



January 5, 2017

Ms. Rachel Grant
Senior HSE/Regulatory Technician
Foundation Energy Management
15 East 5th Street, Suite 1200
Tulsa, OK 74103

**Re: Initial Site Assessment Summary Report
Former National Fuel Corporation Pit Locations
Garfield County, Colorado**

Dear Ms. Grant:

Tasman Geosciences, Inc. (Tasman) has prepared this Initial Site Assessment Summary Report (Report) to document the results of field assessment activities performed at ten (10) earthen pit locations in Garfield County, Colorado (Site [Figure 1]). These locations were recently acquired by Foundation Energy Management (FEM) as part of an asset purchase from National Fuel Corporation (NFC). Initial Site assessment activities were conducted between December 1 and 3, 2016.

This Report describes: 1) the on-Site assessment activities conducted at each pit location; 2) the field observations and instrument measurements collected at each location, and; 3) the laboratory analytical results of the soil samples collected.

In general, the following activities were conducted at each pit location:

- Mobilization of personnel and equipment to the subject location;
- Temporary disassembly of perimeter fencing and bird netting, as required, to access all test pit locations, including the center of the pit;
- Advancement of exploratory excavations (test pits), utilizing either a hand auger or a mini-excavator, to either geologic refusal or the maximum reach of the equipment;
- Collection of soil samples at two-foot intervals from the test pits;
- Field screening of soil samples using visual, olfactory, and photoionization detector (PID) methodologies;
- Submittal of soil samples for laboratory analysis, based on the following criteria hierarchy:
 - o Sample interval exhibiting the highest PID reading, or;
 - o Sample interval exhibiting the greatest visual or olfactory evidence of hydrocarbon impacts, or;
 - o The deepest soil sample interval.
- Backfilling of test pits using excavated spoils, and;
- Replacing perimeter fencing and bird netting, as appropriate.

As approved by Mr. Stan Spencer of the Colorado Oil and Gas Conservation Commission (COGCC) during a telephone conference on September 15, 2016, the following sampling and laboratory analysis protocols were implemented at each location:

- Sample locations / laboratory analytical suites:
 - o Center of pit (base)
 - Analysis of full COGCC Table 910-1 soil analytical suite
 - o North, south, east, and west pit perimeter (sidewalls)
 - Analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons (TPH) – gasoline range and diesel range organics (GRO and DRO), electrical conductivity (EC), and pH
 - o Off-pit composite background soil from each group of pit locations (north, southeast, and southwest)
 - Analysis of arsenic

The results of the field and laboratory assessment activities at each location are described below. The laboratory analytical reports are presented in Attachment A.

Federal 1-34

Pit ID 119489 was the subject of assessment at the Federal 1-34 location. The pit dimensions are approximately 10' by 10' by 4' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	8	0.1
South	6	0.6
East	8	0.1
West	8	1.0
Center	3.5	2,291
Background	~ 0.25	N/A

bgs = below ground surface

ppm = parts per million

N/A = not applicable

The pit location, test pit locations, and sample results are presented on Figure 2. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- **C@3.5' (total TPH)**
 - o (arsenic) – background composite samples above COGCC standard
- E@8' (EC) – below root zone
- N@8' (EC) – below root zone
- S@6' (EC) – below root zone
- W@8' (EC) – below root zone

Significant observations at this location included the following:

- The center and west test pits were advanced using a hand auger;
- Soil staining and odor were encountered in the center test pit between 2' and 3' bgs;
- Geologic refusal (hardpan) was encountered in the center, south, and west test pits.

Federal 1-35

Pit ID 119490 was the subject of assessment at the Federal 1-35 location. The pit dimensions are approximately 14' by 14' by 2' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	5	2.1
South	5	3.8
East	2	2.1
West	7	658
Center	3	741
Southwest Step-Out	N/A – no impacts observed	N/A
Background	~ 0.25	N/A

The pit location, test pit locations, and sample results are presented on Figure 3. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- **E@2' (EC)**
- *C@3' (arsenic) – background composite samples above COGCC standard*
- *N@5' (EC) – below root zone*
- *W@7' (EC) – below root zone*
- *S@5' (EC) – below root zone*

Significant observations at this location included the following:

- The center test pit was advanced using a hand auger;
- Soil staining and odor were encountered in the west test pit at 7' bgs. As such, a step-out test pit was advanced 10' southwest of the west test pit location;
- Geologic refusal (hardpan) was encountered in all six test pit locations.

Federal 2-34

Pit ID 119492 was the subject of assessment at the Federal 2-34 location. The pit dimensions are approximately 10' by 10' by 2' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	8	2.6
South	8	3.6
East	8	1.7
West	8	4,167
Center	4	3,3037
West Step-Out	N/A – no impacts observed	N/A
Background	~ 0.25	N/A

The pit location, test pit locations, and sample results are presented on Figure 4. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- **C@4' (total TPH)**
 - o (arsenic) – background composite samples above COGCC standard
- **W@8' (benzene, total xylenes, total TPH)**
- **E@8' (EC)** – below root zone
- **S@8' (EC)** – below root zone

Significant observations at this location included the following:

- The center, north, and east test pits were advanced using a hand auger;
- Soil staining and odor were encountered in the center test pit between 2' and 4' bgs;
- Soil staining, odor, wood debris, and trash were encountered in the west test pit between 4' and 10' bgs. As such, a step-out test pit was advanced 10' west of the west test pit location.

Federal 43-4

Pit ID 119483 was the subject of assessment at the Federal 43-4 location. The pit dimensions are approximately 10' by 14' by 4' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	10	0.9
South	6	7.2
East	4	4.4
West	2	0.8
Center	6	1,997
Background	~ 0.25	N/A

The pit location, test pit locations, and sample results are presented on Figure 5. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- **C@6' (total TPH)**
 - o (arsenic) – background composite samples above COGCC standard

- **W@2' (pH)**
- *E@4' (pH) – below root zone*

Significant observations at this location included the following:

- The center test pit was advanced using a hand auger.

Federal 12-3

Pit ID 119478 was the subject of assessment at the Federal 12-3 location. The pit dimensions are approximately 15' by 15' by 2' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	8	1.4
South	6	2.4
East	8	0.7
West	10	1.4
Center	4	2,980
Background	~ 0.25	N/A

The pit location, test pit locations, and sample results are presented on Figure 6. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- **C@4' (total TPH)**
 - o (arsenic) – background composite samples above COGCC standard
 - o (EC) – below root zone
- *E@8' (EC) – below root zone*
- *N@8' (EC) – below root zone*
- *W@10' (EC) – below root zone*

Significant observations at this location included the following:

- The center test pit was advanced using a hand auger.

Federal 3-11

Pit ID 119496 was the subject of assessment at the Federal 3-11 location. The pit dimensions are approximately 15' x 15' by 4' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	2	5.5
South	4	1.8
East	6	0.9
West	2	10.2
Center	6	4,263

Background	~ 0.25	N/A
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The pit location, test pit locations, and sample results are presented on Figure 7. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- **C@6' (benzene, total TPH)**
 - o (arsenic) – background composite samples above COGCC standard
 - o (SAR) – below root zone
 - o (EC) – below root zone
- **W@2' (EC)**
- **N@2' (EC)**
- **S@4' (EC) – below root zone**
- **E@6' (EC) – below root zone**

Significant observations at this location included the following:

- The center and south test pits were advanced using a hand auger.

Federal 2-11

Pit ID 119494 was the subject of assessment at the Federal 2-11 location. The pit dimensions are approximately 15' by 15' by 5' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	8	0.1
South	2	1.0
East	2	0.2
West	6	1.7
Center	2	1.1
Background	~ 0.25	N/A

The pit location, test pit locations, and sample results are presented on Figure 8. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- **C@3.5' (arsenic) – background composite samples above COGCC standard**
- **W@6' (EC) – below root zone**
- **N@8' (EC) – below root zone**

There were no significant observations at this location.

Ferguson 3-9

Pit ID 119463 was the subject of assessment at the Ferguson 3-9 location. The pit dimensions are approximately 15' by 15' by 3' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	8	149
South	10	0.3
East	10	0.5
West	10	0.3
Center	8	3,547
Background	~ 0.25	N/A

The pit location, test pit locations, and sample results are presented on Figure 9. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- **C@8' (total TPH, total xylenes)**
 - o (arsenic) – background composite samples above COGCC standard
 - o (EC) – below root zone
- N@8' (EC) – below root zone
- E@10' (EC) – below root zone
- W@10' (EC) – below root zone

Significant observations at this location included the following:

- Soil staining and odor were encountered in the center test pit at 8' bgs;
- Hydrocarbon odors were encountered in the north test pit at 10' bgs.

Federal 22-9

Pit ID 119475 was the subject of assessment at the Federal 22-9 location. The pit dimensions are approximately 15' by 15' by 3' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	4	2,500
South	4	4,253
East	8	3,182
West	8	3,628
Center	4	3,335
South Step-Out 1	N/A – PID measurement at 4'	3,007
South Step-Out 2	N/A – PID measurement at 4'	4,065
South Step-Out 3	7	4,153
West Step-Out	N/A – PID measurement at 10'	52.3
North Step-Out	N/A – Stain and odor observed	N/A

Background	~ 0.25	N/A
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The pit location, test pit locations, and sample results are presented on Figure 10. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- **C@4' (benzene, total TPH)**
 - o (arsenic) – background composite samples above COGCC standard
- **S@4' (total TPH)**
- **S04@7' (benzene, total TPH)**
- **W@8' (total TPH)**
- **N@4' (benzene, total TPH)**
- **E@8' (EC) – below root zone**

Significant observations at this location included the following:

- Soil staining and odor were encountered in the center test pit between 2' and 8' bgs;
- Soil staining and odor were encountered in the south test pit between 4' and 10' bgs. As such, a step-out test pit (South Step-Out 1) was advanced 15' south of the south test pit location.
- Due to impacts observed in South Step-Out 1, a second step-out test pit (South Step-Out 2) was advanced 15' south-southwest of the South Step-Out 1 test pit location.
- Due to impacts observed in South Step-Out 2, a third step-out test pit (South Step-Out 3) was advanced 15' south of the South Step-Out 2 test pit location.
- Based on impacts observed in South Step-Out 3, impacts appear to continue to the south. However, further test pits were not possible due to aboveground infrastructure and subsurface lines.
- Soil staining and odor were encountered in the west test pit between 4' and 10' bgs. As such, a step-out test pit (West Step-Out) was advanced 20' west of the west test pit location.
- Soil staining and odor were encountered in the north test pit at 4' bgs. As such, a step-out test pit (North Step-Out) was advanced 15' north of the north test pit location.
- Based on impacts observed in North Step-Out, impacts appear to continue to the north. However, further test pits were not possible due to a subsurface line.
- Soil staining and odor were encountered in the east test pit between 4' and 10' bgs. However, further test pits were not possible due to aboveground infrastructure.

Government 1-5

Pit ID 112105 was the subject of assessment at the Government 1-5 location. The pit dimensions are approximately 15' by 15' by 2' deep. Test pits were advanced as indicated below, with laboratory analytical samples collected as noted below:

<u>Test Pit Location</u>	<u>Sample Depth (feet bgs)</u>	<u>PID Measurement (ppm)</u>
North	6	0.9
South	10	0.8
East	10	0.8

West	8	1.6
Center	8	209
Background	~ 0.25	N/A

The pit location, test pit locations, and sample results are presented on Figure 11. Laboratory analytical data is presented in Table 1. As presented in Table 1, the following samples exceeded the applicable COGCC Table 910-1 soil standards:

- C@3.5' (arsenic) – background composite samples above COGCC standard
- N@6' (pH) – below root zone

Significant observations at this location included the following:

- The north test pit was advanced using a hand auger;
- Softball-sized cobbles with internal staining and odor (PID measurements > 2,000 ppm when broken with excavator) were encountered from the ground surface to the maximum test pit depth. No other staining or odor was observed.

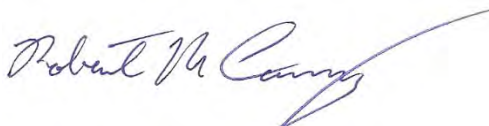
Background Soil Sampling

Background soil samples were collected from each of the three groups of pit locations (north, southeast, and southwest) and analyzed for arsenic. The background arsenic results, as presented in Table 1, were as follows, and indicate background arsenic concentrations above the COGCC Table 910-1 standard of 0.39 milligrams per kilogram (mg/kg):

- North Comp: 9.58 mg/kg
- Southeast Comp: 7.54 mg/kg
- Southwest Comp: 5.60 mg/kg

Please call me at 970.927.0393 if you have any questions regarding the initial Site assessment activities and data described herein.

Sincerely,



Robert M. Cornez
Principal – Environmental

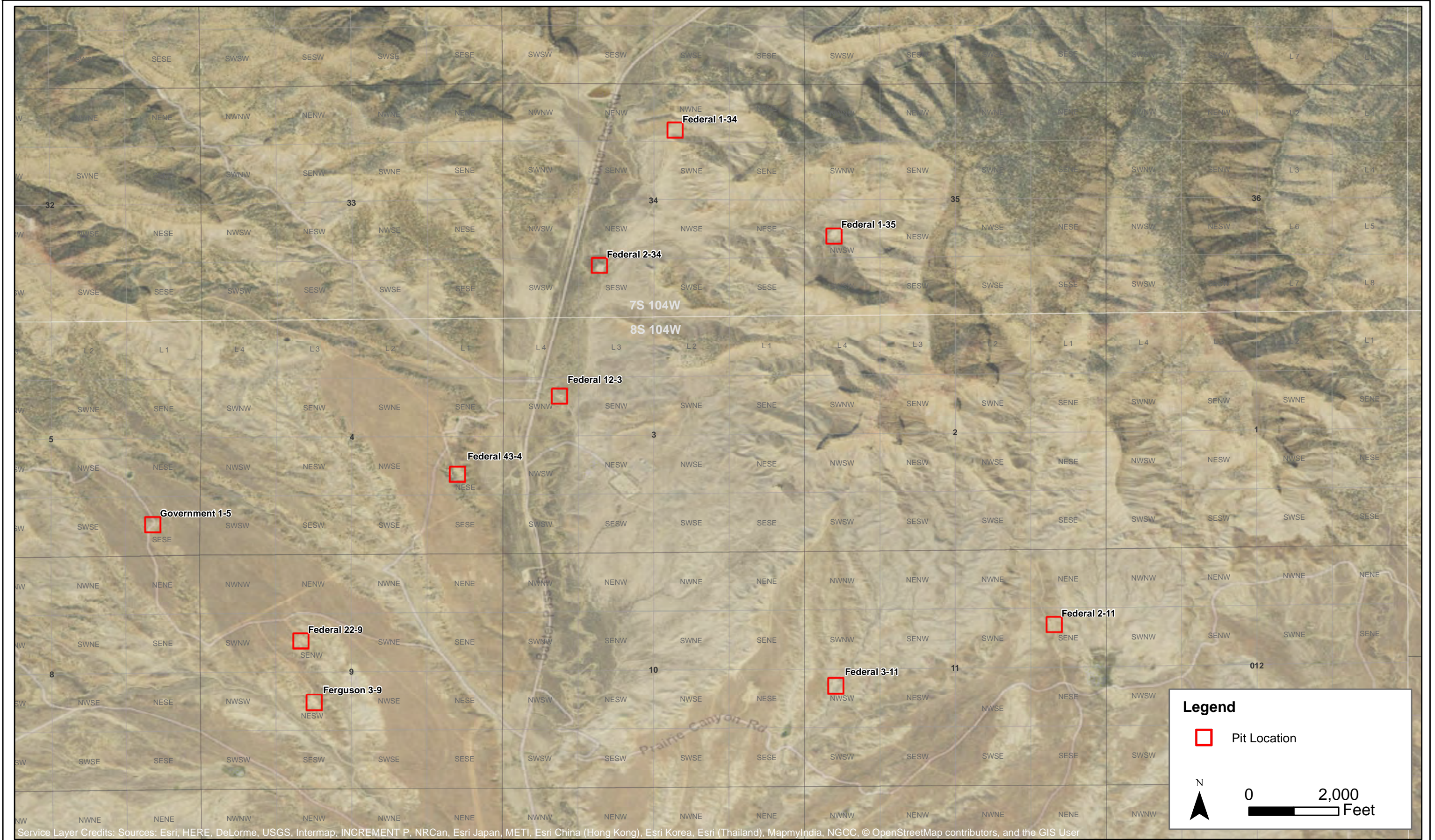
Attachments

TABLE

TABLE 1
Former National Fuel Corporation Pit Locations
Soil Sample Analytical Results
Foundation Energy Management

Sample ID	Date Sampled	BTX				TPH		pH	EC (mmhos/cm)	SAR	Metals											PAHs													
		Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	GRO (mg/kg)	DRO (mg/kg)				Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium III (mg/kg)	Chromium VI (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo(A)anthracene (mg/kg)	Benzo(B)fluoranthene (mg/kg)	Benzo(K)fluoranthene (mg/kg)	Benzo(A)pyrene (mg/kg)	Chrysene (mg/kg)	Dibenzo(A,H)anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3,C,D)pyrene (mg/kg)	Naphthalene (mg/kg)	Pyrene (mg/kg)
Table 910-1 Allowable Concentrations		0.17	85	100	175	500		6-9	<4	<12	0.39	15,000	70	120,000	23	3,100	400	23	1,600	390	390	23,000	1000	1000	0.22	0.22	2.2	0.022	22	0.022	1000	1000	0.22	23	1000
Fed 1-34: E@8'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.96	9.74*																										
Fed 1-34: N@8'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.09	11.1*																										
Fed 1-34: S@6'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.08	12.6*																										
Fed 1-34: C@3.5'	12/01/2016	0.0038	< 0.0050	0.19	2.5	1500	1800	8.33	1.32	0.321	28.9	105	< 0.120	9.69	< 0.300	19.3	18.4	< 0.0600	18.7	1.52	< 0.120	75.9	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	0.00974	< 0.00500	< 0.00500	0.0432	< 0.00500	< 0.00500	< 0.00500
Fed 1-34: W@8'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.22	13.5*																										
Fed 1-35: N@5'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.05	7.86*																										
Fed 1-35: W@7'	12/01/2016	0.0031	< 0.0050	0.037	0.081	4.8	54	7.73	6.72*																										
Fed 1-35: S@5'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.79	6.30*																										
Fed 1-35: E@2'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.96	5.62																										
Fed 1-35: C@3'	12/01/2016	0.044	< 0.0050	0.30	0.018	9.1	88	7.90	2.60	0.250	6.64	25.7	< 0.122	5.09	< 0.300	6.59	8.41	< 0.0612	9.95	0.717	< 0.122	35.0	< 0.00500	< 0.00500	< 0.00500	0.00615	< 0.00500	< 0.00500	0.00804	< 0.00500	0.00574	0.00755	< 0.00500	0.232	< 0.00500
Fed 2-34: E@8'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	0.011	< 0.50	< 50	8.31	12.7*																										
Fed 2-34: C@4'	12/01/2016	0.0088	0.0095	0.011	26	87	740	7.77	3.50	0.508	6.12	80.0	0.156	4.83	< 0.300	10.6	10.2	< 0.0527	9.77	0.637	< 0.166	42.9	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	0.0182	< 0.00500	< 0.00500	0.124	< 0.00500	0.154	0.00521
Fed 2-34: S@8'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.11	11.5*																										
Fed 2-34: W@8'	12/01/2016	2.1	23	25	610	7800	2100	7.80	2.10																										
Fed 2-34: N@8'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.06	3.20																										
Fed 43-4: E@4'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	9.41*	0.407																										
Fed 43-4: C@6'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	33	9200	2000	8.51	0.674	0.295	4.55	169	0.243	6.54	< 0.300	15.5	12.4	< 0.0596	13.0	< 0.477	< 0.119	56.1	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500
Fed 43-4: S@6'	12/01/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.88	1.51																										
Fed 43-4: W@2'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	9.27	0.744																										
Fed 43-4: N@10'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.61	2.09																										
Fed 12-3: C@4'	12/02/2016	< 0.0020	0.11	2.0	80	13000	5500	8.15	6.52*	8.78	7.77	135	0.388	7.68	< 0.300	20.6	27.0	< 0.0537	13.8	0.665	0.248	81.5	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	0.150	< 0.00500
Fed 12-3: S@6'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.04	2.33																										
Fed 12-3: E@8'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.91	6.24*																										
Fed 12-3: N@8'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.16	5.89*																										
Fed 12-3: W@10'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.01	4.25*																										
Fed 3-11: C@6'	12/02/2016	2.0	8.8	17	170	9000	1100	8.36	15.3*	26.6*	11.0	130	0.321	7.14	< 0.300	15.8	15.8	< 0.0556	14.5	1.80	0.150	7.43	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	< 0.00500	0.0636	< 0.00500	2.38	< 0.00500
Fed 3-11: W@2'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.79	7.50																										
Fed 3-11: N@2'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.84	12.4																										
Fed 3-11: S@4'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	7.97	21.5*																										
Fed 3-11: E@6'	12/02/2016	< 0.0020	< 0.0050	< 0.0050	< 0.0050	< 0.50	< 50	8.03	22.0*																										

FIGURES



Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User

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



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

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

Site Locations Overview
Map

Figure
1



DATE:	December 27, 2016
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Arnold



Foundation Energy Management, LLC
Federal 1-34
NWNE, Section 34, Township 7 South, Range 104 West
Garfield County, Colorado

Soil Sample Location
Map

FIGURE
2





DATE: January 5, 2016		Foundation Energy Management, LLC Federal 2-34 SESW, Section 34, Township 7 South, Range 104 West Garfield County, Colorado	Soil Sample Location Map	FIGURE 4
DESIGNED BY: R. Cornez				
DRAWN BY: D. Arnold				



DATE:	January 4, 2017
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Arnold



Foundation Energy Management, LLC
Federal 43-4
NESE, Section 4, Township 8 South, Range 104 West
Garfield County, Colorado

Soil Sample Location
Map

FIGURE
5



DATE: January 4, 2017		Foundation Energy Management, LLC Federal 12-3 NESW, Section 4, Township 8 South, Range 104 West Garfield County, Colorado	Soil Sample Location Map	FIGURE 6
DESIGNED BY: R. Cornez				
DRAWN BY: D. Arnold				



DATE:	January 4, 2017
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Arnold



Foundation Energy Management, LLC
Federal 3-11
NWSW, Section 11, Township 8 South, Range 104 West
Garfield County, Colorado

Soil Sample Location
Map

FIGURE
7



DATE:	December 27, 2016
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Arnold



Foundation Energy Management, LLC
Federal 2-11
SENE, Section 11, Township 8 South, Range 104 West
Garfield County, Colorado

Soil Sample Location
Map

FIGURE
8



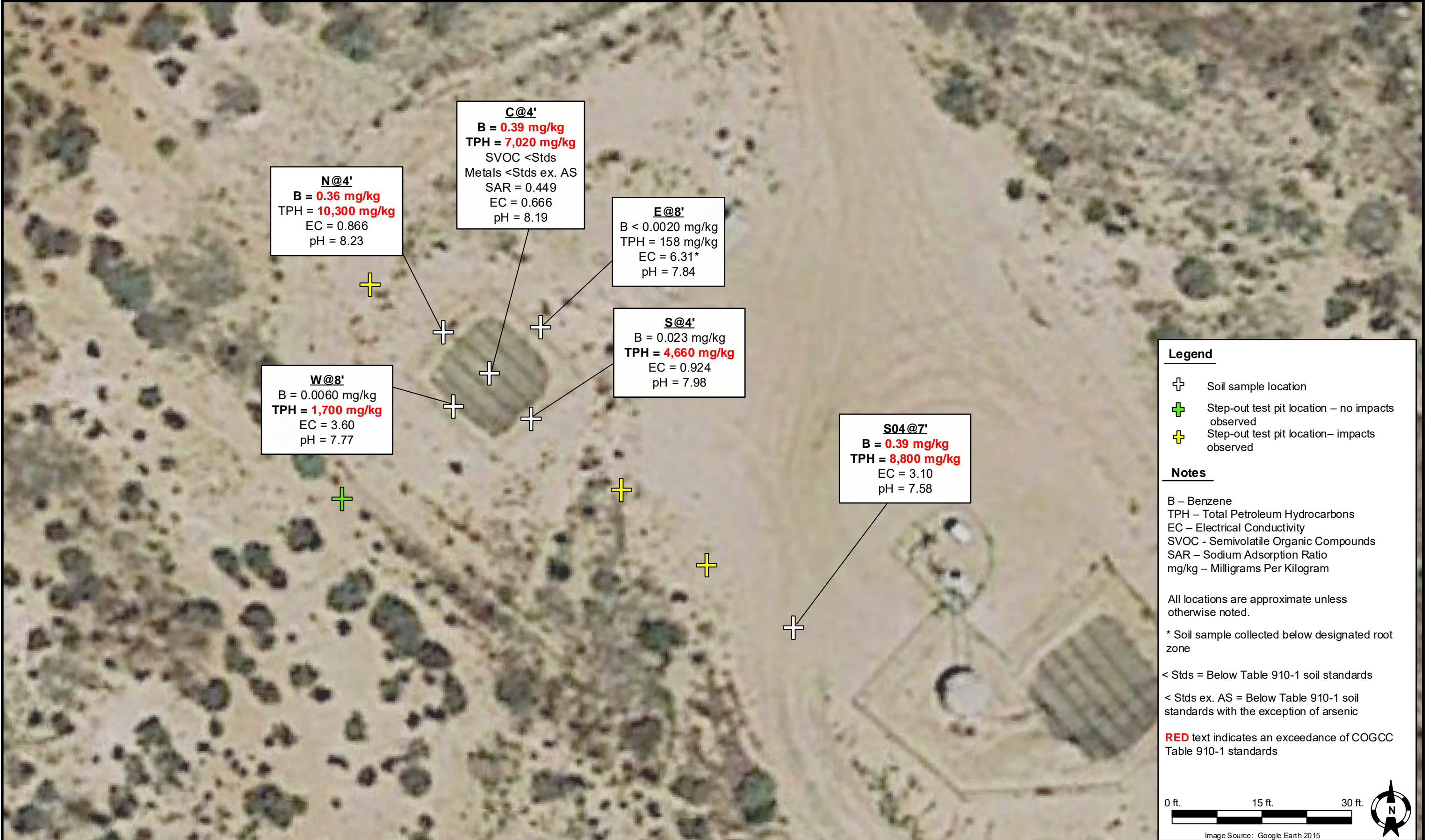
DATE:	January 4, 2017
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Arnold



Foundation Energy Management, LLC
Ferguson 3-9
NESW, Section 9, Township 8 South, Range 104 West
Garfield County, Colorado

Soil Sample Location
Map

FIGURE
9



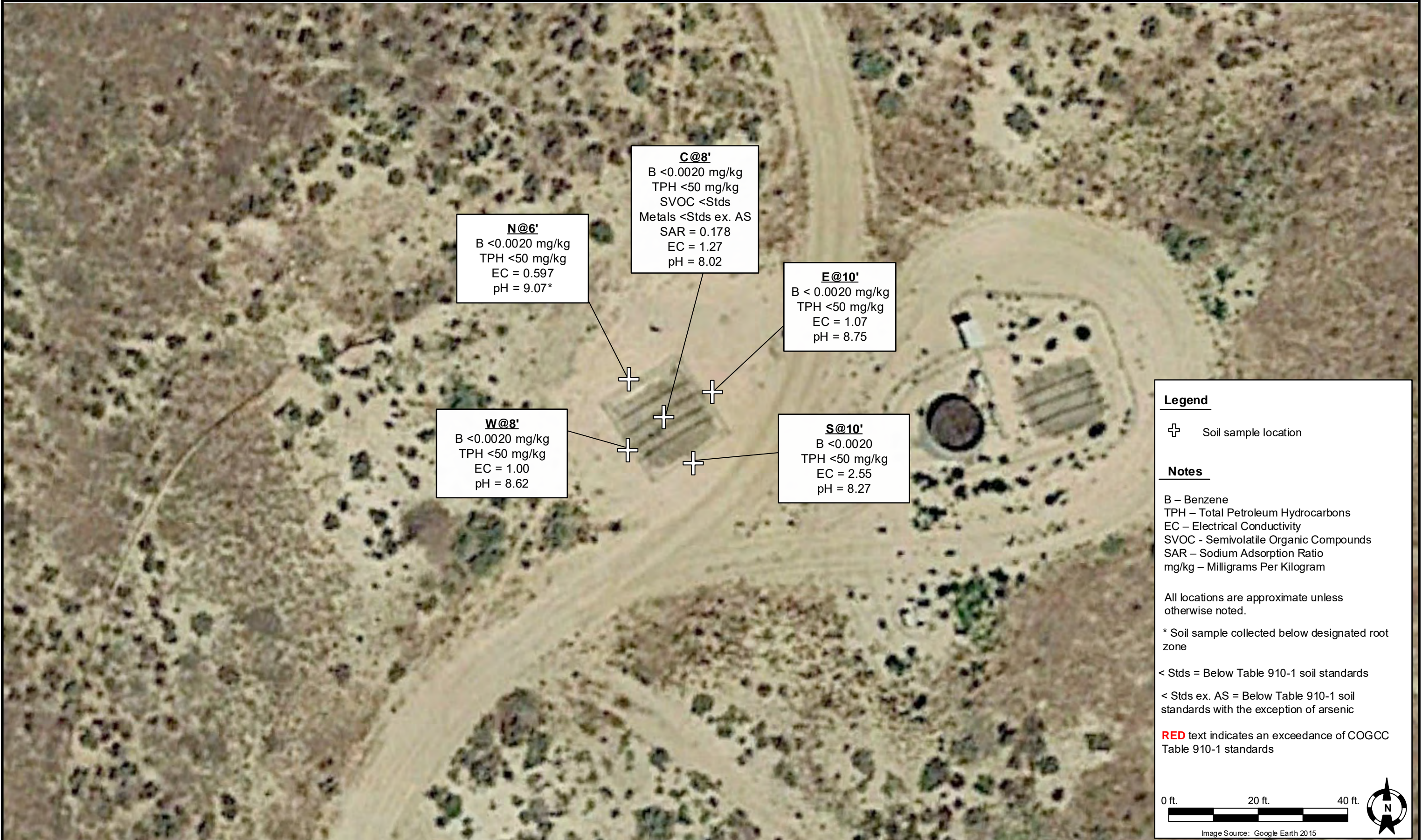
DATE:	January 4, 2017
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Arnold



Foundation Energy Management, LLC
Federal 22-9
SENW, Section 9, Township 8 South, Range 104 West
Garfield County, Colorado

Soil Sample Location
Map

FIGURE
10



DATE:	January 4, 2017
DESIGNED BY:	R. Cornez
DRAWN BY:	D. Arnold



Foundation Energy Management, LLC
Government 1-5
SESE, Section 5, Township 8 South, Range 104 West
Garfield County, Colorado

Soil Sample Location
Map

FIGURE
11

ATTACHMENT A

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

Sincerely,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:33

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

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 Cornezz

Reported:
12/12/16 15:33

Summit Scientific

S₂

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 Cornezz Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table 910-1	GBTEX	TPH - DRC	EC	PH	As-only	
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 @ 6'		0921	1										X	X	X	X		03
4	Fed 1-34: C @ 3.5'		0906	2										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		
8	Fed 1-35: W @ 7'		1121	1										X	X	X	X		
9	Fed 1-35: S @ 5'		1139	1										X	X	X	X		
10	Fed 1-35: E @ 2'		1146	1										X	X	X	X		

Relinquished by: _____ Date/Time: 12/5/16 10:10 Received by: E. Cornezz 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

Relinquished by: _____ Date/Time: _____ Received by: _____ Date/Time: _____

Notes: _____

www.s2scientific.com

Summit Scientific

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



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

Nakita
Custodian Printed Name

MB
Signature or 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: o-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
Specific Conductance (EC)	9.74	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:33

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	

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

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: o-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
Specific Conductance (EC)	11.1	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:33

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	

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

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
Specific Conductance (EC)	12.6	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 15:33

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	

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

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: o-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	"	"	"	"	"	"	

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

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	"	"	"	"	"	"	
Chrysene	0.00974	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0432	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	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	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	28.9	0.240	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	105	0.480	"	"	"	"	"	"	
Boron	3.14	1.20	"	"	"	"	"	"	
Cadmium	ND	0.120	"	"	"	"	"	"	
Chromium	9.69	0.600	"	"	"	"	"	"	
Copper	19.3	0.600	"	"	"	"	"	"	
Lead	18.4	0.240	"	"	"	"	"	"	
Nickel	18.7	0.120	"	"	"	"	"	"	
Selenium	1.52	0.480	"	"	"	"	"	"	
Silver	ND	0.120	"	"	"	"	"	"	
Zinc	75.9	12.0	"	"	"	"	"	"	

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

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
Trivalent Chromium	9.69	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
Calcium	1370	12.0	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	190	6.00	"	"	"	"	"	"	
Sodium	47.8	6.00	"	"	"	"	"	"	

Date Sampled: 12/01/16 09:06

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

Physical Parameters by APHA/ASTM/EPA Methods

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

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
Specific Conductance (EC)	1.32	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
pH	8.33	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
% Solids	83.4		%	"	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 15:33

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: o-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
Specific Conductance (EC)	13.5	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: W @ 8'
1612026-05 (Soil)

Summit Scientific

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

Batch 1612033 - EPA 3550A

Blank (1612033-BLK1)

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

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.7 30-150

LCS (1612033-BS1)

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

C10-C28 (DRO) 485 50 mg/kg 499 97.2 73-134

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

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

Surrogate: o-Terphenyl 15.0 " 12.5 120 30-150

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

Surrogate: o-Terphenyl 15.0 " 12.3 122 30-150

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612057 - EPA 5030 Soil MS

Matrix Spike Dup (1612057-MSD1)		Source: 1612009-01			Prepared & Analyzed: 12/06/16					
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	
Surrogate: 1,2-Dichloroethane-d4	0.0376		"	0.0400		94.0	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0227

"

0.0333

68.0 30-150

Surrogate: Fluoranthene-d10

0.0341

"

0.0333

102 30-150

LCS (1612049-BS1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0272

"

0.0333

81.6 50-150

Surrogate: Fluoranthene-d10

0.0396

"

0.0333

119 50-150

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

Reported:
12/12/16 15:33

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

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

Batch 1612049 - EPA 5030 Soil MS

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

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

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6899 Pecos Street
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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Boron	ND	1.00	"
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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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

Matrix Spike (1612062-MS1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	39.2	0.207	mg/kg dry	39.0	0.898	98.3	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Boron	33.7	1.04	"	39.0	1.15	83.6	75-125			
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

Matrix Spike Dup (1612062-MSD1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	42.6	0.207	mg/kg dry	40.5	0.898	103	75-125	8.37	25	
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25	
Boron	35.8	1.04	"	40.5	1.15	85.6	75-125	6.00	25	
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

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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 Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:33

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

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

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1)

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

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1)

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

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

Duplicate (1612064-DUP1)

Source: 1612026-04

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

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1)

Source: 1612026-04

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

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

Matrix Spike (1612064-MS2)

Source: 1612036-01

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

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

Post Spike (1612064-PS1)

Source: 1612026-04

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:33

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

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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		
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612069 - General Preparation

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

Batch 1612086 - General Preparation

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

Batch 1612087 - General Preparation

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

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/27/16 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 Corneze

Reported:
12/27/16 16:18

Summit Scientific

S₂

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 Corneze Project Number: _____

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions
					HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table (10-2)	GBTEX	TEH - DRC	EC	PH	
1	Fed 1-34: E@8'	12/15/16	0820	1						X			X	X	X	X		
2	Fed 1-34: N@8'		0856	1						X			X	X	X	X		
3	Fed 1-34: S@6'		0921	1						X			X	X	X	X		
4	Fed 1-34: E@5'		0941	2						X			X	X	X	X		
5	Fed 1-34: W@6'		0955	1						X			X	X	X	X		
6	North Camp		1518	1						X			X	X	X	X		
7	Fed 1-35: N@5'		1113	1						X			X	X	X	X		01
8	Fed 1-35: W@7'		1121	1						X			X	X	X	X		02
9	Fed 1-35: S@5'		1139	1						X			X	X	X	X		03
10	Fed 1-35: E@2'	✓	1146	1						X			X	X	X	X		04

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

www.s2scientific.com

Summit Scientific

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



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

S₂

1612028.2

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

2 of 2

Page 8 of X

Client: Foundation 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 ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	FULL TABLE	GC/MS	TPH-SO	EC	PH	As-Only	
1	Fed 1-35: C @ 3'	12-1-16	12:10	2						X			X						65
2	Fed 2-34: E @ 8'		13:57	1									X	X	X	X			
3	Fed 2-34: C @ 4'		13:51	2									X						
4	Fed 2-34: S @ 8'		14:20	1									X	X	X	X			
5	Fed 2-34: W @ 8'		14:51	1									X	X	X	X			
6	Fed 2-34: N @ 8'		15:34	1									X	X	X	X			
7	Fed 4-3: F @ 4'		16:37	1									X	X	X	X			
8	Fed 4-3: F @ 6'		16:55	2									X						
9	Fed 4-3: S @ 6'		17:05	1									X	X	X	X			
10	Fed 4-3: W @ 2'	12-5-16	07:08	1						X			X	X	X	X			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>12/5/16 10:10</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 <u>X</u> 48 hours _____	Notes:
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Sample Integrity: Temperature Upon Receipt: <u>1.6°C</u> Intact: <u>Yes</u> No	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____		

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

Sample Receipt Checklist

S2 Work Order: 1612028

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment

Shipped Via: Hand

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

Airbill #: _____

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

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

Thermometer ID: 61857155-K

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

Nakita
Custodian Printed Name

MA
Signature or Initials of Custodian

12/5/16 1200
Date/Time



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)	7.86	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	
pH	8.05	0.100	pH Units	"	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:
12/27/16 16:18

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

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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

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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
C10-C28 (DRO)	54	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
Benzene	0.0031	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.037	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.081	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	4.8	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
pH	7.73	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	
Specific Conductance (EC)	6.72	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: o-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	7.79	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	
Specific Conductance (EC)	6.30	0.0100	mmhos/cm	"	1612087	12/08/16	12/08/16	SM 2510B	

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/27/16 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: o-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	7.96	0.100	pH Units	1	1612086	12/07/16	12/07/16	EPA 9045	
Specific Conductance (EC)	5.62	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
C10-C28 (DRO)	88	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
Benzene	0.044	0.0020	mg/kg	1	1612057	12/06/16	12/07/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.30	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.018	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	9.1	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

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12/27/16 16:18

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

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Semivolatile Organic Compounds by EPA Method 8270D SIM

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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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)

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Total Metals by EPA Method 6020 - Dry Weight Basis

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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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)

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

Batch 1612033 - EPA 3550A

Blank (1612033-BLK1)

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

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.7 30-150

LCS (1612033-BS1)

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

C10-C28 (DRO) 485 50 mg/kg 499 97.2 73-134

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

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

Surrogate: o-Terphenyl 15.0 " 12.5 120 30-150

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

Surrogate: o-Terphenyl 15.0 " 12.3 122 30-150

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

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

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			
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.6	23-173			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

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			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.3	23-173			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0427		"	0.0400		107	21-167			

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

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12/27/16 16:18

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

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

Batch 1612057 - EPA 5030 Soil MS

Matrix Spike Dup (1612057-MSD1)		Source: 1612009-01			Prepared & Analyzed: 12/06/16					
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	
Surrogate: 1,2-Dichloroethane-d4	0.0376		"	0.0400		94.0	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0407		"	0.0400		102	21-167			

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0227

"

0.0333

68.0 30-150

Surrogate: Fluoranthene-d10

0.0341

"

0.0333

102 30-150

LCS (1612049-BS1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0272

"

0.0333

81.6 50-150

Surrogate: Fluoranthene-d10

0.0396

"

0.0333

119 50-150

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

Reported:
12/27/16 16:18

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

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

Batch 1612049 - EPA 5030 Soil MS

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

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

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

Reported:
12/27/16 16:18

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

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

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
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

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

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

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

Batch 1612062 - EPA 3050B

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612062-DUP1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic	1.02	0.207	mg/kg dry	0.898	12.6	20	
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Boron	1.00	1.04	"	1.15	13.9	20	
Arsenic	1.02	0.207	"	0.898	12.6	20	
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Chromium	2.31	0.518	"	1.76	26.8	20	QR-03
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:
12/27/16 16:18

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

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

Batch 1612062 - EPA 3050B

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/27/16 16:18

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

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

Batch 1612062 - EPA 3050B

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

Summit Scientific

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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 Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/27/16 16:18

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

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

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1) Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1) Prepared: 12/07/16 Analyzed: 12/08/16

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

Duplicate (1612064-DUP1) Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1) Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16

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

Matrix Spike (1612064-MS2) Source: 1612036-01 Prepared: 12/07/16 Analyzed: 12/08/16

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

Post Spike (1612064-PS1) Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/27/16 16:18

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/27/16 16:18

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

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

Batch 1612069 - General Preparation

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

Batch 1612086 - General Preparation

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

Batch 1612087 - General Preparation

Blank (1612087-BLK1)				Prepared & Analyzed: 12/08/16						
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (1612087-BS1)				Prepared & Analyzed: 12/08/16						
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.3	90-110				
Duplicate (1612087-DUP1)	Source: 1612025-01			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:
12/27/16 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

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 11:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 2-34: E @ 8'	1612029-01	Soil	12/01/16 13:57	12/05/16 11:45
Fed 2-34: C @ 4'	1612029-02	Soil	12/01/16 13:51	12/05/16 11:45
Fed 2-34: S @ 8'	1612029-03	Soil	12/01/16 14:20	12/05/16 11:45
Fed 2-34: W @ 8'	1612029-04	Soil	12/01/16 14:51	12/05/16 11:45
Fed 2-34: N @ 8'	1612029-05	Soil	12/01/16 15:39	12/05/16 11:45

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 15:42

Summit Scientific

S₂

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

1612029

Page 2 of 8

Client: Foundation 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 ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	F ₁₁ Table	GSTEX	TPH-200	EC ₂		pH
1	Fed 1-35:6@3'	12-10	1357	1						X		X						
2	Fed 2-34:5@8'		1357	1								X	X	X	X			01
3	Fed 2-34:6@4'		1351	2								X						02
4	Fed 2-34:5@8'		1420	1								X	X	X	X			03
5	Fed 2-34:W@8'		1451	1								X	X	X	X			04
6	Fed 2-34:N@8'		1539	1								X	X	X	X			05
7	Fed 4-3-4:5@4'		1637	1								X	X	X	X			
8	Fed 4-3-4:6@6'		1655	2								X	X	X	X			
9	Fed 4-3-4:5@6'		1705	1								X	X	X	X			
10	Fed 4-3-4:W@2'	02-10	0708	1								X	X	X	X			

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
	12/5/16 1010		12-5-16 1010	Same Day — 72 hours 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	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

www.s2scientific.com

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:42

Sample Receipt Checklist

S2 Work Order: 1612029

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment (Feb 2-34)

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

Airbill #: _____

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

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

Thermometer ID: 61857155-K

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

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

12/5/16 1200
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 15:42

Fed 2-34: E @ 8'
1612029-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/01/16 13:57

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 13:57

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/01/16 13:57

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)	0.011	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/01/16 13:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/01/16 13:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	12.7	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 15:42

Fed 2-34: E @ 8'
1612029-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/01/16 13:57

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.31	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 15:42

Fed 2-34: C @ 4'
1612029-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	740	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: 12/01/16 13:51

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0088	0.0020	mg/kg	1	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	0.0095	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.011	0.0050	"	"	"	"	"	"	
Xylenes (total)	26	0.50	"	100	"	"	12/08/16	"	
Gasoline Range Hydrocarbons	87	0.50	"	1	"	"	12/08/16	"	

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.3 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		221 %	21-167		"	"	"	"	S-02

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 12/01/16 13:51

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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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:42

Fed 2-34: C @ 4'
1612029-02 (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	0.0182	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.124	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Naphthalene	0.154	0.00500	"	"	"	"	"	"	
Pyrene	0.00521	0.00500	"	"	"	"	"	"	

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		40.8 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		108 %	30-150		"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.12	0.232	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	80.0	0.464	"	"	"	"	"	"	
Cadmium	0.156	0.116	"	"	"	"	"	"	
Chromium	4.83	0.580	"	"	"	"	"	"	
Copper	10.6	0.580	"	"	"	"	"	"	
Lead	10.2	0.232	"	"	"	"	"	"	
Nickel	9.77	0.116	"	"	"	"	"	"	
Selenium	0.637	0.464	"	"	"	"	"	"	
Silver	ND	0.116	"	"	"	"	"	"	
Zinc	42.9	11.6	"	"	"	"	"	"	

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.12	0.232	"	"	"	"	"	"	

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 15:42

Fed 2-34: C @ 4'
1612029-02 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Barium	80.0	0.464	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
Boron	1.80	1.16	"	"	"	"	"	"
Cadmium	0.156	0.116	"	"	"	"	"	"
Chromium	4.83	0.580	"	"	"	"	"	"
Copper	10.6	0.580	"	"	"	"	"	"
Lead	10.2	0.232	"	"	"	"	"	"
Nickel	9.77	0.116	"	"	"	"	"	"
Selenium	0.637	0.464	"	"	"	"	"	"
Silver	ND	0.116	"	"	"	"	"	"
Zinc	42.9	11.6	"	"	"	"	"	"

Total Mercury by EPA Method 7471

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0527	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

Hexavalent Chromium by EPA 7196

Date Sampled: 12/01/16 13:51

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 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	4.83	0.928	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: 12/01/16 13:51

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 15:42

Fed 2-34: C @ 4'
1612029-02 (Soil)

Summit Scientific

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

Calcium	1300	11.6 mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)
Magnesium	376	5.80	"	"	"	"	"
Sodium	80.8	5.80	"	"	"	"	"

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.508		units	"	1612082	12/08/16	12/08/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.50	0.0100 mmhos/cm		1	1612097	12/09/16	12/09/16	SM 2510B	

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.77	0.100	pH Units	"	1612095	12/06/16	12/06/16	EPA 9045	

Date Sampled: 12/01/16 13:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.2		%	"	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 15:42

Fed 2-34: S @ 8'
1612029-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/01/16 14:20

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 14:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		95.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/01/16 14:20

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: 12/01/16 14:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		114 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/01/16 14:20

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	11.5	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 15:42

Fed 2-34: S @ 8'
1612029-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/01/16 14:20

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.11	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

Summit Scientific

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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 15:42

Fed 2-34: W @ 8'
1612029-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/01/16 14:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	2100	50	mg/kg	1	1612033	12/05/16	12/07/16	8015M	

Date Sampled: 12/01/16 14:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/01/16 14:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	2.1	0.20	mg/kg	100	1612073	12/07/16	12/08/16	EPA 8260B	
Toluene	23	0.50	"	"	"	"	"	"	
Ethylbenzene	25	0.50	"	"	"	"	"	"	
Xylenes (total)	610	5.0	"	1000	"	"	"	"	
Gasoline Range Hydrocarbons	7800	50	"	100	"	"	"	"	

Date Sampled: 12/01/16 14:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		104 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		110 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		230 %	21-167		"	"	"	"	S-02

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/01/16 14:51

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.10	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 15:42

Fed 2-34: W @ 8'
1612029-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/01/16 14:51

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.80	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 15:42

Fed 2-34: N @ 8'
1612029-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/01/16 15:39

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

Date Sampled: 12/01/16 15:39

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/01/16 15:39

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: 12/01/16 15:39

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/01/16 15:39

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.20	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 15:42

Fed 2-34: N @ 8'
1612029-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/01/16 15:39

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.06	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 15:42

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1612033 - EPA 3550A

Blank (1612033-BLK1)

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

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.7 30-150

LCS (1612033-BS1)

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

C10-C28 (DRO) 485 50 mg/kg 499 97.2 73-134

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

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

Surrogate: o-Terphenyl 15.0 " 12.5 120 30-150

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

Surrogate: o-Terphenyl 15.0 " 12.3 122 30-150

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 15:42

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

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

Batch 1612073 - EPA 5030 Soil MS

Blank (1612073-BLK1)

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

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

LCS (1612073-BS1)

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

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

Matrix Spike (1612073-MS1)

Source: 1612029-01

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

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

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 15:42

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

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

Batch 1612073 - EPA 5030 Soil MS

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

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6899 Pecos Street
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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

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12/12/16 15:42

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

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

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

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

LCS (1612049-BS1)

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

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

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

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

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12/12/16 15:42

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

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

Batch 1612049 - EPA 5030 Soil MS

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

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

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

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12/12/16 15:42

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

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

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

Arsenic	127	0.500	mg/kg wet	132	96.5	82.6-117
Barium	183	1.00	"	228	80.3	72.8-127
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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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

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12/12/16 15:42

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

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

Batch 1612062 - EPA 3050B

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612062-DUP1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic	1.02	0.207	mg/kg dry	0.898	12.6	20	
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Arsenic	1.02	0.207	"	0.898	12.6	20	
Boron	1.00	1.04	"	1.15	13.9	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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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:42

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

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

Batch 1612062 - EPA 3050B

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

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

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

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12/12/16 15:42

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

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

Batch 1612062 - EPA 3050B

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

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:42

Total Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

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

Reported:
12/12/16 15:42

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

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

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1)

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

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1)

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

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

Duplicate (1612064-DUP1)

Source: 1612026-04

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

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1)

Source: 1612026-04

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

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

Matrix Spike (1612064-MS2)

Source: 1612036-01

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

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

Post Spike (1612064-PS1)

Source: 1612026-04

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

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

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

Reported:
12/12/16 15:42

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Summit Scientific

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 15:42

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

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

Batch 1612069 - General Preparation

Duplicate (1612069-DUP1) **Source: 1612014-01** Prepared & Analyzed: 12/07/16

% Solids	92.3		%		93.0			0.756	20	
----------	------	--	---	--	------	--	--	-------	----	--

Batch 1612095 - General Preparation

LCS (1612095-BS1) Prepared & Analyzed: 12/06/16

pH	8.02	0.100	pH Units	8.00	100	95-105				
----	------	-------	----------	------	-----	--------	--	--	--	--

Duplicate (1612095-DUP1) **Source: 1612029-01** Prepared & Analyzed: 12/06/16

pH	8.39	0.100	pH Units		8.31			0.958	20	
----	------	-------	----------	--	------	--	--	-------	----	--

Batch 1612097 - General Preparation

Blank (1612097-BLK1) Prepared & Analyzed: 12/09/16

Specific Conductance (EC)	ND	0.0100	mmhos/cm							
---------------------------	----	--------	----------	--	--	--	--	--	--	--

LCS (1612097-BS1) Prepared & Analyzed: 12/09/16

Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.2	90-110				
---------------------------	-------	--------	----------	-------	------	--------	--	--	--	--

Duplicate (1612097-DUP1) **Source: 1612029-01** Prepared & Analyzed: 12/09/16

Specific Conductance (EC)	11.7	0.0100	mmhos/cm		12.7			7.75	20	
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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 15:42

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

Sincerely,

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

Paul Shrewsbury
President



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

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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

S₂

1612030.1

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

1 of 2
Page 8 of 8

Client: Foundation 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 ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table 916-1	GC/MS	TPH-ISO	EC		PH
1	Fed 1-35-C @ 3'	12-1-16	12:18	1						X			X					
2	Fed 2-34-E @ 8'		13:57	1									X	X	X	X		
3	Fed 2-34-C @ 4'		13:51	2									X					
4	Fed 2-34-S @ 8'		14:20	1									X	X	X	X		
5	Fed 2-34-W @ 8'		14:31	1									X	X	X	X		
6	Fed 2-34-N @ 8'		15:39	1									X	X	X	X		
7	Fed 43-4-E @ 4'		16:37	1									X	X	X	X		01
8	Fed 43-4-C @ 6'		16:55	2									X					02
9	Fed 43-4-S @ 6'		17:05	1									X	X	X	X		03
10	Fed 43-4-W @ 2'	02-Dec	07:08	1									X	X	X	X		04

Relinquished by:	Date/Time:	Received by:	Date/Time:	Turn Around Time (Check)	Notes:
	12/5/16 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"/>	
Relinquished by:	Date/Time:	Received by:	Date/Time:	48 hours —	
				Sample Integrity:	
				Temperature Upon Receipt: 1.6°C	
				Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

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Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:44

Summit Scientific

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1612030.2

2 of 2
Page 2 of 2

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	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table 2/10-1	GISTEX	TPH-DRO	EC	PH		AS-Caly
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	X	X	X	X		
3	Fed 12-3: S@6'		0946	1									X	X	X	X	X		
4	Fed 12-3: E@8'		1008	1									X	X	X	X	X		
5	Fed 12-3: N@8'		1031	1									X	X	X	X	X		
6	Fed 12-3: W@10'		1101	1									X	X	X	X	X		
7	Fed 3-11: C@6'		1218	2									X	X	X	X	X		
8	Fed 3-11: W@2'		1232	1									X	X	X	X	X		
9	Fed 3-11: N@2'		1259	1									X	X	X	X	X		
10	Fed 3-11: S@4'		1229	1									X	X	X	X	X		

Relinquished by: <u>[Signature]</u>	Date/Time: <u>12/16/16 10:10</u>	Received by: <u>[Signature]</u>	Date/Time: <u>12-5-16 10:10</u>	Turn Around Time (Check) Same Day <input type="checkbox"/> 72 hours 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="radio"/> Yes <input type="radio"/> No	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____		

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Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:44

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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<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):				
⁽¹⁾ 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 1210
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: o-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
Specific Conductance (EC)	0.407	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: o-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	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	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	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	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

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

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 15:44

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

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 15:44

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: o-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
Specific Conductance (EC)	1.51	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	8.88	0.100	pH Units	1	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:
12/12/16 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
Specific Conductance (EC)	0.744	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: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: o-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
Specific Conductance (EC)	2.09	0.0100	mmhos/cm	1	1612087	12/08/16	12/08/16	SM 2510B	

Summit Scientific

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

Batch 1612033 - EPA 3550A

Blank (1612033-BLK1)

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

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 11.8 " 12.5 94.7 30-150

LCS (1612033-BS1)

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

C10-C28 (DRO) 485 50 mg/kg 499 97.2 73-134

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

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

Surrogate: o-Terphenyl 15.0 " 12.5 120 30-150

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

Surrogate: o-Terphenyl 15.0 " 12.3 122 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 15:44

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

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

Batch 1612073 - EPA 5030 Soil MS

Blank (1612073-BLK1)

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

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

LCS (1612073-BS1)

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

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

Matrix Spike (1612073-MS1)

Source: 1612029-01

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

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

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:44

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

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

Batch 1612073 - EPA 5030 Soil MS

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

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0227

"

0.0333

68.0 30-150

Surrogate: Fluoranthene-d10

0.0341

"

0.0333

102 30-150

LCS (1612049-BS1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0272

"

0.0333

81.6 50-150

Surrogate: Fluoranthene-d10

0.0396

"

0.0333

119 50-150

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612049 - EPA 5030 Soil MS

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

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

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612062-DUP1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic	1.02	0.207	mg/kg dry	0.898	12.6	20	
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Boron	1.00	1.04	"	1.15	13.9	20	
Arsenic	1.02	0.207	"	0.898	12.6	20	
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Chromium	2.31	0.518	"	1.76	26.8	20	QR-03
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

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 15:44

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

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

Batch 1612062 - EPA 3050B

Matrix Spike (1612062-MS1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	39.2	0.207	mg/kg dry	39.0	0.898	98.3	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Boron	33.7	1.04	"	39.0	1.15	83.6	75-125			
Arsenic	39.2	0.207	"	39.0	0.898	98.3	75-125			
Cadmium	2.17	0.104	"	1.95	0.0802	107	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Chromium	38.5	0.518	"	39.0	1.76	94.4	75-125			
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

Matrix Spike Dup (1612062-MSD1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	42.6	0.207	mg/kg dry	40.5	0.898	103	75-125	8.37	25	
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25	
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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

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

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:44

Total Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:44

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

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

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1)

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

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1)

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

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

Duplicate (1612064-DUP1)

Source: 1612026-04

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

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1)

Source: 1612026-04

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

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

Matrix Spike (1612064-MS2)

Source: 1612036-01

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

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

Post Spike (1612064-PS1)

Source: 1612026-04

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:44

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:44

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

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

Batch 1612069 - General Preparation

Duplicate (1612069-DUP1) **Source: 1612014-01** Prepared & Analyzed: 12/07/16

% Solids	92.3		%		93.0			0.756	20	
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Batch 1612086 - General Preparation

LCS (1612086-BS1) Prepared & Analyzed: 12/07/16

pH	6.01	0.100	pH Units	6.00	100	95-105				
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Duplicate (1612086-DUP1) **Source: 1612025-01** Prepared & Analyzed: 12/07/16

pH	7.73	0.100	pH Units		7.16			7.66	20	
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Batch 1612087 - General Preparation

Blank (1612087-BLK1) Prepared & Analyzed: 12/08/16

Specific Conductance (EC)	ND	0.0100	mmhos/cm							
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LCS (1612087-BS1) Prepared & Analyzed: 12/08/16

Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.3	90-110				
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Duplicate (1612087-DUP1) **Source: 1612025-01** Prepared & Analyzed: 12/08/16

Specific Conductance (EC)	0.283	0.0100	mmhos/cm		0.266			6.26	20	
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Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:44

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,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

ANALYTICAL REPORT FOR SAMPLES

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

Summit Scientific

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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

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

Page 8 of 8

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

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

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

www.s2scientific.com

Summit Scientific

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

[Signature]



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Sample Receipt Checklist

S2 Work Order: 1612031

Client: Foundation/Tasman

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

Nakita
Custodian Printed Name

MS
Signature or Initials of Custodian

12/5/16 1230
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

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

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 09:25

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

Date Sampled: 12/02/16 09:25

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 09:25

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

Date Sampled: 12/02/16 09:25

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

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 12/02/16 09:25

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

Summit Scientific

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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	"	"	"	"	"	"	
Fluorene	0.0701	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Naphthalene	0.150	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: 12/02/16 09:25

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

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 12/02/16 09:25

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

Date Sampled: 12/02/16 09:25

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

Summit Scientific

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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)

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Total Metals by EPA Method 6020 - Dry Weight Basis

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

Total Mercury by EPA Method 7471

Date Sampled: 12/02/16 09:25

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

Hexavalent Chromium by EPA 7196

Date Sampled: 12/02/16 09:25

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

Date Sampled: 12/02/16 09:25

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

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

Date Sampled: 12/02/16 09:25

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

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

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

Date Sampled: 12/02/16 09:25

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

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 09:25

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

Date Sampled: 12/02/16 09:25

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

Date Sampled: 12/02/16 09:25

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

Summit Scientific

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

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

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 09:45

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

Date Sampled: 12/02/16 09:45

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 09:45

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

Date Sampled: 12/02/16 09:45

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

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 09:45

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

Summit Scientific

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6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Fed 12-3: 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	

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

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

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 10:08

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

Date Sampled: 12/02/16 10:08

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 10:08

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

Date Sampled: 12/02/16 10:08

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

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 10:08

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

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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	

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

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

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: o-Terphenyl		94.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 10:31

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

Date Sampled: 12/02/16 10:31

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

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 10:31

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

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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	8.16	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

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6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:48

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

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 09:25

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

Date Sampled: 12/02/16 09:25

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 09:25

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

Date Sampled: 12/02/16 09:25

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

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 09:25

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

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

Batch 1612067 - EPA 3550A

Blank (1612067-BLK1)

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

C10-C28 (DRO) ND 50 mg/kg

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

LCS (1612067-BS1)

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

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

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

Matrix Spike (1612067-MS1)

Source: 1612031-01

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

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

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

Matrix Spike Dup (1612067-MSD1)

Source: 1612031-01

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

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

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

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

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

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

Batch 1612073 - EPA 5030 Soil MS

Blank (1612073-BLK1)

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

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

LCS (1612073-BS1)

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

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

Matrix Spike (1612073-MS1)

Source: 1612029-01

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

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

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

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

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

Batch 1612073 - EPA 5030 Soil MS

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

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6899 Pecos Street
Denver CO, 80221

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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

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

LCS (1612049-BS1)

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

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

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

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

Reported:
12/12/16 15:48

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

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

Batch 1612049 - EPA 5030 Soil MS

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

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

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

Reported:
12/12/16 15:48

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

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

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

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12/12/16 15:48

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

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

Batch 1612062 - EPA 3050B

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612062-DUP1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

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

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

Reported:
12/12/16 15:48

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

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

Batch 1612062 - EPA 3050B

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

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

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6899 Pecos Street
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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

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

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

Batch 1612062 - EPA 3050B

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

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

Reported:
12/12/16 15:48

Total Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

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

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1)

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

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1)

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

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

Duplicate (1612064-DUP1)

Source: 1612026-04

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

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1)

Source: 1612026-04

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

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

Matrix Spike (1612064-MS2)

Source: 1612036-01

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

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

Post Spike (1612064-PS1)

Source: 1612026-04

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

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

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

Reported:
12/12/16 15:48

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:48

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

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

Batch 1612069 - General Preparation

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

Batch 1612095 - General Preparation

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

Batch 1612097 - General Preparation

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

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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

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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,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:49

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

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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

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1412032.1

1 of 2
2 of 2

Page 8 of 15

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 ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	GC-MS	TPH-DRO	EC		pH
1	Fed 43-4: H@10'	02-1-16	0753	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	

Relinquished by: [Signature] Date/Time: 12/14/16 1010 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: 1.6g
Temperature Upon Receipt: 1.6g
Intact: ☒ Yes ☐ No

Notes:

www.s2scientific.com

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[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 15:49

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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	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Foil Talle	GISTEX	TPH-DRO	EC		PH
1	Fed 3-11: E06'	02-Dec	1343	1						X				X	X	X	X	05
2	Fed 3-11: E02'		1416	2										X				
3	Soil Harvest Comp		1530	1														
4	Fed 3-11: W06'		1527	1										X	X	X	X	
5	Fed 3-11: S02'		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'		0604	1										X	X	X	X	
10	Fed 3-9: E010'		0830	1										X	X	X	X	

Relinquished by: [Signature] Date/Time: 12/5/16 10:00 Received by: [Signature] Date/Time: 12-5-16 16:00
 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 X
 48 hours _____
 Sample Integrity: 1.6%
 Temperature Upon Receipt: _____
 Intact: Yes No _____

Notes: _____

www.s2scientific.com

Summit Scientific

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[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 15:49

Sample Receipt Checklist

S2 Work Order: 1612032
Client: Foundation/Tasman Client Project ID: Western Slope Pit Assessment (Fed 3-11)
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)	<u>1.6</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<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):				
⁽¹⁾ 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 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 15:49

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	"	"	"	"	"	"	

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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)

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Semivolatile Organic Compounds by EPA Method 8270D SIM

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (b) fluoranthene	ND	0.00500	mg/kg	1	1612049	12/06/16	12/08/16	EPA 8270D SIM	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	0.0636	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Naphthalene	2.38	0.500	"	100	"	"	"	"	
Pyrene	ND	0.00500	"	1	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	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	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	11.0	0.244	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	130	0.489	"	"	"	"	"	"	
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	"	"	"	"	"	"	

Date Sampled: 12/02/16 12:18

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	11.0	0.244	"	"	"	"	"	"	

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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

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

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
Specific Conductance (EC)	7.50	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 15:49

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	

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: 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: o-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
Specific Conductance (EC)	12.4	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	7.84	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: 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: o-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
Specific Conductance (EC)	21.5	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: 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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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: o-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
Specific Conductance (EC)	22.0	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

Summit Scientific

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

Batch 1612067 - EPA 3550A

Blank (1612067-BLK1)

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

C10-C28 (DRO) ND 50 mg/kg

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

LCS (1612067-BS1)

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

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

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

Matrix Spike (1612067-MS1)

Source: 1612031-01

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

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

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

Matrix Spike Dup (1612067-MSD1)

Source: 1612031-01

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

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

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

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

Reported:
12/12/16 15:49

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

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

Batch 1612073 - EPA 5030 Soil MS

Blank (1612073-BLK1)

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

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

LCS (1612073-BS1)

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

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

Matrix Spike (1612073-MS1)

Source: 1612029-01

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

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

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:49

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

Batch 1612073 - EPA 5030 Soil MS

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

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

Reported:
12/12/16 15:49

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

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

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

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

LCS (1612049-BS1)

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

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

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

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

Reported:
12/12/16 15:49

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

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

Batch 1612049 - EPA 5030 Soil MS

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

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

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

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Boron	ND	1.00	"
Arsenic	ND	0.200	"
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

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

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

Batch 1612062 - EPA 3050B

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

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 15:49

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

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

Batch 1612062 - EPA 3050B

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:49

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

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

Batch 1612062 - EPA 3050B

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

Summit Scientific

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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 Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:49

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

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

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1)

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

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1)

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

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

Duplicate (1612064-DUP1)

Source: 1612026-04

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

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1)

Source: 1612026-04

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

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

Matrix Spike (1612064-MS2)

Source: 1612036-01

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

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

Post Spike (1612064-PS1)

Source: 1612026-04

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:49

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:49

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

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

Batch 1612069 - General Preparation

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

Batch 1612095 - General Preparation

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

Batch 1612097 - General Preparation

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:49

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 ♦ 303.374.5933 - 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 12:28. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 2-11: C @ 2'	1612033-01	Soil	12/02/16 14:59	12/05/16 12:28
Fed 12-3: W @ 6'	1612033-02	Soil	12/02/16 15:57	12/05/16 12:28
Fed 2-11: S @ 2'	1612033-03	Soil	12/02/16 16:38	12/05/16 12:28
Fed 2-11: N @ 8'	1612033-04	Soil	12/02/16 16:38	12/05/16 12:28
Fed 2-11: E @ 2'	1612033-05	Soil	12/02/16 16:57	12/05/16 12:28

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 15:54

Summit Scientific

S₂

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

1612033

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	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Fall Table	GISTEX	TPH-DRO	EC	PH	HS-Only	
1	Fed 3-11: E@6'	02-Dec	1343	1															
2	Fed 2-11: C@2'		1459	2															D1
3	Contaminant Comp		1530	1															
4	Fed 3-11: W@6'		1527	1															02
5	Fed 2-11: S@2'		1557	1															03
6	Fed 2-11: N@8'		1638	1															04
7	Fed 2-11: E@2'		1657	1															05
8	Fed 3-9: C@8'	03-Dec	0916	2															
9	Fed 3-9: N@8'		0904	1															
10	Fed 3-9: E@10'		0938	1															
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 16:00</u>		Turn Around Time (Check)		Notes:										
Relinquished by:		Date/Time:	Received by:		Date/Time:		Same Day		72 hours										
Relinquished by:		Date/Time:	Received by:		Date/Time:		24 hours		Standard										
Relinquished by:		Date/Time:	Received by:		Date/Time:		48 hours												
Relinquished by:		Date/Time:	Received by:		Date/Time:		Sample Integrity:		1.6%										
Relinquished by:		Date/Time:	Received by:		Date/Time:		Temperature Upon Receipt:												
Relinquished by:		Date/Time:	Received by:		Date/Time:		Intact: Yes No												

www.s2scientific.com

Summit Scientific

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



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

Sample Receipt Checklist

S2 Work Order: 1612033

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment

Shipped Via: Hand

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

Airbill #: _____

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

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

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<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):				
⁽¹⁾ 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 1235
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

Fed 2-11: C @ 2'
1612033-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 14:59

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 14:59

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 14:59

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: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: 12/02/16 14:59

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 15:54

Fed 2-11: C @ 2'
1612033-01 (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: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		62.8 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		93.2 %	30-150		"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.49	0.230	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	199	0.461	"	"	"	"	"	"	
Cadmium	0.192	0.115	"	"	"	"	"	"	
Chromium	8.21	0.576	"	"	"	"	"	"	
Copper	12.4	0.576	"	"	"	"	"	"	
Lead	13.3	0.230	"	"	"	"	"	"	
Nickel	14.8	0.115	"	"	"	"	"	"	
Selenium	0.726	0.461	"	"	"	"	"	"	
Silver	ND	0.115	"	"	"	"	"	"	
Zinc	67.5	11.5	"	"	"	"	"	"	

Date Sampled: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	7.49	0.230	"	"	"	"	"	"	

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 15:54

Fed 2-11: C @ 2'
1612033-01 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Barium	199	0.461	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
Boron	1.75	1.15	"	"	"	"	"	"
Cadmium	0.192	0.115	"	"	"	"	"	"
Chromium	8.21	0.576	"	"	"	"	"	"
Copper	12.4	0.576	"	"	"	"	"	"
Lead	13.3	0.230	"	"	"	"	"	"
Nickel	14.8	0.115	"	"	"	"	"	"
Selenium	0.726	0.461	"	"	"	"	"	"
Silver	ND	0.115	"	"	"	"	"	"
Zinc	67.5	11.5	"	"	"	"	"	"

Total Mercury by EPA Method 7471

Date Sampled: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0576	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

Hexavalent Chromium by EPA 7196

Date Sampled: 12/02/16 14:59

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 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	8.21	0.922	"	"	[CALC]	"	"	EPA 7196/3060A	

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

Date Sampled: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 15:54

Fed 2-11: C @ 2'
1612033-01 (Soil)

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	13800	11.5	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	947	5.76	"	"	"	"	"	"	
Sodium	26.1	5.76	"	"	"	"	"	"	

Date Sampled: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0580		units	"	1612082	12/08/16	12/08/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.992	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

Date Sampled: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.29	0.100	pH Units	"	1612095	12/06/16	12/06/16	EPA 9045	

Date Sampled: 12/02/16 14:59

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	"	1612069	12/07/16	12/07/16	% calculation	

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

Fed 12-3: W @ 6'
1612033-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 15:57

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 15:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 15:57

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: 12/02/16 15:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 15:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.35	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 15:54

Fed 12-3: W @ 6'
1612033-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 15:57

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.92	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 15:54

Fed 2-11: S @ 2'
1612033-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 16:38

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 16:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.5 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 16:38

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: 12/02/16 16:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		121 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.9 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 16:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.424	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 15:54

Fed 2-11: S @ 2'
1612033-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 16:38

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.72	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 15:54

Fed 2-11: N @ 8'
1612033-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 16:38

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 16:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.3 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 16:38

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: 12/02/16 16:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		123 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 16:38

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	5.52	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

Fed 2-11: N @ 8'
1612033-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 16:38

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.12	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 15:54

Fed 2-11: E @ 2'
1612033-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 12/02/16 16:57

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 16:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		94.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 12/02/16 16:57

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)	0.019	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: 12/02/16 16:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		131 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		106 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 16:57

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.560	0.0100	mmhos/cm	1	1612097	12/09/16	12/09/16	SM 2510B	

Summit Scientific

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Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

Fed 2-11: E @ 2'
1612033-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 12/02/16 16:57

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.93	0.100	pH Units	1	1612095	12/06/16	12/06/16	EPA 9045	

Summit Scientific

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1612067 - EPA 3550A

Blank (1612067-BLK1)

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

C10-C28 (DRO) ND 50 mg/kg

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

LCS (1612067-BS1)

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

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

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

Matrix Spike (1612067-MS1)

Source: 1612031-01

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

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

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

Matrix Spike Dup (1612067-MSD1)

Source: 1612031-01

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

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

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

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:54

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

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

Batch 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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0481		"	0.0400		120	23-173			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	21-167			

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			
Surrogate: 1,2-Dichloroethane-d4	0.0499		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	21-167			

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			
Surrogate: 1,2-Dichloroethane-d4	0.0507		"	0.0400		127	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	21-167			

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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 15:54

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

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

Batch 1612089 - EPA 5030 Soil MS

Matrix Spike Dup (1612089-MSD1)		Source: 1612033-01			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	
Surrogate: 1,2-Dichloroethane-d4	0.0501		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

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 15:54

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

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

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0227

"

0.0333

68.0 30-150

Surrogate: Fluoranthene-d10

0.0341

"

0.0333

102 30-150

LCS (1612049-BS1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0272

"

0.0333

81.6 50-150

Surrogate: Fluoranthene-d10

0.0396

"

0.0333

119 50-150

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6899 Pecos Street
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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

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

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

Batch 1612049 - EPA 5030 Soil MS

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

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

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

Reported:
12/12/16 15:54

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

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

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
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
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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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

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

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

Batch 1612062 - EPA 3050B

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612062-DUP1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic	1.02	0.207	mg/kg dry	0.898	12.6	20	
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Boron	1.00	1.04	"	1.15	13.9	20	
Arsenic	1.02	0.207	"	0.898	12.6	20	
Cadmium	0.131	0.104	"	0.0802	48.4	20	QR-03
Barium	26.7	0.415	"	21.8	20.1	20	QR-03
Chromium	2.31	0.518	"	1.76	26.8	20	QR-03
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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Project: Western Slope Pit Assessment
Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

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

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

Batch 1612062 - EPA 3050B

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

Matrix Spike Dup (1612062-MSD1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	42.6	0.207	mg/kg dry	40.5	0.898	103	75-125	8.37	25	
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25	
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	

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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 15:54

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

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

Batch 1612062 - EPA 3050B

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

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

Total Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

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

Reported:
12/12/16 15:54

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

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

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1)

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

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1)

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

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

Duplicate (1612064-DUP1)

Source: 1612026-04

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

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1)

Source: 1612026-04

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

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

Matrix Spike (1612064-MS2)

Source: 1612036-01

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

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

Post Spike (1612064-PS1)

Source: 1612026-04

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

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

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

Reported:
12/12/16 15:54

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

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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 15:54

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

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

Batch 1612069 - General Preparation

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

Batch 1612095 - General Preparation

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

Batch 1612097 - General Preparation

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:54

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

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,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/13/16 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

S₂

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1612034.1

1 of 2

Page 4 of 6

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	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Fall Table #10-1	GIBTEX	TPH-DRO	EC		PH
1	Fed 3-11: E @ 6'	02-Dec	1343	1						X			X	X	X	X		
2	Fed 2-11: E @ 2'		1468	2									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	Fed 3-9: C @ 8'	03-Dec	0746	2									X	X	X	X		01
9	Fed 3-9: N @ 8'		0804	1									X	X	X	X		02
10	Fed 3-9: E @ 10'		0838	1									X	X	X	X		03

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 16:00</u>	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <u>X</u> 48 hours _____	Notes: <u>1.6%</u>
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Sample Integrity: _____	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Temperature Upon Receipt: _____ Intact: <u>Yes</u> 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:
12/13/16 14:29

Summit Scientific

 S_2

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303-277-9310 ♦ 303-374-5933

1412034.2

2 of 2

Page 5 of 4

Client: Foundation Energy / Tasman

Project Manager: ENI

Address:

E-Mail:

City/State/Zip:

Phone:

Fax:

Project Name: Western Slope Lit Assessment

Sampler Name:

Project Number:

Sample Name:		Project Number:		Preservative		Matrix		Analysis Requested						Special Instructions						
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	C-B TEST	TPH - DOO	EC	pH	As - Only		
1	Ferc 3-9:5@10'	07-10-16	0859	1						X				X	X	X	X			04
2	Ferc 3-9:W@10'		0917	1										X	X	X	X			05
3	Fed 22-9:C@4'		1020	2									X							
4	Fed 22-9:SO@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'		1226	1										X	X	X	X			
7	Fed 22-9:W@4'		1209	1										X	X	X	X			
8	Fed 22-9:SO@8'		1211	1										X	X	X	X			
9	SW 15:1C@3'		1113	1										X	X	X	X			
10	Southwest Comp		1442	1														X		
Relinquished by:		Date/Time:		Received by:		Date/Time:		Turn Around Time		(Check)		Notes:								
		12/5/16 1010				12-5-16 1020		Same Day		72 hours										
Relinquished by:		Date/Time:		Received by:		Date/Time:		24 hours		Standard		X								
								48 hours												
								Sample Integrity:												
Relinquished by:		Date/Time:		Received by:		Date/Time:		Temperature Upon Receipt:												
								Intact: Yes		No										

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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:
12/13/16 14:29

Sample Receipt Checklist

S2 Work Order: 1612034

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment

(Figs 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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For Volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<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):				
⁽¹⁾ 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
C10-C28 (DRO)	1800	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	
Toluene	24	0.50	"	100	"	"	"	"	
Ethylbenzene	10	0.50	"	"	"	"	"	"	
Xylenes (total)	570	5.0	"	1000	"	"	"	"	
Gasoline Range Hydrocarbons	1700	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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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

Semivolatile Organic Compounds by EPA Method 8270D SIM

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	"	"	"	"	"	"
Fluorene	0.00719	0.00500	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"
Naphthalene	1.19	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	"	"	"	"	"	"	

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

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

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Silver	ND	0.115	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
Zinc	36.8	11.5	"	"	"	"	"	"
Lead	9.57	0.231	"	"	"	"	"	"
Nickel	9.84	0.115	"	"	"	"	"	"
Selenium	0.591	0.461	"	"	"	"	"	"
Silver	ND	0.115	"	"	"	"	"	"
Zinc	36.8	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
Trivalent Chromium	6.08	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
Calcium	7710	11.5	mg/kg dry	1	1612063	12/07/16	12/07/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	309	5.77	"	"	"	"	"	"	
Sodium	39.6	5.77	"	"	"	"	"	"	
Sodium Adsorption Ratio	0.120		units	"	1612082	12/08/16	12/08/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

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

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)	4.35	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	7.87	0.100	pH Units	"	1612096	12/09/16	12/09/16	EPA 9045	
% Solids	86.7		%	"	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:
12/13/16 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: o-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	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.69	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
pH	8.07	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
Specific Conductance (EC)	7.08	0.0100	mmhos/cm	"	1612098	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:
12/13/16 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: o-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)	6.70	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	8.15	0.100	pH Units	"	1612096	12/09/16	12/09/16	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:
12/13/16 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: o-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	8.19	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
Specific Conductance (EC)	2.20	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: 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: o-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)	5.93	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	8.00	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:
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Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1612117 - EPA 3550A

Blank (1612117-BLK1)

Prepared & Analyzed: 12/12/16

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

LCS (1612117-BS1)

Prepared & Analyzed: 12/12/16

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

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			
Surrogate: o-Terphenyl	13.0		"	12.5	104		30-150			

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	
Surrogate: o-Terphenyl	13.1		"	12.5	105		30-150			

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

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

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			
Surrogate: 1,2-Dichloroethane-d4	0.0499		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	21-167			

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			
Surrogate: 1,2-Dichloroethane-d4	0.0507		"	0.0400		127	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	21-167			

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Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

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12/13/16 14:29

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

Batch 1612089 - EPA 5030 Soil MS

Matrix Spike Dup (1612089-MSD1)		Source: 1612033-01			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	
Surrogate: 1,2-Dichloroethane-d4	0.0501		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0227

"

0.0333

68.0 30-150

Surrogate: Fluoranthene-d10

0.0341

"

0.0333

102 30-150

LCS (1612049-BS1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0272

"

0.0333

81.6 50-150

Surrogate: Fluoranthene-d10

0.0396

"

0.0333

119 50-150

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Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/13/16 14:29

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

Batch 1612049 - EPA 5030 Soil MS

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

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

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

Reported:
12/13/16 14:29

Total Metals by EPA Method 6020 - Dry Weight Basis - Quality Control
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Analyte	Reporting			Spike	Source		%REC		RPD	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Boron	ND	1.00	"
Arsenic	ND	0.200	"
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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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

LCS (1612062-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612062-DUP1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

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

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612062 - EPA 3050B

Matrix Spike (1612062-MS1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612062-MSD1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic	42.6	0.207	mg/kg dry	40.5	0.898	103	75-125	8.37	25
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25
Boron	35.8	1.04	"	40.5	1.15	85.6	75-125	6.00	25
Arsenic	42.6	0.207	"	40.5	0.898	103	75-125	8.37	25
Cadmium	2.21	0.104	"	2.02	0.0802	105	75-125	1.66	25
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25
Chromium	42.3	0.518	"	40.5	1.76	100	75-125	9.44	25
Copper	41.5	0.518	"	40.5	2.29	96.8	75-125	6.39	25
Cadmium	2.21	0.104	"	2.02	0.0802	105	75-125	1.66	25
Lead	33.4	0.207	"	20.2	9.99	116	75-125	4.91	25
Nickel	41.4	0.104	"	40.5	2.01	97.3	75-125	9.36	25
Chromium	42.3	0.518	"	40.5	1.76	100	75-125	9.44	25
Selenium	4.29	0.415	"	4.05	0.302	98.6	75-125	8.46	25
Silver	1.97	0.104	"	2.02	0.0250	96.2	75-125	7.66	25
Copper	41.5	0.518	"	40.5	2.29	96.8	75-125	6.39	25

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/13/16 14:29

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

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

Batch 1612062 - EPA 3050B

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

Summit Scientific

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1)

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

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1)

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

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

Duplicate (1612064-DUP1)

Source: 1612026-04

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

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1)

Source: 1612026-04

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

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

Matrix Spike (1612064-MS2)

Source: 1612036-01

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

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

Post Spike (1612064-PS1)

Source: 1612026-04

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

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

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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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch 1612069 - General Preparation

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

Batch 1612096 - General Preparation

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

Batch 1612098 - General Preparation

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

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 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 12:42. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Fed 22-9: C @ 4'	1612035-01	Soil	12/03/16 10:20	12/05/16 12:42
Fed 22-9: S @ 4'	1612035-02	Soil	12/03/16 10:52	12/05/16 12:42
Fed 22-9: SO4 @ 7'	1612035-03	Soil	12/03/16 12:08	12/05/16 12:42
Fed 22-9: W @ 48'	1612035-04	Soil	12/03/16 12:26	12/05/16 12:42
Fed 22-9: N @ 4'	1612035-05	Soil	12/03/16 13:09	12/05/16 12:42
Fed 22-9: E @ 8'	1612035-06	Soil	12/03/16 13:41	12/05/16 12:42

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 15:56

Summit Scientific

S₂

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

1612035

1 of 1

Page 5 of 8

Client: Foundation Energy / Tasman Project Manager: ZHC
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 ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	G-BTEX	TPH-DGC	ELC	PH	As-Cu-Ly	
1	Fed 3-9: S@10'	02-20	0854	1															
2	Fed 3-9: W@10'		0917	1															
3	Fed 22-9: C@4'		1020	2															01
4	Fed 22-9: S@4'		1052	1															02
5	Fed 22-9: S@4' 7'		1208	1															03
6	Fed 22-9: W@8'		1226	1															04
7	Fed 22-9: N@4'		1309	1															05
8	Fed 22-9: E@3'		1411	1															06
9	SW 1-1: C@3'		1413	1															
10	Southwest Lamp		1413	1															SW 1-1 12/16/16
Relinquished by: <u>[Signature]</u>		Date/Time: <u>12/15/16 10:10</u>		Received by: <u>[Signature]</u>		Date/Time: <u>12-15-16 10:00</u>		Turn Around Time (Check)		Same Day		72 hours		24 hours		Standard		X	
Relinquished by: _____		Date/Time: _____		Received by: _____		Date/Time: _____		48 hours		Sample Integrity:		Temperature Upon Receipt: <u>1.6°C</u>		Intact: <u>Yes</u>		No			

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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 15:56

Sample Receipt Checklist

S2 Work Order: 1612035

Client: Foundation/Tasman

Client Project ID: Western Slope Pit Assessment
(Feb 22-4)

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

Airbill #: _____

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

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

Thermometer ID: 61857155-K

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

Nakita
Custodian Printed Name

MB
Signature or 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 15:56

Fed 22-9: C @ 4'
1612035-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	520	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		100 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.39	0.20	mg/kg	100	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	26	0.50	"	"	"	"	"	"	
Ethylbenzene	12	0.50	"	"	"	"	"	"	
Xylenes (total)	130	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6500	50	"	"	"	"	"	"	

Date Sampled: **12/03/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		122 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		87.8 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		135 %	21-167		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: **12/03/16 10:20**

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 15:56

Fed 22-9: C @ 4'
1612035-01 (Soil)

Summit Scientific

Semivolatile Organic Compounds by EPA Method 8270D SIM

Benzo (b) fluoranthene	ND	0.00500	mg/kg	1	1612049	12/06/16	12/08/16	EPA 8270D SIM
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"
Chrysene	ND	0.00500	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"
Fluoranthene	ND	0.00500	"	"	"	"	"	"
Fluorene	0.0351	0.00500	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"
Naphthalene	0.297	0.0500	"	10	"	"	"	"
Pyrene	ND	0.00500	"	1	"	"	"	"

Date Sampled: **12/03/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		83.4 %	30-150		"	"	"	"	
Surrogate: Fluoranthene-d10		78.0 %	30-150		"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **12/03/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	5.90	0.226	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	25.7	0.452	"	"	"	"	"	"	
Arsenic	5.90	0.226	"	"	"	"	"	"	
Boron	2.49	1.13	"	"	"	"	"	"	
Barium	25.7	0.452	"	"	"	"	"	"	
Cadmium	0.155	0.113	"	"	"	"	"	"	
Chromium	4.36	0.566	"	"	"	"	"	"	
Cadmium	0.155	0.113	"	"	"	"	"	"	
Copper	10.1	0.566	"	"	"	"	"	"	
Lead	10.4	0.226	"	"	"	"	"	"	
Chromium	4.36	0.566	"	"	"	"	"	"	
Nickel	9.85	0.113	"	"	"	"	"	"	
Selenium	ND	0.452	"	"	"	"	"	"	
Copper	10.1	0.566	"	"	"	"	"	"	
Silver	ND	0.113	"	"	"	"	"	"	

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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 15:56

Fed 22-9: C @ 4'
1612035-01 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Zinc	38.5	11.3	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
Lead	10.4	0.226	"	"	"	"	"	"
Nickel	9.85	0.113	"	"	"	"	"	"
Selenium	ND	0.452	"	"	"	"	"	"
Silver	ND	0.113	"	"	"	"	"	"
Zinc	38.5	11.3	"	"	"	"	"	"

Total Mercury by EPA Method 7471

Date Sampled: **12/03/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0505	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

Hexavalent Chromium by EPA 7196

Date Sampled: **12/03/16 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	4.36	0.905	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 10:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1030	11.3	mg/kg dry	1	1612063	12/07/16	12/08/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	275	5.66	"	"	"	"	"	"	
Sodium	62.8	5.66	"	"	"	"	"	"	
Sodium Adsorption Ratio	0.449		units	"	1612082	12/08/16	12/08/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 10:20**

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 15:56

Fed 22-9: C @ 4'
1612035-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

pH	8.19	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045
% Solids	88.4		%	"	1612069	12/07/16	12/07/16	% calculation
Specific Conductance (EC)	0.666	0.0100	mmhos/cm	"	1612098	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 15:56

Fed 22-9: S @ 4'
1612035-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	760	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		98.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.023	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	0.020	0.0050	"	"	"	"	"	"	
Ethylbenzene	1.9	0.50	"	100	"	"	"	"	
Xylenes (total)	30	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	3900	50	"	"	"	"	"	"	

Date Sampled: **12/03/16 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		117 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		100 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		125 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 10:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.924	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	7.98	0.100	pH Units	"	1612096	12/09/16	12/09/16	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 15:56

Fed 22-9: SO4 @ 7'
1612035-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1900	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		97.2 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.39	0.20	mg/kg	100	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	1.7	0.50	"	"	"	"	"	"	
Ethylbenzene	12	0.50	"	"	"	"	"	"	
Xylenes (total)	110	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	6900	50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		121 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		75.3 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		153 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.58	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
Specific Conductance (EC)	3.10	0.0100	mmhos/cm	"	1612098	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 15:56

Fed 22-9: W @ 48'
1612035-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	300	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		96.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.0060	0.0020	mg/kg	1	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	0.38	0.0050	"	"	"	"	"	"	
Ethylbenzene	1.8	0.50	"	100	"	"	"	"	
Xylenes (total)	20	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	1400	50	"	"	"	"	"	"	

Date Sampled: **12/03/16 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		121 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		104 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		96.4 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 12:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.77	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
Specific Conductance (EC)	3.60	0.0100	mmhos/cm	"	1612098	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 15:56

Fed 22-9: N @ 4'
1612035-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 13:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	1800	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 13:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		99.0 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 13:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	0.36	0.20	mg/kg	100	1612089	12/08/16	12/09/16	EPA 8260B	
Toluene	1.4	0.50	"	"	"	"	"	"	
Ethylbenzene	6.0	0.50	"	"	"	"	"	"	
Xylenes (total)	100	0.50	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	8500	50	"	"	"	"	"	"	

Date Sampled: **12/03/16 13:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		121 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		89.5 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		159 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 13:09**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.866	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	8.23	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:
12/12/16 15:56

Fed 22-9: E @ 8'
1612035-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 13:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	120	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 13:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		96.1 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 13:41**

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	0.011	0.0050	"	"	"	"	"	"	
Ethylbenzene	0.31	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.30	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	38	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 13:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		123 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		98.7 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 13:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.31	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	7.84	0.100	pH Units	"	1612096	12/09/16	12/09/16	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 15:56

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1612038 - EPA 3550A

Blank (1612038-BLK1)

Prepared & Analyzed: 12/05/16

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.0		"	12.5		95.7	30-150			

LCS (1612038-BS1)

Prepared & Analyzed: 12/05/16

C10-C28 (DRO)	452	50	mg/kg	499		90.6	73-134			
Surrogate: o-Terphenyl	14.9		"	12.5		119	30-150			

Matrix Spike (1612038-MS1)

Source: 1612009-01

Prepared & Analyzed: 12/05/16

C10-C28 (DRO)	465	50	mg/kg	499	14.3	90.3	50-148			
Surrogate: o-Terphenyl	15.3		"	12.5		122	30-150			

Matrix Spike Dup (1612038-MSD1)

Source: 1612009-01

Prepared & Analyzed: 12/05/16

C10-C28 (DRO)	500	50	mg/kg	499	14.3	97.4	50-148	7.28	20	
Surrogate: o-Terphenyl	15.1		"	12.5		121	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 15:56

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

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

Batch 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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0481		"	0.0400		120	23-173			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	21-167			

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			
Surrogate: 1,2-Dichloroethane-d4	0.0499		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	21-167			

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			
Surrogate: 1,2-Dichloroethane-d4	0.0507		"	0.0400		127	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	21-167			

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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 15:56

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

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

Batch 1612089 - EPA 5030 Soil MS

Matrix Spike Dup (1612089-MSD1)		Source: 1612033-01			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	
Surrogate: 1,2-Dichloroethane-d4	0.0501		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

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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 15:56

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

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

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0227

"

0.0333

68.0 30-150

Surrogate: Fluoranthene-d10

0.0341

"

0.0333

102 30-150

LCS (1612049-BS1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0272

"

0.0333

81.6 50-150

Surrogate: Fluoranthene-d10

0.0396

"

0.0333

119 50-150

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:56

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

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

Batch 1612049 - EPA 5030 Soil MS

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

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

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 15:56

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

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

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
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

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 15:56

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

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

Batch 1612062 - EPA 3050B

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 15:56

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

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

Batch 1612062 - EPA 3050B

Matrix Spike (1612062-MS1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	39.2	0.207	mg/kg dry	39.0	0.898	98.3	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Boron	33.7	1.04	"	39.0	1.15	83.6	75-125			
Arsenic	39.2	0.207	"	39.0	0.898	98.3	75-125			
Cadmium	2.17	0.104	"	1.95	0.0802	107	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Chromium	38.5	0.518	"	39.0	1.76	94.4	75-125			
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

Matrix Spike Dup (1612062-MSD1)		Source: 1612006-04			Prepared & Analyzed: 12/07/16					
Arsenic	42.6	0.207	mg/kg dry	40.5	0.898	103	75-125	8.37	25	
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25	
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 15:56

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

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

Batch 1612062 - EPA 3050B

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

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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 15:56

Total Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:56

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

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

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1) Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1) Prepared: 12/07/16 Analyzed: 12/08/16

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

Duplicate (1612064-DUP1) Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1) Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16

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

Matrix Spike (1612064-MS2) Source: 1612036-01 Prepared: 12/07/16 Analyzed: 12/08/16

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

Post Spike (1612064-PS1) Source: 1612026-04 Prepared: 12/07/16 Analyzed: 12/08/16

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

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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 15:56

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

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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 15:56

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

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

Batch 1612069 - General Preparation

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

Batch 1612096 - General Preparation

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

Batch 1612098 - General Preparation

Blank (1612098-BLK1)	Prepared & Analyzed: 12/09/16										
Specific Conductance (EC)	ND	0.0100	mmhos/cm								
LCS (1612098-BS1)	Prepared & Analyzed: 12/09/16										
Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750		99.2	90-110				
Duplicate (1612098-DUP1)	Source: 1612034-01			Prepared & Analyzed: 12/09/16							
Specific Conductance (EC)	4.04	0.0100	mmhos/cm		4.35			7.40		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 15:56

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

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - 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 12:48. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:58

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Gov't 1-5:C @ 8'	1612036-01	Soil	12/03/16 14:48	12/05/16 12:48
Gov't 1-5:W @ 8'	1612036-02	Soil	12/03/16 15:13	12/05/16 12:48
Gov't 1-5:E @ 10'	1612036-03	Soil	12/03/16 15:40	12/05/16 12:48
Gov't 1-5:N @ 6'	1612036-04	Soil	12/03/16 15:41	12/05/16 12:48
Gov't 1-5:SD @ 10'	1612036-05	Soil	12/03/16 16:06	12/05/16 12:48

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 15:58

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S₂

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303-277-9310 • 303-374-5933

1612086.1

1 of 2
Page 5 of 8

Client: Foundation Energy / Tasman Project Manager: ZUC
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 ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	GC-MS	TPH-DOD	EC		PH	AS-Cu
1	Forg 3-9-42101	07 Dec	0859	1															
2	Forg 3-9-42101		0917	1															
3	Fed 22-9-42101		1020	2															
4	Fed 22-9-42101		1052	1															
5	Fed 22-9-42101		1208	1															
6	Fed 22-9-42101		1226	1															
7	Fed 22-9-42101		1309	1															
8	Fed 22-9-42101		1341	1															
9	Gov 1-5-42101		1418	2															
10	Southwest Comp		1442	2															
Relinquished by: <u>[Signature]</u>		Date/Time: <u>12/5/16 10:10</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		X	
Relinquished by: _____		Date/Time: _____		Received by: _____		Date/Time: _____		48 hours		Sample Integrity:		Temperature Upon Receipt: <u>1.6°C</u>		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 15:58

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S₂

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1612086.2

2 of 2

Page 1 of 1

Client: Foundation Energy Services 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 ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	GC-MS	HH-NEG	EC	pH	As-only		
1	Govt 1-5-W@8'	03-Dec	1513	1						X					X	X	X	X		02
2	Govt 1-5-E@10'		1540	1											X	X	X	X		03
3	Govt 1-5-N@8'		1541	1											X	X	X	X		04
4	Govt 1-5-S@10'		1546	1											X	X	X	X		05
5																				
6																				
7																				
8																				
9																				
10																				

Relinquished by: _____ Date/Time: 12/5/16 Received by: E. Cornez 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: _____

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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 15:58

Sample Receipt Checklist

S2 Work Order: 1612036
Client: Foundation/Tasman Client Project ID: Western Slope Pit Assessment (Gout 1-5)
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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
If custody seals are present, are they intact ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Are short holding time analytes or samples with HTs due within 48 hours present?			<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?			<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):				
⁽¹⁾ 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 1245
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 15:58

Gov't 1-5:C @ 8'
1612036-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 14:48**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 14:48**

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 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		124 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		105 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.8 %	21-167		"	"	"	"	

Semivolatile Organic Compounds by EPA Method 8270D SIM

Date Sampled: **12/03/16 14:48**

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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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:58

Gov't 1-5:C @ 8'
1612036-01 (Soil)

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Semivolatile Organic Compounds by EPA Method 8270D SIM

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

Date Sampled: **12/03/16 14:48**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	63.9 %	30-150	"	"	"	"	"	"	
Surrogate: Fluoranthene-d10	98.4 %	30-150	"	"	"	"	"	"	

Total Metals by EPA Method 6020 - Dry Weight Basis

Date Sampled: **12/03/16 14:48**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	6.45	0.225	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A	
Barium	114	0.451	"	"	"	"	"	"	
Arsenic	6.45	0.225	"	"	"	"	"	"	
Boron	2.54	1.13	"	"	"	"	"	"	
Barium	114	0.451	"	"	"	"	"	"	
Cadmium	0.195	0.113	"	"	"	"	"	"	
Chromium	4.73	0.564	"	"	"	"	"	"	
Cadmium	0.195	0.113	"	"	"	"	"	"	
Copper	8.92	0.564	"	"	"	"	"	"	
Lead	12.2	0.225	"	"	"	"	"	"	
Chromium	4.73	0.564	"	"	"	"	"	"	
Nickel	11.4	0.113	"	"	"	"	"	"	
Selenium	0.619	0.451	"	"	"	"	"	"	
Copper	8.92	0.564	"	"	"	"	"	"	

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 15:58

Gov't 1-5:C @ 8'
1612036-01 (Soil)

Summit Scientific

Total Metals by EPA Method 6020 - Dry Weight Basis

Silver	ND	0.113	mg/kg dry	1	1612062	12/07/16	12/07/16	EPA 6020A
Zinc	50.5	11.3	"	"	"	"	"	"
Lead	12.2	0.225	"	"	"	"	"	"
Nickel	11.4	0.113	"	"	"	"	"	"
Selenium	0.619	0.451	"	"	"	"	"	"
Silver	ND	0.113	"	"	"	"	"	"
Zinc	50.5	11.3	"	"	"	"	"	"

Total Mercury by EPA Method 7471

Date Sampled: **12/03/16 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Mercury	ND	0.0503	mg/kg dry	1	1612034	12/05/16	12/06/16	EPA 7471	

Hexavalent Chromium by EPA 7196

Date Sampled: **12/03/16 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trivalent Chromium	4.73	0.902	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 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1140	11.3	mg/kg dry	1	1612063	12/07/16	12/08/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	136	5.64	"	"	"	"	"	"	
Sodium	23.9	5.64	"	"	"	"	"	"	
Sodium Adsorption Ratio	0.178		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:
12/12/16 15:58

Gov't 1-5:C @ 8'
1612036-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 14:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.27	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	8.02	0.100	pH Units	"	1612096	12/09/16	12/09/16	EPA 9045	
% Solids	88.7		%	"	1612069	12/07/16	12/07/16	% calculation	

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Tasman Geosciences
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Denver CO, 80221

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

Reported:
12/12/16 15:58

Gov't 1-5:W @ 8'
1612036-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 15:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 15:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		93.6 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 15:13**

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	0.0064	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.0095	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 15:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 15:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.62	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
Specific Conductance (EC)	1.00	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:
12/12/16 15:58

Gov't 1-5:E @ 10'
1612036-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 15:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 15:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		92.5 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 15:40**

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 15:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		118 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 15:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.07	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	8.75	0.100	pH Units	"	1612096	12/09/16	12/09/16	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 15:58

Gov't 1-5:N @ 6'
1612036-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 15:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 15:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		95.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 15:41**

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)	0.0074	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 15:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		103 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.1 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 15:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.07	0.100	pH Units	1	1612096	12/09/16	12/09/16	EPA 9045	
Specific Conductance (EC)	0.597	0.0100	mmhos/cm	"	1612098	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 15:58

Gov't 1-5:SD @ 10'
1612036-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **12/03/16 16:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1612038	12/05/16	12/06/16	8015M	

Date Sampled: **12/03/16 16:06**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **12/03/16 16:06**

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)	0.0094	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **12/03/16 16:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		126 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		104 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %	21-167		"	"	"	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **12/03/16 16:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.55	0.0100	mmhos/cm	1	1612098	12/09/16	12/09/16	SM 2510B	
pH	8.27	0.100	pH Units	"	1612096	12/09/16	12/09/16	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 15:58

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1612038 - EPA 3550A

Blank (1612038-BLK1)

Prepared & Analyzed: 12/05/16

C10-C28 (DRO)	ND	50	mg/kg							
Surrogate: o-Terphenyl	12.0		"	12.5		95.7	30-150			

LCS (1612038-BS1)

Prepared & Analyzed: 12/05/16

C10-C28 (DRO)	452	50	mg/kg	499		90.6	73-134			
Surrogate: o-Terphenyl	14.9		"	12.5		119	30-150			

Matrix Spike (1612038-MS1)

Source: 1612009-01

Prepared & Analyzed: 12/05/16

C10-C28 (DRO)	465	50	mg/kg	499	14.3	90.3	50-148			
Surrogate: o-Terphenyl	15.3		"	12.5		122	30-150			

Matrix Spike Dup (1612038-MSD1)

Source: 1612009-01

Prepared & Analyzed: 12/05/16

C10-C28 (DRO)	500	50	mg/kg	499	14.3	97.4	50-148	7.28	20	
Surrogate: o-Terphenyl	15.1		"	12.5		121	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 15:58

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

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

Batch 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	"							
Surrogate: 1,2-Dichloroethane-d4	0.0481		"	0.0400		120	23-173			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0413		"	0.0400		103	21-167			

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			
Surrogate: 1,2-Dichloroethane-d4	0.0499		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0415		"	0.0400		104	21-167			

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			
Surrogate: 1,2-Dichloroethane-d4	0.0507		"	0.0400		127	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	21-167			

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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 15:58

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

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

Batch 1612089 - EPA 5030 Soil MS

Matrix Spike Dup (1612089-MSD1)		Source: 1612033-01			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	
Surrogate: 1,2-Dichloroethane-d4	0.0501		"	0.0400		125	23-173			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

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Denver CO, 80221

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

Reported:
12/12/16 15:58

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

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

Batch 1612049 - EPA 5030 Soil MS

Blank (1612049-BLK1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0227

"

0.0333

68.0 30-150

Surrogate: Fluoranthene-d10

0.0341

"

0.0333

102 30-150

LCS (1612049-BS1)

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

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

Surrogate: 2-Methylnaphthalene-d10

0.0272

"

0.0333

81.6 50-150

Surrogate: Fluoranthene-d10

0.0396

"

0.0333

119 50-150

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Denver CO, 80221

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

Reported:
12/12/16 15:58

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

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

Batch 1612049 - EPA 5030 Soil MS

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

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

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

Reported:
12/12/16 15:58

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

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

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
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
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 15:58

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

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

Batch 1612062 - EPA 3050B

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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Denver CO, 80221

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

Reported:
12/12/16 15:58

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

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

Batch 1612062 - EPA 3050B

Matrix Spike (1612062-MS1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic	39.2	0.207	mg/kg dry	39.0	0.898	98.3	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Boron	33.7	1.04	"	39.0	1.15	83.6	75-125			
Arsenic	39.2	0.207	"	39.0	0.898	98.3	75-125			
Cadmium	2.17	0.104	"	1.95	0.0802	107	75-125			
Barium	58.7	0.415	"	39.0	21.8	94.6	75-125			
Chromium	38.5	0.518	"	39.0	1.76	94.4	75-125			
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

Matrix Spike Dup (1612062-MSD1)

Source: 1612006-04

Prepared & Analyzed: 12/07/16

Arsenic	42.6	0.207	mg/kg dry	40.5	0.898	103	75-125	8.37	25
Barium	64.2	0.415	"	40.5	21.8	105	75-125	8.98	25
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

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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 15:58

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

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

Batch 1612062 - EPA 3050B

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

Summit Scientific

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Denver CO, 80221

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

Reported:
12/12/16 15:58

Total Mercury by EPA Method 7471 - Quality Control
Summit Scientific

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

Batch 1612034 - EPA 7471A

Blank (1612034-BLK1)

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

Mercury ND 0.0500 mg/kg wet

LCS (1612034-BS1)

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

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

Duplicate (1612034-DUP1)

Source: 1612006-01

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

Mercury 0.00401 0.0460 mg/kg dry 0.00399 0.564 20

Matrix Spike (1612034-MS1)

Source: 1612006-01

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

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

Matrix Spike Dup (1612034-MSD1)

Source: 1612006-01

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

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

Summit Scientific

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 15:58

Hexavalent Chromium by EPA 7196 - Quality Control Summit Scientific

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

Batch 1612064 - 3060A_Mod

Blank (1612064-BLK1)

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

Chromium, Hexavalent ND 0.300 mg/kg wet

LCS (1612064-BS1)

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

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

Duplicate (1612064-DUP1)

Source: 1612026-04

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

Chromium, Hexavalent ND 0.300 mg/kg dry ND 20

Matrix Spike (1612064-MS1)

Source: 1612026-04

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

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

Matrix Spike (1612064-MS2)

Source: 1612036-01

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

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

Post Spike (1612064-PS1)

Source: 1612026-04

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

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

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

Reported:
12/12/16 15:58

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

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

Batch 1612063 - General Preparation

Blank (1612063-BLK1)

Prepared & Analyzed: 12/07/16

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

LCS (1612063-BS1)

Prepared & Analyzed: 12/07/16

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

Duplicate (1612063-DUP1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike (1612063-MS1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Matrix Spike Dup (1612063-MSD1)

Source: 1612026-04

Prepared & Analyzed: 12/07/16

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

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: [none]
Project Manager: Bob Cornez

Reported:
12/12/16 15:58

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

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

Batch 1612069 - General Preparation

Duplicate (1612069-DUP1) **Source: 1612014-01** Prepared & Analyzed: 12/07/16

% Solids	92.3		%		93.0			0.756	20	
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Batch 1612096 - General Preparation

LCS (1612096-BS1) Prepared & Analyzed: 12/09/16

pH	8.02	0.100	pH Units	8.00	100	95-105				
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Duplicate (1612096-DUP1) **Source: 1612034-01** Prepared & Analyzed: 12/09/16

pH	7.82	0.100	pH Units		7.87			0.637	20	
----	------	-------	----------	--	------	--	--	-------	----	--

Batch 1612098 - General Preparation

Blank (1612098-BLK1) Prepared & Analyzed: 12/09/16

Specific Conductance (EC)	ND	0.0100	mmhos/cm							
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LCS (1612098-BS1) Prepared & Analyzed: 12/09/16

Specific Conductance (EC)	0.744	0.0100	mmhos/cm	0.750	99.2	90-110				
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Duplicate (1612098-DUP1) **Source: 1612034-01** Prepared & Analyzed: 12/09/16

Specific Conductance (EC)	4.04	0.0100	mmhos/cm		4.35			7.40	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 15:58

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

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,

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

Paul Shrewsbury
President



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: 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

S₂

1612027.1

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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	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table 910-1	GBTEX	TPH - DRC	EC		PH
1	Feet 1-34: EEB	12/5/16	08:28	1														
2	Feet 1-34: NEE	12/5/16	08:28	1														
3	Feet 1-34: SEF	12/5/16	08:28	1														
4	Feet 1-34: CEF	12/5/16	08:28	2														
5	Feet 1-34: NEE	12/5/16	08:28	1														
6	North Comp	12/5/16	15:18	1														
7	Feet 1-35: NEE	12/5/16	11:13	1														
8	Feet 1-35: NEE	12/5/16	11:21	1														
9	Feet 1-35: SEF	12/5/16	11:29	1														
10	Feet 1-35: EEF	12/5/16	11:46	1														

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

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Summit Scientific

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

[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

Summit Scientific

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1612027.2

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	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Table	GC/MS	TPH-DRO	EC	PH		AS-Only
1	Fed 3-11: E06'	02-02-16	1343	1															
2	Fed 2-11: E02'		1454	1															
3	Contest Comp		1530	1															
4	Fed 3-11: W06'		1527	1															
5	Fed 3-11: E02'		1857	1															
6	Fed 2-11: N08'		1638	1															
7	Fed 3-11: E02'		1657	1															
8	Fed 3-11: E08'	03-10-16	0746	2															
9	Fed 3-11: N08'		0804	1															
10	Fed 3-11: E010'		0838	1															

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 <u>X</u> 48 hours _____	Notes:
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Sample Integrity: <u>1.6%</u>	
Relinquished by: _____	Date/Time: _____	Received by: _____	Date/Time: _____	Temperature Upon Receipt: <u>1.6°C</u> Intact: <u>Yes</u> No	

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[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

Summit Scientific

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1612027.3

3 3
Page 5 of 8

Client: Foundation Energy / Tasman Project Manager: ZHC
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 ₃	None	Other (Specify)	Groundwater	Soil	Air-Canister #	Other (Specify)	Full Toile	GBL	TPH-D80	EC		pH
1	Fert 3-9-10 10' 07' 0859		0859	1														
2	Fert 3-9-10 10' 0917		0917	1														
3	Fert 22-9-10 41' 1020		1020	2														
4	Fert 22-9-10 41' 1052		1052	1														
5	Fert 22-9-10 41' 1208		1208	1														
6	Fert 22-9-10 41' 1226		1226	1														
7	Fert 22-9-10 41' 1302		1302	1														
8	Fert 22-9-10 41' 1501		1501	1														
9	Fert 22-9-10 41' 1618		1618	1														
10	Southwest Camp		1443	1														

Relinquished by: [Signature] Date/Time: 12/5/16 10:00 Received by: [Signature] Date/Time: 12-5-16 10:00

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 X
48 hours _____

Sample Integrity: 1.60C

Temperature Upon Receipt: 1.60C
Intact: Yes No

Notes: 12/5/16
DT D3

www.s2scientific.com

Summit Scientific

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

[Signature]



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Western Slope Pit Assessment

Project Number: 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)	<u>1.6</u>				

Thermometer ID: 61857155-K

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



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

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
Arsenic	9.58	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
% Solids	90.1		%	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	7.54	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	89.1		%	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

**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	5.60	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	90.2		%	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

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

Summit Scientific

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

Batch 1612062 - EPA 3050B

Blank (1612062-BLK1)

Prepared & Analyzed: 12/07/16

Arsenic ND 0.200 mg/kg wet

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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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

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

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

Batch 1612069 - General Preparation

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

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

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