

Summit Scientific

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October 05, 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 10/04/16 15:10. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Paul Shrewsbury
President



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F

Project Number: 701530.064.03
Project Manager: Colby Sterling

Reported:
10/05/16 16:13

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
P-2@24"	1610043-01	Soil	10/04/16 10:50	10/04/16 15:10
UL-3@24"	1610043-02	Soil	10/04/16 10:26	10/04/16 15:10
UL-5@24"	1610043-03	Soil	10/04/16 10:46	10/04/16 15:10
UL-6@12"	1610043-04	Soil	10/04/16 10:22	10/04/16 15:10
UL-8@12"	1610043-05	Soil	10/04/16 10:34	10/04/16 15:10
UL-9@12"	1610043-06	Soil	10/04/16 10:30	10/04/16 15:10
UL-10@12"	1610043-07	Soil	10/04/16 10:38	10/04/16 15:10
UL-11@12"	1610043-08	Soil	10/04/16 10:42	10/04/16 15:10

Summit Scientific

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Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F

Project Number: 701530.064.03
Project Manager: Colby Sterling

Reported:
10/05/16 16:13

Sample Receipt Checklist

S2 Work Order: 1610043

Client: Talon Client Project ID: Razor 12F

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

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

Cooler ID					
Temp (°C)	<u>21.1</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 10-4-16
Signature or Initials of Custodian

17:50
Date/Time



Talon/LPE
1811 E Mulberry
Ft Collins CO, 80524

Project: Razor 12F
Project Number: 701530.064.03
Project Manager: Colby Sterling

Reported:
10/05/16 16:13

P-2@24"
1610043-01 (Soil)

Summit Scientific

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

Date Sampled: **10/04/16 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	3880	13.4	mg/kg dry	1	1610044	10/05/16	10/05/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	417	6.70	"	"	"	"	"	"	
Sodium	1060	6.70	"	"	"	"	"	"	
Sodium Adsorption Ratio	4.32		units	"	1610056	10/05/16	10/05/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/16 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	9.00	0.100	pH Units	1	1610042	10/05/16	10/05/16	EPA 9045	
% Solids	74.6		%	"	1610043	"	10/05/16	% calculation	
Specific Conductance (EC)	1.26	0.0100	mmhos/cm	"	1610041	10/05/16	10/05/16	SM 2510B	

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Reported:
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UL-3@24"
1610043-02 (Soil)

Summit Scientific

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

Date Sampled: **10/04/16 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2940	12.7	mg/kg dry	1	1610044	10/05/16	10/05/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	288	6.34	"	"	"	"	"	"	
Sodium	924	6.34	"	"	"	"	"	"	
Sodium Adsorption Ratio	4.35		units	"	1610056	10/05/16	10/05/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/16 10:26**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.38	0.0100	mmhos/cm	1	1610041	10/05/16	10/05/16	SM 2510B	
pH	8.88	0.100	pH Units	"	1610042	10/05/16	10/05/16	EPA 9045	
% Solids	78.9		%	"	1610043	"	10/05/16	% calculation	

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Project: Razor 12F
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Reported:
10/05/16 16:13

UL-5@24"
1610043-03 (Soil)

Summit Scientific

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

Date Sampled: **10/04/16 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1610	13.0	mg/kg dry	1	1610044	10/05/16	10/05/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	253	6.51	"	"	"	"	"	"	
Sodium	1100	6.51	"	"	"	"	"	"	
Sodium Adsorption Ratio	6.73		units	"	1610056	10/05/16	10/05/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/16 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.64	0.100	pH Units	1	1610042	10/05/16	10/05/16	EPA 9045	
% Solids	76.8		%	"	1610043	"	10/05/16	% calculation	
Specific Conductance (EC)	2.00	0.0100	mmhos/cm	"	1610041	10/05/16	10/05/16	SM 2510B	

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Reported:
10/05/16 16:13

UL-6@12"
1610043-04 (Soil)

Summit Scientific

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

Date Sampled: **10/04/16 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2350	11.4	mg/kg dry	1	1610044	10/05/16	10/05/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	176	5.68	"	"	"	"	"	"	
Sodium	233	5.68	"	"	"	"	"	"	
Sodium Adsorption Ratio	1.25		units	"	1610056	10/05/16	10/05/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/16 10:22**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0		%	1	1610043	10/05/16	10/05/16	% calculation	
Specific Conductance (EC)	0.462	0.0100	mmhos/cm	"	1610041	10/05/16	10/05/16	SM 2510B	
pH	8.86	0.100	pH Units	"	1610042	10/05/16	10/05/16	EPA 9045	

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Project: Razor 12F
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Reported:
10/05/16 16:13

UL-8@12"
1610043-05 (Soil)

Summit Scientific

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

Date Sampled: **10/04/16 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1710	11.5	mg/kg dry	1	1610044	10/05/16	10/05/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	269	5.75	"	"	"	"	"	"	
Sodium	1100	5.75	"	"	"	"	"	"	
Sodium Adsorption Ratio	6.53		units	"	1610056	10/05/16	10/05/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/16 10:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.9		%	1	1610043	10/05/16	10/05/16	% calculation	
Specific Conductance (EC)	2.51	0.0100	mmhos/cm	"	1610041	10/05/16	10/05/16	SM 2510B	
pH	8.57	0.100	pH Units	"	1610042	10/05/16	10/05/16	EPA 9045	

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Reported:
10/05/16 16:13

UL-9@12"
1610043-06 (Soil)

Summit Scientific

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

Date Sampled: **10/04/16 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1300	12.1	mg/kg dry	1	1610044	10/05/16	10/05/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	232	6.05	"	"	"	"	"	"	
Sodium	670	6.05	"	"	"	"	"	"	
Sodium Adsorption Ratio	4.50		units	"	1610056	10/05/16	10/05/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/16 10:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.6		%	1	1610043	10/05/16	10/05/16	% calculation	
pH	8.46	0.100	pH Units	"	1610042	"	10/05/16	EPA 9045	
Specific Conductance (EC)	1.71	0.0100	mmhos/cm	"	1610041	10/05/16	10/05/16	SM 2510B	

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Reported:
10/05/16 16:13

UL-10@12"
1610043-07 (Soil)

Summit Scientific

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

Date Sampled: **10/04/16 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	3100	12.4	mg/kg dry	1	1610044	10/05/16	10/05/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	477	6.18	"	"	"	"	"	"	
Sodium	921	6.18	"	"	"	"	"	"	
Sodium Adsorption Ratio	4.07		units	"	1610056	10/05/16	10/05/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/16 10:38**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.04	0.0100	mmhos/cm	1	1610041	10/05/16	10/05/16	SM 2510B	
pH	9.35	0.100	pH Units	"	1610042	10/05/16	10/05/16	EPA 9045	
% Solids	80.9		%	"	1610043	"	10/05/16	% calculation	

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Reported:
10/05/16 16:13

UL-11@12"
1610043-08 (Soil)

Summit Scientific

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

Date Sampled: **10/04/16 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2250	12.2	mg/kg dry	1	1610044	10/05/16	10/05/16	EPA 6020/Mod. USDA60 6(2, 3A)	
Magnesium	375	6.11	"	"	"	"	"	"	
Sodium	628	6.11	"	"	"	"	"	"	
Sodium Adsorption Ratio	3.23		units	"	1610056	10/05/16	10/05/16	"	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/16 10:42**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.18	0.100	pH Units	1	1610042	10/05/16	10/05/16	EPA 9045	
% Solids	81.9		%	"	1610043	"	10/05/16	% calculation	
Specific Conductance (EC)	0.729	0.0100	mmhos/cm	"	1610041	10/05/16	10/05/16	SM 2510B	

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Reported:
10/05/16 16:13

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

Summit Scientific

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

Batch 1610044 - General Preparation

Blank (1610044-BLK1)

Prepared & Analyzed: 10/05/16

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

LCS (1610044-BS1)

Prepared & Analyzed: 10/05/16

Calcium	428	10.0	mg/kg wet	500		85.6	82.9-118			
Magnesium	460	5.00	"	500		92.0	77.1-123			
Sodium	471	5.00	"	500		94.2	71-129			

Duplicate (1610044-DUP1)

Source: 1610043-01

Prepared & Analyzed: 10/05/16

Calcium	3140	13.4	mg/kg dry		3880			21.1	200	
Magnesium	371	6.70	"		417			11.7	200	
Sodium	981	6.70	"		1060			7.47	200	

Matrix Spike (1610044-MS1)

Source: 1610043-01

Prepared & Analyzed: 10/05/16

Calcium	4550	13.4	mg/kg dry	670	3880	100	75-125			
Magnesium	960	6.70	"	670	417	81.0	75-125			
Sodium	1580	6.70	"	670	1060	78.7	75-125			

Matrix Spike Dup (1610044-MSD1)

Source: 1610043-01

Prepared & Analyzed: 10/05/16

Calcium	4630	13.4	mg/kg dry	670	3880	112	75-125	1.67	25	
Magnesium	933	6.70	"	670	417	77.0	75-125	2.80	25	
Sodium	1560	6.70	"	670	1060	75.7	75-125	1.27	25	

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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 1610041 - General Preparation

Blank (1610041-BLK1)			Prepared & Analyzed: 10/05/16								
Specific Conductance (EC)	ND	0.0100	mmhos/cm								
LCS (1610041-BS1)			Prepared & Analyzed: 10/05/16								
Specific Conductance (EC)	0.511	0.0100	mmhos/cm	0.500	102	90-110					
Duplicate (1610041-DUP1)			Source: 1610009-01		Prepared & Analyzed: 10/05/16						
Specific Conductance (EC)	5.44	0.0100	mmhos/cm		5.08			7.03	20		

Batch 1610042 - General Preparation

LCS (1610042-BS1)			Prepared & Analyzed: 10/05/16								
pH	8.03	0.100	pH Units	8.00	100	95-105					
Duplicate (1610042-DUP1)			Source: 1610009-01		Prepared & Analyzed: 10/05/16						
pH	7.89	0.100	pH Units		7.92			0.380	20		

Batch 1610043 - General Preparation

Duplicate (1610043-DUP1)			Source: 1610042-01		Prepared & Analyzed: 10/05/16						
% Solids	88.3		%		88.3			0.00	20		

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Project: Razor 12F

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Reported:
10/05/16 16:13

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