



Summit Scientific

741 Corporate Circle – Suite I ♦ Golden, Colorado 80401

303.277.9310 - laboratory ♦ 303.277.9531 - fax

July 27, 2018

Brandon Bruns
Tasman Geosciences
6899 Pecos St, Unit C
Denver, CO 80221
RE: Noble - Carlson J33-30D

Enclosed are the results of analyses for samples received by Summit Scientific on 07/20/18 18:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Muri Premier For Ben Shrewsbury
Laboratory Manager



Tasman Geosciences
6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Carlson J33-30D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/27/18 12:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS01@3'	1807283-01	Soil	07/20/18 12:00	07/20/18 18:35
SS04@5'	1807283-04	Soil	07/20/18 12:06	07/20/18 18:35

1807283

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

Project Manager:	Brandon Bruns, Invoice: Jacob Evans
E-Mail:	Bbruns@tasman-geo.com
Project Name:	Carlson J 33-300
Project Number:	

Page 1 of 1[illegible]

1807283

Sample Receipt Checklist

S2 Work Order: _____

Client: Noble/TasmanClient Project ID: Carlson J-33-30DShipped Via: Pickup

(UPS, FedEx, Hand Delivered, Pick-up, etc.)

Airbill #: _____

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

Temp (°C)

10.2

Thermometer ID: 61857155-K

	Yes	No	N/A	Comments (if any)
If samples require cooling, was the temperature at 4°C +/- 2°C ⁽¹⁾ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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⁾ ?	<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⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Note the type of preservative in the Comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , ect				
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Record the pH in Comments.				
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.UP
Custodian Printed Name or Initials[Signature]
Signature or Initials of Custodian7.20.18 1835
Date/Time



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SS01@3'
1807283-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: 07/20/18 12:00									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1807265	07/23/18	07/24/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: 07/20/18 12:00									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		109 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		102 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: 07/20/18 12:00									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1807266	"	07/24/18	EPA 8015M	

Date Sampled: 07/20/18 12:00									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		102 %	30-150		"	"	"	"	

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

Date Sampled: 07/20/18 12:00									
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	2330	10.8	mg/kg dry	1	1807275	07/23/18	07/25/18	EPA 6020B	

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SS01@3'
1807283-01 (Soil)

Summit Scientific

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

Magnesium	208	5.39	mg/kg dry	1	1807275	07/23/18	07/25/18	EPA 6020B
Sodium	11.4	5.39	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **07/20/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	ND	0.100	units	1	1807306	07/25/18	07/27/18	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/20/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.7		%	1	1807280	07/23/18	07/24/18	Calculation	
pH	8.80		pH Units	"	1807291	07/24/18	07/24/18	EPA 9045D	

Specific Conductance by EPA Method 120.1

Date Sampled: **07/20/18 12:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.364	0.0100	mmhos/cm	1	1807292	07/24/18	07/24/18	EPA 120.1	



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Project: Noble - Carlson J33-30D

Project Number: [none]
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Reported:
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SS04@5'
1807283-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/18 12:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	1807265	07/23/18	07/24/18	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
Naphthalene	ND	0.010	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	50	"	"	"	"	"	"	

Date Sampled: **07/20/18 12:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		110 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		100 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %	21-167		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/20/18 12:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	1807266	"	07/24/18	EPA 8015M	

Date Sampled: **07/20/18 12:06**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		107 %	30-150		"	"	"	"	

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Reported:
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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 1807265 - EPA 5030 Soil MS

Blank (1807265-BLK1)

Prepared & Analyzed: 07/23/18

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
Naphthalene	ND	0.010	"							
Gasoline Range Hydrocarbons	ND	50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0396		98.5	23-173			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	20-170			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	21-167			

LCS (1807265-BS1)

Prepared: 07/23/18 Analyzed: 07/24/18

Benzene	0.0893	0.0020	mg/kg	0.100		89.3	70-130			
Toluene	0.0987	0.0050	"	0.100		98.7	70-130			
Ethylbenzene	0.107	0.0050	"	0.100		107	70-130			
m,p-Xylene	0.212	0.010	"	0.200		106	70-130			
o-Xylene	0.0951	0.0050	"	0.100		95.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0396		99.9	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.8	20-170			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	21-167			

Matrix Spike (1807265-MS1)

Source: 1807270-01

Prepared: 07/23/18 Analyzed: 07/24/18

Benzene	0.0891	0.0020	mg/kg	0.100	ND	89.1	70-130			
Toluene	0.0995	0.0050	"	0.100	ND	99.5	70-130			
Ethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130			
m,p-Xylene	0.217	0.010	"	0.200	ND	108	70-130			
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0404		"	0.0396		102	23-173			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	20-170			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	21-167			

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07/27/18 12:23

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 1807265 - EPA 5030 Soil MS

Matrix Spike Dup (1807265-MSD1)		Source: 1807270-01			Prepared: 07/23/18		Analyzed: 07/24/18			
Benzene	0.0967	0.0020	mg/kg	0.100	ND	96.7	70-130	8.17	30	
Toluene	0.109	0.0050	"	0.100	ND	109	70-130	8.79	30	
Ethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130	8.25	30	
m,p-Xylene	0.236	0.010	"	0.200	ND	118	70-130	8.48	30	
o-Xylene	0.110	0.0050	"	0.100	ND	110	70-130	9.06	30	
Surrogate: 1,2-Dichloroethane-d4	0.0398		"	0.0396		100	23-173			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	20-170			
Surrogate: 4-Bromofluorobenzene	0.0401		"	0.0400		100	21-167			

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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 1807266 - EPA 3550A

Blank (1807266-BLK1)

Prepared: 07/23/18 Analyzed: 07/24/18

C10-C28 (DRO) ND 50 mg/kg

LCS (1807266-BS1)

Prepared: 07/23/18 Analyzed: 07/24/18

C10-C28 (DRO) 508 50 mg/kg 70-130

Matrix Spike (1807266-MS1)

Source: 1807270-01

Prepared: 07/23/18 Analyzed: 07/24/18

C10-C28 (DRO) 429 50 mg/kg 40.6 70-130

Matrix Spike Dup (1807266-MSD1)

Source: 1807270-01

Prepared: 07/23/18 Analyzed: 07/24/18

C10-C28 (DRO) 502 50 mg/kg 40.6 70-130 15.8 20



Tasman Geosciences
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Denver CO, 80221

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07/27/18 12:23

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 1807275 - General Preparation

Blank (1807275-BLK1)

Prepared: 07/23/18 Analyzed: 07/25/18

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

LCS (1807275-BS1)

Prepared: 07/23/18 Analyzed: 07/25/18

Calcium	521	10.0	mg/kg wet	500	104	70-130
Magnesium	541	5.00	"	500	108	70-130
Sodium	552	5.00	"	500	110	70-130

Duplicate (1807275-DUP1)

Source: 1807230-01

Prepared: 07/23/18 Analyzed: 07/25/18

Calcium	297	11.7	mg/kg dry	322	7.84	20
Magnesium	134	5.86	"	145	7.59	20
Sodium	85.6	5.86	"	90.4	5.44	20

Matrix Spike (1807275-MS1)

Source: 1807230-01

Prepared: 07/23/18 Analyzed: 07/25/18

Calcium	908	11.7	mg/kg dry	586	322	100	70-130
Magnesium	769	5.86	"	586	145	107	70-130
Sodium	739	5.86	"	586	90.4	111	70-130

Matrix Spike Dup (1807275-MSD1)

Source: 1807230-01

Prepared: 07/23/18 Analyzed: 07/25/18

Calcium	957	11.7	mg/kg dry	586	322	108	70-130	5.21	25
Magnesium	773	5.86	"	586	145	107	70-130	0.528	25
Sodium	769	5.86	"	586	90.4	116	70-130	4.07	25

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Project: Noble - Carlson J33-30D

Project Number: [none]
Project Manager: Brandon Bruns

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07/27/18 12:23

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 1807280 - General Preparation

Duplicate (1807280-DUP1) **Source: 1807283-01** Prepared: 07/23/18 Analyzed: 07/24/18

% Solids	93.4		%		92.7			0.720	20	
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Batch 1807291 - General Preparation

LCS (1807291-BS1) Prepared & Analyzed: 07/24/18

pH	9.1		pH Units	9.18	99.3	95-105				
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Duplicate (1807291-DUP1) **Source: 1807277-01** Prepared & Analyzed: 07/24/18

pH	8.5		pH Units		8.4			0.827	20	
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6899 Pecos St, Unit C
Denver CO, 80221

Project: Noble - Carlson J33-30D

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
07/27/18 12:23

Specific Conductance by EPA Method 120.1 - Quality Control
Summit Scientific

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

Batch 1807292 - General Preparation

LCS (1807292-BS1)

Prepared & Analyzed: 07/24/18

Specific Conductance (EC)	0.748	0.0100	mmhos/cm	0.750	99.8	90-110
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Duplicate (1807292-DUP1)

Source: 1807277-01

Prepared & Analyzed: 07/24/18

Specific Conductance (EC)	0.642	0.0100	mmhos/cm	0.632	1.41	20
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Project Manager: Brandon Bruns

Reported:
07/27/18 12:23

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