



# 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

*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.*

1710063

741 Corporate Circle Suite I ♦ Golden, Colorado 80401

303-277-9310 ♦ 303-374-5933 Fax

Page 1 of 1

Client: Noble/Tasman

**Address:**

City/State/Zip:

Phone: 303-487-1228 Fax: \_\_\_\_\_

Sampler Name: GB

**Project Manager:** Brandon Bruns, Invoice: Jacob Evans

E-Mail: [Bbruns@tasman-geo.com](mailto:Bbruns@tasman-geo.com)

Project Name: Wells Branch USF BB11-02

Project Number:

				Preservative				Matrix				Analyze For:								
Sample Description	Date Sampled	Time Sampled	Number of Containers	HCl	HNO <sub>3</sub>	None	Other (Specify)	Groundwater	Soil	Air - Canister Serial #	Other (Specify)	8260 BTEX	8260B GBTEXN	8015 DRO	pH, EC, SAR					Special Instructions
SS 02 @ 3'	10/4/17	1618	( )			X			X				X	X	X					
SS 05 @ 5'		1625	( )			X			X				X	X						
SS 09 @ 3'		1633	( )			X			X				X	X	X					
SS 10 @ 8'		1637	( )			X			X				X	X						
Relinquished by: _____ Date/Time: 10/5/17 10:30				Received by: [Signature] Date/Time: 10/5/17 1030				Turn Around Time (Check) 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"/>								Notes:  on ice				
Relinquished by: _____ Date/Time: _____				Received by: _____ Date/Time: _____				Sample Integrity: Temperature Upon Receipt: 5.9°C Intact: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>												
Relinquished by: _____ Date/Time: _____				Received in Lab by: _____ Date/Time: _____																



## Sample Receipt Checklist

1710063

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

Client: Noble/TasmanClient Project ID: Wells Ranch USX BB11-02Shipped 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)	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 <sup>(1)</sup> ?				
NOTE: If samples are delivered the same day of sampling, this requirement is met provided that there is evidence that cooling has begun.	✓			
Were all samples received intact <sup>(1)</sup> ?	✓			
Was adequate sample volume provided <sup>(1)</sup> ?	✓			
If custody seals are present, are they intact <sup>(1)</sup> ?			✓	
Are 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 <sup>(1)</sup> ?	✓			
Does the COC agree with the number and type of sample bottles received <sup>(1)</sup> ?	✓			
Do the sample IDs on the bottle labels match the COC <sup>(1)</sup> ?	✓			
Is the COC properly relinquished by the client w/ date and time recorded <sup>(1)</sup> ?	✓			
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.				
Are samples preserved that require preservation (excluding cooling) <sup>(1)</sup> ?			✓	
Note the type of preservative in the Comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , ect			✓	
If samples are acid preserved for metals, is the pH ≤ 2 <sup>(1)</sup> ? Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

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: <b>10/04/17 16:18</b>									
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: <b>10/04/17 16:18</b>									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		108 %	30-150		"	"	"	"	

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

Date Sampled: <b>10/04/17 16:18</b>									
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: <b>10/04/17 16:18</b>									
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: <b>10/04/17 16:18</b>									
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

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.



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

**SS02@3'**  
**1710063-01 (Soil)**

**Summit Scientific**

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

<b>Magnesium</b>	<b>212</b>	5.34	mg/kg dry	1	1710089	10/10/17	10/11/17	EPA 6020/Mod. USDA60 6(2, 3A)
<b>Sodium</b>	<b>7.62</b>	5.34	"	"	"	"	"	"
<b>Sodium Adsorption Ratio</b>	<b>0.0891</b>		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		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Specific Conductance (EC)</b>	<b>0.0714</b>	0.0100	mmhos/cm	1	1710091	10/10/17	10/10/17	SM 2510B	
<b>% Solids</b>	<b>93.7</b>		%	"	1710059	10/06/17	10/06/17	% calculation	
<b>pH</b>	<b>8.92</b>	0.100	pH Units	"	1710090	10/10/17	10/10/17	EPA 9045	

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.*



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

**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: o-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

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.





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**

**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: o-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

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.



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**

<b>Magnesium</b>	<b>336</b>	5.46 mg/kg dry	1	1710089	10/10/17	10/11/17	EPA 6020/Mod. USDA60 6(2, 3A)
<b>Sodium</b>	<b>24.6</b>	5.46 "	"	"	"	"	"
<b>Sodium Adsorption Ratio</b>	<b>0.224</b>	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		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>% Solids</b>	<b>91.6</b>		%	1	1710059	10/06/17	10/06/17	% calculation	
<b>Specific Conductance (EC)</b>	<b>0.157</b>	0.0100	mmhos/cm	"	1710091	10/10/17	10/10/17	SM 2510B	
<b>pH</b>	<b>8.49</b>	0.100	pH Units	"	1710090	10/10/17	10/04/17	EPA 9045	

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.*



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: o-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		"	"	"	"	

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.



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

**Batch 1710056 - EPA 3550A**

**Blank (1710056-BLK1)**

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

C10-C28 (DRO) ND 50 mg/kg

Surrogate: o-Terphenyl 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

Surrogate: o-Terphenyl 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

Surrogate: o-Terphenyl 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

Surrogate: o-Terphenyl 12.3 " 12.5 98.2 30-150

Summit Scientific

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



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

**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 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			

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.





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	
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

**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	
Surrogate: 1,2-Dichloroethane-d4	0.0416		"	0.0400		104	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	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.*



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**

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

**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

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.*



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

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

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

**Batch 1710059 - General Preparation**

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

**Batch 1710090 - General Preparation**

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

**Batch 1710091 - General Preparation**

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



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

### 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