LCS (1612064-BS1)</b>										
Prepared: 12/07/16 Analyzed: 12/08/16										
Chromium, Hexavalent	18.7	0.300	mg/kg wet	19.9		93.7	85-115			
<b>Duplicate (1612064-DUP1)</b>										
Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16										
Chromium, Hexavalent	ND	0.300	mg/kg dry		ND				20	
<b>Matrix Spike (1612064-MS1)</b>										
Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16										
Chromium, Hexavalent	ND	0.300	mg/kg dry	23.9	ND		85-115			
<b>Matrix Spike (1612064-MS2)</b>										
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			
<b>Post Spike (1612064-PS1)</b>										
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			

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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 15:49

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

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

**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

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:49

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

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

**Batch 1612069 - General Preparation**

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

**Batch 1612095 - General Preparation**

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

**Batch 1612097 - General Preparation**

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

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Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/12/16 15:49

### 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 ♦ 303.277.9531 - fax

December 13, 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 12:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury

President



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Ferg 3-9: C @ 8'	1612034-01	Soil	12/03/16 07:46	12/05/16 12:35
Ferg 3-9: N @ 8'	1612034-02	Soil	12/03/16 08:04	12/05/16 12:35
Ferg 3-9: E @ 10'	1612034-03	Soil	12/03/16 08:38	12/05/16 12:35
Ferg 3-9: S @ 10'	1612034-04	Soil	12/03/16 08:59	12/05/16 12:35
Ferg 3-9: W @ 10'	1612034-05	Soil	12/03/16 09:17	12/05/16 12:35

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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:  
12/13/16 14:29

# Summit Scientific

1412034.1

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303-277-9310 • 303-374-5933

1 of 2  
Page 4 of 4

Client: Foundation Energy / Tasman Project Manager: RUC  
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)	Fall Table 110-1	GBTEX	TPH-DRO	EC		PH	HS-Only		
1	Fed 2-11: E @ 6'	02-Dec	1343	1						X			X	X	X	X					
2	Fed 2-11: C @ 2'		1469	2									X	X	X	X					
3	Southeast Camp		1530	1									X	X	X	X					
4	Fed 2-11: W @ 6'		1527	1									X	X	X	X					
5	Fed 2-11: S @ 2'		1637	1									X	X	X	X					
6	Fed 2-11: N @ 8'		1638	1									X	X	X	X					
7	Fed 2-11: E @ 2'		1657	1									X	X	X	X					
8	Ferg 3-9: C @ 8'	03-Dec	0746	2									X	X	X	X		01			
9	Ferg 3-9: N @ 8'		0804	1									X	X	X	X		02			
10	Ferg 3-9: E @ 10'		0838	1									X	X	X	X		03			
Relinquished by:		Date/Time: 12/5/16 10:00	Received by:		Date/Time: 12-5-16 16:10	Turn Around Time (Check)		Same Day _____ 72 hours		24 hours _____ Standard <input checked="" type="checkbox"/>		48 hours _____		Sample Integrity: 1.6°C		Temperature Upon Receipt: 1.6°C		Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Notes:	

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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:  
12/13/16 14:29

# Summit Scientific

S<sub>2</sub>

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303-277-9310 • 303-374-5933

1612034.2

2 of 2

Page 5 of 5

Client: Foundation Energy/Tasman Project Manager: ZVC  
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-BTEX	TPH-DOO	EC	PH	
1	Feris 3-9:5@10'	07-16	0859	1					X				X	X	X	X		04
2	Feris 3-9:W@10'		0917	1									X	X	X	X		05
3	Fed 22-9:C@4'		1020	2									X	X	X	X		
4	Fed 22-9:S@4'		1052	1									X	X	X	X		
5	Fed 22-9:SO@4'		1208	1									X	X	X	X		
6	Fed 22-9:W@8'		1326	1									X	X	X	X		
7	Fed 22-9:V@4'		1309	1									X	X	X	X		
8	Fed 22-9:SO@8'		1511	1									X	X	X	X		
9	SW 10:10:10		1143	2									X	X	X	X		
10	Southwest Comp		1442	2					X									

*[Handwritten signature]*  
12/13/16

Relinquished by: [Signature] Date/Time: 12/15/16 10:10 Received by: [Signature] Date/Time: 12-15-16 10:00  
Turn Around Time (Check)  
Same Day  72 hours  
24 hours  Standard   
48 hours   
Sample Integrity: 1.600  
Temperature Upon Receipt: 1.600  
Intact:  Yes  No

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*[Handwritten signature]*



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/13/16 14:29

**Sample Receipt Checklist**

S2 Work Order: 1612034  
Client: Foundation/Tasman Client Project ID: Western Slope Pit Assessment (F03 3-9)  
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 <sup>(1)</sup> ?	<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<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 <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<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) <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
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 <sup>(1)</sup> ?			<input checked="" type="checkbox"/>	
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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

Nakita  
Custodian Printed Name

MA  
Signature or Initials of Custodian

12/13/16 1235  
Date/Time



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/13/16 14:29

**Ferg 3-9: C @ 8'**  
**1612034-01 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>1800</b>	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 07:46**

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
<b>Toluene</b>	<b>24</b>	0.50	"	100	"	"	"	"	
<b>Ethylbenzene</b>	<b>10</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>570</b>	5.0	"	1000	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1700</b>	50	"	100	"	"	"	"	

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		128 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		205 %	21-167		"	"	"	"	S-02

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Date Sampled: **12/03/16 07:46**

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	"	"	"	"	"	"	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/13/16 14:29

**Ferg 3-9: C @ 8'**  
**1612034-01 (Soil)**

**Summit Scientific**

**Semivolatile Organic Compounds by EPA Method 8270D SIM**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	ND	0.00500	mg/kg	1	1612049	12/06/16	12/08/16	EPA 8270D SIM	
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	"	"	"	"	"	"	
<b>Fluorene</b>	<b>0.00719</b>	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Naphthalene</b>	<b>1.19</b>	0.0500	"	10	"	"	"	"	
Pyrene	ND	0.00500	"	1	"	"	"	"	

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		14.4 %	30-150		"	"	"	"	S-02
Surrogate: Fluoranthene-d10		94.2 %	30-150		"	"	"	"	

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.71	0.231	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	137	0.461	"	"	"	"	"	"	
Arsenic	5.71	0.231	"	"	"	"	"	"	
Boron	3.51	1.15	"	"	"	"	"	"	
Barium	137	0.461	"	"	"	"	"	"	
Cadmium	0.140	0.115	"	"	"	"	"	"	
Chromium	6.08	0.577	"	"	"	"	"	"	
Cadmium	0.140	0.115	"	"	"	"	"	"	
Copper	8.72	0.577	"	"	"	"	"	"	
Lead	9.57	0.231	"	"	"	"	"	"	
Chromium	6.08	0.577	"	"	"	"	"	"	
Nickel	9.84	0.115	"	"	"	"	"	"	
Selenium	0.591	0.461	"	"	"	"	"	"	
Copper	8.72	0.577	"	"	"	"	"	"	

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

**Ferg 3-9: C @ 8'**  
**1612034-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Silver	ND	0.115	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
<b>Zinc</b>	<b>36.8</b>	11.5	"	"	"	"	"	"	
<b>Lead</b>	<b>9.57</b>	0.231	"	"	"	"	"	"	
<b>Nickel</b>	<b>9.84</b>	0.115	"	"	"	"	"	"	
<b>Selenium</b>	<b>0.591</b>	0.461	"	"	"	"	"	"	
Silver	ND	0.115	"	"	"	"	"	"	
<b>Zinc</b>	<b>36.8</b>	11.5	"	"	"	"	"	"	

**Total Mercury by EPA Method 7471**

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0489	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

**Hexavalent Chromium by EPA 7196**

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Trivalent Chromium</b>	<b>6.08</b>	0.923	mg/kg dry	1	[CALC]	12/07/16	12/08/16	EPA 7196/3060A	
Chromium, Hexavalent	ND	0.300	"	"	1612064	"	"	EPA 7196	

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

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>7710</b>	11.5	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
<b>Magnesium</b>	<b>309</b>	5.77	"	"	"	"	"	"	
<b>Sodium</b>	<b>39.6</b>	5.77	"	"	"	"	"	"	
<b>Sodium Adsorption Ratio</b>	<b>0.120</b>		units	"	1612082	12/08/16	12/08/16	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

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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:**  
 12/13/16 14:29

**Ferg 3-9: C @ 8'**  
**1612034-01 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/03/16 07:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>4.35</b>	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	<b>7.87</b>	0.100	pH Units	"	1612096	12/09/16	12/09/16	EPA 9045	
% Solids	<b>86.7</b>		%	"	1612069	12/07/16	12/07/16	% calculation	

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/13/16 14:29

**Ferg 3-9: N @ 8'**  
**1612034-02 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 08:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 08:04**

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

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/03/16 08:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.69</b>	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 08:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		127 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.3 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/03/16 08:04**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.07</b>	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
<b>Specific Conductance (EC)</b>	<b>7.08</b>	0.0100	mmhos/cm	"	1612098	12/09/16	12/09/16	SM 2510B	

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6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

**Ferg 3-9: E @ 10'**  
**1612034-03 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		98.1 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/03/16 08:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>6.70</b>	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	<b>8.15</b>	0.100	pH Units	"	1612096	12/09/16	12/09/16	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:**  
12/13/16 14:29

**Ferg 3-9: S @ 10'**  
**1612034-04 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		98.1 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		133 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/03/16 08:59**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	<b>8.19</b>	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
Specific Conductance (EC)	<b>2.20</b>	0.0100	mmhos/cm	"	1612098	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:**  
12/13/16 14:29

**Ferg 3-9: W @ 10'**  
**1612034-05 (Soil)**

**Summit Scientific**

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612117	12/12/16	12/13/16	8015M	

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		97.3 %	30-150		"	"	"	"	

**Volatile Organic Compounds by EPA Method 8260B**

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		124 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/03/16 09:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>5.93</b>	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	<b>8.00</b>	0.100	pH Units	"	1612096	12/09/16	12/09/16	EPA 9045	

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
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Analyte	Result	Reporting		Spike Level	Source		%REC		RPD		Notes
		Limit	Units		Result	%REC	Limits	RPD	Limit		

**Batch 1612117 - EPA 3550A**

**Blank (1612117-BLK1)**

Prepared & Analyzed: 12/12/16

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	<i>12.9</i>		"	<i>12.5</i>		<i>103</i>	<i>30-150</i>				

**LCS (1612117-BS1)**

Prepared & Analyzed: 12/12/16

C10-C28 (DRO)	429	50	mg/kg	499		86.0	73-134				
<i>Surrogate: o-Terphenyl</i>	<i>13.0</i>		"	<i>12.5</i>		<i>104</i>	<i>30-150</i>				

**Matrix Spike (1612117-MS1)**

Source: 1612072-01

Prepared: 12/12/16 Analyzed: 12/13/16

C10-C28 (DRO)	460	50	mg/kg	499	53.6	81.5	50-148				
<i>Surrogate: o-Terphenyl</i>	<i>13.0</i>		"	<i>12.5</i>		<i>104</i>	<i>30-150</i>				

**Matrix Spike Dup (1612117-MSD1)**

Source: 1612072-01

Prepared: 12/12/16 Analyzed: 12/13/16

C10-C28 (DRO)	464	50	mg/kg	499	53.6	82.3	50-148	0.890	20		
<i>Surrogate: o-Terphenyl</i>	<i>13.1</i>		"	<i>12.5</i>		<i>105</i>	<i>30-150</i>				

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/13/16 14:29

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

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

**Batch 1612089 - EPA 5030 Soil MS**

**Blank (1612089-BLK1)**

Prepared & 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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0481</i>		<i>"</i>	<i>0.0400</i>		<i>120</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0414</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

**LCS (1612089-BS1)**

Prepared & Analyzed: 12/08/16

Benzene	0.0861	0.0020	mg/kg	0.100		86.1	58-130			
Toluene	0.0954	0.0050	"	0.100		95.4	61-134			
Ethylbenzene	0.120	0.0050	"	0.0992		121	74-139			
m,p-Xylene	0.217	0.010	"	0.200		109	73-137			
o-Xylene	0.112	0.0050	"	0.0980		115	73-141			
Xylenes (total)	0.330	0.0050	"				30-150			
Gasoline Range Hydrocarbons	3.07	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0499</i>		<i>"</i>	<i>0.0400</i>		<i>125</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0415</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

**Matrix Spike (1612089-MS1)**

Source: 1612033-01

Prepared: 12/08/16 Analyzed: 12/09/16

Benzene	0.0834	0.0020	mg/kg	0.100	ND	83.4	30-131			
Toluene	0.0954	0.0050	"	0.100	ND	95.4	30-134			
Ethylbenzene	0.119	0.0050	"	0.0992	ND	120	22-153			
m,p-Xylene	0.218	0.010	"	0.200	ND	109	10-159			
o-Xylene	0.112	0.0050	"	0.0980	ND	114	31-151			
Xylenes (total)	0.330	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	3.10	0.50	"		ND		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0507</i>		<i>"</i>	<i>0.0400</i>		<i>127</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0402</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.0</i>	<i>21-167</i>			

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

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

**Batch 1612089 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1612089-MSD1)</b>	<b>Source: 1612033-01</b>			Prepared: 12/08/16		Analyzed: 12/09/16				
Benzene	0.0839	0.0020	mg/kg	0.100	ND	83.9	30-131	0.609	34	
Toluene	0.0951	0.0050	"	0.100	ND	95.1	30-134	0.346	30	
Ethylbenzene	0.120	0.0050	"	0.0992	ND	121	22-153	1.21	24	
m,p-Xylene	0.219	0.010	"	0.200	ND	110	10-159	0.741	68	
o-Xylene	0.112	0.0050	"	0.0980	ND	114	31-151	0.00	38	
Xylenes (total)	0.331	0.0050	"		ND		30-150	0.490	20	
Gasoline Range Hydrocarbons	3.12	0.50	"		ND		30-150	0.787	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0501</i>		<i>"</i>	<i>0.0400</i>		<i>125</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>21-167</i>			

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/13/16 14:29

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

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

**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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0227		"	0.0333		68.0	30-150			
<i>Surrogate: Fluoranthene-d10</i>	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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0272		"	0.0333		81.6	50-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0396		"	0.0333		119	50-150			

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

Reported:  
12/13/16 14:29

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

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

**Batch 1612049 - EPA 5030 Soil MS**

<b>Matrix Spike (1612049-MS1)</b>	<b>Source: 1612026-04</b>			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			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0276</i>		"	<i>0.0333</i>		<i>82.9</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0373</i>		"	<i>0.0333</i>		<i>112</i>	<i>50-150</i>			

<b>Matrix Spike Dup (1612049-MSD1)</b>	<b>Source: 1612026-04</b>			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	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0322</i>		"	<i>0.0333</i>		<i>96.5</i>	<i>50-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0365</i>		"	<i>0.0333</i>		<i>110</i>	<i>50-150</i>			

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Project: Western Slope Pit Assessment

Project Number: [none]  
Project Manager: Bob Cornez

**Reported:**  
12/13/16 14:29

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

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

**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	"							
Cadmium	ND	0.100	"							
Barium	ND	0.400	"							
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

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:  
12/13/16 14:29

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

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

**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

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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:  
12/13/16 14:29

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

**Summit Scientific**

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

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike (1612062-MS1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>								
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

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>								
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:**  
12/13/16 14:29

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

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

**Batch 1612062 - EPA 3050B**

<b>Matrix Spike Dup (1612062-MSD1)</b>	<b>Source: 1612006-04</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>							
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

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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:**  
12/13/16 14:29

**Total Mercury by EPA Method 7471 - Quality Control**  
**Summit Scientific**

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

**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:**  
12/13/16 14:29

**Hexavalent Chromium by EPA 7196 - Quality Control**  
**Summit Scientific**

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

**Batch 1612064 - 3060A\_Mod**

<b>Blank (1612064-BLK1)</b>			Prepared: 12/07/16 Analyzed: 12/08/16								
Chromium, Hexavalent	ND	0.300	mg/kg wet								
<b>LCS (1612064-BS1)</b>			Prepared: 12/07/16 Analyzed: 12/08/16								
Chromium, Hexavalent	18.7	0.300	mg/kg wet	19.9	93.7	85-115					
<b>Duplicate (1612064-DUP1)</b>			<b>Source: 1612026-04</b>			Prepared: 12/07/16 Analyzed: 12/08/16					
Chromium, Hexavalent	ND	0.300	mg/kg dry		ND					20	
<b>Matrix Spike (1612064-MS1)</b>			<b>Source: 1612026-04</b>			Prepared: 12/07/16 Analyzed: 12/08/16					
Chromium, Hexavalent	ND	0.300	mg/kg dry	23.9	ND	85-115					
<b>Matrix Spike (1612064-MS2)</b>			<b>Source: 1612036-01</b>			Prepared: 12/07/16 Analyzed: 12/08/16					
Chromium, Hexavalent	3.25	0.300	mg/kg dry	22.5	ND	14.4	85-115				
<b>Post Spike (1612064-PS1)</b>			<b>Source: 1612026-04</b>			Prepared: 12/07/16 Analyzed: 12/08/16					
Chromium, Hexavalent	0.00400		mg/kg	0.498	0.00	0.802	85-115				

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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:  
12/13/16 14:29

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

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

**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:**  
12/13/16 14:29

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

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

**Batch 1612069 - General Preparation**

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

**Batch 1612096 - General Preparation**

<b>LCS (1612096-BS1)</b>				Prepared & Analyzed: 12/09/16						
pH	8.02	0.100	pH Units	8.00		100	95-105			
<b>Duplicate (1612096-DUP1)</b>	<b>Source: 1612034-01</b>			Prepared & Analyzed: 12/09/16						
pH	7.82	0.100	pH Units		7.87			0.637	20	

**Batch 1612098 - General Preparation**

<b>Blank (1612098-BLK1)</b>				Prepared & Analyzed: 12/09/16						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
<b>LCS (1612098-BS1)</b>				Prepared & Analyzed: 12/09/16						
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750		99.2	90-110			
<b>Duplicate (1612098-DUP1)</b>	<b>Source: 1612034-01</b>			Prepared & Analyzed: 12/09/16						
Specific Conductance (EC)	4.04	0.0100	mmhos/cm		4.35			7.40	20	

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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:**  
12/13/16 14:29

### 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

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741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

December 09, 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 11:31. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury  
President



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
North Comp	1612027-01	Soil	12/01/16 15:18	12/05/16 11:31
Southeast Comp	1612027-02	Soil	12/01/16 15:30	12/05/16 11:31
Southwest Comp	1612027-03	Soil	12/01/16 14:42	12/05/16 11:31

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Corne

Reported:  
12/09/16 10:47

# Summit Scientific

1612027.1

S<sub>2</sub>

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303-277-9310 • 303-374-5933

Page 1 of 3

Client: Foundation Energy / Tasman Project Manager: ZMC  
Address: \_\_\_\_\_ E-Mail: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_  
Phone: \_\_\_\_\_ Fax: \_\_\_\_\_ Project Name: Western Slope Pit Assessment  
Sampler Name: Bob Corne 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 910-1	GBTEX	TPH - DRC		EC	PH
1	Feet 1-34: EEB'	12/15/16	08:28	1						X			X	X	X	X		
2	Feet 1-34: N@E'	12/15/16	08:58	1									X	X	X	X		
3	Feet 1-34: S@E'	12/15/16	09:21	1									X	X	X	X		
4	Feet 1-34: C@S'	12/15/16	09:08	2									X	X	X	X		
5	Feet 1-34: W@E'	12/15/16	09:53	1									X	X	X	X		
6	North Camp	12/15/16	15:18	1									X	X	X	X		
7	Feet 1-35: N@S'	12/15/16	11:13	1									X	X	X	X		
8	Feet 1-35: W@S'	12/15/16	11:21	1									X	X	X	X		
9	Feet 1-35: S@S'	12/15/16	11:39	1									X	X	X	X		
10	Feet 1-35: E@S'	12/15/16	11:46	1									X	X	X	X		
Relinquished by: _____		Date/Time: _____	Received by: _____		Date/Time: _____		Turn Around Time (Check)		Notes:									
_____		12/15/16 10:10	_____		12-5-16 10:10		Same Day _____ 72 hours _____											
Relinquished by: _____		Date/Time: _____	Received by: _____		Date/Time: _____		24 hours _____ Standard <input checked="" type="checkbox"/>											
_____		_____	_____		_____		48 hours _____											
Relinquished by: _____		Date/Time: _____	Received by: _____		Date/Time: _____		Sample Integrity:											
_____		_____	_____		_____		Temperature Upon Receipt: 1.6°C											
_____		_____	_____		_____		Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No											

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

Reported:  
12/09/16 10:47

# Summit Scientific

1612027.2

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303-277-9310 • 303-374-5933

Page 2 of 3

Client: Foundation Energy / Tasman Project Manager: RUC  
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 110-1	GISTEX	TPH-DRO	EC		PH	AS-Only	
1	Fed 3-11: E06'	02-Dec	1343	1						X			X	X	X	X	X		Amplify	
2	Fed 2-11: C02'		1459	1									X						OZ	
3	South East Comp		1530	1									X	X	X	X	X			
4	Fed 2-11: W06'		1527	1									X	X	X	X	X			
5	Fed 2-11: S02'		1857	1									X	X	X	X	X			
6	Fed 2-11: N08'		1638	1									X	X	X	X	X			
7	Fed 2-11: E02'		1657	1									X	X	X	X	X			
8	Fed 3-4: C08'	03-Dec	0746	2									X	X	X	X	X			
9	Fed 2-9: N08'		0804	1									X	X	X	X	X			
10	Fed 2-9: E010'		0838	1									X	X	X	X	X			
Relinquished by: <u>[Signature]</u>		Date/Time: <u>12/5/16 10:00</u>	Received by: <u>[Signature]</u>		Date/Time: <u>12-5-16 10:10</u>	Turn Around Time (Check)		Same Day _____ 72 hours		24 hours _____ Standard <input checked="" type="checkbox"/>		48 hours _____		Sample Integrity: <u>1.6%</u>		Temperature Upon Receipt: <u>1.6°C</u>		Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		Notes:
Relinquished by: _____		Date/Time: _____	Received by: _____		Date/Time: _____	Sample Integrity: _____		Temperature Upon Receipt: _____		Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No										Notes:

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

Reported:  
12/09/16 10:47

# Summit Scientific

S<sub>2</sub>

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

1612027.3

3 3  
Page 5 of 8

Client: Foundation Energy / Tasman Project Manager: ZMC  
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	GBL/EX	TPH-DRO	EC		pH
1	Ferg 3-9-2010 67' 20'	0859		1						X				X	X	X		
2	Ferg 3-9-2010 16'	0917		1										X	X	X		
3	Fed 22-9-2010 41'	1020		2										X	X	X		
4	Fed 22-9-2010 41'	1052		1										X	X	X		
5	Fed 22-9-2010 71'	1208		1										X	X	X		
6	Fed 22-9-2010 8'	1226		1										X	X	X		
7	Fed 22-9-2010 3'	1309		1										X	X	X		
8	Fed 22-9-2010 3'	1341		1										X	X	X		
9	Southwest Camp	1443		2										X	X	X		
10	Southwest Camp	1443		2										X	X	X		

*Handwritten notes:*  
12/15/16  
DT D3

Relinquished by: \_\_\_\_\_ Date/Time: 12/15/16 10:00 Received by: [Signature] Date/Time: 12-5-16 10:00  
Turn Around Time (Check):  
Same Day \_\_\_\_\_ 72 hours \_\_\_\_\_  
24 hours \_\_\_\_\_ Standard   
48 hours \_\_\_\_\_  
Sample Integrity: \_\_\_\_\_  
Temperature Upon Receipt: 1.6°C  
Intact:  Yes  No

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*Handwritten signature*



Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

Reported:  
12/09/16 10:47

**Sample Receipt Checklist**

S2 Work Order: 1612027  
 Client: Foundation/Tasman Client Project ID: Western Slope Pit Assessment (Comp)  
 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)	1.6				

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 <sup>(1)</sup> ?	✓			
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 <sup>(1)</sup> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
If custody seals are present, are they intact <sup>(1)</sup> ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	✓			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?			✓	
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 <sup>(1)</sup> ?			✓	
Record the pH in Comments.				
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

Makita  
Custodian Printed Name

[Signature]  
Signature or Initials of Custodian

12/5/16  
Date/Time

[Signature]



Tasman Geosciences  
6899 Pecos Street  
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Project: Western Slope Pit Assessment

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Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

**North Comp**  
**1612027-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: **12/01/16 15:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Arsenic</b>	<b>9.58</b>	0.222	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 15:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>90.1</b>		%	1	1612069	12/07/16	12/07/16	% calculation	

Summit Scientific

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Tasman Geosciences  
6899 Pecos Street  
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

**Southeast Comp  
1612027-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: **12/01/16 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	<b>7.54</b>	0.224	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 15:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>89.1</b>		%	1	1612069	12/07/16	12/07/16	% calculation	

Summit Scientific

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**Reported:**  
12/09/16 10:47

**Southwest Comp  
1612027-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA Method 6020 - Dry Weight Basis**

Date Sampled: **12/01/16 14:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	<b>5.60</b>	0.222	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **12/01/16 14:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>90.2</b>		%	1	1612069	12/07/16	12/07/16	% calculation	

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**Reported:**  
12/09/16 10:47

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

**Summit Scientific**

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

**Batch 1612062 - EPA 3050B**

**Blank (1612062-BLK1)**

Prepared & Analyzed: 12/07/16

Arsenic ND 0.200 mg/kg wet

**LCS (1612062-BS1)**

Prepared & Analyzed: 12/07/16

Arsenic 127 0.500 mg/kg wet 132 96.5 82.6-117

**Duplicate (1612062-DUP1)**

**Source: 1612006-04**

Prepared & Analyzed: 12/07/16

Arsenic 1.02 0.207 mg/kg dry 0.898 12.6 20

**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

**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

Summit Scientific

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 6899 Pecos Street  
 Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: Comp  
 Project Manager: Bob Cornez

**Reported:**  
 12/09/16 10:47

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

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

**Batch 1612069 - General Preparation**

<b>Duplicate (1612069-DUP1)</b>		<b>Source: 1612014-01</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>			
% Solids	92.3		%		93.0		0.756	20
<b>Duplicate (1612069-DUP2)</b>		<b>Source: 1612014-01</b>			<b>Prepared &amp; Analyzed: 12/07/16</b>			
% Solids	92.3		%		93.0		0.756	20

Summit Scientific

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Project: Western Slope Pit Assessment

Project Number: Comp  
Project Manager: Bob Cornez

**Reported:**  
12/09/16 10:47

### 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