

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

September 30, 2016

Colby Sterling
Talon/LPE
1811 E Mulberry
Ft Collins, CO 80524
RE: Razor 12F

Enclosed are the results of analyses for samples received by Summit Scientific on 09/29/16 18:05. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F

Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P-2@12"	1609199-01	Soil	09/29/16 11:20	09/29/16 18:05
UL-3@12"	1609199-02	Soil	09/29/16 11:26	09/29/16 18:05
UL-6	1609199-03	Soil	09/29/16 11:31	09/29/16 18:05
UL-7	1609199-04	Soil	09/29/16 11:35	09/29/16 18:05
UL-8	1609199-05	Soil	09/29/16 11:38	09/29/16 18:05
UL-9	1609199-06	Soil	09/29/16 11:41	09/29/16 18:05
UL-10	1609199-07	Soil	09/29/16 11:43	09/29/16 18:05
UL-11	1609199-08	Soil	09/29/16 11:45	09/29/16 18:05
UL-5@12"	1609199-09	Soil	09/29/16 11:48	09/29/16 18:05

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F

Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

Summit Scientific *1609189*

741 Corporate Circle Suite 1 ♦ Golden, Colorado 80401
303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: Talon/LPE - Bill Whiting Petroleum	Project Manager: Colby Sterling
Address: 1811 East Mulberry	E-Mail: csterling@talonlpe.com
City/State/Zip: Fort Collins, CO 80524	Project Name: Razor 12F
Phone: 970-818-5330 Fax:	Project Number: 701530.064.03
Sampler Name: Jason Leverton / Colby Sterling	

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)	GRO/DRO	BTEX	EC	SAR	pH	
P-2 @ 12"	9/29/2016	11:20	1		x			x				x	x	x	x	x	
UL-3 @ 12"	9/29/2016	11:26	1		x			x				x	x	x	x	x	
UL-6	9/29/2016	11:31	1		x			x				x	x	x	x	x	
UL-7	9/29/2016	11:35	1		x			x				x	x	x	x	x	
UL-8	9/29/2016	11:38	1		x			x				x	x	x	x	x	
UL-9	9/29/2016	11:41	1		x			x				x	x	x	x	x	
UL-10	9/29/2016	11:43	1		x			x				x	x	x	x	x	
UL-11	9/29/2016	11:45	1		x			x				x	x	x	x	x	
UL-5 @ 12"	9/29/2016	11:48	1		x			x				x	x	x	x	x	
Relinquished by: <i>[Signature]</i> Date/Time: 9-29-16 16:00				Received by: <i>[Signature]</i> Date/Time: 9-29-16 16:00				Turn Around Time (Check)				Notes:					
								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: <i>[Signature]</i> Date/Time: 9-29-16 14:00				Sample Integrity:				Temperature Upon Receipt: 23.7					
								Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>									

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S₂

Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F

Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

Sample Receipt Checklist

S2 Work Order: 1609159

Client: Talon Client Project ID: Razor 12F

Shipped Via: P.U. (UPS, FedEx, Hand Delivered, Pick-up, etc.) Airbill #: _____

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

Cooler ID					
Temp (°C)	<u>23.7</u>				

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature just above 0°C to ≤ 6°C ⁽¹⁾ ?			X	
NOTE: If samples are delivered the same day of sampling, this requirement is waived provided that there is evidence that cooling has begun.				
Were all samples received intact ⁽¹⁾ ?	X			
Was adequate sample volume provided ⁽¹⁾ ?	X			
If custody seals are present, are they intact ⁽¹⁾ ?			X	
Are short holding time analytes or samples with HTs due within 48 hours present?	X			
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⁾ ?			X	
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⁾ ?			X	
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.

Muri P.
Custodian Printed Name

MS 9-29-16
Signature or Initials of Custodian

17:45
Date/Time



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

P-2@12"
1609199-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/16 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609247	09/29/16	09/29/16	8015M	

Date Sampled: **09/29/16 11:20**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/16 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609246	09/29/16	09/29/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/29/16 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

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

Date Sampled: **09/29/16 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8830	13.4	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	535	6.72	"	"	"	"	"	"	

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P-2@12"
1609199-01 (Soil)

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	516	6.72	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium Adsorption Ratio	1.44		units	"	1609259	09/30/16	09/30/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/29/16 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.756	0.0100	mmhos/cm	1	1609245	09/29/16	09/30/16	SM 2510B	
% Solids	74.4		%	"	1609248	09/30/16	09/30/16	% calculation	
pH	10.7	0.100	pH Units	"	1609244	09/29/16	09/30/16	EPA 9045	

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Project: Razor 12F
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Reported:
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UL-3@12"
1609199-02 (Soil)

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Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/16 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609247	09/29/16	09/29/16	8015M	

Date Sampled: **09/29/16 11:26**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/16 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609246	09/29/16	09/29/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/29/16 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		97.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

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

Date Sampled: **09/29/16 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	9740	11.3	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	553	5.63	"	"	"	"	"	"	

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UL-3@12"
1609199-02 (Soil)

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	443	5.63	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium Adsorption Ratio	1.18		units	"	1609259	09/30/16	09/30/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/29/16 11:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	75.2		%	1	1609248	09/30/16	09/30/16	% calculation	
Specific Conductance (EC)	1.18	0.0100	mmhos/cm	"	1609245	09/29/16	09/30/16	SM 2510B	
pH	9.83	0.100	pH Units	"	1609244	09/29/16	09/30/16	EPA 9045	

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Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

UL-6
1609199-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/16 11:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609247	09/29/16	09/29/16	8015M	

Date Sampled: **09/29/16 11:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		92.4 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/16 11:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609246	09/29/16	09/29/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/29/16 11:31**

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

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

Date Sampled: **09/29/16 11:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1350	9.44	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	229	4.72	"	"	"	"	"	"	

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Project: Razor 12F
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Reported:
 09/30/16 17:02

UL-6
1609199-03 (Soil)

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	38.0	4.72	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium Adsorption Ratio	0.252		units	"	1609259	09/30/16	09/30/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/29/16 11:31**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.9		%	1	1609248	09/30/16	09/30/16	% calculation	
Specific Conductance (EC)	0.554	0.0100	mmhos/cm	"	1609245	09/29/16	09/30/16	SM 2510B	
pH	9.15	0.100	pH Units	"	1609244	09/29/16	09/30/16	EPA 9045	

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Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
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Reported:
09/30/16 17:02

UL-7
1609199-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/16 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609247	09/29/16	09/29/16	8015M	

Date Sampled: **09/29/16 11:35**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/16 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609246	09/29/16	09/29/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/29/16 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

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

Date Sampled: **09/29/16 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1900	8.55	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	277	4.27	"	"	"	"	"	"	

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Project: Razor 12F

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UL-7
1609199-04 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	196	4.27	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium Adsorption Ratio	1.11		units	"	1609259	09/30/16	09/30/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/29/16 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.58	0.100	pH Units	1	1609244	09/29/16	09/30/16	EPA 9045	
% Solids	95.9		%	"	1609248	09/30/16	09/30/16	% calculation	
Specific Conductance (EC)	1.96	0.0100	mmhos/cm	"	1609245	09/29/16	09/30/16	SM 2510B	

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Project: Razor 12F
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Reported:
09/30/16 17:02

UL-8
1609199-05 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/16 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609247	09/29/16	09/29/16	8015M	

Date Sampled: **09/29/16 11:38**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/16 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609246	09/29/16	09/29/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/29/16 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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

Date Sampled: **09/29/16 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1450	9.90	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	187	4.95	"	"	"	"	"	"	

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Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

UL-8
1609199-05 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	607	4.95	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium Adsorption Ratio	3.99		units	"	1609259	09/30/16	09/30/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/29/16 11:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.21	0.0100	mmhos/cm	1	1609245	09/29/16	09/30/16	SM 2510B	
% Solids	84.2		%	"	1609248	09/30/16	09/30/16	% calculation	
pH	10.4	0.100	pH Units	"	1609244	09/29/16	09/30/16	EPA 9045	

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

UL-9
1609199-06 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/16 11:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609247	09/29/16	09/30/16	8015M	

Date Sampled: **09/29/16 11:41**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/16 11:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609246	09/29/16	09/29/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/29/16 11:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.8 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		102 %	21-167		"	"	"	"	

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

Date Sampled: **09/29/16 11:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2190	9.67	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	195	4.84	"	"	"	"	"	"	

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

UL-9
1609199-06 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	846	4.84	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium Adsorption Ratio	4.65		units	"	1609259	09/30/16	09/30/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/29/16 11:41**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.7		%	1	1609248	09/30/16	09/30/16	% calculation	
Specific Conductance (EC)	1.98	0.0100	mmhos/cm	"	1609245	09/29/16	09/30/16	SM 2510B	
pH	11.6	0.100	pH Units	"	1609244	09/29/16	09/30/16	EPA 9045	

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

UL-10
1609199-07 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/16 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609247	09/29/16	09/30/16	8015M	

Date Sampled: **09/29/16 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		92.8 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/16 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609246	09/29/16	09/29/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/29/16 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.5 %	21-167		"	"	"	"	

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

Date Sampled: **09/29/16 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1200	7.62	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	147	3.81	"	"	"	"	"	"	

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Talon/LPE
 1811 E Mulberry
 Ft Collins CO, 80524

Project: Razor 12F
 Project Number: [none701530.064.03]
 Project Manager: Colby Sterling

Reported:
 09/30/16 17:02

UL-10
1609199-07 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	611	3.81	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium Adsorption Ratio	4.43		units	"	1609259	09/30/16	09/30/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/29/16 11:43**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	1609248	09/30/16	09/30/16	% calculation	
pH	10.4	0.100	pH Units	"	1609244	09/29/16	09/30/16	EPA 9045	
Specific Conductance (EC)	2.15	0.0100	mmhos/cm	"	1609245	09/29/16	09/30/16	SM 2510B	

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

UL-11
1609199-08 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609247	09/29/16	09/30/16	8015M	

Date Sampled: **09/29/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		92.5 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0018	mg/kg	1	1609246	09/29/16	09/29/16	EPA 8260B	
Toluene	ND	0.0045	"	"	"	"	"	"	
Ethylbenzene	ND	0.0045	"	"	"	"	"	"	
Xylenes (total)	ND	0.0045	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.45	"	"	"	"	"	"	

Date Sampled: **09/29/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

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

Date Sampled: **09/29/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2360	10.9	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	270	5.47	"	"	"	"	"	"	

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Talon/LPE
 1811 E Mulberry
 Ft Collins CO, 80524

Project: Razor 12F
 Project Number: [none701530.064.03]
 Project Manager: Colby Sterling

Reported:
 09/30/16 17:02

UL-11
1609199-08 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	798	5.47	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium Adsorption Ratio	4.15		units	"	1609259	09/30/16	09/30/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/29/16 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4		%	1	1609248	09/30/16	09/30/16	% calculation	
Specific Conductance (EC)	2.97	0.0100	mmhos/cm	"	1609245	09/29/16	09/30/16	SM 2510B	
pH	10.1	0.100	pH Units	"	1609244	09/29/16	09/30/16	EPA 9045	

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

UL-5@12"
1609199-09 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/29/16 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1609247	09/29/16	09/30/16	8015M	

Date Sampled: **09/29/16 11:48**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/29/16 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1609246	09/29/16	09/29/16	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.0050	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **09/29/16 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.4 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %	21-167		"	"	"	"	

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

Date Sampled: **09/29/16 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	6070	11.4	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	496	5.71	"	"	"	"	"	"	

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

UL-5@12"
1609199-09 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium	773	5.71	mg/kg dry	1	1609250	09/30/16	09/30/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium Adsorption Ratio	2.56		units	"	1609259	09/30/16	09/30/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/29/16 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	74.2		%	1	1609248	09/30/16	09/30/16	% calculation	
pH	8.20	0.100	pH Units	"	1609244	09/29/16	09/30/16	EPA 9045	
Specific Conductance (EC)	7.45	0.0100	mmhos/cm	"	1609245	09/29/16	09/30/16	SM 2510B	

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F

Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

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 1609247 - EPA 3550A

Blank (1609247-BLK1)

Prepared & Analyzed: 09/29/16

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	<i>11.8</i>		"	<i>12.5</i>		<i>94.3</i>	<i>30-150</i>				

LCS (1609247-BS1)

Prepared & Analyzed: 09/29/16

C10-C28 (DRO)	418	50	mg/kg	499		83.9	73-134				
<i>Surrogate: o-Terphenyl</i>	<i>12.2</i>		"	<i>12.5</i>		<i>97.4</i>	<i>30-150</i>				

Matrix Spike (1609247-MS1)

Source: 1609199-01

Prepared & Analyzed: 09/29/16

C10-C28 (DRO)	435	50	mg/kg	490	15.5	85.6	50-148				
<i>Surrogate: o-Terphenyl</i>	<i>14.4</i>		"	<i>12.3</i>		<i>117</i>	<i>30-150</i>				

Matrix Spike Dup (1609247-MSD1)

Source: 1609199-01

Prepared & Analyzed: 09/29/16

C10-C28 (DRO)	424	50	mg/kg	488	15.5	83.6	50-148	2.67		20	
<i>Surrogate: o-Terphenyl</i>	<i>13.7</i>		"	<i>12.2</i>		<i>112</i>	<i>30-150</i>				

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

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 1609246 - EPA 5030 Soil MS

Blank (1609246-BLK1)

Prepared & Analyzed: 09/29/16

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.0050	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0422</i>		<i>"</i>	<i>0.0400</i>		<i>106</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0401</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>21-167</i>			

LCS (1609246-BS1)

Prepared & Analyzed: 09/29/16

Benzene	0.109	0.0020	mg/kg	0.100		109	58-130			
Toluene	0.113	0.0050	"	0.100		113	61-134			
Ethylbenzene	0.116	0.0050	"	0.0992		116	74-139			
m,p-Xylene	0.213	0.010	"	0.200		107	73-137			
o-Xylene	0.113	0.0050	"	0.0980		115	73-141			
Xylenes (total)	0.326	0.0050	"				30-150			
Gasoline Range Hydrocarbons	2.34	0.50	"				30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0442</i>		<i>"</i>	<i>0.0400</i>		<i>111</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0412</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>21-167</i>			

Matrix Spike (1609246-MS1)

Source: 1609199-01

Prepared & Analyzed: 09/29/16

Benzene	0.103	0.0020	mg/kg	0.0926	ND	111	30-131			
Toluene	0.110	0.0050	"	0.0926	ND	119	30-134			
Ethylbenzene	0.116	0.0050	"	0.0919	ND	126	22-153			
m,p-Xylene	0.214	0.010	"	0.185	ND	116	10-159			
o-Xylene	0.112	0.0050	"	0.0907	ND	123	31-151			
Xylenes (total)	0.325	0.0050	"		ND		30-150			
Gasoline Range Hydrocarbons	2.41	0.50	"		ND		30-150			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0406</i>		<i>"</i>	<i>0.0370</i>		<i>110</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0379</i>		<i>"</i>	<i>0.0370</i>		<i>102</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0367</i>		<i>"</i>	<i>0.0370</i>		<i>99.0</i>	<i>21-167</i>			

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

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 1609246 - EPA 5030 Soil MS

Matrix Spike Dup (1609246-MSD1)	Source: 1609199-01			Prepared: 09/29/16		Analyzed: 09/30/16				
Benzene	0.112	0.0020	mg/kg	0.0973	ND	115	30-131	8.88	34	
Toluene	0.119	0.0050	"	0.0973	ND	122	30-134	7.17	30	
Ethylbenzene	0.130	0.0050	"	0.0965	ND	135	22-153	11.6	24	
m,p-Xylene	0.237	0.010	"	0.194	ND	122	10-159	10.4	68	
o-Xylene	0.123	0.0050	"	0.0953	ND	129	31-151	9.31	38	
Xylenes (total)	0.360	0.0050	"		ND		30-150	10.0	20	
Gasoline Range Hydrocarbons	2.67	0.50	"		ND		30-150	10.1	20	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0423</i>		<i>"</i>	<i>0.0389</i>		<i>109</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0383</i>		<i>"</i>	<i>0.0389</i>		<i>98.3</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0385</i>		<i>"</i>	<i>0.0389</i>		<i>99.0</i>	<i>21-167</i>			

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

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

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

Batch 1609250 - General Preparation

Blank (1609250-BLK1)

Prepared & Analyzed: 09/30/16

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

LCS (1609250-BS1)

Prepared & Analyzed: 09/30/16

Calcium	472	10.0	mg/kg wet	500	94.3	82.9-118			
Magnesium	478	5.00	"	500	95.6	77.1-123			
Sodium	401	5.00	"	500	80.2	71-129			

Duplicate (1609250-DUP1)

Source: 1609119-04

Prepared & Analyzed: 09/30/16

Calcium	11300	8.50	mg/kg dry	12800			12.3	200	
Magnesium	952	4.25	"	1080			12.8	200	
Sodium	4750	4.25	"	4820			1.38	200	

Matrix Spike (1609250-MS1)

Source: 1609119-04

Prepared & Analyzed: 09/30/16

Calcium	10200	8.50	mg/kg dry	425	12800	NR	75-125		QM-02
Magnesium	1140	4.25	"	425	1080	12.6	75-125		QM-02
Sodium	4970	4.25	"	425	4820	36.2	75-125		QM-02

Matrix Spike Dup (1609250-MSD1)

Source: 1609119-04

Prepared & Analyzed: 09/30/16

Calcium	10000	8.50	mg/kg dry	425	12800	NR	75-125	1.85	25	QM-02
Magnesium	1280	4.25	"	425	1080	45.9	75-125	11.7	25	QM-02
Sodium	5010	4.25	"	425	4820	44.4	75-125	0.697	25	QM-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 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

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

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

Batch 1609244 - General Preparation

LCS (1609244-BS1)					Prepared & Analyzed: 09/29/16					
pH	6.04	0.100	pH Units	6.00	101	95-105				
Duplicate (1609244-DUP1)					Source: 1609195-01 Prepared & Analyzed: 09/29/16					
pH	8.17	0.100	pH Units	8.23	0.732	20				

Batch 1609245 - General Preparation

Blank (1609245-BLK1)					Prepared & Analyzed: 09/29/16					
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (1609245-BS1)					Prepared & Analyzed: 09/29/16					
Specific Conductance (EC)	0.0997	0.00200	mmhos/cm	0.100	99.7	90-110				
Duplicate (1609245-DUP1)					Source: 1609195-01 Prepared & Analyzed: 09/29/16					
Specific Conductance (EC)	0.285	0.0100	mmhos/cm	0.306	7.01	20				

Batch 1609248 - General Preparation

Duplicate (1609248-DUP1)					Source: 1609176-02 Prepared & Analyzed: 09/30/16					
% Solids	60.3		%	60.7	0.661	20				

Summit Scientific

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1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F

Project Number: [none701530.064.03]
Project Manager: Colby Sterling

Reported:
09/30/16 17:02

Notes and Definitions

- QM-02 The RPD and/or percent recovery for this QC spike sample cannot be accurately calculated due to the high concentration of analyte inherent in the sample.
- 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