



SS05@5'
 B - <0.0020 mg/kg
 T - <0.0050 mg/kg
 E - <0.0050 mg/kg
 X - <0.010 mg/kg
 TPH - <50 mg/kg
 N - <0.010 mg/kg

SS09@3'
 B - <0.0020 mg/kg
 T - <0.0050 mg/kg
 E - <0.0050 mg/kg
 X - <0.010 mg/kg
 TPH - <50 mg/kg
 N - <0.010 mg/kg
 SAR - 0.224
 EC - 0.157 mmhos/cm
 pH - 8.49

SS02@3'
 B - <0.0020 mg/kg
 T - <0.0050 mg/kg
 E - <0.0050 mg/kg
 X - <0.010 mg/kg
 TPH - <50 mg/kg
 N - <0.010 mg/kg
 SAR - 0.0891
 EC - 0.0714 mmhos/cm
 pH - 8.92

SS10@8'
 B - <0.0020 mg/kg
 T - <0.0050 mg/kg
 E - <0.0050 mg/kg
 X - <0.010 mg/kg
 TPH - <50 mg/kg
 N - <0.010 mg/kg

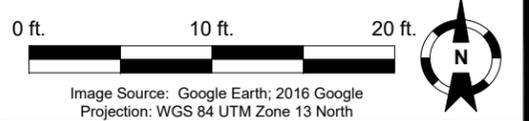
Legend

- Excavation Sample Location
- Excavation Sample Location (Not Submitted for Laboratory Analysis)
- Excavation Extent

Notes

- 1) All locations are approximate unless otherwise noted
 - 2) **RED** value indicates concentration greater than COGCC table 910-1 soil standard (see table below).
- GPS – Global Positioning System
 mg/kg – Milligrams Per Kilogram
 mmhos/cm – Millimhos Per Centimeter

Contaminant of Concern	COGCC Concentration Standard
B - Benzene	0.17 mg/kg
T - Toluene	85 mg/kg
E - Ethylbenzene	100 mg/kg
X – Total Xylenes	175 mg/kg
TPH- Total Petroleum Hydrocarbons	500 mg/kg
N - Naphthalene	23 mg/kg
SAR – Sodium Absorption Ratio	<12 ⁵
EC – Electrical Conductivity	<4mmhos/cm or 2x background
pH	6-9



DATE: 10/11/2017
 DESIGNED BY: DC
 DRAWN BY: GB

TASMAN
 GEOSCIENCES
 Tasman Geosciences, Inc.
 6899 Pecos Street – Unit C
 Denver, CO 80221

Noble Energy, Inc. – DJ Basin
Wells Ranch USX BB11-02 Vault Removal – Location ID: 310653
 NWNE, Section 11, Township 5 North, Range 63 West
 Weld County, Colorado

Excavation Soil Analytical
 Results Map
 (10/04/2017)

Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

October 12, 2017

Brandon Bruns
Tasman Geosciences
6899 Pecos Street
Denver, CO 80221

RE: Noble - Wells Ranch USX BB11-02

Enclosed are the results of analyses for samples received by Summit Scientific on 10/05/17 10:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Paul Shrewsbury For Ben Shrewsbury
Laboratory Manager



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/17 11:57

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02@3'	1710063-01	Soil	10/04/17 16:18	10/05/17 10:30
SS05@5'	1710063-02	Soil	10/04/17 16:25	10/05/17 10:30
SS09@3'	1710063-03	Soil	10/04/17 16:33	10/05/17 10:30
SS10@8'	1710063-04	Soil	10/04/17 16:37	10/05/17 10:30

Summit Scientific

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Sample Receipt Checklist

1710063

S2 Work Order: _____

Client: Noble/Tasman Client Project ID: Wells Ranch USX BB11-02

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)	5.9				

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.	✓			
Were all samples received intact ⁽¹⁾ ?	✓			
Was adequate sample volume provided ⁽¹⁾ ?	✓			
If custody seals are present, are they intact ⁽¹⁾ ?			✓	
Are short holding time analytes or samples with HTs due within 48 hours present?			✓	
Is a chain-of-custody (COC) form present and filled out completely ⁽¹⁾ ?	✓			
Does the COC agree with the number and type of sample bottles received ⁽¹⁾ ?	✓			
Do the sample IDs on the bottle labels match the COC ⁽¹⁾ ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded ⁽¹⁾ ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.				
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ?			✓	
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⁾ ?			✓	
Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

Nakita
Custodian Printed Name

[Signature]
Signature or Initials of Custodian

10/5/17 1220
Date/Time



Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/17 11:57

SS02@3'
1710063-01 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/04/17 16:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710056	10/06/17	10/08/17	8015M	

Date Sampled: **10/04/17 16:18**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/04/17 16:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710054	10/06/17	10/07/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **10/04/17 16:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		111 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		101 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.6 %	21-167		"	"	"	"	

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

Date Sampled: **10/04/17 16:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	205	10.7	mg/kg dry	1	1710089	10/10/17	10/11/17	EPA 6020/Mod. USDA60 6(2, 3A)	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/17 11:57

SS02@3'
1710063-01 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Magnesium	212	5.34	mg/kg dry	1	1710089	10/10/17	10/11/17	EPA 6020/Mod. USDA60 6(2, 3A)
Sodium	7.62	5.34	"	"	"	"	"	"
Sodium Adsorption Ratio	0.0891		units	"	1710120	10/11/17	10/11/17	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/17 16:18**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.0714	0.0100	mmhos/cm	1	1710091	10/10/17	10/10/17	SM 2510B	
% Solids	93.7		%	"	1710059	10/06/17	10/06/17	% calculation	
pH	8.92	0.100	pH Units	"	1710090	10/10/17	10/10/17	EPA 9045	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/12/17 11:57

SS05@5'
1710063-02 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/04/17 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710056	10/06/17	10/08/17	8015M	

Date Sampled: **10/04/17 16:25**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/04/17 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710054	10/06/17	10/07/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **10/04/17 16:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		106 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.9 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		95.9 %	21-167		"	"	"	"	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/12/17 11:57

SS09@3'
1710063-03 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/04/17 16:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710056	10/06/17	10/08/17	8015M	

Date Sampled: **10/04/17 16:33**

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

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/04/17 16:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710054	10/06/17	10/07/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **10/04/17 16:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		108 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		98.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.4 %	21-167		"	"	"	"	

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

Date Sampled: **10/04/17 16:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	362	10.9	mg/kg dry	1	1710089	10/10/17	10/11/17	EPA 6020/Mod. USDA60 6(2, 3A)	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/17 11:57

SS09@3'
1710063-03 (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
Magnesium	336	5.46	mg/kg dry	1	1710089	10/10/17	10/11/17	EPA 6020/Mod. USDA60 6(2, 3A)	
Sodium	24.6	5.46	"	"	"	"	"	"	"
Sodium Adsorption Ratio	0.224		units	"	1710120	10/11/17	10/11/17	"	"

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **10/04/17 16:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.6		%	1	1710059	10/06/17	10/06/17	% calculation	
Specific Conductance (EC)	0.157	0.0100	mmhos/cm	"	1710091	10/10/17	10/10/17	SM 2510B	
pH	8.49	0.100	pH Units	"	1710090	10/10/17	10/04/17	EPA 9045	

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/12/17 11:57

SS10@8'
1710063-04 (Soil)

Summit Scientific

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/04/17 16:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1710056	10/06/17	10/08/17	8015M	

Date Sampled: **10/04/17 16:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: <i>o</i> -Terphenyl		103 %	30-150		"	"	"	"	

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/04/17 16:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Naphthalene	ND	0.010	mg/kg	1	1710054	10/06/17	10/07/17	EPA 8260B	
Benzene	ND	0.0020	"	"	"	"	"	"	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **10/04/17 16:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		105 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		96.0 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.6 %	21-167		"	"	"	"	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/12/17 11:57

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 1710056 - EPA 3550A

Blank (1710056-BLK1)

Prepared: 10/06/17 Analyzed: 10/07/17

C10-C28 (DRO)	ND	50	mg/kg								
<i>Surrogate: o-Terphenyl</i>	12.7		"	12.5		102	30-150				

LCS (1710056-BS1)

Prepared: 10/06/17 Analyzed: 10/07/17

C10-C28 (DRO)	474	50	mg/kg	499		95.1	73-134				
<i>Surrogate: o-Terphenyl</i>	11.2		"	12.5		89.4	30-150				

Matrix Spike (1710056-MS1)

Source: 1710055-01

Prepared: 10/06/17 Analyzed: 10/07/17

C10-C28 (DRO)	452	50	mg/kg	499	36.3	83.3	50-148				
<i>Surrogate: o-Terphenyl</i>	11.4		"	12.5		91.5	30-150				

Matrix Spike Dup (1710056-MSD1)

Source: 1710055-01

Prepared: 10/06/17 Analyzed: 10/07/17

C10-C28 (DRO)	480	50	mg/kg	499	36.3	89.0	50-148	6.05		20	
<i>Surrogate: o-Terphenyl</i>	12.3		"	12.5		98.2	30-150				

Summit Scientific

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/12/17 11:57

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

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

Batch 1710054 - EPA 5030 Soil MS

Blank (1710054-BLK1)

Prepared: 10/06/17 Analyzed: 10/07/17

Naphthalene	ND	0.010	mg/kg							
Benzene	ND	0.0020	"							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	23-173			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	20-170			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.2	21-167			

LCS (1710054-BS1)

Prepared: 10/06/17 Analyzed: 10/07/17

Naphthalene	0.00912	0.010	mg/kg				66-138			
Benzene	0.0711	0.0020	"	0.100		71.1	58-130			
Toluene	0.0870	0.0050	"	0.100		87.0	61-134			
Ethylbenzene	0.109	0.0050	"	0.0992		110	74-139			
m,p-Xylene	0.206	0.010	"	0.200		103	73-137			
o-Xylene	0.105	0.0050	"	0.0980		107	73-141			
Surrogate: 1,2-Dichloroethane-d4	0.0417		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		98.9	21-167			

Matrix Spike (1710054-MS1)

Source: 1710063-01

Prepared: 10/06/17 Analyzed: 10/07/17

Naphthalene	0.00909	0.010	mg/kg		0.00900		10-158			
Benzene	0.0722	0.0020	"	0.100	ND	72.2	30-131			
Toluene	0.0840	0.0050	"	0.100	ND	84.0	30-134			
Ethylbenzene	0.110	0.0050	"	0.0992	ND	111	22-153			
m,p-Xylene	0.208	0.010	"	0.200	ND	104	10-159			
o-Xylene	0.106	0.0050	"	0.0980	ND	108	31-151			
Surrogate: 1,2-Dichloroethane-d4	0.0424		"	0.0400		106	23-173			
Surrogate: Toluene-d8	0.0388		"	0.0400		97.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0399		"	0.0400		99.8	21-167			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/12/17 11:57

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 1710054 - EPA 5030 Soil MS

Matrix Spike Dup (1710054-MSD1)	Source: 1710063-01			Prepared: 10/06/17		Analyzed: 10/07/17				
Naphthalene	0.00903	0.010	mg/kg		0.00900		10-158	0.662	42	
Benzene	0.0725	0.0020	"	0.100	ND	72.5	30-131	0.373	34	
Toluene	0.0880	0.0050	"	0.100	ND	88.0	30-134	4.71	30	
Ethylbenzene	0.109	0.0050	"	0.0992	ND	110	22-153	0.821	24	
m,p-Xylene	0.208	0.010	"	0.200	ND	104	10-159	0.173	68	
o-Xylene	0.104	0.0050	"	0.0980	ND	106	31-151	1.91	38	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>98.0</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.5</i>	<i>21-167</i>			

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/12/17 11:57

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 1710089 - General Preparation

Blank (1710089-BLK1)

Prepared: 10/10/17 Analyzed: 10/11/17

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

LCS (1710089-BS1)

Prepared: 10/10/17 Analyzed: 10/11/17

Calcium	933	10.0	mg/kg wet	1000		93.3	82.9-118			
Magnesium	939	5.00	"	1000		93.9	77.1-123			
Sodium	973	5.00	"	1000		97.3	71-129			

Duplicate (1710089-DUP1)

Source: 1710063-01

Prepared: 10/10/17 Analyzed: 10/11/17

Calcium	200	10.7	mg/kg dry		205			2.43	200	
Magnesium	210	5.34	"		212			0.759	200	
Sodium	5.09	5.34	"		7.62			39.9	200	

Matrix Spike (1710089-MS1)

Source: 1710063-01

Prepared: 10/10/17 Analyzed: 10/11/17

Calcium	1110	10.7	mg/kg dry	1070	205	84.9	75-125			
Magnesium	1190	5.34	"	1070	212	91.8	75-125			
Sodium	826	5.34	"	1070	7.62	76.7	75-125			

Matrix Spike Dup (1710089-MSD1)

Source: 1710063-01

Prepared: 10/10/17 Analyzed: 10/11/17

Calcium	1100	10.7	mg/kg dry	1070	205	84.2	75-125	0.673	25	
Magnesium	1190	5.34	"	1070	212	91.9	75-125	0.109	25	
Sodium	866	5.34	"	1070	7.62	80.4	75-125	4.72	25	

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Tasman Geosciences
6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Brunns

Reported:
10/12/17 11:57

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control
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Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD		

Batch 1710059 - General Preparation

Duplicate (1710059-DUP1)		Source: 1710033-01			Prepared & Analyzed: 10/06/17					
% Solids	56.1		%		56.1				0.00	20

Batch 1710090 - General Preparation

LCS (1710090-BS1)		Prepared & Analyzed: 10/10/17								
pH	9.18	0.100	pH Units		9.16		100	95-105		
Duplicate (1710090-DUP1)		Source: 1710033-01			Prepared & Analyzed: 10/10/17					
pH	9.41	0.100	pH Units		9.34				0.747	20

Batch 1710091 - General Preparation

Blank (1710091-BLK1)		Prepared & Analyzed: 10/10/17								
Specific Conductance (EC)	ND	0.0100	mmhos/cm							
LCS (1710091-BS1)		Prepared & Analyzed: 10/10/17								
Specific Conductance (EC)	0.751	0.0100	mmhos/cm		0.750		100	90-110		
Duplicate (1710091-DUP1)		Source: 1710033-01			Prepared & Analyzed: 10/10/17					
Specific Conductance (EC)	4.36	0.0100	mmhos/cm		4.36				0.149	20

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6899 Pecos Street
Denver CO, 80221

Project: Noble - Wells Ranch USX BB11-02

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
10/12/17 11:57

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