

SITE ASSESSMENT REPORT

LILLI UNIT 16-7

ECMC SPILL TRACKING # 481760

ECMC REMEDIATION # 21705

Prepared for:



2115 117th Avenue
Greeley, CO 80631

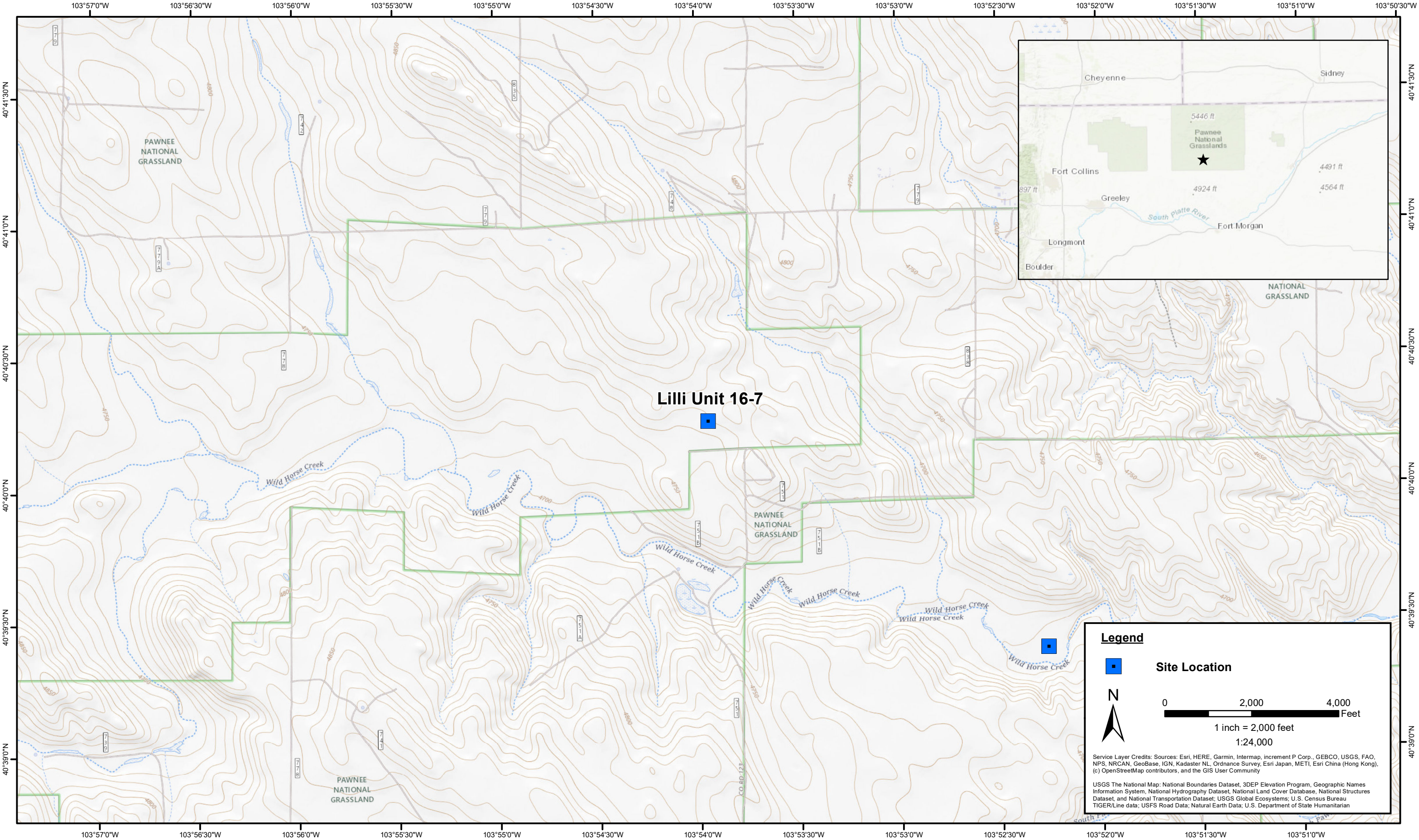
Prepared by:



6855 W. 119th Ave
Broomfield, CO 80020

TABLES

FIGURES



DATE:	December 2023
DESIGNED BY:	J. Whritenour
DRAWN BY:	L. Reed



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


Noble Energy, Inc - DJ Basin
Lilli Unit 16-7
SESE, Section 7, Township 8 North, Range 58 West
Weld County, Colorado

Site Location Map

Figure
1





DATE:	08/29/2024	 <div>TASMAN GEOSCIENCES</div> <div>Tasman Geosciences, Inc. 6855 W 119th Avenue Broomfield, CO 80020</div>	Noble Energy, Inc. – 100322 – DJ Basin Lilli Unit 16-7 SESE, Section 7, Township 8 North, Range 58 West Weld County, Colorado	Site Assessment Soil Analytical Results Map (01/22/2024)	Figure 3
DESIGNED BY:	JW				
DRAWN BY:	S. Bousquet				

ATTACHMENT A
LABORATORY SOIL ANALYTICAL DATA REPORTS

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

January 29, 2024

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

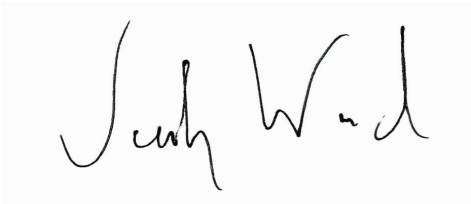
Broomfield, CO 80020

RE: Noble - Lilli Unit 16-7

Work Order #2401359

Enclosed are the results of analyses for samples received by Summit Scientific on 01/22/24 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Jacob Wood". The signature is written in a cursive, flowing style.

Jacob Wood For Paul Shrewsbury

President



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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BG01@5-6'	2401359-01	Soil	01/22/24 12:50	01/22/24 16:30
BG01@11-12'	2401359-02	Soil	01/22/24 12:55	01/22/24 16:30
BG01@13-14'	2401359-03	Soil	01/22/24 13:00	01/22/24 16:30
BG02@5-6'	2401359-04	Soil	01/22/24 11:35	01/22/24 16:30
BG02@11-12'	2401359-05	Soil	01/22/24 11:40	01/22/24 16:30
BG02@12-13'	2401359-06	Soil	01/22/24 11:45	01/22/24 16:30
BG03@5-6'	2401359-07	Soil	01/22/24 10:55	01/22/24 16:30
BG03@11-12'	2401359-08	Soil	01/22/24 11:00	01/22/24 16:30
BG03@14-15'	2401359-09	Soil	01/22/24 11:05	01/22/24 16:30
BG03@18-19'	2401359-10	Soil	01/22/24 11:10	01/22/24 16:30
BG04@5-6'	2401359-11	Soil	01/22/24 10:40	01/22/24 16:30
BG04@11-12'	2401359-12	Soil	01/22/24 10:45	01/22/24 16:30
BG04@12-13'	2401359-13	Soil	01/22/24 10:50	01/22/24 16:30
BG05@5-6'	2401359-14	Soil	01/22/24 12:00	01/22/24 16:30
FL01-C@4'	2401359-15	Soil	01/22/24 11:15	01/22/24 16:30
FL01-D@4'	2401359-16	Soil	01/22/24 11:20	01/22/24 16:30
FL01-E@4'	2401359-17	Soil	01/22/24 11:25	01/22/24 16:30
FL01-F@4'	2401359-18	Soil	01/22/24 11:30	01/22/24 16:30

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.



Send Data To:		Send Invoice To:
Client: Noble/Tasman	Project Manager: Jake Whritenour	Company: Noble
Address: 6855 W. 119th Ave.	E-Mail: Jwhritenour@tasman-geo.com	Project Name/Location: Lilli Unit 16-7
City/State/Zip: Broomfield/CO/ 80020		AFE#:
Phone: 727 365 4136	Project Name: Lilli Unit 16-7	PO/Billing Codes:
Sampler Name: Elizabeth Brauer	Project Number:	Contact: Dan Peterson

					Preservative				Matrix			Analysis Requested								Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	Metals - 915 *	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	EC	SAR, EC, pH by saturated paste	
1	BG01 @ 5-6'	1/22/24	1250	2			X			X			X				X					
2	BG01 @ 11-12'	↓	1255	↓			↓			↓			↓				↓					
3	BG01 @ 13-14'		1300																			
4	BG02 @ 5-6'		1135																			
5	BG02 @ 11-12'		1140																			
6	BG02 @ 12-13'		1145																			
7	BG03 @ 5-6'		1055																			
8	BG03 @ 11-12'		1100																			
9	BG03 @ 14-15'		1105																			
10	BG03 @ 18-19'		1110																			
11	BG04 @ 5-6'		1040																			
12	BG04 @ 11-12'		1045																			
13	BG04 @ 12-13'		1050																			
14	BG05 @ 5-6'		1200																			
15	FL01-C @ 4'		↓	1115	3			↓			↓			↓	X	X	X	↓	X		X	

Relinquished by: <i>Elb</i>	Date/Time: 1/22/24 1522	Received by: Summit North	Date/Time: 1/22/24 1522	TAT Business Days	Field DO	Notes: *arsenic only
				Same Day	Field EC	
Relinquished by: <i>52</i>	Date/Time: 12224 1630	Received by: <i>[Signature]</i>	Date/Time: 12224 1600	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 9.1		Corrected Temperature: 9		IR gun #: 1	HNO3 lot #:	

Client: Noble/Tasman		Send Data To:		Send Invoice To:	
Address: 6855 W. 119th Ave.		Project Manager: Jake Whritenour		Company: Noble	
City/State/Zip: Broomfield/CO/ 80020		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location: Lilli Unit 16-7	
Phone: 727-365-4136		Project Name: Lilli Unit 16-7		AFE#:	
Sampler Name: Elizabeth Brauer		Project Number:		PO/Billing Codes:	
				Contact: Dan Peterson	

					Preservative				Matrix				Analysis Requested								Special Instructions																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	Metals - 915 *	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

Relinquished by: 	Date/Time: 1/22/24 1522	Received by: Summit North	Date/Time: 1/22/24 1522	TAT Business Days	Field DO	Notes: *arsenic only
Relinquished by: 52	Date/Time: 12224 1630	Received by: 	Date/Time: 12224 1630	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	X Field Turb.	
Temperature Upon Receipt: 81	Corrected Temperature: 8	IR gun #: .1	HNO3 lot #:			

S₂

2/2

Sample Receipt Checklist

S2 Work Order# 2401359Client: Nabe Hasman Client Project ID: Lilli unit 16-7Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☐ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 8.1 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	note
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input 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"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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"/>	
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"/>	
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⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
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.

AS
Custodian Printed Name

1/22/24
Date/Time



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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

BG01@5-6'
2401359-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	3.33	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	6.83	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	2.62	0.0500	"	"	"	"	"	"	
Sodium	60.7	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.01	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	70.2		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 12:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	9.03		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG01@11-12'

2401359-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.38	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	45.1	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	19.8	0.0500	"	"	"	"	"	"	
Sodium	35.8	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	1.12	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	74.9		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 12:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.25		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG01@13-14'

2401359-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.28	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	27.3	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	10.3	0.0500	"	"	"	"	"	"	
Sodium	42.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	1.74	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	75.0		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 13:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.04		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG02@5-6'
2401359-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	9.79	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	12.1	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	3.26	0.0500	"	"	"	"	"	"	
Sodium	66.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	4.35	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	68.4		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.83		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG02@11-12'
2401359-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.64	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	15.3	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	5.21	0.0500	"	"	"	"	"	"	
Sodium	107	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	6.03	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	73.3		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.44		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG02@12-13'
2401359-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.22	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	5.17	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	2.29	0.0500	"	"	"	"	"	"	
Sodium	56.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.19	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	73.7		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.30		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG03@5-6'
2401359-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	9.98	0.200		mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	96.4	0.0500		mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	9.68	0.0500		"	"	"	"	"	"	
Sodium	45.4	0.0500		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Sodium Adsorption Ratio	1.18	0.00100		units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	80.1			%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 10:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.86			pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG03@11-12'
2401359-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	1.64	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	4.55	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	2.15	0.0500	"	"	"	"	"	"	
Sodium	52.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.03	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	77.7		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.67		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG03@14-15'

2401359-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.74	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	6.25	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	2.99	0.0500	"	"	"	"	"	"	
Sodium	85.0	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	7.00	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	70.0		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:05**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	7.69		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG03@18-19'

2401359-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.40	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	35.5	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	12.4	0.0500	"	"	"	"	"	"	
Sodium	37.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	1.37	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	73.0		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:10**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.15		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

BG04@5-6'
2401359-11 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.58	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	60.6	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	17.8	0.0500	"	"	"	"	"	"	
Sodium	252	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	7.32	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	90.2		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 10:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.12		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG04@11-12'
2401359-12 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	5.05	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	8.87	0.0500	mg/L dry	1	BHA0783	01/23/24	01/25/24	EPA 6020B	
Magnesium	2.93	0.0500	"	"	"	"	"	"	
Sodium	77.3	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	5.75	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	84.8		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 10:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.97		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG04@12-13'

2401359-13 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	16.6	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	18.8	0.0500	mg/L dry	1	BHA0783	01/23/24	01/26/24	EPA 6020B	
Magnesium	5.75	0.0500	"	"	"	"	"	"	
Sodium	118	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	6.11	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	87.6		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 10:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.46		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

BG05@5-6'
2401359-14 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **01/22/24 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	21.7	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B	

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	13.0	0.0500	mg/L dry	1	BHA0783	01/23/24	01/26/24	EPA 6020B	
Magnesium	2.26	0.0500	"	"	"	"	"	"	
Sodium	1.93	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Sodium Adsorption Ratio	0.130	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
% Solids	84.1		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 12:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
pH	8.75		pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D	

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

FL01-C@4'
2401359-15 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHA0798	01/23/24	01/25/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0433	108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0403	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0421	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0796	01/23/24	01/24/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.40	67.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

FL01-C@4'
2401359-15 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0779	01/23/24	01/24/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0164	49.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0218	65.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0817	01/24/24	01/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

FL01-C@4'
2401359-15 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	5.16	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	96.5	0.0500	mg/L dry	1	BHA0783	01/23/24	01/26/24	EPA 6020B	
Magnesium	5.79	0.0500	"	"	"	"	"	"	
Sodium	43.9	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.17	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.2		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.264	0.0100	mmhos/cm	1	BHA0838	01/24/24	01/24/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

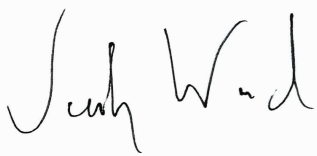
FL01-C@4'
2401359-15 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.49	pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

FL01-D@4'
2401359-16 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHA0798	01/23/24	01/25/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0485	121 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0409	102 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0420	105 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0796	01/23/24	01/24/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.04	64.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

FL01-D@4'
2401359-16 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHA0779	01/23/24	01/24/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0143	42.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0140	42.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHA0817	01/24/24	01/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

FL01-D@4'
2401359-16 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	8.54	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	96.9	0.0500	mg/L dry	1	BHA0783	01/23/24	01/26/24	EPA 6020B	
Magnesium	15.3	0.0500	"	"	"	"	"	"	
Sodium	52.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.31	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.1		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.279	0.0100	mmhos/cm	1	BHA0838	01/24/24	01/24/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

FL01-D@4'
2401359-16 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	9.17	pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

FL01-E@4'
2401359-17 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHA0798	01/23/24	01/25/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0437	109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0796	01/23/24	01/24/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.38	51.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

FL01-E@4'
2401359-17 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0779	01/23/24	01/24/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0153	46.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0251	75.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0817	01/24/24	01/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

FL01-E@4'
2401359-17 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	3.10	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	8.91	0.0500	mg/L dry	1	BHA0783	01/23/24	01/26/24	EPA 6020B	
Magnesium	2.18	0.0500	"	"	"	"	"	"	
Sodium	53.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.17	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	78.9		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.334	0.0100	mmhos/cm	1	BHA0838	01/24/24	01/24/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

FL01-E@4'
2401359-17 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	9.08	pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D
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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

FL01-F@4'
2401359-18 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHA0798	01/23/24	01/25/24	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0449	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0412	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHA0796	01/23/24	01/24/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	6.02	48.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

FL01-F@4'
2401359-18 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHA0779	01/23/24	01/24/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0135	40.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0164	49.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHA0817	01/24/24	01/24/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

FL01-F@4'
2401359-18 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Arsenic	7.13	0.200	mg/kg dry	1	BHA0908	01/25/24	01/26/24	EPA 6020B
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Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.4	0.0500	mg/L dry	1	BHA0783	01/23/24	01/26/24	EPA 6020B	
Magnesium	11.4	0.0500	"	"	"	"	"	"	
Sodium	18.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.556	0.00100	units	1	BHA0935	01/26/24	01/26/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	79.1		%	1	BHA0790	01/23/24	01/23/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.130	0.0100	mmhos/cm	1	BHA0838	01/24/24	01/24/24	EPA 120.1	

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

Date Sampled: **01/22/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

FL01-F@4'
2401359-18 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction

pH	8.92	pH Units	1	BHA0837	01/24/24	01/24/24	EPA 9045D
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Tasman Geosciences
6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

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 BHA0798 - EPA 5030 Soil MS

Blank (BHA0798-BLK1)

Prepared: 01/23/24 Analyzed: 01/24/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0386		"	0.0400		96.4	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

LCS (BHA0798-BS1)

Prepared: 01/23/24 Analyzed: 01/24/24

Benzene	0.0816	0.0020	mg/kg	0.100		81.6	70-130			
Toluene	0.104	0.0050	"	0.100		104	70-130			
Ethylbenzene	0.101	0.0050	"	0.100		101	70-130			
m,p-Xylene	0.202	0.010	"	0.200		101	70-130			
o-Xylene	0.100	0.0050	"	0.100		100	70-130			
1,2,4-Trimethylbenzene	0.0957	0.0050	"	0.100		95.7	70-130			
1,3,5-Trimethylbenzene	0.0983	0.0050	"	0.100		98.3	70-130			
Naphthalene	0.0850	0.0038	"	0.100		85.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.6	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	50-150			

Matrix Spike (BHA0798-MS1)

Source: 2401335-01

Prepared: 01/23/24 Analyzed: 01/24/24

Benzene	0.0636	0.0020	mg/kg	0.100	ND	63.6	70-130			QM-07
Toluene	0.0768	0.0050	"	0.100	ND	76.8	70-130			
Ethylbenzene	0.0720	0.0050	"	0.100	ND	72.0	70-130			
m,p-Xylene	0.146	0.010	"	0.200	ND	72.8	70-130			
o-Xylene	0.0710	0.0050	"	0.100	ND	71.0	70-130			
1,2,4-Trimethylbenzene	0.0627	0.0050	"	0.100	ND	62.7	70-130			QM-07
1,3,5-Trimethylbenzene	0.0642	0.0050	"	0.100	ND	64.2	70-130			QM-07
Naphthalene	0.0524	0.0038	"	0.100	ND	52.4	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0376		"	0.0400		93.9	50-150			
Surrogate: Toluene-d8	0.0413		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.3	50-150			

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Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

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 BHA0798 - EPA 5030 Soil MS

Matrix Spike Dup (BHA0798-MSD1)		Source: 2401335-01			Prepared: 01/23/24 Analyzed: 01/24/24					
Benzene	0.0797	0.0020	mg/kg	0.100	ND	79.7	70-130	22.6	30	
Toluene	0.0944	0.0050	"	0.100	ND	94.4	70-130	20.5	30	
Ethylbenzene	0.0862	0.0050	"	0.100	ND	86.2	70-130	17.9	30	
m,p-Xylene	0.171	0.010	"	0.200	ND	85.6	70-130	16.1	30	
o-Xylene	0.0847	0.0050	"	0.100	ND	84.7	70-130	17.6	30	
1,2,4-Trimethylbenzene	0.0746	0.0050	"	0.100	ND	74.6	70-130	17.3	30	
1,3,5-Trimethylbenzene	0.0768	0.0050	"	0.100	ND	76.8	70-130	17.8	30	
Naphthalene	0.0605	0.0038	"	0.100	ND	60.5	70-130	14.5	30	QM-07
<hr/>										
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.6	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0393		"	0.0400		98.3	50-150			

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Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

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 BHA0796 - EPA 3550A

Blank (BHA0796-BLK1)

Prepared & Analyzed: 01/23/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	8.95		"	12.5		71.6	30-150			

LCS (BHA0796-BS1)

Prepared & Analyzed: 01/23/24

C10-C28 (DRO)	426	50	mg/kg	500		85.2	70-130			
Surrogate: o-Terphenyl	8.71		"	12.5		69.7	30-150			

Matrix Spike (BHA0796-MS1)

Source: 2401335-01

Prepared & Analyzed: 01/23/24

C10-C28 (DRO)	427	50	mg/kg	500	8.77	83.7	70-130			
Surrogate: o-Terphenyl	8.53		"	12.5		68.2	30-150			

Matrix Spike Dup (BHA0796-MSD1)

Source: 2401335-01

Prepared & Analyzed: 01/23/24

C10-C28 (DRO)	466	50	mg/kg	500	8.77	91.4	70-130	8.66	20	
Surrogate: o-Terphenyl	8.43		"	12.5		67.4	30-150			

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Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHA0779 - EPA 5030 Soil MS

Blank (BHA0779-BLK1)

Prepared: 01/23/24 Analyzed: 01/24/24

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0149		"	0.0333		44.6	40-150			
Surrogate: Fluoranthene-d10	0.0375		"	0.0333		112	40-150			

LCS (BHA0779-BS1)

Prepared: 01/23/24 Analyzed: 01/24/24

Acenaphthene	0.0384	0.00500	mg/kg	0.0333	115	31-137
Anthracene	0.0371	0.00500	"	0.0333	111	30-120
Benzo (a) anthracene	0.0384	0.00500	"	0.0333	115	30-120
Benzo (a) pyrene	0.0373	0.00500	"	0.0333	112	30-120
Benzo (b) fluoranthene	0.0374	0.00500	"	0.0333	112	30-120
Benzo (k) fluoranthene	0.0353	0.00500	"	0.0333	106	30-120
Chrysene	0.0350	0.00500	"	0.0333	105	30-120
Dibenz (a,h) anthracene	0.0303	0.00500	"	0.0333	90.9	30-120
Fluoranthene	0.0397	0.00500	"	0.0333	119	30-120
Fluorene	0.0372	0.00500	"	0.0333	112	30-120
Indeno (1,2,3-cd) pyrene	0.0290	0.00500	"	0.0333	86.9	30-120
Pyrene	0.0369	0.00500	"	0.0333	111	35-142
1-Methylnaphthalene	0.0336	0.00500	"	0.0333	101	35-142
2-Methylnaphthalene	0.0366	0.00500	"	0.0333	110	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0350		"	0.0333	105	40-150
Surrogate: Fluoranthene-d10	0.0405		"	0.0333	121	40-150

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHA0779 - EPA 5030 Soil MS

Matrix Spike (BHA0779-MS1)

Source: 2401334-01

Prepared: 01/23/24 Analyzed: 01/24/24

Acenaphthene	0.0266	0.00500	mg/kg	0.0333	ND	79.9	31-137				
Anthracene	0.0272	0.00500	"	0.0333	ND	81.6	30-120				
Benzo (a) anthracene	0.0285	0.00500	"	0.0333	ND	85.4	30-120				
Benzo (a) pyrene	0.0256	0.00500	"	0.0333	ND	76.8	30-120				
Benzo (b) fluoranthene	0.0281	0.00500	"	0.0333	ND	84.4	30-120				
Benzo (k) fluoranthene	0.0288	0.00500	"	0.0333	ND	86.4	30-120				
Chrysene	0.0270	0.00500	"	0.0333	ND	81.1	30-120				
Dibenz (a,h) anthracene	0.0186	0.00500	"	0.0333	ND	55.7	30-120				
Fluoranthene	0.0275	0.00500	"	0.0333	ND	82.6	30-120				
Fluorene	0.0284	0.00500	"	0.0333	ND	85.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0177	0.00500	"	0.0333	ND	53.2	30-120				
Pyrene	0.0296	0.00500	"	0.0333	ND	88.9	35-142				
1-Methylnaphthalene	0.0256	0.00500	"	0.0333	ND	76.7	15-130				
2-Methylnaphthalene	0.0272	0.00500	"	0.0333	ND	81.5	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0287		"	0.0333		86.0	40-150				
Surrogate: Fluoranthene-d10	0.0286		"	0.0333		85.8	40-150				

Matrix Spike Dup (BHA0779-MSD1)

Source: 2401334-01

Prepared: 01/23/24 Analyzed: 01/24/24

Acenaphthene	0.0192	0.00500	mg/kg	0.0333	ND	57.5	31-137	32.7	30	QR-02
Anthracene	0.0201	0.00500	"	0.0333	ND	60.2	30-120	30.2	30	QR-02
Benzo (a) anthracene	0.0205	0.00500	"	0.0333	ND	61.5	30-120	32.6	30	QR-02
Benzo (a) pyrene	0.0183	0.00500	"	0.0333	ND	55.0	30-120	33.1	30	QR-02
Benzo (b) fluoranthene	0.0204	0.00500	"	0.0333	ND	61.1	30-120	32.1	30	QR-02
Benzo (k) fluoranthene	0.0206	0.00500	"	0.0333	ND	61.7	30-120	33.3	30	QR-02
Chrysene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	31.1	30	QR-02
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.1	30-120	30.1	30	QR-02
Fluoranthene	0.0205	0.00500	"	0.0333	ND	61.6	30-120	29.1	30	
Fluorene	0.0193	0.00500	"	0.0333	ND	57.8	30-120	38.3	30	QR-02
Indeno (1,2,3-cd) pyrene	0.0156	0.00500	"	0.0333	ND	46.7	30-120	13.0	30	
Pyrene	0.0219	0.00500	"	0.0333	ND	65.8	35-142	29.9	30	
1-Methylnaphthalene	0.0161	0.00500	"	0.0333	ND	48.2	15-130	45.6	50	
2-Methylnaphthalene	0.0196	0.00500	"	0.0333	ND	58.9	15-130	32.1	50	
Surrogate: 2-Methylnaphthalene-d10	0.0170		"	0.0333		50.9	40-150			
Surrogate: Fluoranthene-d10	0.0210		"	0.0333		63.1	40-150			

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

Total Metals by EPA 6020B Hot Water Soluble Extraction - Quality Control
Summit Scientific

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

Batch BHA0817 - EPA 3050B

Blank (BHA0817-BLK1)

Prepared & Analyzed: 01/24/24

Boron ND 2.00 mg/L

LCS (BHA0817-BS1)

Prepared & Analyzed: 01/24/24

Boron 4.71 2.00 mg/L 5.00 94.2 80-120

Duplicate (BHA0817-DUP1)

Source: 2312318-02RE1

Prepared & Analyzed: 01/24/24

Boron ND 2.00 mg/L ND 20

Matrix Spike (BHA0817-MS1)

Source: 2312318-02RE1

Prepared & Analyzed: 01/24/24

Boron 4.64 2.00 mg/L 5.00 ND 92.8 75-125

Matrix Spike Dup (BHA0817-MSD1)

Source: 2312318-02RE1

Prepared & Analyzed: 01/24/24

Boron 4.89 2.00 mg/L 5.00 ND 97.8 75-125 5.23 25

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHA0908 - EPA 3050B

Blank (BHA0908-BLK1)

Prepared: 01/25/24 Analyzed: 01/26/24

Arsenic ND 0.200 mg/kg wet

LCS (BHA0908-BS1)

Prepared: 01/25/24 Analyzed: 01/26/24

Arsenic 40.5 0.200 mg/kg wet 40.0 101 80-120

Duplicate (BHA0908-DUP1)

Source: 2311401-01

Prepared: 01/25/24 Analyzed: 01/26/24

Arsenic 1.45 0.200 mg/kg dry 1.60 9.33 20

Matrix Spike (BHA0908-MS1)

Source: 2311401-01

Prepared: 01/25/24 Analyzed: 01/26/24

Arsenic 43.3 0.200 mg/kg dry 43.8 1.60 95.3 75-125

Matrix Spike Dup (BHA0908-MSD1)

Source: 2311401-01

Prepared: 01/25/24 Analyzed: 01/26/24

Arsenic 43.7 0.200 mg/kg dry 43.8 1.60 96.2 75-125 0.932 25

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Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

Soluble Nutrients by EPA 6020/USDA60 6(2) - Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BHA0783 - General Preparation

Blank (BHA0783-BLK1)

Prepared: 01/23/24 Analyzed: 01/25/24

Calcium	ND	0.0500	mg/L wet
Magnesium	ND	0.0500	"
Sodium	ND	0.0500	"

LCS (BHA0783-BS1)

Prepared: 01/23/24 Analyzed: 01/25/24

Calcium	4.77	0.0500	mg/L wet	5.00	95.4	70-130
Magnesium	5.42	0.0500	"	5.00	108	70-130
Sodium	5.00	0.0500	"	5.00	100	70-130

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]

Project Manager: Jacob Whritenour

Reported:

01/29/24 14:47

Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BHA0790 - General Preparation

Duplicate (BHA0790-DUP1)		Source: 2401342-01		Prepared & Analyzed: 01/23/24						
% Solids	94.6		%		94.4			0.159	20	

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Broomfield CO, 80020

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BHA0838 - General Preparation

Blank (BHA0838-BLK1)

Prepared & Analyzed: 01/24/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHA0838-BS1)

Prepared & Analyzed: 01/24/24

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BHA0838-DUP1)

Source: 2401359-16

Prepared & Analyzed: 01/24/24

Specific Conductance (EC) 0.275 0.0100 mmhos/cm 0.279 1.59 20

Summit Scientific

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

Project: Noble - Lilli Unit 16-7

Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

Physical Parameters by APHA/ASTM/EPA Methods, Saturated Paste Extraction - Quality Control
Summit Scientific

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

Batch BHA0837 - General Preparation

LCS (BHA0837-BS1)

Prepared & Analyzed: 01/24/24

pH	9.27	pH Units	9.18	101	95-105
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Duplicate (BHA0837-DUP1)

Source: 2401359-01

Prepared & Analyzed: 01/24/24

pH	8.87	pH Units	9.03	1.79	20
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Summit Scientific

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Tasman Geosciences
6855 W. 119th Ave.
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Project: Noble - Lilli Unit 16-7

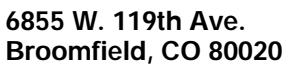
Project Number: [none]
Project Manager: Jacob Whritenour

Reported:
01/29/24 14:47

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QM-07	The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
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

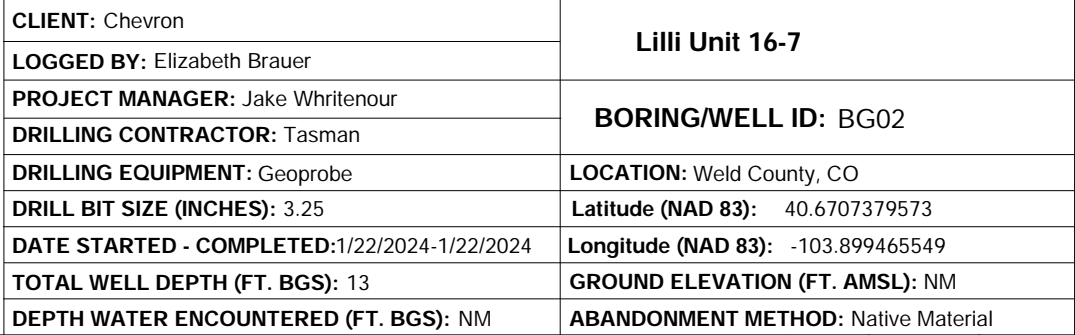
ATTACHMENT B
BORING LOGS



DEPTH WATER ENCOUNTERED (FT. BGS): NM

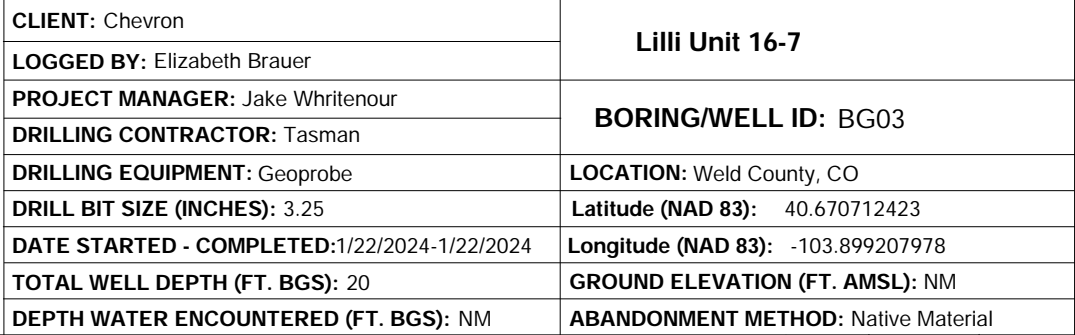
ABANDONMENT METHOD: Native Material











Drilling / Sample Method: Macro-Core Hand Auger Geotechnical Lab Analytical Chemistry Lab Geotechnical & Analytical Chemistry Lab

Drilling / Sample Method: Expendable Well Tip HydroPunch Groundwater Sampler



Drilling / Sample Method:  Macro-Core  Hand Auger  HydroPunch Groundwater Sampler  Geotechnical Lab  Analytical Chemistry Lab  Geotechnical & Analytical Chemistry Lab

Expendable Well Tip  



TASMAN

6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Chevron

LOGGED BY: Elizabeth Brauer

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25

DATE STARTED - COMPLETED: 1/22/2024-1/22/2024

TOTAL WELL DEPTH (FT. BGS): 13

DEPTH WATER ENCOUNTERED (FT. BGS): NM

Lilli Unit 16-7

BORING/WELL ID: BG04

LOCATION: Weld County, CO

Latitude (NAD 83): 40.6709413879

Longitude (NAD 83): -103.898791847

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native Material

Depth (feet)	Drill Tooling	% Rec. 25 50 75	Lithologic Description	USCS	PID (ppm)		Lab	Depth (feet)
					100	1000		
0			Gray, sandy clay, medium plasticity, dry, no odor	CL				0
			No Recovery	NA				
5			Light Tan, silty sand, fine grain, well sorted, dry, no odor	SM				5
			Grey, sandy clay, medium plasticity, dry, no odor	CL				
10								10

Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Hand Auger

HydroPunch Groundwater Sampler

Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

Geotechnical & Analytical Chemistry Lab



TASMAN

6855 W. 119th Ave.
Broomfield, CO 80020

CLIENT: Chevron

LOGGED BY: Elizabeth Brauer

PROJECT MANAGER: Jake Whritenour

DRILLING CONTRACTOR: Tasman

DRILLING EQUIPMENT: Geoprobe

DRILL BIT SIZE (INCHES): 3.25

DATE STARTED - COMPLETED: 1/22/2024-1/22/2024

TOTAL WELL DEPTH (FT. BGS): 6

DEPTH WATER ENCOUNTERED (FT. BGS): NM

Lilli Unit 16-7

BORING/WELL ID: BG05

LOCATION: Weld County, CO

Latitude (NAD 83): 40.6710445548

Longitude (NAD 83): -103.899141894

GROUND ELEVATION (FT. AMSL): NM

ABANDONMENT METHOD: Native Material

Depth (feet)	Drill Tooling	% Rec. 25 50 75			Lithologic Description	USCS	PID (ppm)		Lab	Depth (feet)
							100	1000		
0					Light Tan, sand, poorly sorted, fine to coarse grain, dry, no odor					0
						SW				
					No Recovery	NA				
5					Light Tan, sand, poorly sorted, fine to coarse grain, dry, no odor	SW				5

Drilling / Sample Method:

Macro-Core

Expendable Well Tip

Hand Auger

HydroPunch Groundwater Sampler

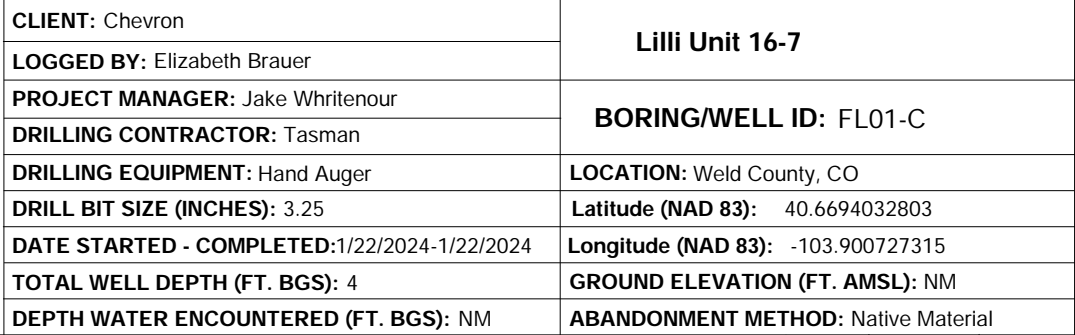
Laboratory Sample Types:

Geotechnical Lab

Analytical Chemistry Lab

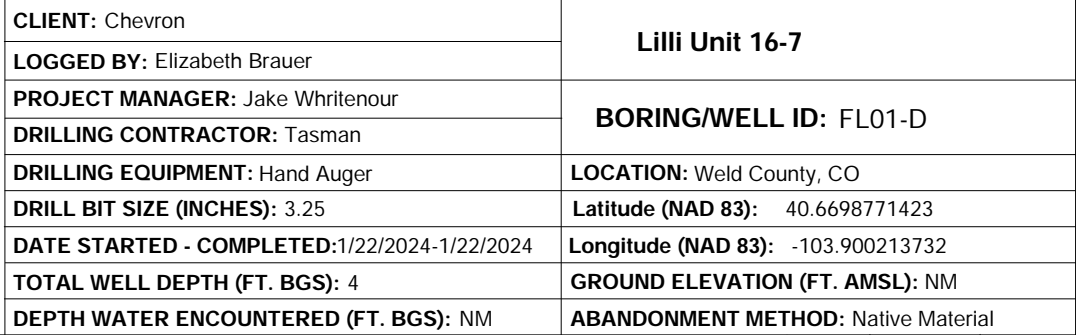


Geotechnical & Analytical Chemistry Lab



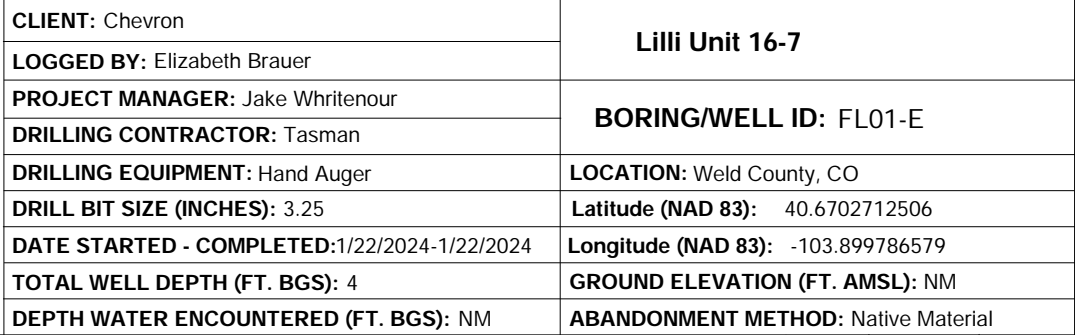
Drilling / Sample Method:

 Macro-Core	 Hand Auger	 Geotechnical Lab	 Geotechnical & Analytical Chemistry Lab
 Expendable Well Tip	 HydroPunch Groundwater Sampler	 Analytical Chemistry Lab	



Drilling / Sample Method:

 Macro-Core	 Hand Auger	 Geotechnical Lab	 Geotechnical & Analytical Chemistry Lab
 Expendable Well Tip	 HydroPunch Groundwater Sampler	 Analytical Chemistry Lab	

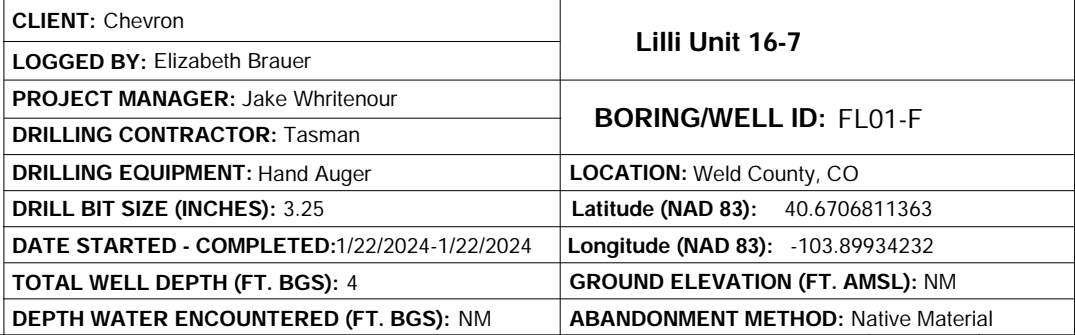


Drilling / Sample Method:

- Macro-Core
- Expendable Well Tip
- Hand Auger
- HydroPunch Groundwater Sampler

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab



Drilling / Sample Method:

- Macro-Core
- Expendable Well Tip
- Hand Auger
- HydroPunch Groundwater Sampler

Laboratory Sample Types:

- Geotechnical Lab
- Analytical Chemistry Lab
- Geotechnical & Analytical Chemistry Lab