

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

April 09, 2021

Brandon Bruns

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Munds 13-29, Dickerson 14-29A

Work Order #2104123

Enclosed are the results of analyses for samples received by Summit Scientific on 04/07/21 18:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Muri Premer". The signature is written in a cursive style with a large initial "M" and a long, sweeping underline.

Muri Premer For Paul Shrewsbury
President



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/09/21 16:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BH16	2104123-01	Water	04/07/21 13:35	04/07/21 18:30
BH17	2104123-02	Water	04/07/21 13:40	04/07/21 18:30

Summit Scientific

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2104123

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Client: Noble / Tasman Project Manager: Brandon Bruns, Invoice: *Jacob Evans*
 Address: 6855 W 119th Ave E-Mail: Bbruns@tasman-geo.com
 City/State/Zip: Broomfield, CO, 80020
 Phone: 979-255-4235 Project Name: *Munds 13-29, Dickerson 14-29A*
 Sampler Name: Max Garza Project Number: N/A

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested					Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX	Naphthalene	Chlorides/Sulfates	TDS		1,2,4 & 1,3,5-trimethylbenzene
1	BH16	4/7/21	13 35	4	X				X				X	X	X	X	X	
2	BH17	↓	13 40	↓	↓				↓				↓	↓	↓	↓	↓	
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: <i>[Signature]</i> Date/Time: 1510 4/7/21	Received by: Tasman's Lock Box Date/Time: 1510 4/7/21	Turn Around Time (Check) Same Day ___ 72 hours 24 hours ___ Standard <input checked="" type="checkbox"/> 48 hours ___	Notes:
Relinquished by: Tasman's Lock Box Date/Time: 4/7/21 1830	Received by: <i>Jacob Bruns</i> Date/Time: 4/7/21 1830	Sample Integrity: 5	
Relinquished by:	Received by:	Temperature Upon Receipt: <u>5</u> Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	

Sample Receipt Checklist

S2 Work Order **2104123**

Client: Noble / Tasman Client Project ID: Munds 13-29, Dickerson 14-29A

Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other _____ Airbill #: _____

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

Temp (°C)	<u>5</u>
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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.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>On ice</u>
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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling) ⁽¹⁾ ? Note the type of preservative in the Comments column – HCl, H2SO4, NaOH, HNO3, ect	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>HCl</u>
If samples are acid preserved for metals, is the pH ≤ 2 ⁽¹⁾ ? Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.

JB
Custodian Printed Name or Initials

John Br
Signature of Custodian

4/7/21 1950
Date/Time



Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/09/21 16:33

BH16
2104123-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	750	100	ug/l	100	BED0130	04/08/21	04/09/21	EPA 8260B	
Toluene	ND	1.0	"	1	"	"	"	"	
Ethylbenzene	69	1.0	"	"	"	"	"	"	
Xylenes (total)	430	2.0	"	"	"	"	"	"	
Naphthalene	3.9	1.0	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	60	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	76	1.0	"	"	"	"	"	"	

Date Sampled: **04/07/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.1 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		90.2 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/07/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	283	60.0	mg/L	200	BED0147	04/08/21	04/09/21	EPA 300.0	
Chloride	251	12.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/07/21 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	1740	10.0	mg/L	1	BED0126	04/08/21	04/08/21	SM2540C	

Summit Scientific

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Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/09/21 16:33

BH17
2104123-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **04/07/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	20	1.0	ug/l	1	BED0130	04/08/21	04/09/21	EPA 8260B	
Toluene	3.0	1.0	"	"	"	"	"	"	
Ethylbenzene	920	100	"	100	"	"	"	"	
Xylenes (total)	12000	200	"	"	"	"	"	"	
Naphthalene	21	1.0	"	1	"	"	"	"	
1,2,4-Trimethylbenzene	150	1.0	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	180	1.0	"	"	"	"	"	"	

Date Sampled: **04/07/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		120 %	23-173		"	"	"	"	
Surrogate: Toluene-d8		99.7 %	20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %	21-167		"	"	"	"	

Anions by EPA Method 300.0

Date Sampled: **04/07/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sulfate	518	60.0	mg/L	200	BED0147	04/08/21	04/09/21	EPA 300.0	
Chloride	735	12.0	"	"	"	"	"	"	

Total Dissolved Solids by SM2540C

Date Sampled: **04/07/21 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Total Dissolved Solids	2420	10.0	mg/L	1	BED0126	04/08/21	04/08/21	SM2540C	

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Project Number: [none]
Project Manager: Brandon Brunns

Reported:
04/09/21 16:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BED0130 - EPA 5030 Water MS

Blank (BED0130-BLK1)

Prepared & Analyzed: 04/08/21

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Naphthalene	ND	1.0	"								
1,2,4-Trimethylbenzene	ND	1.0	"								
1,3,5-Trimethylbenzene	ND	1.0	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.7		"	13.3		103		23-173			
<i>Surrogate: Toluene-d8</i>	13.0		"	13.3		97.3		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.0		"	13.3		97.2		21-167			

LCS (BED0130-BS1)

Prepared & Analyzed: 04/08/21

Benzene	32.6	1.0	ug/l	33.3		97.7		51-132			
Toluene	37.6	1.0	"	33.3		113		51-138			
Ethylbenzene	41.8	1.0	"	33.3		125		58-146			
m,p-Xylene	78.4	2.0	"	66.7		118		57-144			
o-Xylene	40.8	1.0	"	33.3		122		53-146			
Naphthalene	38.7	1.0	"	33.3		116		70-130			
1,2,4-Trimethylbenzene	31.3	1.0	"	33.3		93.9		70-130			
1,3,5-Trimethylbenzene	42.6	1.0	"	33.3		128		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.1		"	13.3		98.5		23-173			
<i>Surrogate: Toluene-d8</i>	13.4		"	13.3		100		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.1		"	13.3		98.3		21-167			

Matrix Spike (BED0130-MS1)

Source: 2104072-01

Prepared & Analyzed: 04/08/21

Benzene	32.5	1.0	ug/l	33.3	ND	97.5		34-141			
Toluene	38.1	1.0	"	33.3	ND	114		27-151			
Ethylbenzene	41.4	1.0	"	33.3	ND	124		29-160			
m,p-Xylene	78.0	2.0	"	66.7	ND	117		20-166			
o-Xylene	40.1	1.0	"	33.3	ND	120		33-159			
Naphthalene	42.8	1.0	"	33.3	ND	128		70-130			
1,2,4-Trimethylbenzene	30.5	1.0	"	33.3	ND	91.6		70-130			
1,3,5-Trimethylbenzene	42.2	1.0	"	33.3	ND	127		70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	13.1		"	13.3		98.0		23-173			
<i>Surrogate: Toluene-d8</i>	13.5		"	13.3		101		20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	13.1		"	13.3		98.2		21-167			

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04/09/21 16:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BED0130 - EPA 5030 Water MS

Matrix Spike Dup (BED0130-MSD1)	Source: 2104072-01			Prepared & Analyzed: 04/08/21						
Benzene	30.0	1.0	ug/l	33.3	ND	90.1	34-141	7.87	30	
Toluene	35.0	1.0	"	33.3	ND	105	27-151	8.29	30	
Ethylbenzene	41.7	1.0	"	33.3	ND	125	29-160	0.890	30	
m,p-Xylene	79.0	2.0	"	66.7	ND	118	20-166	1.21	30	
o-Xylene	40.7	1.0	"	33.3	ND	122	33-159	1.61	30	
Naphthalene	42.9	1.0	"	33.3	ND	129	70-130	0.280	30	
1,2,4-Trimethylbenzene	31.3	1.0	"	33.3	ND	93.9	70-130	2.46	30	
1,3,5-Trimethylbenzene	43.0	1.0	"	33.3	ND	129	70-130	1.97	30	
Surrogate: 1,2-Dichloroethane-d4	12.3		"	13.3		92.0	23-173			
Surrogate: Toluene-d8	12.2		"	13.3		91.4	20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.2	21-167			

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04/09/21 16:33

Anions by EPA Method 300.0 - Quality Control
Summit Scientific

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

Batch BED0147 - General Preparation

Blank (BED0147-BLK1)

Prepared & Analyzed: 04/08/21

Chloride	ND	0.0600	mg/L							
Sulfate	ND	0.300	"							

LCS (BED0147-BS1)

Prepared & Analyzed: 04/08/21

Sulfate	15.2	0.300	mg/L	15.0	101	90-110				
Chloride	2.95	0.0600	"	3.00	98.4	90-110				

Duplicate (BED0147-DUP1)

Source: 2104073-01

Prepared & Analyzed: 04/08/21

Sulfate	61.8	60.0	mg/L	68.2			9.85	20		
Chloride	174	12.0	"	173			0.461	20		

Matrix Spike (BED0147-MS1)

Source: 2104073-01

Prepared & Analyzed: 04/08/21

Chloride	879	12.0	mg/L	600	173	118	80-120			
Sulfate	3300	60.0	"	3000	68.2	108	80-120			

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Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/09/21 16:33

Total Dissolved Solids by SM2540C - Quality Control
Summit Scientific

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

Batch BED0126 - General Preparation

Blank (BED0126-BLK1)

Prepared & Analyzed: 04/08/21

Total Dissolved Solids ND 10.0 mg/L

Duplicate (BED0126-DUP1)

Source: 2104118-01

Prepared & Analyzed: 04/08/21

Total Dissolved Solids 596 10.0 mg/L 596 0.00 20

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Project: Noble - Munds 13-29, Dickerson 14-29A

Project Number: [none]
Project Manager: Brandon Bruns

Reported:
04/09/21 16:33

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