



talonlpe.com • 866.742.0742



Horsetail 07 East Test Line  
**Confirmation Sampling**  
**Project # 701530.139.01**

October 11, 2019

**Prepared By:**

Talon/ LPE  
1811 East Mulberry Street  
Fort Collins, CO 80524

**Prepared For:**

**Whiting Oil and Gas Corporation**



October 11, 2019

Mr. Kyle Waggoner  
Whiting Oil and Gas Corporation  
208 Racquette Drive  
Fort Collins, Colorado 80524

**RE: Confirmation Sampling  
Horsetail 07 East Test Line  
Weld County, Colorado  
Project # 701530.139.01**

Mr. Waggoner:

On July 24, 2019, Talon/LPE conducted confirmation soil sampling at the Horsetail 07 East Test Line (Site) in Weld County, Colorado. The purpose of the sampling event was to ensure that all hydrocarbon impacted soils had been removed to the extent required by the Colorado Oil and Gas Conservation Commission (COGCC) following cleanup activities of a produced water release. The Site is identified by the COGCC as Spill/Release Point IDs 466014.

On July 24, 2019, a total of 4 grab samples (SW-W, SW-E, SW-S, SW-N) from a depth of one (1) foot below ground surface (ft bgs), and 1 grab sample (BH-1) from a depth of three (1) ft bgs were collected from the impacted area. A site map with the sample locations is presented in Figure 1.

The collected samples were analyzed for Total Petroleum Hydrocarbons (TPH) via Gasoline Range Organics (GRO) method EPA8260B and Diesel Range Organics (DRO) method 8015, for Benzene, Toluene, Ethyl-benzene, and Xylenes (BTEX) via method EPA8260B, and for inorganics (Electrical Conductivity (EC), Sodium Adsorption Ratio (SAR), and pH) via method USDA60 at Summit Scientific (Summit) in Golden, Colorado. All five of the Analytical results for samples collected at one (1) ft bgs exceeded COGCC 910-1 concentration levels for either Benzene, TPH, EC or SAR. A soil concentration map is presented in Figures 2, and a breakdown of the soil analytical data is presented in Table 1.

Based on the collected analytical data, further excavation was performed by Whiting contractors to a depth of one and-a-half (1.5) for the sidewalls, and to a depth of three (3) ft bgs for the bottom hole. On July 30, 2019, Talon/LPE personnel



collected 5 (5) grab samples (SW-W, SW-E, SW-S, SW-N, and BH-1) and submitted them to Summit for analysis of TPH and BTEX as well as inorganics. All 5 of the Analytical results for sidewall samples collected at one and-a-half (1.5), and the bottom hole at six (6) ft bgs exceeded COGCC 910-1 concentration levels for either Benzene, TPH, EC or SAR. Per Whiting request, on July 31, 2019 Talon/LPE personnel collected 1 background sample and submitted it to Summit for Analysis of BTEX and Inorganics. Analytical results for the background sample collected were below COGCC 910-1 concentration levels.

Based on the collected analytical data, further excavation was performed by Whiting contractors to a depth of two (2) ft bgs for the sidewalls and to a depth of six and-a-half (6.5) ft bgs for the bottom hole . On August 19, 2019, Talon/LPE personnel collected five (5) grab samples (SW-W, SW-E, SW-S, SW-N, and BH-1) and submitted them to Summit for analysis of inorganics. All analytical results from these samples were below laboratory detection limits or COGCC Table 910-1 concentration levels. Analytical results are shown in Table 1 and Figure 2.

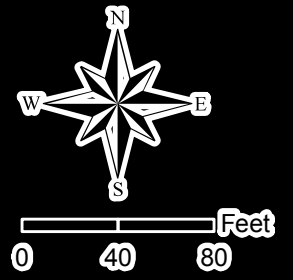
Following the excavations, Whiting contractors transported and disposed the excavated stockpile material at an approved landfill facility. Clean soil will be brought into the Site to backfill the excavated areas upon approval of this closure request.

Based upon the collected analytical data Talon/LPE believes that no further corrective action is necessary, and that Whiting can request closure from the COGCC. If you have any questions or comments, please do not hesitate to call me at (970) 818-5330.

Respectfully Submitted,

Levi Kirk  
Environmental Scientist  
Talon/LPE

**Attachment 1**  
**Figures**

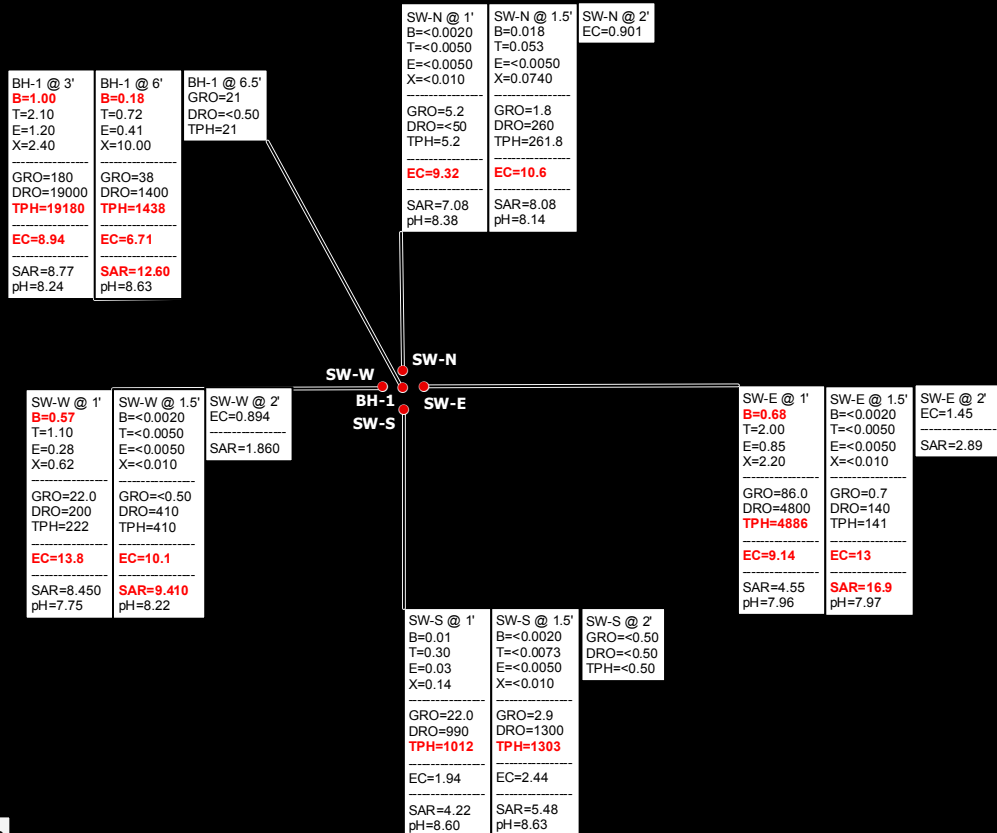
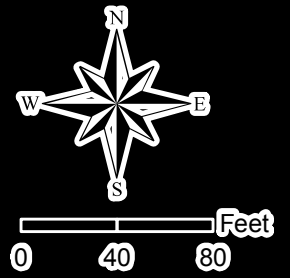


SW-W • SW-N  
BH-1 • SW-E  
• SW-S

LEGEND  
• Soil Sample

Drafted: 9/16/2019  
1 in = 80 ft  
Drafted By: JAI

Whiting Oil & Gas  
Horsetail 07 East Test Line  
Weld County, CO  
Figure 1 - Topographic Map

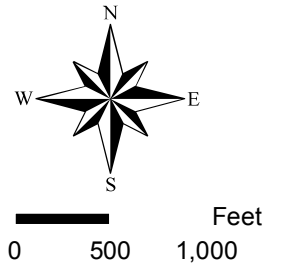


COGCC Concentration Levels	
(mg/kg)	
B =	0.17
T =	85
E =	100
X =	175
GRO =	NA
DRO =	NA
(mmhos/cm)	
EC =	<4
(Units)	
SAR =	<12
pH =	6-9

**LEGEND**  
 • Soil Sample

Drafted: 9/16/2019  
 1 in = 80 ft  
 Drafted By: JAI

**Whiting Oil & Gas**  
**Horsetail 07 East Test Line**  
**Weld County, CO**  
**Figure 3 - Final Concentration Map**



**Site Location**

Topographic Map Source: [map-pass.mytopo.com](http://map-pass.mytopo.com)

Drafted: 9/6/2019  
1 in = 1,000 ft  
Drafted By: JAI

**Whiting Oil & Gas  
Horsetail 07 East Test Line  
Weld County, CO  
Figure 1 - Topographic Map**

**Attachment 2  
Tables**



Table 1 - Soil Analytical Data

Whiting Oil & Gas Corporation  
 Horsetail 07 East Test Line  
 Weld County, Colorado

Sample ID	Depth BGS in Feet	Date Sampled	Concentration (mg/kg)							mmhos/cm	Units	
			Benzene	Toluene	Ethylbenzene	Xylenes (Total)	GRO	DRO	TPH	EC	SAR	pH
<b>COGCC Table 910-1 Concentration Levels</b>			<b>0.17</b>	<b>85</b>	<b>100</b>	<b>175</b>	<b>NA</b>	<b>NA</b>	<b>500</b>	<b>&lt;4</b>	<b>&lt;12</b>	<b>6-9</b>
SW-W	1	7/24/2019	0.57	1.10	0.28	0.62	22.0	200	222	13.8	8.450	7.75
	1.5	7/30/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	410	410	10.1	9.410	8.22
	2	8/19/2019								0.894	1.860	
SW-E	1	7/24/2019	0.68	2.00	0.85	2.20	86.0	4800	4886	9.14	4.55	7.96
	1.5	7/30/2019	<0.0020	<0.0050	<0.0050	<0.010	0.7	140	141	13	16.9	7.97
	2	8/19/2019								1.45	2.89	
SW-S	1	7/24/2019	0.01	0.30	0.03	0.14	22.0	990	1012	1.94	4.22	8.60
	1.5	7/30/2019	<0.0020	0.0073	<0.0050	<0.010	2.9	1300	1303	2.44	5.48	8.63
	2	8/19/2019					<0.50	<0.50	<0.50			
SW-N	1	7/24/2019	<0.0020	<0.0050	<0.0050	<0.010	5.2	<50	5.2	9.32	7.08	8.38
	1.5	7/30/2019	0.018	0.053	<0.0050	0.0740	1.8	260	261.8	10.6	8.08	8.14
	2	8/19/2019								0.901		
BH-1	3	7/24/2019	1.00	2.10	1.20	2.40	180	19000	19180	8.94	8.77	8.24
	6	7/30/2019	0.18	0.72	0.41	10.00	38	1400	1438	6.71	12.60	8.63
	6.5	8/19/2019					21	<0.50	21			
Background North	0	7/31/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<0.50	<0.50	0.334	0.99	7.09

mg/kg - milligrams per kilogram  
 mmhos/cm - millimhos per centimeter  
 < - Analytical result is less than the reporting limit  
 COGCC - Colorado Oil and Gas Conservation Commission

GRO - Gasoline Range Organics  
 DRO - Diesel Range Organics  
 TPH - Total Petroleum Hydrocarbons (Combined GRO/DRO)  
 EC - Electrical Conductivity

SAR - Sodium Adsorption Ratio  
 NA - Not Analyzed  
 BGS - Below Ground Surface

**Attachment 3**  
**Analytical Reports**

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 25, 2019

Jason Leverton

Talon/LPE

1811 East Mulberry

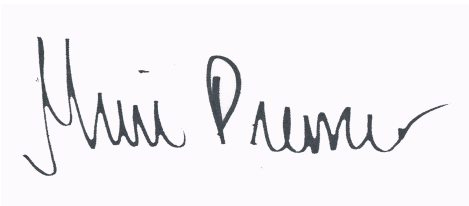
Fort Collins, CO 80525

RE: Horsetail 07 East Test Line

Work Order # 1907226

Enclosed are the results of analyses for samples received by Summit Scientific on 07/18/19 09:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large, stylized 'M' and 'P'.

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/25/19 12:48

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1@0.2'	1907226-01	Soil	07/17/19 12:50	07/18/19 09:35
SS-2@0.2'	1907226-02	Soil	07/17/19 12:55	07/18/19 09:35
SS-3@0.2'	1907226-03	Soil	07/17/19 13:00	07/18/19 09:35
SS-4@0.2'	1907226-04	Soil	07/17/19 13:05	07/18/19 09:35
SS-5@0.2'	1907226-05	Soil	07/17/19 13:10	07/18/19 09:35
SS-6@0.2'	1907226-06	Soil	07/17/19 13:15	07/18/19 09:35
BH-1@0.2'	1907226-07	Soil	07/17/19 13:20	07/18/19 09:35

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.*



1907226

Sample Receipt Checklist

S2 Work Order \_\_\_\_\_

Client: Talon/LPE Client Project ID: Horsetail 07 E Test Line

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

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

Temp (°C)	4.7
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact <sup>(1)</sup> ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation <b>(excluding cooling)</b> <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<u>Additional Comments (if any):</u>  				
<b><sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.</b>				

MP  
Custodian Printed Name or Initials

*Muri Premer*  
Signature of Custodian

7/18/19  
Date/Time



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/25/19 12:48

**SS-1@0.2'**  
**1907226-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/17/19 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1907274	07/19/19	07/22/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/17/19 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		83.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		91.5 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/17/19 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1907275	07/19/19	07/20/19	EPA 8015M	

Date Sampled: **07/17/19 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		105 %	30-150		"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/25/19 12:48

**SS-2@0.2'**  
**1907226-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/17/19 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907274	07/19/19	07/22/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/17/19 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		87.3 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/17/19 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1907275	07/19/19	07/20/19	EPA 8015M	

Date Sampled: **07/17/19 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		110 %	30-150		"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/25/19 12:48

**SS-3@0.2'**  
**1907226-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/17/19 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907274	07/19/19	07/22/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.78</b>	0.50	"	"	"	"	"	"	

Date Sampled: **07/17/19 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		83.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/17/19 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1907275	07/19/19	07/20/19	EPA 8015M	

Date Sampled: **07/17/19 13:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/25/19 12:48

**SS-4@0.2'**  
**1907226-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/17/19 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907274	07/19/19	07/22/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/17/19 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		84.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/17/19 13:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>500</b>	50	mg/kg	1	1907275	07/19/19	07/20/19	EPA 8015M	

Date Sampled: **07/17/19 13:05**

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

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/25/19 12:48

**SS-5@0.2'**  
**1907226-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/17/19 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.52</b>	0.20	mg/kg	100	1907274	07/19/19	07/22/19	EPA 8260B	
<b>Toluene</b>	<b>7.4</b>	0.50	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>6.1</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>20</b>	1.0	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1500</b>	50	"	"	"	"	"	"	

Date Sampled: **07/17/19 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		93.5 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		102 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		121 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/17/19 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>12000</b>	50	mg/kg	1	1907275	07/19/19	07/20/19	EPA 8015M	

Date Sampled: **07/17/19 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		204 %	30-150		"	"	"	"	S-02

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/25/19 12:48

**SS-6@0.2'**  
**1907226-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/17/19 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907274	07/19/19	07/22/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.14</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>8.1</b>	0.50	"	"	"	"	"	"	

Date Sampled: **07/17/19 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		85.4 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		94.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		106 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/17/19 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>4400</b>	50	mg/kg	1	1907275	07/19/19	07/20/19	EPA 8015M	

Date Sampled: **07/17/19 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		30.7 %	30-150		"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/25/19 12:48

**BH-1@0.2'**  
**1907226-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/17/19 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.022</b>	0.0020	mg/kg	1	1907274	07/19/19	07/22/19	EPA 8260B	
<b>Toluene</b>	<b>2.0</b>	0.50	"	100	"	"	"	"	
<b>Ethylbenzene</b>	<b>3.4</b>	0.50	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>12</b>	1.0	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1200</b>	50	"	"	"	"	"	"	

Date Sampled: **07/17/19 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		108 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/17/19 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>7900</b>	50	mg/kg	1	1907275	07/19/19	07/20/19	EPA 8015M	

Date Sampled: **07/17/19 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		81.0 %	30-150		"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/25/19 12:48

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch 1907274 - EPA 5030 Soil MS

##### Blank (1907274-BLK1)

Prepared: 07/19/19 Analyzed: 07/21/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0359		"	0.0400		89.8	23-173			
Surrogate: Toluene-d8	0.0372		"	0.0400		93.1	20-170			
Surrogate: 4-Bromofluorobenzene	0.0412		"	0.0400		103	21-167			

##### LCS (1907274-BS1)

Prepared: 07/19/19 Analyzed: 07/21/19

Benzene	0.0799	0.0020	mg/kg	0.100		79.9	70-130			
Toluene	0.0760	0.0050	"	0.100		76.0	70-130			
Ethylbenzene	0.0772	0.0050	"	0.100		77.2	70-130			
m,p-Xylene	0.152	0.010	"	0.200		76.2	70-130			
o-Xylene	0.0776	0.0050	"	0.100		77.6	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0340		"	0.0400		84.9	23-173			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		102	21-167			

##### Matrix Spike (1907274-MS1)

Source: 1907206-01

Prepared: 07/19/19 Analyzed: 07/21/19

Benzene	0.0737	0.0020	mg/kg	0.100	ND	73.7	70-130			
Toluene	0.0780	0.0050	"	0.100	ND	78.0	70-130			
Ethylbenzene	0.0795	0.0050	"	0.100	ND	79.5	70-130			
m,p-Xylene	0.156	0.010	"	0.200	ND	77.9	70-130			
o-Xylene	0.0810	0.0050	"	0.100	ND	81.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0332		"	0.0400		83.0	23-173			
Surrogate: Toluene-d8	0.0411		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	21-167			

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/25/19 12:48

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

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

**Batch 1907274 - EPA 5030 Soil MS**

Matrix Spike Dup (1907274-MSD1)	Source: 1907206-01			Prepared: 07/19/19 Analyzed: 07/21/19					
Benzene	0.0739	0.0020	mg/kg	0.100	ND	73.9	70-130	0.163	30
Toluene	0.0735	0.0050	"	0.100	ND	73.5	70-130	5.94	30
Ethylbenzene	0.0757	0.0050	"	0.100	ND	75.7	70-130	4.95	30
m,p-Xylene	0.147	0.010	"	0.200	ND	73.6	70-130	5.70	30
o-Xylene	0.0764	0.0050	"	0.100	ND	76.4	70-130	5.87	30
Surrogate: 1,2-Dichloroethane-d4	0.0336		"	0.0400		84.0	23-173		
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	20-170		
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167		

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/25/19 12:48

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

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

**Batch 1907275 - EPA 3550A**

**Blank (1907275-BLK1)**

Prepared: 07/19/19 Analyzed: 07/20/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1907275-BS1)**

Prepared: 07/19/19 Analyzed: 07/20/19

C10-C28 (DRO) 468 50 mg/kg 500 93.5 70-130

**Matrix Spike (1907275-MS1)**

**Source: 1907206-01**

Prepared: 07/19/19 Analyzed: 07/20/19

C10-C28 (DRO) 500 50 mg/kg 500 32.9 93.3 70-130

**Matrix Spike Dup (1907275-MSD1)**


**Source: 1907206-01**

Prepared: 07/19/19 Analyzed: 07/20/19

C10-C28 (DRO) 488 50 mg/kg 500 32.9 91.0 70-130 2.36 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.*





Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/25/19 12:48

### 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.
- 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

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 25, 2019

Jennifer Galles

Talon/LPE

1811 East Mulberry


Fort Collins, CO 80525

RE: Horsetail 07 East Test Line

Work Order # 1907290

Enclosed are the results of analyses for samples received by Summit Scientific on 07/24/19 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01

Project Manager: Jennifer Galles

**Reported:**  
07/25/19 10:53

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWW@1'	1907290-01	Soil	07/24/19 12:40	07/24/19 16:00
SWE@1'	1907290-02	Soil	07/24/19 12:30	07/24/19 16:00
SWS@1'	1907290-03	Soil	07/24/19 12:34	07/24/19 16:00
SWN@1'	1907290-04	Soil	07/24/19 12:37	07/24/19 16:00
BH1@3'	1907290-05	Soil	07/24/19 12:32	07/24/19 16:00

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.*

# Summit Scientific

1907290

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

Client: Talon/LPE -Bill to Whiting  
Address: 1811 East Mulberry  
City/State/Zip: Fort Collins, CO 80524  
Phone: 970-818-5330 Fax: \_\_\_\_\_  
Sampler Name: Levi Kirk

Project Manager: Jennifer Galles  
E-Mail: jgalles@talonlpe.com & jleverton@talonlpe.com  
Project Name: Horsetail 07 East test line  
Project Number: 701530.139.01

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions					
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX	GRO/DRO												
SWW@1'	7/24/2019	12:40	1					x				x	x												
SWE@1'	7/24/2019	12:30	1					x				x	x												
SWS@1'	7/24/2019	12:34	1					x				x	x												
SWN@1'	7/24/2019	12:37	1					x				x	x												
BH1@3'	7/24/2019	12:32	1					x				x	x												
Relinquished by: <u>[Signature]</u> Date/Time: <u>7/24/19 16:00</u>				Received by: <u>[Signature]</u> Date/Time: <u>07/24/19 1600</u>				Turn Around Time (Check)																	
								Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>																	
								24 Hours <input checked="" type="checkbox"/> Standard <input type="checkbox"/>																	
								48 Hours <input type="checkbox"/>																	
Relinquished by:				Received in Lab by:				Sample Integrity:																	
Date/Time:				Date/Time:				Temperature Upon Receipt: <u>4.2</u>																	
								Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																	





Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/25/19 10:53

**SWW@1'**  
**1907290-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.57</b>	0.020	mg/kg	10	1907350	07/24/19	07/24/19	EPA 8260B	
<b>Toluene</b>	<b>1.1</b>	0.050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.28</b>	0.0050	"	1	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.62</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>22</b>	0.50	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>200</b>	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		112 %	30-150		"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/25/19 10:53

**SWE@1'**  
**1907290-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.68</b>	0.020	mg/kg	10	1907350	07/24/19	07/24/19	EPA 8260B	
<b>Toluene</b>	<b>2.0</b>	0.050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.85</b>	0.050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2.2</b>	0.10	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>86</b>	5.0	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		149 %	23-173	"	"	"	"	"	
<i>Surrogate: Toluene-d8</i>		89.8 %	20-170	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		99.4 %	21-167	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>4800</b>	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		175 %	30-150	"	"	"	"	"	S-02

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/25/19 10:53

**SWS@1'**  
**1907290-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.0077</b>	0.0020	mg/kg	1	1907350	07/24/19	07/24/19	EPA 8260B	
<b>Toluene</b>	<b>0.043</b>	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.030</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.14</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>22</b>	0.50	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.6 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.1 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>990</b>	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		122 %	30-150		"	"	"	"	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/25/19 10:53

**SWN@1'**  
**1907290-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907350	07/24/19	07/24/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>5.2</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		87.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.9 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/25/19 10:53

**BH1@3'**  
**1907290-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1.0</b>	0.020	mg/kg	10	1907350	07/24/19	07/24/19	EPA 8260B	
<b>Toluene</b>	<b>2.1</b>	0.050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>1.2</b>	0.050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2.4</b>	0.10	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>180</b>	5.0	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:32**

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>		86.9 %	20-170	"	"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		115 %	21-167	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>19000</b>	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		127 %	30-150	"	"	"	"	"	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/25/19 10:53

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

**Summit Scientific**

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

**Batch 1907350 - EPA 5030 Soil MS**

**Blank (1907350-BLK1)**

Prepared: 07/24/19 Analyzed: 07/25/19

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0264		"	0.0400		66.1	23-173				
Surrogate: Toluene-d8	0.0359		"	0.0400		89.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	21-167				

**LCS (1907350-BS1)**

Prepared: 07/24/19 Analyzed: 07/25/19

Benzene	0.0774	0.0020	mg/kg	0.100		77.4	70-130				
Toluene	0.0863	0.0050	"	0.100		86.3	70-130				
Ethylbenzene	0.114	0.0050	"	0.100		114	70-130				
m,p-Xylene	0.232	0.010	"	0.200		116	70-130				
o-Xylene	0.105	0.0050	"	0.100		105	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0237		"	0.0400		59.2	23-173				
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	20-170				
Surrogate: 4-Bromofluorobenzene	0.0349		"	0.0400		87.2	21-167				

**Matrix Spike (1907350-MS1)**

Source: 1907289-01

Prepared: 07/24/19 Analyzed: 07/25/19

Benzene	0.0784	0.0020	mg/kg	0.100	ND	78.4	70-130				
Toluene	0.0861	0.0050	"	0.100	ND	86.1	70-130				
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130				
m,p-Xylene	0.220	0.010	"	0.200	ND	110	70-130				
o-Xylene	0.0994	0.0050	"	0.100	ND	99.4	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0271		"	0.0400		67.8	23-173				
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0360		"	0.0400		89.9	21-167				

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/25/19 10:53

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

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

**Batch 1907350 - EPA 5030 Soil MS**

**Matrix Spike Dup (1907350-MSD1)**

Source: 1907289-01

Prepared: 07/24/19 Analyzed: 07/25/19

Benzene	0.0778	0.0020	mg/kg	0.100	ND	77.8	70-130	0.768	30	
Toluene	0.0856	0.0050	"	0.100	ND	85.6	70-130	0.489	30	
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130	6.17	30	
m,p-Xylene	0.232	0.010	"	0.200	ND	116	70-130	5.40	30	
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	4.60	30	
Surrogate: 1,2-Dichloroethane-d4	0.0228		"	0.0400		57.1	23-173			
Surrogate: Toluene-d8	0.0368		"	0.0400		91.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0341		"	0.0400		85.3	21-167			

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/25/19 10:53

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

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

**Batch 1907351 - EPA 3550A**

**Blank (1907351-BLK1)**

Prepared & Analyzed: 07/24/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1907351-BS1)**

Prepared: 07/24/19 Analyzed: 07/25/19

C10-C28 (DRO) 501 50 mg/kg 500 100 70-130

**Matrix Spike (1907351-MS1)**

**Source: 1907289-01**

Prepared: 07/24/19 Analyzed: 07/25/19

C10-C28 (DRO) 506 50 mg/kg 500 33.3 94.5 70-130

**Matrix Spike Dup (1907351-MSD1)**

**Source: 1907289-01**

Prepared: 07/24/19 Analyzed: 07/25/19

C10-C28 (DRO) 521 50 mg/kg 500 33.3 97.5 70-130 2.92 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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/25/19 10:53

### 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.
- 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

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 26, 2019

Jennifer Galles

Talon/LPE

1811 East Mulberry

Fort Collins, CO 80525

RE: Horsetail 07 East Test Line

Work Order # 1907290

Enclosed are the results of analyses for samples received by Summit Scientific on 07/24/19 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read 'Paul Shrewsbury', written in a cursive style.

Paul Shrewsbury For Ben Shrewsbury

Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01

Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWW@1'	1907290-01	Soil	07/24/19 12:40	07/24/19 16:00
SWE@1'	1907290-02	Soil	07/24/19 12:30	07/24/19 16:00
SWS@1'	1907290-03	Soil	07/24/19 12:34	07/24/19 16:00
SWN@1'	1907290-04	Soil	07/24/19 12:37	07/24/19 16:00
BH1@3'	1907290-05	Soil	07/24/19 12:32	07/24/19 16:00

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.*

# Summit Scientific

1907290

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

Client: Talon/LPE -Bill to Whiting  
Address: 1811 East Mulberry  
City/State/Zip: Fort Collins, CO 80524  
Phone: 970-818-5330 Fax: \_\_\_\_\_  
Sampler Name: Levi Kirk

Project Manager: Jennifer Galles  
E-Mail: jgalles@talonlpe.com & jleverton@talonlpe.com  
Project Name: Horsetail 07 East test line  
Project Number: 701530.139.01

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions					
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX	GRO/DRO												
SWW@1'	7/24/2019	12:40	1					x				x	x												
SWE@1'	7/24/2019	12:30	1					x				x	x												
SWS@1'	7/24/2019	12:34	1					x				x	x												
SWN@1'	7/24/2019	12:37	1					x				x	x												
BH1@3'	7/24/2019	12:32	1					x				x	x												
Relinquished by: <u>Levi Kirk</u> Date/Time: <u>7/24/19 16:00</u>				Received by: <u>[Signature]</u> Date/Time: <u>07/24/19 1600</u>				Turn Around Time (Check)																	
								Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/>																	
								24 Hours <input checked="" type="checkbox"/> Standard <input type="checkbox"/>																	
								48 Hours <input type="checkbox"/>																	
Relinquished by:				Received in Lab by:				Sample Integrity:																	
Date/Time:				Date/Time:				Temperature Upon Receipt: <u>4.2</u>																	
								Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>																	





Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

**SWW@1'**  
**1907290-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Benzene</b>	<b>0.57</b>	0.020	mg/kg	10	1907350	07/24/19	07/24/19	EPA 8260B	
<b>Toluene</b>	<b>1.1</b>	0.050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.28</b>	0.0050	"	1	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.62</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>22</b>	0.50	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		112 %	23-173	"	"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	21-167	"	"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>C10-C28 (DRO)</b>	<b>200</b>	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		112 %	30-150	"	"	"	"	"	

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

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>6060</b>	11.1	mg/kg dry	1	1907365	07/25/19	07/25/19	EPA 6020B	
<b>Magnesium</b>	<b>1380</b>	5.54	"	"	"	"	"	"	
<b>Sodium</b>	<b>2800</b>	5.54	"	"	"	"	"	"	

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.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/26/19 08:45

**SWW@1'**  
**1907290-01 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.45	0.100	units	1	1907371	07/26/19	07/26/19	Calculation	

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

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.2		%	1	1907374	07/26/19	07/26/19	Calculation	
pH	7.75		pH Units	"	1907368	07/25/19	07/25/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/24/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	13.8	0.0100	mmhos/cm	1	1907367	"	07/25/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

**SWE@1'**  
**1907290-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.68</b>	0.020	mg/kg	10	1907350	07/24/19	07/24/19	EPA 8260B	
<b>Toluene</b>	<b>2.0</b>	0.050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.85</b>	0.050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2.2</b>	0.10	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>86</b>	5.0	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		149 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		89.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.4 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>4800</b>	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		175 %	30-150		"	"	"	"	S-02

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

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>6560</b>	10.9	mg/kg dry	1	1907365	07/25/19	07/25/19	EPA 6020B	
<b>Magnesium</b>	<b>1280</b>	5.44	"	"	"	"	"	"	
<b>Sodium</b>	<b>1540</b>	5.44	"	"	"	"	"	"	

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.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/26/19 08:45

**SWE@1'**  
**1907290-02 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.55	0.100	units	1	1907371	07/26/19	07/26/19	Calculation	

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

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.9		%	1	1907374	07/26/19	07/26/19	Calculation	
pH	7.96		pH Units	"	1907368	07/25/19	07/25/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/24/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	9.14	0.0100	mmhos/cm	1	1907367	"	07/25/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

**SWS@1'**  
**1907290-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.0077</b>	0.0020	mg/kg	1	1907350	07/24/19	07/24/19	EPA 8260B	
<b>Toluene</b>	<b>0.043</b>	0.0050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>0.030</b>	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.14</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>22</b>	0.50	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: 1,2-Dichloroethane-d4</i>		98.6 %	23-173		"	"	"	"	
<i>Surrogate: Toluene-d8</i>		98.1 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		102 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>990</b>	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		122 %	30-150		"	"	"	"	

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

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>5770</b>	11.4	mg/kg dry	1	1907365	07/25/19	07/25/19	EPA 6020B	
<b>Magnesium</b>	<b>793</b>	5.71	"	"	"	"	"	"	
<b>Sodium</b>	<b>1290</b>	5.71	"	"	"	"	"	"	

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.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/26/19 08:45

**SWS@1'**  
**1907290-03 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.22	0.100	units	1	1907371	07/26/19	07/26/19	Calculation	

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

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	1	1907374	07/26/19	07/26/19	Calculation	
pH	8.60		pH Units	"	1907368	07/25/19	07/25/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/24/19 12:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.94	0.0100	mmhos/cm	1	1907367	"	07/25/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

**SWN@1'**  
**1907290-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1907350	07/24/19	07/24/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>5.2</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		87.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.9 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		111 %	30-150		"	"	"	"	

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

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>11900</b>	11.1	mg/kg dry	1	1907365	07/25/19	07/25/19	EPA 6020B	
<b>Magnesium</b>	<b>1320</b>	5.55	"	"	"	"	"	"	
<b>Sodium</b>	<b>3050</b>	5.55	"	"	"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

**SWN@1'**  
**1907290-04 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>7.08</b>	0.100	units	1	1907371	07/26/19	07/26/19	Calculation	

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

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>90.1</b>		%	1	1907374	07/26/19	07/26/19	Calculation	
pH	<b>8.38</b>		pH Units	"	1907368	07/25/19	07/25/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/24/19 12:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>9.32</b>	0.0100	mmhos/cm	1	1907367	"	07/25/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

**BH1@3'**  
**1907290-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>1.0</b>	0.020	mg/kg	10	1907350	07/24/19	07/24/19	EPA 8260B	
<b>Toluene</b>	<b>2.1</b>	0.050	"	"	"	"	"	"	
<b>Ethylbenzene</b>	<b>1.2</b>	0.050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>2.4</b>	0.10	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>180</b>	5.0	"	"	"	"	"	"	

Date Sampled: **07/24/19 12:32**

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>		86.9 %	20-170		"	"	"	"	
<i>Surrogate: 4-Bromofluorobenzene</i>		115 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>19000</b>	50	mg/kg	1	1907351	07/24/19	07/24/19	EPA 8015M	

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<i>Surrogate: o-Terphenyl</i>		127 %	30-150		"	"	"	"	

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

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>2530</b>	10.8	mg/kg dry	1	1907365	07/25/19	07/25/19	EPA 6020B	
<b>Magnesium</b>	<b>235</b>	5.42	"	"	"	"	"	"	
<b>Sodium</b>	<b>1720</b>	5.42	"	"	"	"	"	"	

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.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/26/19 08:45

**BH1@3'**  
**1907290-05 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.77	0.100	units	1	1907371	07/26/19	07/26/19	Calculation	

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

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.2		%	1	1907374	07/26/19	07/26/19	Calculation	
pH	8.24		pH Units	"	1907368	07/25/19	07/25/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/24/19 12:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	8.94	0.0100	mmhos/cm	1	1907367	"	07/25/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch 1907350 - EPA 5030 Soil MS

##### Blank (1907350-BLK1)

Prepared: 07/24/19 Analyzed: 07/25/19

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0264		"	0.0400		66.1	23-173				
Surrogate: Toluene-d8	0.0359		"	0.0400		89.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	21-167				

##### LCS (1907350-BS1)

Prepared: 07/24/19 Analyzed: 07/25/19

Benzene	0.0774	0.0020	mg/kg	0.100		77.4	70-130				
Toluene	0.0863	0.0050	"	0.100		86.3	70-130				
Ethylbenzene	0.114	0.0050	"	0.100		114	70-130				
m,p-Xylene	0.232	0.010	"	0.200		116	70-130				
o-Xylene	0.105	0.0050	"	0.100		105	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0237		"	0.0400		59.2	23-173				
Surrogate: Toluene-d8	0.0376		"	0.0400		94.0	20-170				
Surrogate: 4-Bromofluorobenzene	0.0349		"	0.0400		87.2	21-167				

##### Matrix Spike (1907350-MS1)

Source: 1907289-01

Prepared: 07/24/19 Analyzed: 07/25/19

Benzene	0.0784	0.0020	mg/kg	0.100	ND	78.4	70-130				
Toluene	0.0861	0.0050	"	0.100	ND	86.1	70-130				
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130				
m,p-Xylene	0.220	0.010	"	0.200	ND	110	70-130				
o-Xylene	0.0994	0.0050	"	0.100	ND	99.4	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0271		"	0.0400		67.8	23-173				
Surrogate: Toluene-d8	0.0375		"	0.0400		93.8	20-170				
Surrogate: 4-Bromofluorobenzene	0.0360		"	0.0400		89.9	21-167				

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/26/19 08:45

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

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

**Batch 1907350 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1907350-MSD1)</b>	<b>Source: 1907289-01</b>			<b>Prepared: 07/24/19 Analyzed: 07/25/19</b>						
Benzene	0.0778	0.0020	mg/kg	0.100	ND	77.8	70-130	0.768	30	
Toluene	0.0856	0.0050	"	0.100	ND	85.6	70-130	0.489	30	
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130	6.17	30	
m,p-Xylene	0.232	0.010	"	0.200	ND	116	70-130	5.40	30	
o-Xylene	0.104	0.0050	"	0.100	ND	104	70-130	4.60	30	
Surrogate: 1,2-Dichloroethane-d4	0.0228		"	0.0400		57.1	23-173			
Surrogate: Toluene-d8	0.0368		"	0.0400		91.9	20-170			
Surrogate: 4-Bromofluorobenzene	0.0341		"	0.0400		85.3	21-167			

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/26/19 08:45

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

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

**Batch 1907351 - EPA 3550A**

**Blank (1907351-BLK1)**

Prepared & Analyzed: 07/24/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1907351-BS1)**

Prepared: 07/24/19 Analyzed: 07/25/19

C10-C28 (DRO) 501 50 mg/kg 500 100 70-130

**Matrix Spike (1907351-MS1)**

**Source: 1907289-01**

Prepared: 07/24/19 Analyzed: 07/25/19

C10-C28 (DRO) 506 50 mg/kg 500 33.3 94.5 70-130

**Matrix Spike Dup (1907351-MSD1)**

**Source: 1907289-01**

Prepared: 07/24/19 Analyzed: 07/25/19

C10-C28 (DRO) 521 50 mg/kg 500 33.3 97.5 70-130 2.92 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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

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

**Summit Scientific**

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

**Batch 1907365 - General Preparation**

**Blank (1907365-BLK1)**

Prepared & Analyzed: 07/25/19

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

**LCS (1907365-BS1)**

Prepared & Analyzed: 07/25/19

Calcium	565	10.0	mg/kg wet	500		113	70-130		
Magnesium	553	5.00	"	500		111	70-130		
Sodium	538	5.00	"	500		108	70-130		

**Duplicate (1907365-DUP1)**

Source: 1907297-07

Prepared & Analyzed: 07/25/19

Calcium	2350	11.9	mg/kg dry		2570			8.86	20
Magnesium	719	5.97	"		682			5.26	20
Sodium	278	5.97	"		287			3.14	20

**Matrix Spike (1907365-MS1)**

Source: 1907297-07

Prepared & Analyzed: 07/25/19

Calcium	2910	11.9	mg/kg dry	597	2570	57.9	70-130		QM-07
Magnesium	1200	5.97	"	597	682	86.7	70-130		
Sodium	832	5.97	"	597	287	91.3	70-130		

**Matrix Spike Dup (1907365-MSD1)**

Source: 1907297-07

Prepared & Analyzed: 07/25/19

Calcium	3020	11.9	mg/kg dry	597	2570	75.7	70-130	3.59	25
Magnesium	1250	5.97	"	597	682	95.0	70-130	4.05	25
Sodium	875	5.97	"	597	287	98.4	70-130	4.99	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.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/26/19 08:45

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

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

**Batch 1907368 - General Preparation**

**LCS (1907368-BS1)**

Prepared & Analyzed: 07/25/19

pH 9.42 pH Units 9.23 102 95-105

**Duplicate (1907368-DUP1)**

Source: 1907290-01

Prepared & Analyzed: 07/25/19

pH 7.81 pH Units 7.75 0.771 20

**Batch 1907374 - General Preparation**

**Duplicate (1907374-DUP1)**

Source: 1907290-01

Prepared & Analyzed: 07/26/19

% Solids 89.3 % 90.2 1.00 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.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 07/26/19 08:45

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 1907367 - General Preparation**

**Blank (1907367-BLK1)**

Prepared & Analyzed: 07/25/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (1907367-BS1)**

Prepared & Analyzed: 07/25/19

Specific Conductance (EC) 0.752 0.0100 mmhos/cm 0.750 100 90-110

**Duplicate (1907367-DUP1)**

Source: 1907290-01

Prepared & Analyzed: 07/25/19

Specific Conductance (EC) 13.1 0.0100 mmhos/cm 13.8 5.11 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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
07/26/19 08:45

### 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.
- 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

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 31, 2019

Jason Leverton

Talon/LPE

1811 East Mulberry

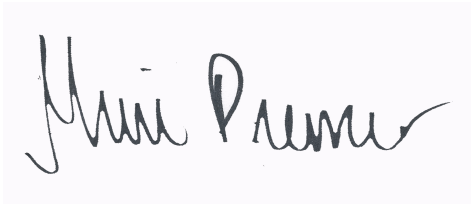
Fort Collins, CO 80525

RE: Horsetail 07 East Test Line

Work Order # 1907356

Enclosed are the results of analyses for samples received by Summit Scientific on 07/30/19 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01

Project Manager: Jason Leverton

**Reported:**  
07/31/19 16:56

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SWW@1.5'	1907356-01	Soil	07/30/19 13:50	07/30/19 16:00
SWE@1.5'	1907356-02	Soil	07/30/19 14:00	07/30/19 16:00
SWS@1.5'	1907356-03	Soil	07/30/19 13:55	07/30/19 16:00
SWN@1.5'	1907356-04	Soil	07/30/19 13:45	07/30/19 16:00
BH1@6'	1907356-05	Soil	07/30/19 14:05	07/30/19 16:00

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.*

# Summit Scientific

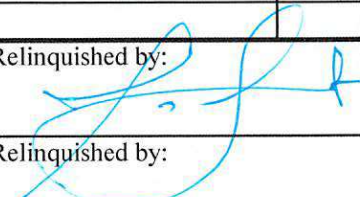
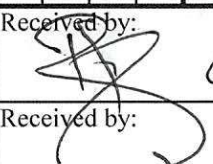
1907386

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

Page 1 of 1

Client: Talon/LPE -Bill to Whiting  
Address: 1811 East Mulberry  
City/State/Zip: Fort Collins, CO 80524  
Phone: 970-818-5330 Fax:  
Sampler Name: Ben Bradfield

Project Manager: Jennifer Galles  
E-Mail: jgalles@talonlpe.com & jleverton@talonlpe.com  
Project Name: Horsetail 07 East test line  
Project Number: 701530.139.01

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:						Special Instructions				
				HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX	GRO/DRO	EC	SAR	pH						
SWW@1.5'	7/30/2019	13:50:00 P	1					X				X	X	X	X	X						
SWE@1.5'	7/30/2019	14:00:00 P	1					X				X	X	X	X	X						
SWS@1.5'	7/30/2019	13:55:00 P	1					X				X	X	X	X	X						
SWN@1.5'	7/30/2019	13:45:00 P	1					X				X	X	X	X	X						
BH1@6'	7/30/2019	14:05:00 P	1					X				X	X	X	X	X						
Relinquished by: 				Date/Time: <u>16:00 7-30-19</u>	Received by: 				Date/Time: <u>07/30/19 1600</u>	Turn Around Time (Check)												
Relinquished by:				Date/Time:	Received by:				Date/Time:	Same Day <input type="checkbox"/>		72 Hours <input type="checkbox"/>										
Relinquished by:				Date/Time:	Received in Lab by:				Date/Time:	24 Hours <input checked="" type="checkbox"/>		Standard <input type="checkbox"/>										
Relinquished by:				Date/Time:	Received in Lab by:				Date/Time:	48 Hours <input type="checkbox"/>		Sample Integrity:		Temperature Upon Receipt: <u>5.4</u>								
										Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No												

### Sample Receipt Checklist

S2 Work Order 1907356

Client: Talon / LPE Client Project ID: HORSETAIL 07 EAST TEST

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

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

Temp (°C)	5.4
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			On Ice
Were all samples received intact <sup>(1)</sup> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
If custody seals are present, are they intact <sup>(1)</sup> ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?	✓			
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	✓			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	

Additional Comments (if any):  
 \_\_\_\_\_  
 \_\_\_\_\_

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

RZ  
 \_\_\_\_\_  
 Custodian Printed Name or Initials

*RZ*  
 \_\_\_\_\_  
 Signature of Custodian

7/30/19  
 \_\_\_\_\_  
 Date/Time



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/31/19 16:56

**SWW@1.5'**  
**1907356-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/30/19 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	1907417	07/30/19	07/30/19	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **07/30/19 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		86.7 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		88.1 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.5 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/30/19 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>C10-C28 (DRO)</b>	<b>410</b>	50		mg/kg	1	1907403	07/30/19	07/31/19	EPA 8015M	

Date Sampled: **07/30/19 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		122 %		30-150		"	"	"	"	

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

Date Sampled: **07/30/19 13:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Calcium</b>	<b>7680</b>	12.5		mg/kg dry	1	1907412	07/30/19	07/30/19	EPA 6020B	
<b>Magnesium</b>	<b>1380</b>	6.23		"	"	"	"	"	"	

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.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/31/19 16:56

**SWW@1.5'**  
**1907356-01 (Soil)**

**Summit Scientific**

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

<b>Sodium</b>	<b>3410</b>	6.23	mg/kg dry	1	1907412	07/30/19	07/30/19	EPA 6020B
---------------	-------------	------	-----------	---	---------	----------	----------	-----------

**Calculated Analysis**

Date Sampled: **07/30/19 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Sodium Adsorption Ratio</b>	<b>9.41</b>	0.100	units	1	1907435	07/31/19	07/31/19	Calculation	

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

Date Sampled: **07/30/19 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>% Solids</b>	<b>80.2</b>		%	1	1907418	07/31/19	07/31/19	Calculation	
<b>pH</b>	<b>8.22</b>		pH Units	"	1907419	07/31/19	07/31/19	EPA 9045D	

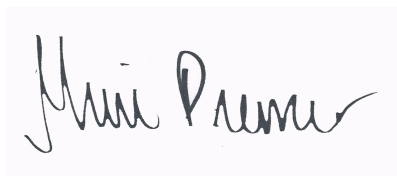
**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/30/19 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>10.1</b>	0.0100	mmhos/cm	1	1907420	07/31/19	07/31/19	EPA 120.1	

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.*





Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/31/19 16:56

**SWE@1.5'**  
**1907356-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/30/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1907417	07/30/19	07/30/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>0.70</b>	0.50	"	"	"	"	"	"	

Date Sampled: **07/30/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		99.2 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		93.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.5 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/30/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>C10-C28 (DRO)</b>	<b>140</b>	50	mg/kg	1	1907403	07/30/19	07/31/19	EPA 8015M	

Date Sampled: **07/30/19 14:00**

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

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

Date Sampled: **07/30/19 14:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>4680</b>	12.3	mg/kg dry	1	1907412	07/30/19	07/30/19	EPA 6020B	
<b>Magnesium</b>	<b>1190</b>	6.17	"	"	"	"	"	"	
<b>Sodium</b>	<b>4990</b>	6.17	"	"	"	"	"	"	

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.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/31/19 16:56

**SWE@1.5'**  
**1907356-02 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/30/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>16.9</b>	0.100	units	1	1907435	07/31/19	07/31/19	Calculation	

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

Date Sampled: **07/30/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>81.0</b>		%	1	1907418	07/31/19	07/31/19	Calculation	
pH	<b>7.97</b>		pH Units	"	1907419	07/31/19	07/31/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/30/19 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>13.0</b>	0.0100	mmhos/cm	1	1907420	07/31/19	07/31/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/31/19 16:56

**SWS@1.5'**  
**1907356-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/30/19 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	1907417	07/30/19	07/30/19	EPA 8260B	
<b>Toluene</b>	<b>0.0073</b>	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>2.9</b>	0.50		"	"	"	"	"	"	

Date Sampled: **07/30/19 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		92.3 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		96.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.1 %		21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/30/19 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>C10-C28 (DRO)</b>	<b>1300</b>	50		mg/kg	1	1907403	07/30/19	07/31/19	EPA 8015M	

Date Sampled: **07/30/19 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		146 %		30-150		"	"	"	"	

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

Date Sampled: **07/30/19 13:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
<b>Calcium</b>	<b>2160</b>	10.9		mg/kg dry	1	1907412	07/30/19	07/30/19	EPA 6020B	
<b>Magnesium</b>	<b>478</b>	5.47		"	"	"	"	"	"	
<b>Sodium</b>	<b>1080</b>	5.47		"	"	"	"	"	"	

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.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/31/19 16:56

**SWS@1.5'**  
**1907356-03 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/30/19 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.48	0.100	units	1	1907435	07/31/19	07/31/19	Calculation	

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

Date Sampled: **07/30/19 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.3		%	1	1907418	07/31/19	07/31/19	Calculation	
pH	8.63		pH Units	"	1907419	07/31/19	07/31/19	EPA 9045D	

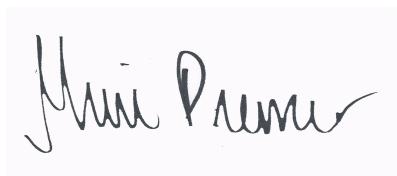
**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/30/19 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.44	0.0100	mmhos/cm	1	1907420	07/31/19	07/31/19	EPA 120.1	

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.*





Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/31/19 16:56

**SWN@1.5'**  
**1907356-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/30/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.018</b>	0.0020	mg/kg	1	1907417	07/30/19	07/30/19	EPA 8260B	
<b>Toluene</b>	<b>0.053</b>	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
<b>Xylenes (total)</b>	<b>0.074</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>1.8</b>	0.50	"	"	"	"	"	"	

Date Sampled: **07/30/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		96.7 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		92.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/30/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>260</b>	50	mg/kg	1	1907403	07/30/19	07/31/19	EPA 8015M	

Date Sampled: **07/30/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		127 %	30-150		"	"	"	"	

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

Date Sampled: **07/30/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>4000</b>	10.7	mg/kg dry	1	1907412	07/30/19	07/30/19	EPA 6020B	
<b>Magnesium</b>	<b>450</b>	5.34	"	"	"	"	"	"	
<b>Sodium</b>	<b>2020</b>	5.34	"	"	"	"	"	"	

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.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/31/19 16:56

**SWN@1.5'**  
**1907356-04 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/30/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>8.08</b>	0.100	units	1	1907435	07/31/19	07/31/19	Calculation	

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

Date Sampled: **07/30/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>93.7</b>		%	1	1907418	07/31/19	07/31/19	Calculation	
pH	<b>8.14</b>		pH Units	"	1907419	07/31/19	07/31/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/30/19 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>10.6</b>	0.0100	mmhos/cm	1	1907420	07/31/19	07/31/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/31/19 16:56

**BH1@6'**  
**1907356-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/30/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Benzene</b>	<b>0.18</b>	0.0020	mg/kg	1	1907417	07/30/19	07/30/19	EPA 8260B	
<b>Toluene</b>	<b>0.72</b>	0.050	"	10	"	"	07/30/19	"	
<b>Ethylbenzene</b>	<b>0.41</b>	0.0050	"	1	"	"	07/30/19	"	
<b>Xylenes (total)</b>	<b>1.0</b>	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>38</b>	0.50	"	"	"	"	"	"	

Date Sampled: **07/30/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.9 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		149 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/30/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>C10-C28 (DRO)</b>	<b>1400</b>	50	mg/kg	1	1907403	07/30/19	07/31/19	EPA 8015M	

Date Sampled: **07/30/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		139 %	30-150		"	"	"	"	

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

Date Sampled: **07/30/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>7430</b>	12.3	mg/kg dry	1	1907412	07/30/19	07/30/19	EPA 6020B	
<b>Magnesium</b>	<b>569</b>	6.14	"	"	"	"	"	"	
<b>Sodium</b>	<b>4200</b>	6.14	"	"	"	"	"	"	

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.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/31/19 16:56

**BH1@6'**  
**1907356-05 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **07/30/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	12.6	0.100	units	1	1907435	07/31/19	07/31/19	Calculation	

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

Date Sampled: **07/30/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.5		%	1	1907418	07/31/19	07/31/19	Calculation	
pH	8.63		pH Units	"	1907419	07/31/19	07/31/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/30/19 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.71	0.0100	mmhos/cm	1	1907420	07/31/19	07/31/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/31/19 16:56

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

**Summit Scientific**

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

**Batch 1907417 - EPA 5030 Soil MS**

**Blank (1907417-BLK1)**

Prepared: 07/30/19 Analyzed: 07/31/19

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
Surrogate: 1,2-Dichloroethane-d4	0.0236		"	0.0400		59.0	23-173				
Surrogate: Toluene-d8	0.0356		"	0.0400		89.1	20-170				
Surrogate: 4-Bromofluorobenzene	0.0356		"	0.0400		89.1	21-167				

**LCS (1907417-BS1)**

Prepared: 07/30/19 Analyzed: 07/31/19

Benzene	0.0791	0.0020	mg/kg	0.100		79.1	70-130				
Toluene	0.0841	0.0050	"	0.100		84.1	70-130				
Ethylbenzene	0.112	0.0050	"	0.100		112	70-130				
m,p-Xylene	0.233	0.010	"	0.200		117	70-130				
o-Xylene	0.100	0.0050	"	0.100		100	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0252		"	0.0400		62.9	23-173				
Surrogate: Toluene-d8	0.0368		"	0.0400		92.0	20-170				
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		90.9	21-167				

**Matrix Spike (1907417-MS1)**

Source: 1907354-01

Prepared: 07/30/19 Analyzed: 07/31/19

Benzene	0.0794	0.0020	mg/kg	0.100	ND	79.4	70-130				
Toluene	0.0856	0.0050	"	0.100	ND	85.6	70-130				
Ethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130				
m,p-Xylene	0.231	0.010	"	0.200	ND	115	70-130				
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0246		"	0.0400		61.4	23-173				
Surrogate: Toluene-d8	0.0371		"	0.0400		92.7	20-170				
Surrogate: 4-Bromofluorobenzene	0.0361		"	0.0400		90.2	21-167				

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/31/19 16:56

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

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

**Batch 1907417 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (1907417-MSD1)</b>	<b>Source: 1907354-01</b>			<b>Prepared: 07/30/19 Analyzed: 07/31/19</b>						
Benzene	0.0810	0.0020	mg/kg	0.100	ND	81.0	70-130	1.98	30	
Toluene	0.0873	0.0050	"	0.100	ND	87.3	70-130	1.94	30	
Ethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130	2.00	30	
m,p-Xylene	0.226	0.010	"	0.200	ND	113	70-130	2.14	30	
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130	0.120	30	
Surrogate: 1,2-Dichloroethane-d4	0.0271		"	0.0400		67.6	23-173			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0356		"	0.0400		89.0	21-167			

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/31/19 16:56

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

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

**Batch 1907403 - EPA 3550A**

**Blank (1907403-BLK1)**

Prepared & Analyzed: 07/30/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1907403-BS1)**

Prepared & Analyzed: 07/30/19

C10-C28 (DRO) 545 50 mg/kg 500 109 70-130

**Matrix Spike (1907403-MS1)**

**Source: 1907354-01**

Prepared & Analyzed: 07/30/19

C10-C28 (DRO) 572 50 mg/kg 500 34.7 107 70-130

**Matrix Spike Dup (1907403-MSD1)**

**Source: 1907354-01**

Prepared: 07/30/19 Analyzed: 07/31/19

C10-C28 (DRO) 573 50 mg/kg 500 34.7 108 70-130 0.177 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.*





Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/31/19 16:56

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

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

**Batch 1907412 - General Preparation**

**Blank (1907412-BLK1)**

Prepared & Analyzed: 07/30/19

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

**LCS (1907412-BS1)**

Prepared & Analyzed: 07/30/19

Calcium	536	10.0	mg/kg wet	500	107	70-130			
Magnesium	624	5.00	"	500	125	70-130			
Sodium	561	5.00	"	500	112	70-130			

**Duplicate (1907412-DUP1)**

Source: 1907324-01

Prepared & Analyzed: 07/30/19

Calcium	686	10.2	mg/kg dry	783			13.2	20
Magnesium	179	5.12	"	216			18.4	20
Sodium	13.2	5.12	"	13.8			4.71	20

**Matrix Spike (1907412-MS1)**

Source: 1907324-01

Prepared & Analyzed: 07/30/19

Calcium	1290	10.2	mg/kg dry	512	783	99.8	70-130	
Magnesium	791	5.12	"	512	216	112	70-130	
Sodium	559	5.12	"	512	13.8	107	70-130	

**Matrix Spike Dup (1907412-MSD1)**

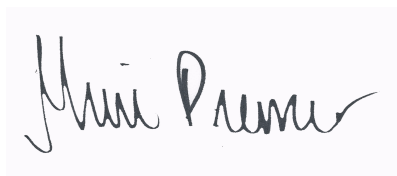
Source: 1907324-01

Prepared & Analyzed: 07/30/19

Calcium	1280	10.2	mg/kg dry	512	783	97.4	70-130	0.957	25
Magnesium	831	5.12	"	512	216	120	70-130	4.92	25
Sodium	576	5.12	"	512	13.8	110	70-130	2.90	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.*





Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/31/19 16:56

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

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

**Batch 1907418 - General Preparation**

<b>Duplicate (1907418-DUP1)</b>		<b>Source: 1907324-01</b>			<b>Prepared &amp; Analyzed: 07/31/19</b>			
% Solids	97.7		%		97.6		0.101	20

**Batch 1907419 - General Preparation**

<b>LCS (1907419-BS1)</b>					<b>Prepared &amp; Analyzed: 07/31/19</b>			
pH	9.45		pH Units	9.23		102	95-105	
<b>Duplicate (1907419-DUP1)</b>		<b>Source: 1907327-01</b>			<b>Prepared &amp; Analyzed: 07/31/19</b>			
pH	8.23		pH Units		8.24		0.121	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.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 07/31/19 16:56

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 1907420 - General Preparation**

**Blank (1907420-BLK1)**

Prepared & Analyzed: 07/31/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (1907420-BS1)**

Prepared & Analyzed: 07/31/19

Specific Conductance (EC) 0.743 0.0100 mmhos/cm 0.750 99.1 90-110

**Duplicate (1907420-DUP1)**

**Source: 1907327-01**

Prepared & Analyzed: 07/31/19

Specific Conductance (EC) 2.54 0.0100 mmhos/cm 2.55 0.236 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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
07/31/19 16:56

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 01, 2019

Jennifer Galles

Talon/LPE

1811 East Mulberry

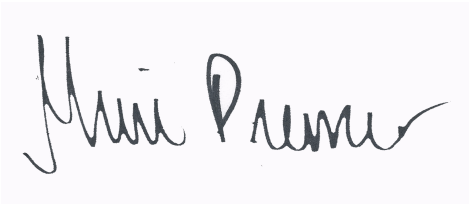
Fort Collins, CO 80525

RE: Horsetail 07 East Test Line

Work Order # 1907379

Enclosed are the results of analyses for samples received by Summit Scientific on 07/31/19 15:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01

Project Manager: Jennifer Galles

**Reported:**  
08/01/19 15:25

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Background North @0'	1907379-01	Soil	07/31/19 11:30	07/31/19 15:00

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.*



Sample Receipt Checklist

S2 Work Order 1907379

Client: TALON/LPE Client Project ID: HORSETAIL OF EAST TEST LINE

Shipped Via: (H.D.) P.U./FedEx/UPS/USPS/Other Airbill #: \_\_\_\_\_

Matrix (check all that apply):      Air   X   Soil/Solid      Water      Other: \_\_\_\_\_  
(Describe)

Temp (°C)	<u>3.8</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	<u>X</u>			
Were all samples received intact <sup>(1)</sup> ?	<u>X</u>			
Was adequate sample volume provided <sup>(1)</sup> ?	<u>X</u>			
If custody seals are present, are they intact <sup>(1)</sup> ?			<u>X</u>	
Are samples with holding times due within 48 hours sample due within 48 hours present?	<u>X</u>			<u>24 HORSETAIL</u>
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	<u>X</u>			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	<u>X</u>			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	<u>X</u>			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	<u>X</u>			
For volatiles in water – is there headspace present? <b>If yes, contact client and note in narrative.</b>			<u>X</u>	
Are samples preserved that require preservation <b>(excluding cooling)</b> <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			<u>X</u>	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			<u>X</u>	
If dissolved metals are requested, were samples field filtered?			<u>X</u>	
<u>Additional Comments (if any):</u>				
<b><sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.</b>				

RE  
Custodian Printed Name or Initials

[Signature]  
Signature of Custodian

07/31/19  
Date/Time 1538



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
08/01/19 15:25

**Background North @0'  
1907379-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/31/19 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1907439	07/31/19	08/01/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/31/19 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		86.8 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		88.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.0 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/31/19 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	1907440	07/31/19	07/31/19	EPA 8015M	

Date Sampled: **07/31/19 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		118 %	30-150		"	"	"	"	

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

Date Sampled: **07/31/19 11:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	<b>501</b>	10.9	mg/kg dry	1	1907438	07/31/19	07/31/19	EPA 6020B	
Magnesium	<b>108</b>	5.43	"	"	"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
08/01/19 15:25

**Background North @0'  
1907379-01 (Soil)**

**Summit Scientific**

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

Sodium	93.5	5.43	mg/kg dry	1	1907438	07/31/19	07/31/19	EPA 6020B
--------	------	------	-----------	---	---------	----------	----------	-----------

**Calculated Analysis**

Date Sampled: **07/31/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>0.988</b>	0.100	units	1	1908016	08/01/19	08/01/19	Calculation	

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

Date Sampled: **07/31/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>92.1</b>		%	1	1908005	08/01/19	08/01/19	Calculation	
pH	<b>7.09</b>		pH Units	"	1908007	08/01/19	08/01/19	EPA 9045D	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **07/31/19 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.334</b>	0.0100	mmhos/cm	1	1908006	08/01/19	08/01/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
08/01/19 15:25

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch 1907439 - EPA 5030 Soil MS

##### Blank (1907439-BLK1)

Prepared: 07/31/19 Analyzed: 08/01/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0351		"	0.0400		87.7		23-173		
Surrogate: Toluene-d8	0.0353		"	0.0400		88.4		20-170		
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400		95.2		21-167		

##### LCS (1907439-BS1)

Prepared: 07/31/19 Analyzed: 08/01/19

Benzene	0.0867	0.0020	mg/kg	0.100		86.7		70-130		
Toluene	0.0817	0.0050	"	0.100		81.7		70-130		
Ethylbenzene	0.0960	0.0050	"	0.100		96.0		70-130		
m,p-Xylene	0.207	0.010	"	0.200		104		70-130		
o-Xylene	0.0902	0.0050	"	0.100		90.2		70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0350		"	0.0400		87.5		23-173		
Surrogate: Toluene-d8	0.0348		"	0.0400		87.1		20-170		
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.4		21-167		

##### Matrix Spike (1907439-MS1)

Source: 1907382-01

Prepared: 07/31/19 Analyzed: 08/01/19

Benzene	0.0732	0.0020	mg/kg	0.100	ND	73.2		70-130		
Toluene	0.0744	0.0050	"	0.100	ND	74.4		70-130		
Ethylbenzene	0.0767	0.0050	"	0.100	ND	76.7		70-130		
m,p-Xylene	0.148	0.010	"	0.200	ND	74.1		70-130		
o-Xylene	0.0757	0.0050	"	0.100	ND	75.7		70-130		
Surrogate: 1,2-Dichloroethane-d4	0.0314		"	0.0400		78.6		23-173		
Surrogate: Toluene-d8	0.0377		"	0.0400		94.3		20-170		
Surrogate: 4-Bromofluorobenzene	0.0373		"	0.0400		93.2		21-167		

Summit Scientific

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



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
08/01/19 15:25

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

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

**Batch 1907439 - EPA 5030 Soil MS**

**Matrix Spike Dup (1907439-MSD1)**

Source: 1907382-01

Prepared: 07/31/19 Analyzed: 08/01/19

Benzene	0.0850	0.0020	mg/kg	0.100	ND	85.0	70-130	14.9	30	
Toluene	0.0819	0.0050	"	0.100	ND	81.9	70-130	9.64	30	
Ethylbenzene	0.0804	0.0050	"	0.100	ND	80.4	70-130	4.66	30	
m,p-Xylene	0.156	0.010	"	0.200	ND	78.2	70-130	5.38	30	
o-Xylene	0.0806	0.0050	"	0.100	ND	80.6	70-130	6.30	30	
Surrogate: 1,2-Dichloroethane-d4	0.0333		"	0.0400		83.2	23-173			
Surrogate: Toluene-d8	0.0380		"	0.0400		95.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0374		"	0.0400		93.4	21-167			

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 08/01/19 15:25

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

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

**Batch 1907440 - EPA 3550A**

**Blank (1907440-BLK1)**

Prepared & Analyzed: 07/31/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1907440-BS1)**

Prepared: 07/31/19 Analyzed: 08/01/19

C10-C28 (DRO) 456 50 mg/kg 500 91.3 70-130

**Matrix Spike (1907440-MS1)**

Source: 1907382-01

Prepared: 07/31/19 Analyzed: 08/01/19

C10-C28 (DRO) 439 50 mg/kg 500 20.8 83.7 70-130

**Matrix Spike Dup (1907440-MSD1)**

Source: 1907382-01

Prepared: 07/31/19 Analyzed: 08/01/19

C10-C28 (DRO) 478 50 mg/kg 500 20.8 91.5 70-130 8.49 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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
08/01/19 15:25

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

**Summit Scientific**

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

**Batch 1907438 - General Preparation**

**Blank (1907438-BLK1)**

Prepared & Analyzed: 07/31/19

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

**LCS (1907438-BS1)**

Prepared & Analyzed: 07/31/19

Calcium	511	10.0	mg/kg wet	500	102	70-130		
Magnesium	519	5.00	"	500	104	70-130		
Sodium	509	5.00	"	500	102	70-130		

**Duplicate (1907438-DUP1)**

Source: 1907379-01

Prepared & Analyzed: 07/31/19

Calcium	468	10.9	mg/kg dry	501			6.72	20
Magnesium	106	5.43	"	108			2.43	20
Sodium	97.2	5.43	"	93.5			3.87	20

**Matrix Spike (1907438-MS1)**

Source: 1907379-01

Prepared & Analyzed: 07/31/19

Calcium	1170	10.9	mg/kg dry	543	501	123	70-130	
Magnesium	630	5.43	"	543	108	96.1	70-130	
Sodium	738	5.43	"	543	93.5	119	70-130	

**Matrix Spike Dup (1907438-MSD1)**

Source: 1907379-01

Prepared & Analyzed: 07/31/19

Calcium	1200	10.9	mg/kg dry	543	501	128	70-130	2.25	25
Magnesium	605	5.43	"	543	108	91.5	70-130	4.02	25
Sodium	745	5.43	"	543	93.5	120	70-130	0.874	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.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 08/01/19 15:25

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

**Summit Scientific**

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

**Batch 1908005 - General Preparation**

<b>Duplicate (1908005-DUP1)</b>		<b>Source: 1907375-05</b>			<b>Prepared &amp; Analyzed: 08/01/19</b>			
% Solids	81.9		%		81.7		0.245	20

**Batch 1908007 - General Preparation**

<b>LCS (1908007-BS1)</b>					<b>Prepared &amp; Analyzed: 08/01/19</b>		
pH	9.44		pH Units	9.23		102	95-105
<b>Duplicate (1908007-DUP1)</b>		<b>Source: 1907375-05</b>			<b>Prepared &amp; Analyzed: 08/01/19</b>		
pH	6.59		pH Units	6.66		1.06	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.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jennifer Galles

**Reported:**  
 08/01/19 15:25

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 1908006 - General Preparation**

**Blank (1908006-BLK1)**

Prepared & Analyzed: 08/01/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (1908006-BS1)**

Prepared & Analyzed: 08/01/19

Specific Conductance (EC) 0.746 0.0100 mmhos/cm 0.750 99.4 90-110

**Duplicate (1908006-DUP1)**

**Source: 1907375-05**

Prepared & Analyzed: 08/01/19

Specific Conductance (EC) 0.0934 0.0100 mmhos/cm 0.0931 0.322 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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jennifer Galles

**Reported:**  
08/01/19 15:25

### Notes and Definitions

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

# Summit Scientific

---

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 26, 2019

Jason Leverton

Talon/LPE

1811 East Mulberry

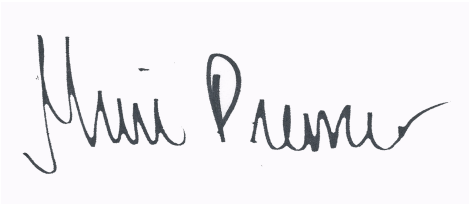
Fort Collins, CO 80525

RE: Horsetail 07 East Test Line

Work Order # 1908230

Enclosed are the results of analyses for samples received by Summit Scientific on 08/19/19 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
08/26/19 15:01

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SW-N@2'	1908230-01	Soil	08/19/19 12:20	08/19/19 16:00
SW-E@2'	1908230-02	Soil	08/19/19 12:25	08/19/19 16:00
SW-S@2'	1908230-03	Soil	08/19/19 12:30	08/19/19 16:00
SW-W@2'	1908230-04	Soil	08/19/19 12:35	08/19/19 16:00
BH-1@6.5'	1908230-05	Soil	08/19/19 12:40	08/19/19 16:00

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.*



**Sample Receipt Checklist**

**1908230**

S2 Work Order \_\_\_\_\_

Client: TALON / LPE Client Project ID: HORSETAIL 07E TEST LINE

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

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

Temp (°C)	2.1
-----------	-----

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C <sup>(1)</sup> ? NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			
Were all samples received intact <sup>(1)</sup> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
If custody seals are present, are they intact <sup>(1)</sup> ?			✓	
Are samples with holding times due within 48 hours sample due within 48 hours present?		✓		
Is a chain-of-custody (COC) form present and filled out completely <sup>(1)</sup> ?	✓			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.			✓	
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

RZ  
Custodian Printed Name or Initials

  
Signature of Custodian

8/19/19  
Date/Time



Talon/LPE	Project: Horsetail 07 East Test Line	
1811 East Mulberry	Project Number: 701530.139.01	<b>Reported:</b>
Fort Collins CO, 80525	Project Manager: Jason Leverton	08/26/19 15:01

**SW-N@2'**  
**1908230-01 (Soil)**

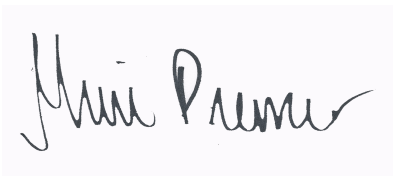
**Summit Scientific**

**Specific Conductance by EPA Method 120.1**

Date Sampled: **08/19/19 12:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Specific Conductance (EC)</b>	<b>0.901</b>	0.0100	mmhos/cm	1	1908271	08/21/19	08/21/19	EPA 120.1	

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.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 08/26/19 15:01

**SW-E@2'**  
**1908230-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/19/19 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	<b>11200</b>	13.3	mg/kg dry	1	1908252	08/20/19	08/20/19	EPA 6020B	
Magnesium	<b>593</b>	6.66	"	"	"	"	"	"	
Sodium	<b>1160</b>	6.66	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/19/19 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	<b>2.89</b>	0.100	units	1	1908290	08/22/19	08/22/19	Calculation	

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

Date Sampled: **08/19/19 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	<b>75.1</b>		%	1	1908270	08/21/19	08/21/19	Calculation	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **08/19/19 12:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Specific Conductance (EC)	<b>1.45</b>	0.0100	mmhos/cm	1	1908271	08/21/19	08/21/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
08/26/19 15:01

**SW-S@2'**  
**1908230-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/19/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Gasoline Range Hydrocarbons	ND	0.50	mg/kg	1	1908321	08/23/19	08/24/19	EPA 8260B	

Date Sampled: **08/19/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		97.6 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		86.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.8 %	21-167		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/19/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1908250	08/20/19	08/21/19	EPA 8015M	

Date Sampled: **08/19/19 12:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		130 %	30-150		"	"	"	"	

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.



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
08/26/19 15:01

**SW-W@2'**  
**1908230-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/19/19 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>2240</b>	11.7	mg/kg dry	1	1908252	08/20/19	08/20/19	EPA 6020B	
<b>Magnesium</b>	<b>316</b>	5.86	"	"	"	"	"	"	
<b>Sodium</b>	<b>354</b>	5.86	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **08/19/19 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Sodium Adsorption Ratio</b>	<b>1.86</b>	0.100	units	1	1908290	08/22/19	08/22/19	Calculation	

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

Date Sampled: **08/19/19 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>% Solids</b>	<b>85.3</b>		%	1	1908270	08/21/19	08/21/19	Calculation	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **08/19/19 12:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Specific Conductance (EC)</b>	<b>0.894</b>	0.0100	mmhos/cm	1	1908271	08/21/19	08/21/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
08/26/19 15:01

**BH-1@6.5'**  
**1908230-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **08/19/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1908251	08/20/19	08/21/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
<b>Gasoline Range Hydrocarbons</b>	<b>21</b>	<b>0.50</b>	"	"	"	"	"	"	

Date Sampled: **08/19/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		122 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		111 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		205 %	21-167		"	"	"	"	S-02

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **08/19/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1908250	08/20/19	08/21/19	EPA 8015M	

Date Sampled: **08/19/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		122 %	30-150		"	"	"	"	

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

Date Sampled: **08/19/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Calcium</b>	<b>11500</b>	18.8	mg/kg dry	1	1908252	08/20/19	08/20/19	EPA 6020B	
<b>Magnesium</b>	<b>1320</b>	9.41	"	"	"	"	"	"	
<b>Sodium</b>	<b>376</b>	9.41	"	"	"	"	"	"	

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.



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 08/26/19 15:01

**BH-1@6.5'**  
**1908230-05 (Soil)**

**Summit Scientific**

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

**Calculated Analysis**

Date Sampled: **08/19/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	<b>0.885</b>	0.100	units	1	1908290	08/22/19	08/22/19	Calculation	

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

Date Sampled: **08/19/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	<b>53.1</b>		%	1	1908270	08/21/19	08/21/19	Calculation	

**Specific Conductance by EPA Method 120.1**

Date Sampled: **08/19/19 12:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	<b>0.612</b>	0.0100	mmhos/cm	1	1908271	08/21/19	08/21/19	EPA 120.1	

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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
08/26/19 15:01

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch 1908251 - EPA 5030 Soil MS

##### Blank (1908251-BLK1)

Prepared: 08/20/19 Analyzed: 08/21/19

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0451		"	0.0400		113	23-173			
Surrogate: Toluene-d8	0.0415		"	0.0400		104	20-170			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.3	21-167			

##### LCS (1908251-BS1)

Prepared: 08/20/19 Analyzed: 08/21/19

Benzene	0.0764	0.0020	mg/kg	0.100		76.4	70-130			
Toluene	0.0911	0.0050	"	0.100		91.1	70-130			
Ethylbenzene	0.0911	0.0050	"	0.100		91.1	70-130			
m,p-Xylene	0.172	0.010	"	0.200		86.0	70-130			
o-Xylene	0.0857	0.0050	"	0.100		85.7	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0411		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0407		"	0.0400		102	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167			

##### Matrix Spike (1908251-MS1)

Source: 1908230-05

Prepared: 08/20/19 Analyzed: 08/21/19

Benzene	0.0727	0.0020	mg/kg	0.100	ND	72.7	70-130			
Toluene	0.0857	0.0050	"	0.100	ND	85.7	70-130			
Ethylbenzene	0.0924	0.0050	"	0.100	ND	92.4	70-130			
m,p-Xylene	0.173	0.010	"	0.200	ND	86.3	70-130			
o-Xylene	0.0862	0.0050	"	0.100	ND	86.2	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	20-170			
Surrogate: 4-Bromofluorobenzene	0.0420		"	0.0400		105	21-167			

Summit Scientific

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



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
08/26/19 15:01

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

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

**Batch 1908251 - EPA 5030 Soil MS**

**Matrix Spike Dup (1908251-MSD1)**

Source: 1908230-05

Prepared: 08/20/19 Analyzed: 08/21/19

Benzene	0.0769	0.0020	mg/kg	0.100	ND	76.9	70-130	5.66	30	
Toluene	0.0927	0.0050	"	0.100	ND	92.7	70-130	7.80	30	
Ethylbenzene	0.0956	0.0050	"	0.100	ND	95.6	70-130	3.38	30	
m,p-Xylene	0.179	0.010	"	0.200	ND	89.5	70-130	3.57	30	
o-Xylene	0.0892	0.0050	"	0.100	ND	89.2	70-130	3.49	30	
Surrogate: 1,2-Dichloroethane-d4	0.0415		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	20-170			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	21-167			

**Batch 1908321 - EPA 5030 Soil MS**

**Blank (1908321-BLK1)**

Prepared: 08/23/19 Analyzed: 08/24/19

Gasoline Range Hydrocarbons	ND	0.50	mg/kg							
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.5	23-173			
Surrogate: Toluene-d8	0.0334		"	0.0400		83.5	20-170			
Surrogate: 4-Bromofluorobenzene	0.0377		"	0.0400		94.2	21-167			

**LCS (1908321-BS1)**

Prepared: 08/23/19 Analyzed: 08/24/19

Surrogate: 1,2-Dichloroethane-d4	0.0324		mg/kg	0.0400		80.9	23-173			
Surrogate: Toluene-d8	0.0352		"	0.0400		88.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.8	21-167			

**Matrix Spike (1908321-MS1)**

Source: 1908272-01

Prepared: 08/23/19 Analyzed: 08/24/19

Surrogate: 1,2-Dichloroethane-d4	0.0341		mg/kg	0.0400		85.4	23-173			
Surrogate: Toluene-d8	0.0362		"	0.0400		90.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0361		"	0.0400		90.2	21-167			

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 08/26/19 15:01

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

**Summit Scientific**

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

**Batch 1908321 - EPA 5030 Soil MS**

**Matrix Spike Dup (1908321-MSD1)**

Source: 1908272-01

Prepared: 08/23/19 Analyzed: 08/24/19

Surrogate: 1,2-Dichloroethane-d4	0.0363		mg/kg	0.0400		90.8	23-173			
Surrogate: Toluene-d8	0.0352		"	0.0400		88.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0357		"	0.0400		89.2	21-167			

Summit Scientific

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



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 08/26/19 15:01

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

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

**Batch 1908250 - EPA 3550A**

**Blank (1908250-BLK1)**

Prepared: 08/20/19 Analyzed: 08/21/19

C10-C28 (DRO) ND 50 mg/kg

**LCS (1908250-BS1)**

Prepared: 08/20/19 Analyzed: 08/21/19

C10-C28 (DRO) 503 50 mg/kg 500 101 70-130

**Matrix Spike (1908250-MS1)**

**Source: 1908230-03**

Prepared: 08/20/19 Analyzed: 08/21/19

C10-C28 (DRO) 524 50 mg/kg 500 25.2 99.8 70-130

**Matrix Spike Dup (1908250-MSD1)**

**Source: 1908230-03**

Prepared: 08/20/19 Analyzed: 08/21/19

C10-C28 (DRO) 501 50 mg/kg 500 25.2 95.1 70-130 4.63 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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
08/26/19 15:01

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

**Summit Scientific**

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

**Batch 1908252 - General Preparation**

**Blank (1908252-BLK1)**

Prepared & Analyzed: 08/20/19

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

**LCS (1908252-BS1)**

Prepared & Analyzed: 08/20/19

Calcium	509	10.0	mg/kg wet	500	102	70-130			
Magnesium	542	5.00	"	500	108	70-130			
Sodium	521	5.00	"	500	104	70-130			

**Duplicate (1908252-DUP1)**

Source: 1908233-03

Prepared & Analyzed: 08/20/19

Calcium	991	12.0	mg/kg dry	1010			1.50	20
Magnesium	620	5.98	"	609			1.67	20
Sodium	24.1	5.98	"	24.0			0.509	20

**Matrix Spike (1908252-MS1)**

Source: 1908233-03

Prepared & Analyzed: 08/20/19

Calcium	1610	12.0	mg/kg dry	598	1010	101	70-130	
Magnesium	1320	5.98	"	598	609	118	70-130	
Sodium	703	5.98	"	598	24.0	113	70-130	

**Matrix Spike Dup (1908252-MSD1)**

Source: 1908233-03

Prepared & Analyzed: 08/20/19

Calcium	1630	12.0	mg/kg dry	598	1010	104	70-130	1.16	25
Magnesium	1250	5.98	"	598	609	106	70-130	5.42	25
Sodium	671	5.98	"	598	24.0	108	70-130	4.67	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.*



Talon/LPE	Project: Horsetail 07 East Test Line	
1811 East Mulberry	Project Number: 701530.139.01	<b>Reported:</b>
Fort Collins CO, 80525	Project Manager: Jason Leverton	08/26/19 15:01

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

**Summit Scientific**

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

**Batch 1908270 - General Preparation**

<b>Duplicate (1908270-DUP1)</b>	<b>Source: 1908223-01</b>		<b>Prepared &amp; Analyzed: 08/21/19</b>								
% Solids	97.0		%		97.0			0.00		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.*



Talon/LPE  
 1811 East Mulberry  
 Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
 Project Manager: Jason Leverton

**Reported:**  
 08/26/19 15:01

**Specific Conductance by EPA Method 120.1 - Quality Control**  
**Summit Scientific**

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

**Batch 1908271 - General Preparation**

**Blank (1908271-BLK1)**

Prepared & Analyzed: 08/21/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (1908271-BS1)**

Prepared & Analyzed: 08/21/19

Specific Conductance (EC) 0.724 0.0100 mmhos/cm 0.750 96.6 90-110

**Duplicate (1908271-DUP1)**

**Source: 1908255-01**

Prepared & Analyzed: 08/21/19

Specific Conductance (EC) 0.133 0.0100 mmhos/cm 0.130 2.02 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.*



Talon/LPE  
1811 East Mulberry  
Fort Collins CO, 80525

Project: Horsetail 07 East Test Line

Project Number: 701530.139.01  
Project Manager: Jason Leverton

**Reported:**  
08/26/19 15:01

### 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.
- 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