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Wildhorse 18-1834H Confirmation Sampling

August 6, 2019

Prepared By:

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

Prepared For:

Whiting Oil and Gas Corporation



August 6, 2019

Mr. Kyle Waggoner
Whiting Oil and Gas Corporation
56719 CR 127
New Raymer, CO 80742

**RE: Confirmation Sampling
Wildhorse 18-1834H
Weld County, Colorado
Project # 701530.135.01**

Mr. Waggoner:

On January 29, 2019, Talon/LPE conducted confirmation soil sampling at the Wildhorse 18-1834H (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 ID 460994.

On January 29, 2019, a total of six (6) grab samples (SS-1 through SS-4, BH-1 and BH-2) from depths ranging from 1 to 3 feet below ground surface (ft bgs) were collected from the impacted area. One (1) background sample was collected from the native soil surface. 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.

Analytical results for EC were above COGCC 910-1 concentration level in samples SS-1, SS-2 and SS-4. All analytical results for BTEX, SAR and pH were below laboratory detection limits, as well as COGCC table 910-1 concentration levels. A soil concentration map is presented in Figure 1, 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 depths of one to four (1-4) ft bgs in the areas with inorganic exceedances of COGCC 910-1. On April 5 Talon/LPE personnel collected four (4) grab samples (BH-2, SS-5, SS-6 and SS-7) and submitted them to Summit for analysis of inorganics. Analytical results for EC in SS-7 were below COGCC 910-1 concentration level.

Based on the collected analytical data, further excavation was performed by Whiting contractors to a depth of three (3) ft bgs in the remaining areas with inorganic exceedances of COGCC 910-1. On June 4, 2019, Talon/LPE personnel collected two (2) grab samples (SS-4 and SS-5) and submitted them to Summit for analysis of inorganics. Analytical results for EC in SS-4 and SS-5 were below COGCC 910-1 concentration level.

Due to analytical results from samples collected at, or before, June 4, 2019 being under COGCC Table 910-1 thresholds with the exception of samples collected at three (3) ft bgs BH-



2, SS-1, SS-2 and SS-6, the excavation was delineated to the North, East, South and West of the release to a depth of at least three (3) ft below ground surface.

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 and that the remaining impacts above reclamation standards will be below three (3) ft bgs upon reclamation, Talon/LPE believes that no further corrective action is necessary, and that Whiting can request conditional closure from the COGCC. If you have any questions or comments, please do not hesitate to call me at (970) 818-5330.

Respectfully Submitted,

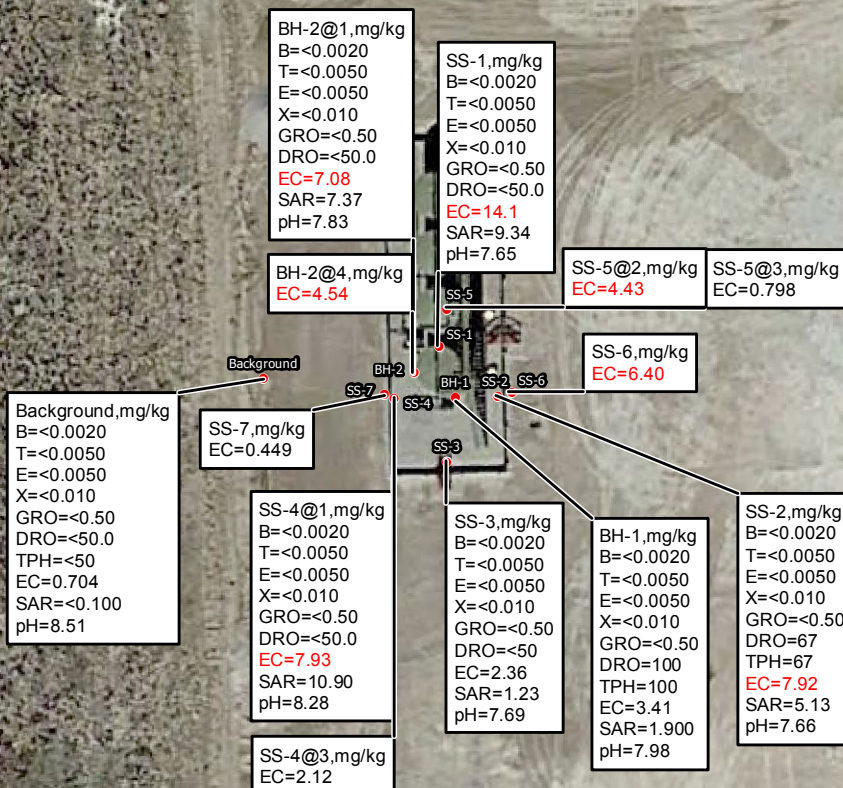
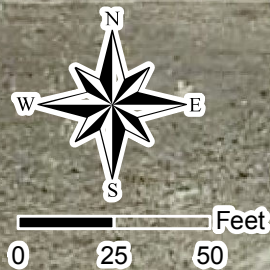
A handwritten signature in black ink, appearing to read "J. Leverton".

Jason Leverton
Environmental Scientist
Talon/LPE

Attachment 1
Figures



LEGEND
• Soil Sample

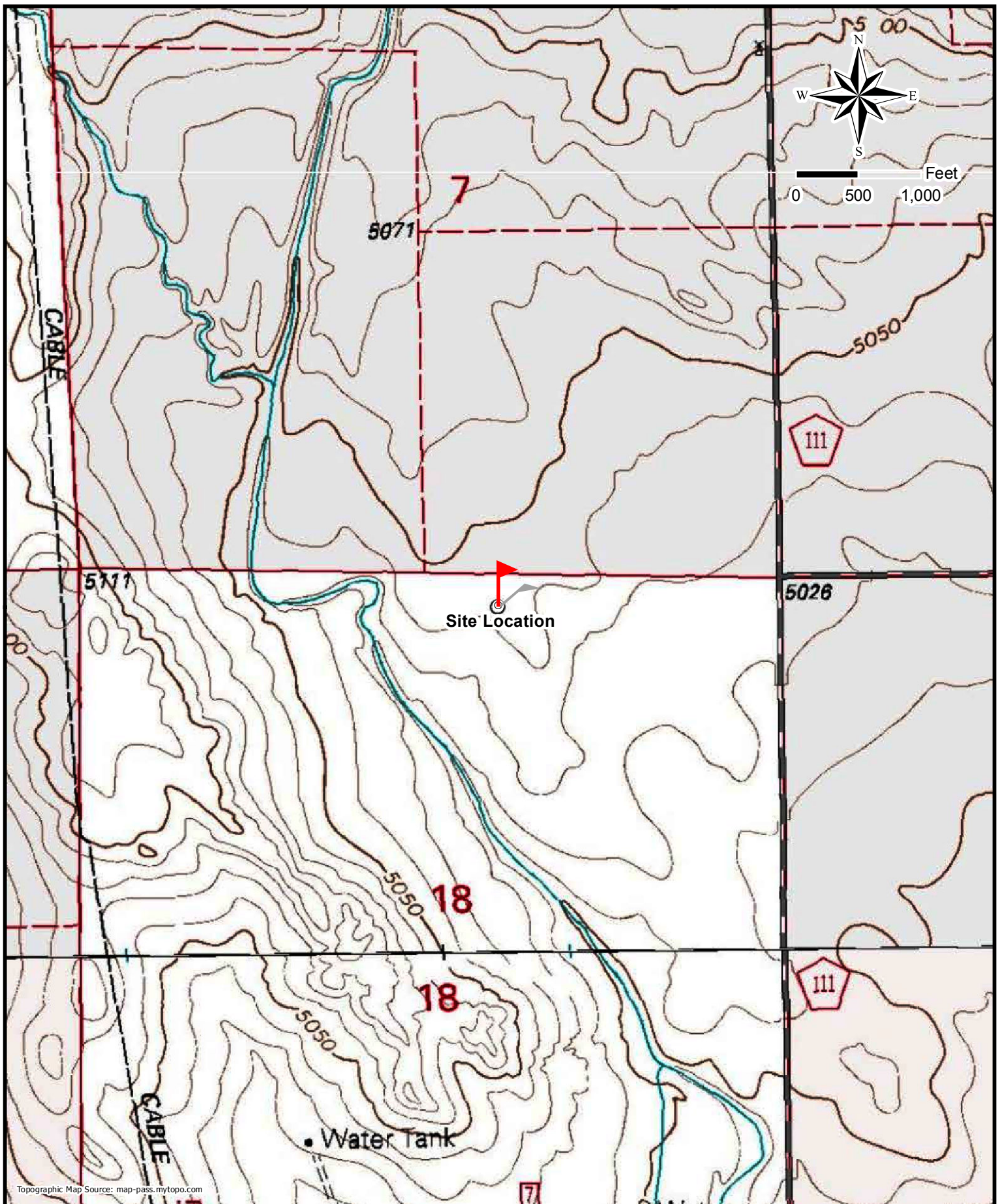


LEGEND	
•	Soil Sample
	COGCC
Concentration Levels	
B=	0.17
T=	85
E=	100
X=	175
TPH=	500
EC=	<4
SAR=	<12
pH=	6-9



Drafted: 6/11/2019
 1 in = 50 ft
 Drafted By: IJM

Whiting Oil and Gas Corporation
 Wildhorse 18-1834H
 Weld County, Colorado
 Soil Concentration map



Topographic Map Source: map-pass.mytopo.com



Drafted: 6/11/2019
1 in = 1,000 ft
Drafted By: IJM

Whiting Oil and Gas Corporation
Wildhorse 18-1834H
Weld County, Colorado
Topographic Map

Attachment 2
Tables



Table 1 - Soil Analytical Data

Whiting Oil & Gas Corporation
Wildhorse 18-1834H
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
COGCC Table 910-1 Concentration Levels			0.17	85	100	175	NA	NA	500	<4	<12	6-9
Background	0	1/29/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50	<50	0.704	<0.100	8.51
BH-1	3	1/29/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	100	100	3.41	1.900	7.98
BH-2	1	1/29/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50.0	ND	7.08	7.37	7.83
	4	4/5/2019								4.54		
SS-1	3	1/29/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50.0	ND	14.1	9.34	7.65
SS-2	3	1/29/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	67	67	7.92	5.13	7.66
SS-3	3	1/29/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50.0	ND	2.36	1.23	7.69
SS-4	1	1/29/2019	<0.0020	<0.0050	<0.0050	<0.010	<0.50	<50.0	ND	7.93	10.90	8.28
	3	6/4/2019								2.12		
SS-5	2	4/5/2019								4.43		
	3	6/4/2019								0.798		
SS-6	3	4/5/2019								6.40		
SS-7	1	4/5/2019								0.449		

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 Report

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 30, 2019

Jennifer Galles

Talon/LPE

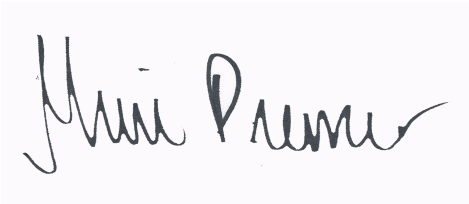
1811 East Mulberry

Fort Collins, CO 80525

RE: Wildhorse 18-1834H

Enclosed are the results of analyses for samples received by Summit Scientific on 01/29/19 16:39. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature is cursive and reads "Muri Premer".

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
Background	1901341-01	Soil	01/29/19 12:27	01/29/19 16:39

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.

1901341

Page 1 of 1

Project Manager:	Jason Leverton
E-Mail:	jleverton@talonlpe.com and lkirk@talonlpe.com
Project Name:	Wildhorse 18-1834H
Project Number:	701530.0135.01

www.s2scientific.com

Sample Receipt Checklist

S2 Work Order 1901341

Client: Talon/CPG - Whiting Client Project ID: Wildhorse 18-1834H

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

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

Temp (°C)	<u>5.1</u>
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Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

Custodian Printed Name or Initials

Signature of Custodian

1.29.18 1645
Date/Time



Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

Background 1901341-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/29/19 12:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1901350	01/29/19	01/30/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/29/19 12:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.2 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/29/19 12:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1901353	"	01/30/19	EPA 8015M	

Date Sampled: **01/29/19 12:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		86.0 %	30-150		"	"	"	"	

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

Date Sampled: **01/29/19 12:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2840	10.5	mg/kg dry	1	1901356	01/29/19	01/29/19	EPA 6020B	
Magnesium	153	5.23	"	"	"	"	"	"	

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H
Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

Background
1901341-01 (Soil)

Summit Scientific

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

Sodium	19.5	5.23	mg/kg dry	1	1901356	01/29/19	01/29/19	EPA 6020B
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Calculated Analysis

Date Sampled: **01/29/19 12:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	ND	0.100	units	1	1901388	01/30/19	01/30/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/29/19 12:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.6		%	1	1901365	01/29/19	01/30/19	Calculation	
pH	8.51		pH Units	"	1901370	01/30/19	01/30/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/29/19 12:27**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.704	0.0100	mmhos/cm	1	1901371	01/30/19	01/30/19	EPA 120.1	

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901350 - Volatiles

Blank (1901350-BLK1)

Prepared: 01/29/19 Analyzed: 01/30/19

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	0.0394		"	0.0400		98.6	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	21-167			

LCS (1901350-BS1)

Prepared: 01/29/19 Analyzed: 01/30/19

Benzene	0.0796	0.0020	mg/kg	0.100		79.6	70-130			
Toluene	0.0790	0.0050	"	0.100		79.0	70-130			
Ethylbenzene	0.0742	0.0050	"	0.100		74.2	70-130			
m,p-Xylene	0.153	0.010	"	0.200		76.4	70-130			
o-Xylene	0.0771	0.0050	"	0.100		77.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.4	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	21-167			

Matrix Spike (1901350-MS1)

Source: 1901333-01

Prepared: 01/29/19 Analyzed: 01/30/19

Benzene	0.0777	0.0020	mg/kg	0.100	ND	77.7	70-130			
Toluene	0.0778	0.0050	"	0.100	ND	77.8	70-130			
Ethylbenzene	0.0757	0.0050	"	0.100	ND	75.7	70-130			
m,p-Xylene	0.143	0.010	"	0.200	ND	71.4	70-130			
o-Xylene	0.0735	0.0050	"	0.100	ND	73.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0400		96.4	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		91.1	21-167			

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901350 - Volatiles

Matrix Spike Dup (1901350-MSD1)

Source: 1901333-01

Prepared: 01/29/19 Analyzed: 01/30/19

Benzene	0.0778	0.0020	mg/kg	0.100	ND	77.8	70-130	0.154	30	
Toluene	0.0767	0.0050	"	0.100	ND	76.7	70-130	1.44	30	
Ethylbenzene	0.0706	0.0050	"	0.100	ND	70.6	70-130	6.93	30	
m,p-Xylene	0.144	0.010	"	0.200	ND	71.9	70-130	0.649	30	
o-Xylene	0.0724	0.0050	"	0.100	ND	72.4	70-130	1.40	30	
Surrogate: 1,2-Dichloroethane-d4	0.0383		"	0.0400		95.7	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0366		"	0.0400		91.6	21-167			

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1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901353 - EPA 3550A

Blank (1901353-BLK1)

Prepared: 01/29/19 Analyzed: 01/30/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901353-BS1)

Prepared: 01/29/19 Analyzed: 01/30/19

C10-C28 (DRO) 528 50 mg/kg 500 106 70-130

Matrix Spike (1901353-MS1)

Source: 1901333-01

Prepared: 01/29/19 Analyzed: 01/30/19

C10-C28 (DRO) 552 50 mg/kg 500 38.0 103 70-130

Matrix Spike Dup (1901353-MSD1)

Source: 1901333-01

Prepared: 01/29/19 Analyzed: 01/30/19

C10-C28 (DRO) 522 50 mg/kg 500 38.0 96.7 70-130 5.63 20

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

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

Summit Scientific

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

Batch 1901356 - General Preparation

Blank (1901356-BLK1)

Prepared & Analyzed: 01/29/19

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

LCS (1901356-BS1)

Prepared & Analyzed: 01/29/19

Calcium	515	10.0	mg/kg wet	500	103	70-130
Magnesium	515	5.00	"	500	103	70-130
Sodium	509	5.00	"	500	102	70-130

Duplicate (1901356-DUP1)

Source: 1901301-01

Prepared & Analyzed: 01/29/19

Calcium	1560	10.8	mg/kg dry	1510	3.30	20
Magnesium	357	5.41	"	349	2.23	20
Sodium	131	5.41	"	130	1.02	20

Matrix Spike (1901356-MS1)

Source: 1901301-01

Prepared & Analyzed: 01/29/19

Calcium	2000	10.8	mg/kg dry	541	1510	90.9	70-130
Magnesium	851	5.41	"	541	349	92.7	70-130
Sodium	651	5.41	"	541	130	96.4	70-130

Matrix Spike Dup (1901356-MSD1)

Source: 1901301-01

Prepared & Analyzed: 01/29/19

Calcium	1960	10.8	mg/kg dry	541	1510	83.9	70-130	1.92	25
Magnesium	811	5.41	"	541	349	85.4	70-130	4.80	25
Sodium	626	5.41	"	541	130	91.8	70-130	3.91	25

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

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

Summit Scientific

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

Batch 1901365 - General Preparation

Duplicate (1901365-DUP1)

Source: 1901341-01

Prepared: 01/29/19 Analyzed: 01/30/19

% Solids	95.7	%		95.6		0.00396	20
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Batch 1901370 - General Preparation

LCS (1901370-BS1)

Prepared & Analyzed: 01/30/19

pH	9.24	pH Units	9.23	100	95-105
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Duplicate (1901370-DUP1)

Source: 1901310-01

Prepared & Analyzed: 01/30/19

pH	8.06	pH Units	8.03	0.373	20
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Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

Specific Conductance by EPA Method 120.1 - Quality Control

Summit Scientific

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

Batch 1901371 - General Preparation

Blank (1901371-BLK1)

Prepared & Analyzed: 01/30/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1901371-BS1)

Prepared & Analyzed: 01/30/19

Specific Conductance (EC) 0.770 0.0100 mmhos/cm 0.750 103 90-110

Duplicate (1901371-DUP1)

Source: 1901310-01

Prepared & Analyzed: 01/30/19

Specific Conductance (EC) 0.398 0.0100 mmhos/cm 0.386 3.00 20

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
01/30/19 17:04

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

January 30, 2019

Jennifer Galles

Talon/LPE

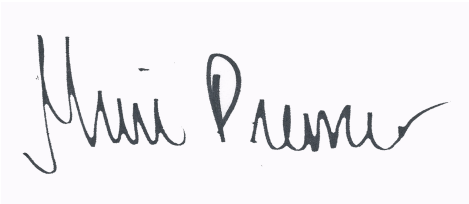
1811 East Mulberry

Fort Collins, CO 80525

RE: Wildhorse 18-1834H

Enclosed are the results of analyses for samples received by Summit Scientific on 01/29/19 16:39. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature is cursive and reads "Muri Premer".

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH-1@3'	1901342-01	Soil	01/29/19 12:10	01/29/19 16:39
BH-2@1'	1901342-02	Soil	01/29/19 12:13	01/29/19 16:39
SS-1@3'	1901342-03	Soil	01/29/19 12:15	01/29/19 16:39
SS-2@3'	1901342-04	Soil	01/29/19 12:17	01/29/19 16:39
SS-3@3'	1901342-05	Soil	01/29/19 12:20	01/29/19 16:39
SS-4@1'	1901342-06	Soil	01/29/19 12:22	01/29/19 16:39

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

1901342

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: Levi Kirk

Project Manager: Jason Leverton
E-Mail: jleverton@talonlpe.com and lkirk@talonlpe.com
Project Name: Wildhorse 18-1834H
Project Number: 701530.0135.01

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:										Special Instructions							
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	BTEX	TPH	EC	SAR	pH													
BH-1 @ 3'	1/29/2019	12:10:00	1			x								x	x	x	x	x											
BH-2 @ 1'	1/29/2019	12:13	1			x								x	x	x	x	x											
SS-1 @ 3'	1/29/2019	12:15	1			x								x	x	x	x	x											
SS-2 @ 3'	1/29/2019	12:17	1			x								x	x	x	x	x											
SS-3 @ 3'	1/29/2019	12:20	1			x								x	x	x	x	x											
SS-4 @ 1'	1/29/2019	12:22	1			x								x	x	x	x	x											
Relinquished by: <i>Levi Kirk</i>				Date/Time: 1-29-19 1639				Received by: <i>[Signature]</i>				Date/Time: 1-29-19 1639				Turn Around Time (Check)													
Relinquished by:				Date/Time:				Received by:				Date/Time:				Same Day <input checked="" type="checkbox"/> 72 Hours <input type="checkbox"/>													
Relinquished by:				Date/Time:				Received by:				Date/Time:				24 Hours <input checked="" type="checkbox"/> Standard <input checked="" type="checkbox"/>													
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				48 Hours <input type="checkbox"/>										Sample Integrity:			
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				Temperature Upon Receipt: 5.1													
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>													

Sample Receipt Checklist

S2 Work Order 1901342

Client: Talon/Lee - Whiting Client Project ID: Wildhorse 18-18344

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

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

Temp (°C)	<u>5.1</u>
-----------	------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? 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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are 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 ⁽¹⁾ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soils, not water
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? 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 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any): 				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

CP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

1-29-19 1830
Date/Time



Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

BH-1@3'
1901342-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/29/19 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	1901350	01/29/19	01/30/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/29/19 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/29/19 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	100	50	mg/kg	1	1901353	"	01/30/19	EPA 8015M	

Date Sampled: **01/29/19 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl		99.0 %	30-150		"	"	"	"	

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

Date Sampled: **01/29/19 12:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	4530	11.8	mg/kg dry	1	1901356	01/29/19	01/29/19	EPA 6020B	
Magnesium	668	5.88	"	"	"	"	"	"	

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H
Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

BH-1@3'
1901342-01 (Soil)

Summit Scientific

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

Sodium	518	5.88	mg/kg dry	1	1901356	01/29/19	01/29/19	EPA 6020B
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Calculated Analysis

Date Sampled: **01/29/19 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.90	0.100	units	1	1901388	01/30/19	01/30/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/29/19 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.0		%	1	1901365	01/29/19	01/30/19	Calculation	
pH	7.98		pH Units	"	1901370	01/30/19	01/30/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/29/19 12:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	3.41	0.0100	mmhos/cm	1	1901371	01/30/19	01/30/19	EPA 120.1	

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

BH-2@1'
1901342-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/29/19 12:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1901350	01/29/19	01/30/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/29/19 12:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		103 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.6 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.3 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/29/19 12:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1901353	"	01/30/19	EPA 8015M	

Date Sampled: **01/29/19 12:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		97.7 %	30-150		"	"	"	"	

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

Date Sampled: **01/29/19 12:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1750	12.2	mg/kg dry	1	1901356	01/29/19	01/29/19	EPA 6020B	
Magnesium	671	6.08	"	"	"	"	"	"	
Sodium	1430	6.08	"	"	"	"	"	"	

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Fort Collins CO, 80525

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Reported:
01/30/19 17:09

BH-2@1'
1901342-02 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **01/29/19 12:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	7.37	0.100	units	1	1901388	01/30/19	01/30/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/29/19 12:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.3		%	1	1901365	01/29/19	01/30/19	Calculation	
pH	7.83		pH Units	"	1901370	01/30/19	01/30/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/29/19 12:13**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	7.08	0.0100	mmhos/cm	1	1901371	01/30/19	01/30/19	EPA 120.1	

Summit Scientific

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1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

SS-1@3'
1901342-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/29/19 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901350	01/29/19	01/30/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/29/19 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/29/19 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901353	"	01/30/19	EPA 8015M	

Date Sampled: **01/29/19 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		98.9 %	30-150		"	"	"	"	

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

Date Sampled: **01/29/19 12:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	5070	11.8	mg/kg dry	1	1901356	01/29/19	01/29/19	EPA 6020B	
Magnesium	823	5.88	"	"	"	"	"	"	
Sodium	2720	5.88	"	"	"	"	"	"	

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1811 East Mulberry
Fort Collins CO, 80525

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Reported:
01/30/19 17:09

SS-1@3'
1901342-03 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **01/29/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	9.34	0.100	units	1	1901388	01/30/19	01/30/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/29/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.0		%	1	1901365	01/29/19	01/30/19	Calculation	
pH	7.65		pH Units	"	1901370	01/30/19	01/30/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/29/19 12:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	14.1	0.0100	mmhos/cm	1	1901371	01/30/19	01/30/19	EPA 120.1	

Summit Scientific

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1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

SS-2@3'
1901342-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/29/19 12:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901350	01/29/19	01/30/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/29/19 12:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/29/19 12:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	67	50	mg/kg	1	1901353	"	01/30/19	EPA 8015M	

Date Sampled: **01/29/19 12:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl		100 %	30-150		"	"	"	"	

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

Date Sampled: **01/29/19 12:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	2270	11.4	mg/kg dry	1	1901356	01/29/19	01/29/19	EPA 6020B	
Magnesium	405	5.70	"	"	"	"	"	"	
Sodium	1010	5.70	"	"	"	"	"	"	

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Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

SS-2@3'
1901342-04 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **01/29/19 12:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.13	0.100	units	1	1901388	01/30/19	01/30/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/29/19 12:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.7		%	1	1901365	01/29/19	01/30/19	Calculation	
pH	7.66		pH Units	"	1901370	01/30/19	01/30/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/29/19 12:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	7.92	0.0100	mmhos/cm	1	1901371	01/30/19	01/30/19	EPA 120.1	

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

SS-3@3'
1901342-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/29/19 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	1901350	01/29/19	01/30/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/29/19 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		95.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.6 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/29/19 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	1901353	"	01/30/19	EPA 8015M	

Date Sampled: **01/29/19 12:20**

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

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

Date Sampled: **01/29/19 12:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Calcium	1520	10.9	mg/kg dry	1	1901356	01/29/19	01/29/19	EPA 6020B	
Magnesium	210	5.44	"	"	"	"	"	"	
Sodium	193	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: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

SS-3@3'
1901342-05 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **01/29/19 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.23	0.100	units	1	1901388	01/30/19	01/30/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/29/19 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.9		%	1	1901365	01/29/19	01/30/19	Calculation	
pH	7.69		pH Units	"	1901370	01/30/19	01/30/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/29/19 12:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.36	0.0100	mmhos/cm	1	1901371	01/30/19	01/30/19	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: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

SS-4@1'
1901342-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/29/19 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1901350	01/29/19	01/30/19	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/29/19 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		107 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.4 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/29/19 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1901353	"	01/30/19	EPA 8015M	

Date Sampled: **01/29/19 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		96.8 %	30-150		"	"	"	"	

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

Date Sampled: **01/29/19 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1420	12.0	mg/kg dry	1	1901356	01/29/19	01/29/19	EPA 6020B	
Magnesium	652	6.01	"	"	"	"	"	"	
Sodium	1970	6.01	"	"	"	"	"	"	

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: Wildhorse 18-1834H
Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

SS-4@1'
1901342-06 (Soil)

Summit Scientific

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

Calculated Analysis

Date Sampled: **01/29/19 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.9	0.100	units	1	1901388	01/30/19	01/30/19	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/29/19 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.2		%	1	1901365	01/29/19	01/30/19	Calculation	
pH	8.28		pH Units	"	1901370	01/30/19	01/30/19	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **01/29/19 12:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	7.93	0.0100	mmhos/cm	1	1901371	01/30/19	01/30/19	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: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901350 - Volatiles

Blank (1901350-BLK1)

Prepared: 01/29/19 Analyzed: 01/30/19

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	0.0394		"	0.0400		98.6	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	21-167			

LCS (1901350-BS1)

Prepared: 01/29/19 Analyzed: 01/30/19

Benzene	0.0796	0.0020	mg/kg	0.100		79.6	70-130			
Toluene	0.0790	0.0050	"	0.100		79.0	70-130			
Ethylbenzene	0.0742	0.0050	"	0.100		74.2	70-130			
m,p-Xylene	0.153	0.010	"	0.200		76.4	70-130			
o-Xylene	0.0771	0.0050	"	0.100		77.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.4	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0370		"	0.0400		92.6	21-167			

Matrix Spike (1901350-MS1)

Source: 1901333-01

Prepared: 01/29/19 Analyzed: 01/30/19

Benzene	0.0777	0.0020	mg/kg	0.100	ND	77.7	70-130			
Toluene	0.0778	0.0050	"	0.100	ND	77.8	70-130			
Ethylbenzene	0.0757	0.0050	"	0.100	ND	75.7	70-130			
m,p-Xylene	0.143	0.010	"	0.200	ND	71.4	70-130			
o-Xylene	0.0735	0.0050	"	0.100	ND	73.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0400		96.4	23-173			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	20-170			
Surrogate: 4-Bromofluorobenzene	0.0364		"	0.0400		91.1	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: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 1901350 - Volatiles

Matrix Spike Dup (1901350-MSD1)		Source: 1901333-01			Prepared: 01/29/19 Analyzed: 01/30/19					
Benzene	0.0778	0.0020	mg/kg	0.100	ND	77.8	70-130	0.154	30	
Toluene	0.0767	0.0050	"	0.100	ND	76.7	70-130	1.44	30	
Ethylbenzene	0.0706	0.0050	"	0.100	ND	70.6	70-130	6.93	30	
m,p-Xylene	0.144	0.010	"	0.200	ND	71.9	70-130	0.649	30	
o-Xylene	0.0724	0.0050	"	0.100	ND	72.4	70-130	1.40	30	
Surrogate: 1,2-Dichloroethane-d4	0.0383		"	0.0400		95.7	23-173			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0366		"	0.0400		91.6	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: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 1901353 - EPA 3550A

Blank (1901353-BLK1)

Prepared: 01/29/19 Analyzed: 01/30/19

C10-C28 (DRO) ND 50 mg/kg

LCS (1901353-BS1)

Prepared: 01/29/19 Analyzed: 01/30/19

C10-C28 (DRO) 528 50 mg/kg 500 106 70-130

Matrix Spike (1901353-MS1)

Source: 1901333-01

Prepared: 01/29/19 Analyzed: 01/30/19

C10-C28 (DRO) 552 50 mg/kg 500 38.0 103 70-130

Matrix Spike Dup (1901353-MSD1)

Source: 1901333-01

Prepared: 01/29/19 Analyzed: 01/30/19

C10-C28 (DRO) 522 50 mg/kg 500 38.0 96.7 70-130 5.63 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: Wildhorse 18-1834H
Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

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

Summit Scientific

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

Batch 1901356 - General Preparation

Blank (1901356-BLK1)

Prepared & Analyzed: 01/29/19

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

LCS (1901356-BS1)

Prepared & Analyzed: 01/29/19

Calcium	515	10.0	mg/kg wet	500	103	70-130
Magnesium	515	5.00	"	500	103	70-130
Sodium	509	5.00	"	500	102	70-130

Duplicate (1901356-DUP1)

Source: 1901301-01

Prepared & Analyzed: 01/29/19

Calcium	1560	10.8	mg/kg dry	1510	3.30	20
Magnesium	357	5.41	"	349	2.23	20
Sodium	131	5.41	"	130	1.02	20

Matrix Spike (1901356-MS1)

Source: 1901301-01

Prepared & Analyzed: 01/29/19

Calcium	2000	10.8	mg/kg dry	541	1510	90.9	70-130
Magnesium	851	5.41	"	541	349	92.7	70-130
Sodium	651	5.41	"	541	130	96.4	70-130

Matrix Spike Dup (1901356-MSD1)

Source: 1901301-01

Prepared & Analyzed: 01/29/19

Calcium	1960	10.8	mg/kg dry	541	1510	83.9	70-130	1.92	25
Magnesium	811	5.41	"	541	349	85.4	70-130	4.80	25
Sodium	626	5.41	"	541	130	91.8	70-130	3.91	25

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

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

Summit Scientific

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

Batch 1901365 - General Preparation

Duplicate (1901365-DUP1)

Source: 1901341-01

Prepared: 01/29/19 Analyzed: 01/30/19

% Solids	95.7	%		95.6		0.00396	20
----------	------	---	--	------	--	---------	----

Batch 1901370 - General Preparation

LCS (1901370-BS1)

Prepared & Analyzed: 01/30/19

pH	9.24	pH Units	9.23	100	95-105
----	------	----------	------	-----	--------

Duplicate (1901370-DUP1)

Source: 1901310-01

Prepared & Analyzed: 01/30/19

pH	8.06	pH Units	8.03	0.373	20
----	------	----------	------	-------	----

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

Specific Conductance by EPA Method 120.1 - Quality Control

Summit Scientific

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

Batch 1901371 - General Preparation

Blank (1901371-BLK1)

Prepared & Analyzed: 01/30/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1901371-BS1)

Prepared & Analyzed: 01/30/19

Specific Conductance (EC) 0.770 0.0100 mmhos/cm 0.750 103 90-110

Duplicate (1901371-DUP1)

Source: 1901310-01

Prepared & Analyzed: 01/30/19

Specific Conductance (EC) 0.398 0.0100 mmhos/cm 0.386 3.00 20

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
01/30/19 17:09

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

April 12, 2019

Jennifer Galles

Talon/LPE

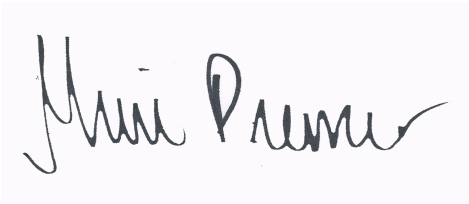
1811 East Mulberry

Fort Collins, CO 80525

RE: Wildhorse 18-1834H

Enclosed are the results of analyses for samples received by Summit Scientific on 04/05/19 16:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature is written in a cursive style and reads "Muri Premer".

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
04/12/19 12:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH-2@4'	1904086-01	Soil	04/05/19 12:30	04/05/19 16:20
SS-5@2'	1904086-02	Soil	04/05/19 12:35	04/05/19 16:20
SS-6@3'	1904086-03	Soil	04/05/19 12:40	04/05/19 16:20
SS-7@1'	1904086-04	Soil	04/05/19 12:45	04/05/19 16:20

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.

Summit Scientific

Page 1 of 1

Project Manager:	Jennifer Galles
E-Mail:	jgalles@talonlpe.com and jleverton@talonlpe.com
Project Name:	Wildhorse 18-1834H
Project Number:	701530.135.01

www.s2scientific.com

Sample Receipt Checklist

S2 Work Order 1904086

Client: Talon LPE/Whiting Client Project ID: W. Idhorse 18-1834H

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

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

Temp (°C)	<u>18.2</u>
-----------	-------------

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ? 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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are 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 ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? 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 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any): 				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

CP
Custodian Printed Name or Initials

[Signature]
Signature of Custodian

4.8.19 1653
Date/Time



Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
04/12/19 12:57

BH-2@4'
1904086-01 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1

Date Sampled: **04/05/19 12:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	4.54	0.0100		mmhos/cm	1	1904150	04/10/19	04/10/19	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: Wildhorse 18-1834H
Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
04/12/19 12:57

SS-5@2'
1904086-02 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1

Date Sampled: **04/05/19 12:35**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	4.43	0.0100		mmhos/cm	1	1904150	04/10/19	04/10/19	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: Wildhorse 18-1834H
Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
04/12/19 12:57

SS-6@3'
1904086-03 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1

Date Sampled: **04/05/19 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	6.40	0.0100		mmhos/cm	1	1904150	04/10/19	04/10/19	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: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
04/12/19 12:57

SS-7@1'
1904086-04 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1

Date Sampled: **04/05/19 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.449	0.0100		mmhos/cm	1	1904150	04/10/19	04/10/19	EPA 120.1	

Summit Scientific

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Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01

Project Manager: Jennifer Galles

Reported:
04/12/19 12:57

Specific Conductance by EPA Method 120.1 - Quality Control

Summit Scientific

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

Batch 1904150 - General Preparation

Blank (1904150-BLK1)

Prepared & Analyzed: 04/10/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1904150-BS1)

Prepared & Analyzed: 04/10/19

Specific Conductance (EC) 0.748 0.0100 mmhos/cm 0.750 99.8 90-110

Duplicate (1904150-DUP1)

Source: 1904084-01

Prepared & Analyzed: 04/10/19

Specific Conductance (EC) 0.678 0.0100 mmhos/cm 0.666 1.79 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: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jennifer Galles

Reported:
04/12/19 12:57

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

June 06, 2019

Jason Leverton

Talon/LPE

1811 East Mulberry

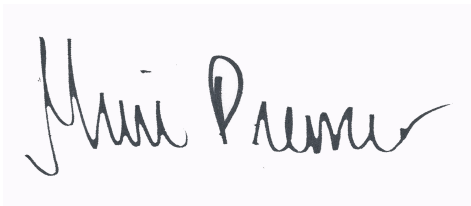
Fort Collins, CO 80525

RE: Wildhorse 18-1834H

Work Order # 1906032

Enclosed are the results of analyses for samples received by Summit Scientific on 06/04/19 17:20. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink on a light blue background. The signature is written in a cursive style and reads "Muri Premer".

Muri Premer For Ben Shrewsbury

Laboratory Manager



Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jason Leverton

Reported:
06/06/19 12:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-4@3'	1906032-01	Soil	06/04/19 12:40	06/04/19 17:20
SS-5@3'	1906032-02	Soil	06/04/19 12:45	06/04/19 17:20

Summit Scientific

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Summit Scientific

1906032

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: Jason Leverton

Project Manager: Jason Leverton
E-Mail: jgalles@talonlpe.com and jleverton@talonlpe.com
Project Name: Wildhorse 18-1834H
Project Number: 701530.135.01

Sample Description	Date Sampled	Time Sampled	Number of Containers	Preservative				Matrix				Analyze For:								Special Instructions				
				HCl	HNO ₃	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	EC												
SS-4@3'	6/4/2019	12:40:00	1			x			x					x										
SS-5@3'	6/4/2019	12:45:00	1			x			x					x										
Relinquished by: <i>Jennifer Galles</i> 6/4/19 1720				Date/Time: 6/4/19 1720				Received by: <i>[Signature]</i> 6/4/19 1720				Date/Time: 6/4/19 1720				Turn Around Time (Check)								on IC9
Relinquished by:				Date/Time:				Received by:				Date/Time:				Same Day <input type="checkbox"/> 72 Hours <input type="checkbox"/> 24 Hours <input type="checkbox"/> Standard <input checked="" type="checkbox"/> 48 Hours <input type="checkbox"/>								
Relinquished by:				Date/Time:				Received in Lab by:				Date/Time:				Sample Integrity: Temperature Upon Receipt: <u>4.8</u> Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>								

Sample Receipt Checklist

S2 Work Order 1906032

Client: Talon / LPE Client Project ID: Wildhorse 18-1234H

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

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

Temp (°C)	4.8
-----------	-----

Thermometer ID: 61857155-K

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

Additional Comments (if any):

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

Custodian Printed Name or Initials

Signature of Custodian

06/04/19
Date/Time 1830



Talon/LPE
1811 East Mulberry
Fort Collins CO, 80525

Project: Wildhorse 18-1834H
Project Number: 701530.135.01
Project Manager: Jason Leverton

Reported:
06/06/19 12:13

SS-4@3'
1906032-01 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1

Date Sampled: **06/04/19 12:40**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	2.12	0.0100		mmhos/cm	1	1906031	06/05/19	06/05/19	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: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jason Leverton

Reported:
06/06/19 12:13

SS-5@3'
1906032-02 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1

Date Sampled: **06/04/19 12:45**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.798	0.0100		mmhos/cm	1	1906031	06/05/19	06/05/19	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: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jason Leverton

Reported:
06/06/19 12:13

Specific Conductance by EPA Method 120.1 - Quality Control

Summit Scientific

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

Batch 1906031 - General Preparation

Blank (1906031-BLK1)

Prepared & Analyzed: 06/05/19

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (1906031-BS1)

Prepared & Analyzed: 06/05/19

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

Duplicate (1906031-DUP1)

Source: 1906012-01

Prepared & Analyzed: 06/05/19

Specific Conductance (EC) 3.11 0.0100 mmhos/cm 2.99 3.88 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: Wildhorse 18-1834H

Project Number: 701530.135.01
Project Manager: Jason Leverton

Reported:
06/06/19 12:13

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