

# Tank Battery Closure Checklist

## COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

Additional attachments (optional):		Pit Closure		Wellhead Closure		Flowline Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number: Booth C35-27, Fac #302545		Date: 7/10/2023				Remediation Project #: 27731		
Associated Wells:		Age of Site:				Number of Photos Attached: 1 - 16		
Location: (GPS coordinates of southeaster berm) 40.275213 / -104.513028						Estimated Facility Size (acres):		

General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)

Good condition, no corrosion or staining observed.

USCS Soil Type: SW	Estimated Depth to Groundwater: > 5ft
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Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

none observed

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)

none observed

### Tanks

Tank Contents	Crude Oil	Produced water					
Size (barrels)							
Age							
Construction	Steel	Concrete					
Tank type	AST	PBV					
Visual Integrity	Good	Good					
Condition of tank	Good	Good					
PID Readings							
Soil impacts present at valves or hatches?	none observed	none observed					
PID Readings	0.0 - 0.0	0.0 - 0.0					
Sample taken? Location/ Sample ID#	yes, see below	yes, see below					
Photo Number(s)	7 - 9	1 - 6					

Other observations regarding tanks:

Samples taken on all 4 sidewalls and base of excavation (SS01-08@2.5', FS01@-5', FS02@4.5' and FS03@5') Sample taken at base of AST, AST01 - 3@0.5'

### Separators

Separator size								
Vertical or	Horizontal	Horizontal	Horizontal					
Age								
Soil impacts	None Observed	None Observed	None Observed					
PID Readings	0.0 - 0.0	0.0 - 0.0	0.0 - 0.2					
Sample taken? Location/ Sample ID#	yes, see below	yes, see below	yes, see below					
Photo Number(s)	10	11	12					

Other observations regarding separators:

Samples taken at Flowline and Dumpline ends of all three Separators (SEP01-FL@2', SEP01-DL@2.5' , SEP02-FL@2', SEP02-DL@2.5', SEP03-FL@3' and SEP03-DL@3.5')

Third Party Equipment									
Type									
Age									
Third Party									
Removal Date									
Sample taken?									
PID Readings									
Photo Number(s)									
Other Facility Equipment									
Equipment type	Meter House 1 - 3		Flare						
Equipment	good		good						
Age									
Soil impacts	none observed		none observed						
PID Readings	0.0		0.0						
Sample taken?	yes, see below		yes, see below						
Photo Number(s)	14 - 16		13						
Other observations regarding other facility or third party equipment: Sample taken below three meter houses on site (MH01 - 3@0.5'), as well as below the flare (Flare01@0.5')									
Summary									
Was impacted soil identified?									
No									
Total number of samples field screened: 24					Total number of samples collected: 24				
Highest PID Reading: 0.2					Total number of samples submitted to lab for analysis: 20				
If more than 10 cubic yards of impacted soil were observed:									
Vertical extent:					Estimated spill volume:				
Lateral extent:					Volume of soil removed:				
Is additional investigation required?									
Was groundwater encountered during the investigation?									
No									
Measured depth to groundwater:					Was remedial groundwater removal conducted?				
Date Groundwater was encountered:					Commencement date of removal:				
Sheen on groundwater?					Volume of groundwater removed prior to sampling:				
Free product observed?					Volume of groundwater removed post sampling:				
Total number of samples collected:					Total Volume of groundwater removed:				
Total number of samples submitted to lab for analysis:									

## Photographic Log

							
<b>Equipment ID:</b>		<b>Equipment Type:</b>		<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>		<b>Volume:</b>		<b>Material:</b>		<b>Volume:</b>	
		<b>Contents:</b>				<b>Contents:</b>	
<b>Notes/Conditions:</b> Site photo also sampling locations within pit for 3				<b>Notes/Conditions:</b>			





## Photographic Log

							
Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:		Volume:		Material:		Volume:	
Contents:				Contents:			
Notes/Conditions:				Notes/Conditions:			



## Photographic Log

							
Equipment ID:		Equipment Type:		Equipment ID:		Equipment Type:	
Material:		Volume:		Material:		Volume:	
Contents:				Contents:			
Notes/Conditions: FL01				Notes/Conditions:			



## Photographic Log

									
						<b>Equipment ID:</b> AST01@0.5'		<b>Equipment Type:</b>	
						<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>	
						<b>Notes/Conditions:</b>			
<b>Equipment ID:</b> AST02@0.5'			<b>Equipment Type:</b>						
<b>Material:</b>		<b>Volume:</b>	<b>Contents:</b>						
<b>Notes/Conditions:</b>									



## Photographic Log

													
Equipment ID: AST03@0.5'			Equipment Type:			Equipment ID:			Equipment Type:				
Material:			Volume:		Contents:		Material:			Volume:		Contents:	
Notes/Conditions:						Notes/Conditions: sep01 - FL and DL							





## Photographic Log

							
<b>Equipment ID:</b>		<b>Equipment Type:</b>		<b>Equipment ID:</b>		<b>Equipment Type:</b>	
<b>Material:</b>		<b>Volume:</b>		<b>Material:</b>		<b>Volume:</b>	
				<b>Contents:</b>		<b>Contents:</b>	
<b>Notes/Conditions:</b> SEP02 - FL and DL				<b>Notes/Conditions:</b> SEP03 - FL and DL			







## Photographic Log

											
Equipment ID: Flare01 @ 0.5'			Equipment Type:			Equipment ID: MH01 @ 0.5'			Equipment Type:		
Material:		Volume:		Contents:		Material:		Volume:		Contents:	
Notes/Conditions:						Notes/Conditions:					



## Photographic Log

					
<b>Equipment ID:</b> MH02@0.5'		<b>Equipment Type:</b>			
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>			
<b>Notes/Conditions:</b>					
					
<b>Equipment ID:</b> MH03@0.5'		<b>Equipment Type:</b>			
<b>Material:</b>	<b>Volume:</b>	<b>Contents:</b>			
<b>Notes/Conditions:</b>					



**TABLE 1**  
**SOIL SAMPLE LOCATIONS**  
**NOBLE ENERGY, INC. - Booth C35-27**

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude <sup>1</sup>	Longitude	PDOP
AST01@0.5'	07/10/23	0.0	No Staining	No Odor	Lab	40.275204	-104.512640	0.9
AST02@0.5'	07/10/23	0.0	No Staining	No Odor	Lab	40.275221	-104.512681	0.9
AST03@0.5'	07/10/23	0.0	No Staining	No Odor	Lab	40.275239	-104.512726	0.9
Flare01@0.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275272	-104.513437	0.9
FS01@5'	07/10/23	0.0	No Staining	No Odor	Lab	40.275292	-104.512886	1.2
FS02@4.5	07/10/23	0.0	No Staining	No Odor	Lab	40.275282	-104.512854	1.1
FS03@5'	07/10/23	0.0	No Staining	No Odor	Lab	40.275270	-104.512822	1.1
MH01@0.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275347	-104.513350	1.0
MH02@0.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275341	-104.513306	0.9
MH03@0.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275333	-104.513276	1.0
SEP01-FL@2'	07/10/23	0.0	No Staining	No Odor	Lab	40.275239	-104.513367	0.9
SEP01-DL@2.5'	07/10/23	0.0	No Staining	No Odor	Lab	40.275236	-104.513361	0.9
SEP02-FL@2'	07/10/23	0.0	No Staining	No Odor	Lab	40.275231	-104.513333	0.9
SEP02-DL@2.5'	07/10/23	0.0	No Staining	No Odor	Lab	40.275228	-104.513326	0.9
SEP03-FL@3'	07/10/23	0.2	No Staining	No Odor	Lab	40.275226	-104.513296	0.9
SEP03-DL@3.5'	07/10/23	0.0	No Staining	No Odor	Lab	40.275226	-104.513290	0.9
SS01@2.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275307	-104.512940	0.8
SS02@2.5'	07/10/23	0.0	No Staining	No Odor	Lab	40.275314	-104.512890	0.8
SS03@2.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275307	-104.512852	0.9
SS04@2.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275291	-104.512813	0.9
SS05@2.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275262	-104.512785	1.0
SS06@2.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275239	-104.512826	0.9
SS07@2.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275256	-104.512870	1.0
SS08@2.5'	07/10/23	0.0	No Staining	No Odor	Grab	40.275260	-104.512914	1.0

Notes:

PID = Photo-ionization detector

ppm = parts per million

PDOP = Position dilution of precision

HC = Hydrocarbon

1.) Latitude and longitude coordinates will be provided in decimal degrees with an accuracy and precision of 5 decimals of a degree using the North American Datum ("NAD") of 1983



TABLE 2  
SOIL ANALYTICAL DATA  
NOBLE ENERGY, INC. - Booth C35-27

Soil Sample ID	Date	<sup>1</sup> Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	1,2,4 - TMB (mg/kg)	1,3,5 - TMB (mg/kg)	Naphthalene (mg/kg)	TPH-GRO (mg/kg)	TPH-DRO (mg/kg)	TPH-ORO (mg/kg)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benz(a) (mg/kg)	Benzo(a) (mg/kg)	Benzo(b) (mg/kg)	Benzo(k) (mg/kg)	Chrysene (mg/kg)	A,H (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	1,2,3-CD (mg/kg)	Pyrene (mg/kg)	1-M (mg/kg)	2-M (mg/kg)
Residential SSL <sup>2</sup>		1.2	490	5.8	58	30	27	2	500			360	1,800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
Protection of Groundwater SSL <sup>2,3</sup>		0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500			0.55	6	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
AST01@0.5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST02@0.5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
AST03@0.5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS01@5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS02@4.5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
FS03@5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-FL@2'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-DL@2.5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP02-FL@2'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	0.00848	0.0110	0.00702	0.00981	<0.00500	0.00931	<0.00500	0.0283	<0.00500	0.00629	0.0232	<0.00500	<0.00500
SEP02-DL@2.5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP03-FL@3'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP03-DL@3.5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	0.0058	<0.00500	0.00546	<0.00500	<0.00500	<0.00500	0.0123	<0.00500	<0.00500	0.0113	<0.00500	<0.00500
SS02@2.5'	07/10/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.010	<0.50	<50	<50	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Soil Sample ID	Date	pH	SAR	EC (mmhos/cm)	Boron (mg/L)
Residential SSL <sup>2</sup>		6 - 8.3	<6	<4mmhos/cm	2
AST01@0.5'	07/10/23	8.12	0.0401	0.253	0.0485
AST02@0.5'	07/10/23	7.87	0.0434	0.271	0.0653
AST03@0.5'	07/10/23	7.89	0.406	0.339	0.0784
FS01@5'	07/10/23	8.08	0.161	0.273	0.0801
FS02@4.5'	07/10/23	7.72	0.0131	0.282	0.107
FS03@5'	07/10/23	7.73	0.0264	0.336	0.146
SEP01-FL@2'	07/10/23	7.81	0.0574	0.280	0.282
SEP01-DL@2.5'	07/10/23	7.73	0.0546	0.330	0.452
SEP02-FL@2'	07/10/23	7.51	0.189	0.713	0.175
SEP02-DL@2.5'	07/10/23	7.66	0.0732	0.448	0.250
SEP03-FL@3'	07/10/23	7.60	0.984	0.771	0.337
SEP03-DL@3.5'	07/10/23	7.65	0.0828	0.406	0.372
SS02@2.5'	07/10/23	7.85	0.0686	0.369	0.256

Soil Sample ID	Date	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
Residential SSL <sup>2</sup>		0.68	15,000	71	0.3	3,100	400	1,500	390	390	23,000
Protection of Groundwater		0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
SEP02-FL@2'	07/10/23	0.840	38.5	<0.200	<0.30	1.79	2.82	1.27	<0.260	<0.0200	7.18

Notes:

1. Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.

2. Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.

3. SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

ECMC = Energy and Carbon Commission

TPH-GRO = Total petroleum hydrocarbons - gasoline range organics

TPH-DRO = Total petroleum hydrocarbons - diesel range organics

TPH-ORO = Total petroleum hydrocarbons - oil range organics

mg/kg = Milligrams per kilogram

SAR = Sodium Adsorption Ratio

EC = Electrical Conductivity

mmhos/cm = Millmhos per centimeter

mg/L = Milligrams per liter

< = Analytical result is less than the indicated laboratory reporting limit

Highlighted results are equal to or exceed the ECMC Table 915-1 standard

1,2,4 - TMB = 1,2,4 Trimethylbenzene

1,3,5 - TMB = 1,3,5 Trimethylbenzene

Benz(a) = Benzo(a)anthracene

Benzo(b) = Benzo(b)fluoranthene

Benzo(k) = Benzo(k)fluoranthene

Benzo(a) = Benzo(a)pyrene

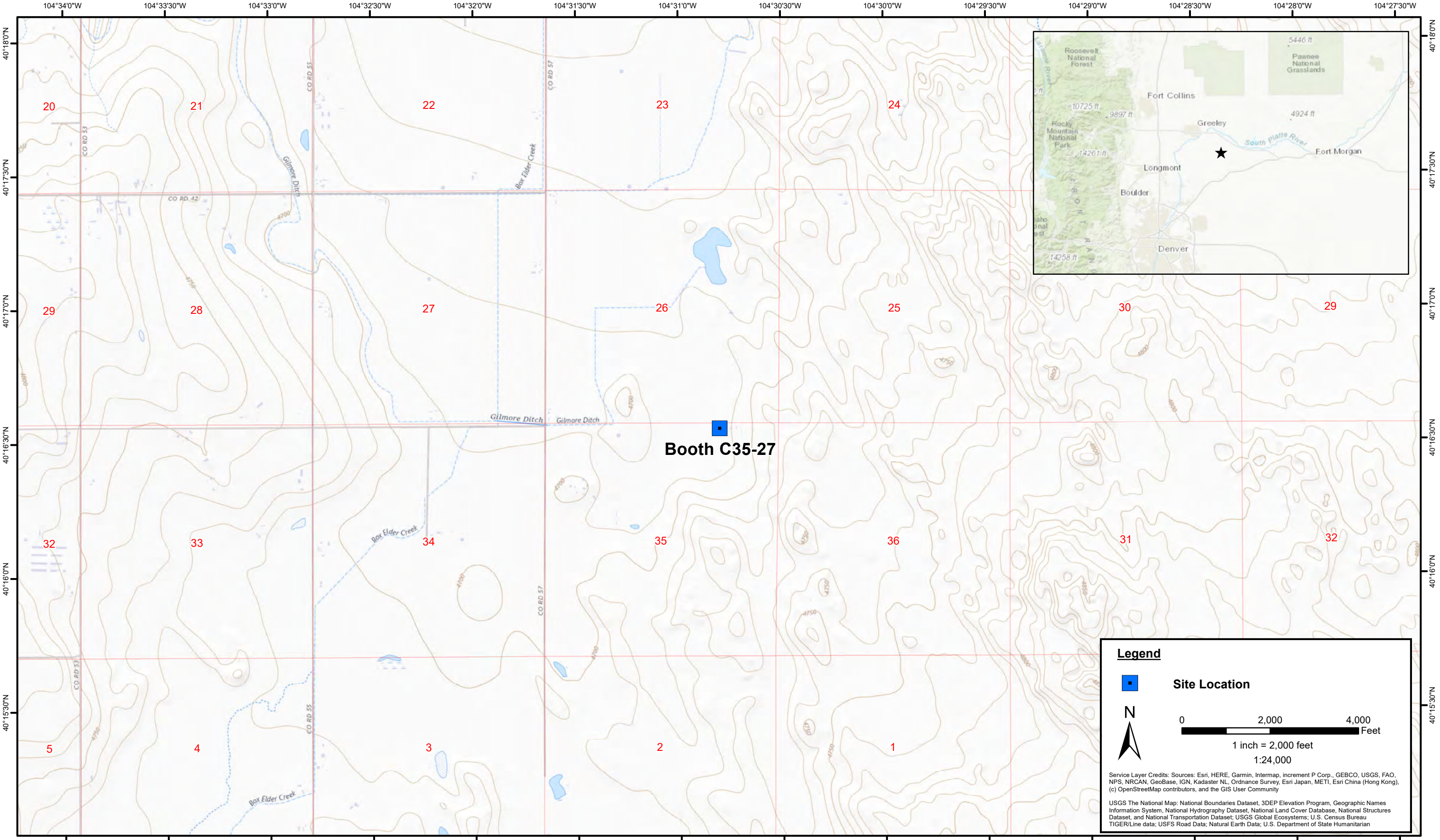
A,H = Dibenzo(a,h)anthracene

1,2,3-CD = Indeno(1,2,3-cd)pyrene

1-M = 1-methylnaphthalene

2-M = 2-methylnaphthalene





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



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

**Noble Energy, Inc - DJ Basin**  
**Booth C35-27**  
NWNE Sec. 35-T4N-R64W  
Weld County, Colorado

Site Location Map

**Figure**  
**1**







# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 16, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

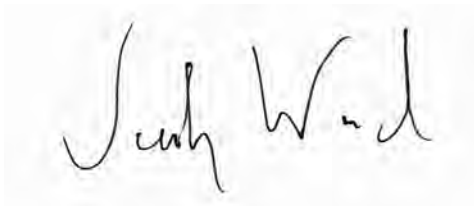
Broomfield, CO 80020

RE: Noble - Booth C35-27

Work Order #2307150

Enclosed are the results of analyses for samples received by Summit Scientific on 07/10/23 17:33. 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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS02@2.5'	2307150-02	Soil	07/10/23 10:46	07/10/23 17:33
FS01@5'	2307150-09	Soil	07/10/23 10:49	07/10/23 17:33
FS02@4.5'	2307150-10	Soil	07/10/23 10:55	07/10/23 17:33
FS03@5'	2307150-11	Soil	07/10/23 10:56	07/10/23 17:33
AST01@0.5	2307150-12	Soil	07/10/23 11:35	07/10/23 17:33
AST02@0.5	2307150-13	Soil	07/10/23 11:36	07/10/23 17:33
AST03@0.5	2307150-14	Soil	07/10/23 11:37	07/10/23 17:33
SEP01-FL@2'	2307150-15	Soil	07/10/23 11:50	07/10/23 17:33
SEP01-DL@2.5'	2307150-16	Soil	07/10/23 11:51	07/10/23 17:33
SEP02-FL@2'	2307150-17	Soil	07/10/23 11:52	07/10/23 17:33
SEP02-DL@2.5'	2307150-18	Soil	07/10/23 11:53	07/10/23 17:33
SEP03-FL@3'	2307150-19	Soil	07/10/23 11:54	07/10/23 17:33
SEP03-DL@3.5'	2307150-20	Soil	07/10/23 11:55	07/10/23 17:33

#### Case Narrative

Dale Brokaw requested 915 Metals be added to SEP02-FL@2' on 8/9/2023.  
This report includes those results.

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.*



# Summit Scientific

S<sub>2</sub>

2307150-1

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

Page 1 of 2

Client: Noble / Tasman Geosciences

Project Manager: Jake Whritenour, Invoice:

Address: 6855 W. 119th Ave.

E-Mail: Jwhritenour@tasman-geo.com

City/State/Zip: Broomfield / CO/ 80020

Phone: 231-292-2576

Project Name: Booth C35-27 Miguel Barron

Sampler Name: Elyse Hossink

Project Number: UWRWE - A3163 - ABN

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions
					HCl	HNO <sub>3</sub>	None	Other	Water	Soil	Air-Canister #	Other	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	
1	SSØ1 @ 2.5'	7/10/23	1045	2			X			X			X	X	X	X	X	X	
2	SSØ2 @ 2.5'		1046																
3	SSØ3 @ 2.5'		1047															X	
4	SSØ4 @ 2.5'		1048															X	
5	SSØ5 @ 2.5'		1050															X	
6	SSØ6 @ 2.5'		1051															X	
7	SSØ7 @ 2.5'		1052															X	
8	SSØ8 @ 2.5'		1053															X	
9	FSØ1 @ 5'		1049																
10	FSØ2 @ 4.5'		1055																

Relinquished by: Elyse Hossink	Date/Time: 7/10/23 1530	Received by: Tasman's Lock Box	Date/Time: 7/10/23 1530	Turn Around Time (Check) Same Day 24 hours <input checked="" type="checkbox"/> 48 hours	72 hours Standard	Notes:
Relinquished by: Tasman's Lock Box	Date/Time: 7/10/23 1733	Received by: [Signature]	Date/Time: 7/10/23 1733	Sample Integrity: Temperature Upon Receipt: 13.9		
Relinquished by:	Date/Time:	Received by:	Date/Time:	Samples Intact: Yes No		



# Summit Scientific

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310

2307150.2

Page 2 of 2

Client: Noble / Tasman Geosciences

Project Manager: Jake Whritenour, Invoice:

Address: 6855 W. 119th Ave.

E-Mail: Jwhritenour@tasman-geo.com

City/State/Zip: Broomfield / CO/ 80020

Phone: 231-292-2576

Project Name: Booth C35-27

Miguel Barron

Sampler Name: Elyse Hossink

Project Number: UWRWE-A3163-ABN

					Preservative				Matrix				Analysis Requested							Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____		VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD		pH, EC, SAR by saturated paste
1	FSØ 3 @ 5'	7/10/23	1056	2			X			X				X	X	X	X	X			
2	ASTØ 1 @ 0.5		1135																		
3	ASTØ 2 @ 0.5		1136																		
4	ASTØ 3 @ 0.5		1137																		
5	SEPØ 1 - FL @ 2'		1150																		
6	SEPØ 1 - DL @ 2.5'		1151																		
7	SEPØ 2 - FL @ 21		1152																		
8	SEPØ 2 - DL @ 2.5'		1153																		
9	SEPØ 3 - FL @ 3'		1154																		
10	SEPØ 3 - DL @ 3.5'		1155																		

Relinquished by: Elyse Hossink Date/Time: 7/10/23 1530  
Received by: Tasman's Lock Box Date/Time: 7/10/23 1530

Relinquished by: Tasman's Lock Box Date/Time: 7/10/23 1733  
Received by: [Signature] Date/Time: 7/10/23 1733

Relinquished by: Date/Time: Received by: Date/Time:

Turn Around Time (Check)  
 Same Day \_\_\_\_\_ 72 hours  
 24 hours ☒ Standard  
 48 hours \_\_\_\_\_

Sample Integrity:  
 Temperature Upon Receipt: 139  
 Samples Intact: (Yes) No

Notes:



S<sub>2</sub>

2/2

## Sample Receipt Checklist

S2 Work Order# 2307150

Client: Noble Frisman Client Project ID: Booth C35-27Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------	--------------------------	--------------------------

Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 13.9Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> <b>NOTE:</b> 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"/>	awzæ
If custody seals are present, are they intact? <sup>(1)</sup>	<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 <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , 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? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Some incorrect time stamps
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)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):				
<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS  
Custodian Printed Name7/10/23  
Date/Time



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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SS02@2.5'**  
**2307150-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 10:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/11/23	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: **07/10/23 10:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0389	97.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0397	99.3 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 10:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 10:46**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.89	79.1 %	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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SS02@2.5'**  
**2307150-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0146	43.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0170	51.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.256</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 10:46**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SS02@2.5'**  
**2307150-02 (Soil)**

**Summit Scientific**

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

Calcium	129	0.0549	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	8.57	0.0549	"	"	"	"	"	"
Sodium	2.98	0.0549	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0686	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.0		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.369	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 10:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.85		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**FS01@5'**  
**2307150-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 10:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/11/23	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: **07/10/23 10:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0404	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0398	99.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0396	99.1 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 10:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 10:49**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	10.2	81.3 %	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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**FS01@5'**  
**2307150-09 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0184	55.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0210	63.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0801</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 10:49**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**FS01@5'**  
**2307150-09 (Soil)**

**Summit Scientific**

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

Calcium	53.3	0.0526	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	7.55	0.0526	"	"	"	"	"	"
Sodium	4.74	0.0526	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.161	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.273	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 10:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**FS02@4.5'**  
**2307150-10 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/11/23	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: **07/10/23 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0403	101 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0402	100 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 10:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.5	124 %	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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**FS02@4.5'**  
**2307150-10 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0180	53.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0177	53.2 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.107</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 10:55**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**FS02@4.5'**  
**2307150-10 (Soil)**

**Summit Scientific**

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

Calcium	568	0.0551	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	25.9	0.0551	"	"	"	"	"	"
Sodium	1.18	0.0551	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0131	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.8		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.282	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 10:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.72		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**FS03@5'**  
**2307150-11 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 10:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/11/23	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: **07/10/23 10:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0425	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	97.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 10:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 10:56**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	16.7	134 %	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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**FS03@5'**  
**2307150-11 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0172	51.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0180	54.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.146</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 10:56**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**FS03@5'**  
**2307150-11 (Soil)**

**Summit Scientific**

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

Calcium	566	0.0572	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	45.6	0.0572	"	"	"	"	"	"
Sodium	2.43	0.0572	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0264	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.5		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.336	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 10:56**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.73		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**AST01@0.5**  
**2307150-12 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/12/23	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: **07/10/23 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0374	93.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	101 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:35**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.36	66.9 %	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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**AST01@0.5**  
**2307150-12 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0204	61.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0485</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 11:35**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**AST01@0.5**  
**2307150-12 (Soil)**

**Summit Scientific**

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

Calcium	29.1	0.0526	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	5.06	0.0526	"	"	"	"	"	"
Sodium	0.892	0.0526	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0401	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.253	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.12		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**AST02@0.5**  
**2307150-13 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/12/23	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: **07/10/23 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0391	97.7 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0389	97.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:36**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.4	123 %	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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**AST02@0.5**  
**2307150-13 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0227	68.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0252	75.7 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0653</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 11:36**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**AST02@0.5**  
**2307150-13 (Soil)**

**Summit Scientific**

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

Calcium	35.6	0.0535	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	5.36	0.0535	"	"	"	"	"	"
Sodium	1.05	0.0535	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0434	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.4		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.271	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.87		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**AST03@0.5**  
**2307150-14 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/12/23	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: **07/10/23 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0414	104 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0380	94.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0401	100 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:37**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	7.45	59.6 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**AST03@0.5**  
**2307150-14 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0212	63.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0229	68.6 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.0784</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 11:37**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**AST03@0.5**  
**2307150-14 (Soil)**

**Summit Scientific**

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

Calcium	40.1	0.0555	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	8.18	0.0555	"	"	"	"	"	"
Sodium	10.8	0.0555	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.406	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.1		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.339	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 11:37**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.89		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP01-FL@2'**  
**2307150-15 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/12/23	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: **07/10/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0397	99.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0419	105 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:50**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	5.20	41.6 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Tasman Geosciences  
6855 W. 119th Ave.  
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Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP01-FL@2'**  
**2307150-15 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0206	61.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0251	75.2 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.282</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 11:50**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP01-FL@2'**  
**2307150-15 (Soil)**

**Summit Scientific**

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

Calcium	239	0.0568	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	9.09	0.0568	"	"	"	"	"	"
Sodium	3.32	0.0568	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0574	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.0		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.280	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 11:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP01-DL@2.5'**  
**2307150-16 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/12/23	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: **07/10/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0401	100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0393	98.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:51**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.2	121 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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6855 W. 119th Ave.  
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Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP01-DL@2.5'**  
**2307150-16 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.00510</b>	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: **07/10/23 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0212	63.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0248	74.3 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.452</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 11:51**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP01-DL@2.5'**  
**2307150-16 (Soil)**

**Summit Scientific**

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

Calcium	158	0.0570	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	9.44	0.0570	"	"	"	"	"	"
Sodium	2.61	0.0570	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0546	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.6		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.330	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 11:51**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.73		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP02-FL@2'**  
**2307150-17 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/12/23	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	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0396	99.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0395	98.8 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.3	90.7 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP02-FL@2'**  
**2307150-17 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	EPA 8270D SIM	
<b>Anthracene</b>	<b>0.00848</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.0110</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (a) pyrene</b>	<b>0.00702</b>	0.00500	"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>0.00981</b>	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
<b>Chrysene</b>	<b>0.00931</b>	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0283</b>	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
<b>Indeno (1,2,3-cd) pyrene</b>	<b>0.00629</b>	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0232</b>	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0199	59.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0215	64.5 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.175</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **07/10/23 11:52**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP02-FL@2'**  
**2307150-17 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	0.840	0.200	mg/kg dry	1	BGH0516	08/14/23	08/15/23	EPA 6020B
Barium	38.5	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	1.79	0.400	"	"	"	"	"	"
Lead	2.82	0.200	"	"	"	"	"	"
Nickel	1.27	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	7.18	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0375	08/09/23	08/09/23	EPA 7196A	

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

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	67.1	0.0548	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B	
Magnesium	10.5	0.0548	"	"	"	"	"	"	
Sodium	6.32	0.0548	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.189	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP02-FL@2'**  
**2307150-17 (Soil)**

**Summit Scientific**

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.3		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.713	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.51		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

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Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP02-FL@2'**  
**2307150-17RE1 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:52**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Naphthalene	ND	0.0038	mg/kg	1	BGG0613	07/11/23	07/21/23	EPA 8260B	

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Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP02-DL@2.5'**  
**2307150-18 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/12/23	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: **07/10/23 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0354	88.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0392	98.1 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:53**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	15.5	124 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP02-DL@2.5'**  
**2307150-18 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0247	74.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.250</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 11:53**

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 - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP02-DL@2.5'**  
**2307150-18 (Soil)**

**Summit Scientific**

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

Calcium	100	0.0556	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	8.58	0.0556	"	"	"	"	"	"
Sodium	2.84	0.0556	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0732	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.9		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.448	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 11:53**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.66		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP03-FL@3'**  
**2307150-19 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/12/23	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: **07/10/23 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0410	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0401	100 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:54**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	9.17	73.4 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Number: UWRWE-A3163-ABN  
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**Reported:**  
08/16/23 08:55

**SEP03-FL@3'**  
**2307150-19 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	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: **07/10/23 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0205	61.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0217	65.0 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.337</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 11:54**

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP03-FL@3'**  
**2307150-19 (Soil)**

**Summit Scientific**

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

Calcium	65.2	0.0556	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	9.12	0.0556	"	"	"	"	"	"
Sodium	32.0	0.0556	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.984	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.0		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.771	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 11:54**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.60		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP03-DL@3.5'**  
**2307150-20 (Soil)**

**Summit Scientific**

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

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGG0296	07/11/23	07/12/23	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: **07/10/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0380	95.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0372	92.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0297	07/11/23	07/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	11.2	89.5 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP03-DL@3.5'**  
**2307150-20 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0266	07/11/23	07/11/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Benzo (a) anthracene</b>	<b>0.00580</b>	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Benzo (b) fluoranthene</b>	<b>0.00546</b>	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
<b>Fluoranthene</b>	<b>0.0123</b>	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
<b>Pyrene</b>	<b>0.0113</b>	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0189	56.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0209	62.8 %	40-150		"	"	"	"	

**Total Metals by EPA 6020B Hot Water Soluble Extraction**

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.372</b>	0.0100	mg/L	1	BGG0384	07/13/23	07/15/23	EPA 6020B	

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

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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6855 W. 119th Ave.  
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Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**SEP03-DL@3.5'**  
**2307150-20 (Soil)**

**Summit Scientific**

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

Calcium	473	0.0559	mg/L dry	1	BGG0376	07/13/23	07/18/23	EPA 6020B
Magnesium	17.1	0.0559	"	"	"	"	"	"
Sodium	6.73	0.0559	"	"	"	"	"	"

**Calculated Analysis**

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0828	0.00100	units	1	BGG0544	07/18/23	07/18/23	Calculation	

**Physical Parameters by APHA/ASTM/EPA Methods**

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.4		%	1	BGG0298	07/11/23	07/11/23	Calculation	

**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.406	0.0100	mmhos/cm	1	BGG0422	07/14/23	07/14/23	EPA 120.1	

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

Date Sampled: **07/10/23 11:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.75		pH Units	1	BGG0424	07/14/23	07/14/23	EPA 9045D	

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6855 W. 119th Ave.  
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Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

## 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 BGG0296 - EPA 5030 Soil MS

##### Blank (BGG0296-BLK1)

Prepared & Analyzed: 07/11/23

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	0.0380		"	0.0400		94.9	50-150			
Surrogate: Toluene-d8	0.0420		"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

##### LCS (BGG0296-BS1)

Prepared & Analyzed: 07/11/23

Benzene	0.0598	0.0020	mg/kg	0.0750		79.7	70-130			
Toluene	0.0778	0.0050	"	0.0750		104	70-130			
Ethylbenzene	0.0875	0.0050	"	0.0750		117	70-130			
m,p-Xylene	0.171	0.010	"	0.150		114	70-130			
o-Xylene	0.0808	0.0050	"	0.0750		108	70-130			
1,2,4-Trimethylbenzene	0.0826	0.0050	"	0.0750		110	70-130			
1,3,5-Trimethylbenzene	0.0853	0.0050	"	0.0750		114	70-130			
Naphthalene	0.0677	0.0038	"	0.0750		90.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0394		"	0.0400		98.5	50-150			
Surrogate: Toluene-d8	0.0406		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	50-150			

##### Matrix Spike (BGG0296-MS1)

Source: 2307150-02

Prepared & Analyzed: 07/11/23

Benzene	0.0579	0.0020	mg/kg	0.0750	ND	77.2	70-130			
Toluene	0.0722	0.0050	"	0.0750	ND	96.2	70-130			
Ethylbenzene	0.0844	0.0050	"	0.0750	ND	112	70-130			
m,p-Xylene	0.166	0.010	"	0.150	ND	111	70-130			
o-Xylene	0.0785	0.0050	"	0.0750	ND	105	70-130			
1,2,4-Trimethylbenzene	0.0811	0.0050	"	0.0750	ND	108	70-130			
1,3,5-Trimethylbenzene	0.0819	0.0050	"	0.0750	ND	109	70-130			
Naphthalene	0.0734	0.0038	"	0.0750	ND	97.9	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0396		"	0.0400		99.1	50-150			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0392		"	0.0400		98.0	50-150			

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Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**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 BGG0296 - EPA 5030 Soil MS**

Matrix Spike Dup (BGG0296-MSD1)			Source: 2307150-02		Prepared & Analyzed: 07/11/23					
Benzene	0.0588	0.0020	mg/kg	0.0750	ND	78.4	70-130	1.54	30	
Toluene	0.0750	0.0050	"	0.0750	ND	100	70-130	3.83	30	
Ethylbenzene	0.0876	0.0050	"	0.0750	ND	117	70-130	3.80	30	
m,p-Xylene	0.171	0.010	"	0.150	ND	114	70-130	3.01	30	
o-Xylene	0.0807	0.0050	"	0.0750	ND	108	70-130	2.75	30	
1,2,4-Trimethylbenzene	0.0832	0.0050	"	0.0750	ND	111	70-130	2.56	30	
1,3,5-Trimethylbenzene	0.0850	0.0050	"	0.0750	ND	113	70-130	3.63	30	
Naphthalene	0.0748	0.0038	"	0.0750	ND	99.8	70-130	1.86	30	
Surrogate: 1,2-Dichloroethane-d4	0.0379		"	0.0400		94.7	50-150			
Surrogate: Toluene-d8	0.0385		"	0.0400		96.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	50-150			

**Batch BGG0613 - EPA 5030 Soil MS**

Blank (BGG0613-BLK1)			Prepared & Analyzed: 07/20/23							
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	0.0289		"	0.0400		72.3	50-150			
Surrogate: Toluene-d8	0.0356		"	0.0400		89.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0442		"	0.0400		110	50-150			

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

## 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 BGG0613 - EPA 5030 Soil MS

##### LCS (BGG0613-BS1)

Prepared & Analyzed: 07/20/23

Benzene	0.199	0.0020	mg/kg	0.200		99.7	70-130			
Toluene	0.206	0.0050	"	0.200		103	70-130			
Ethylbenzene	0.153	0.0050	"	0.200		76.7	70-130			
m,p-Xylene	0.362	0.010	"	0.400		90.4	70-130			
o-Xylene	0.254	0.0050	"	0.200		127	70-130			
1,2,4-Trimethylbenzene	0.157	0.0050	"	0.200		78.5	70-130			
1,3,5-Trimethylbenzene	0.164	0.0050	"	0.200		82.1	70-130			
Naphthalene	0.172	0.0038	"	0.200		86.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0233		"	0.0400		58.3	50-150			
Surrogate: Toluene-d8	0.0353		"	0.0400		88.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0431		"	0.0400		108	50-150			

##### Matrix Spike (BGG0613-MS1)

Source: 2307362-03

Prepared: 07/20/23 Analyzed: 07/21/23

Benzene	0.203	0.0020	mg/kg	0.200	ND	101	70-130			
Toluene	0.209	0.0050	"	0.200	ND	104	70-130			
Ethylbenzene	0.250	0.0050	"	0.200	ND	125	70-130			
m,p-Xylene	0.499	0.010	"	0.400	ND	125	70-130			
o-Xylene	0.243	0.0050	"	0.200	ND	121	70-130			
1,2,4-Trimethylbenzene	0.175	0.0050	"	0.200	ND	87.3	70-130			
1,3,5-Trimethylbenzene	0.172	0.0050	"	0.200	ND	86.1	70-130			
Naphthalene	0.232	0.0038	"	0.200	ND	116	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0307		"	0.0400		76.7	50-150			
Surrogate: Toluene-d8	0.0347		"	0.0400		86.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0431		"	0.0400		108	50-150			

##### Matrix Spike Dup (BGG0613-MSD1)

Source: 2307362-03

Prepared: 07/20/23 Analyzed: 07/21/23

Benzene	0.207	0.0020	mg/kg	0.200	ND	104	70-130	2.24	30	
Toluene	0.213	0.0050	"	0.200	ND	106	70-130	1.95	30	
Ethylbenzene	0.260	0.0050	"	0.200	ND	130	70-130	3.84	30	
m,p-Xylene	0.513	0.010	"	0.400	ND	128	70-130	2.74	30	
o-Xylene	0.246	0.0050	"	0.200	ND	123	70-130	1.30	30	
1,2,4-Trimethylbenzene	0.152	0.0050	"	0.200	ND	75.8	70-130	14.1	30	
1,3,5-Trimethylbenzene	0.150	0.0050	"	0.200	ND	75.1	70-130	13.6	30	
Naphthalene	0.244	0.0038	"	0.200	ND	122	70-130	5.16	30	
Surrogate: 1,2-Dichloroethane-d4	0.0295		"	0.0400		73.6	50-150			
Surrogate: Toluene-d8	0.0351		"	0.0400		87.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0430		"	0.0400		108	50-150			

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Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**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 BGG0297 - EPA 3550A**

**Blank (BGG0297-BLK1)**

Prepared & Analyzed: 07/11/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	15.4		"	12.5		123	30-150			

**LCS (BGG0297-BS1)**

Prepared & Analyzed: 07/11/23

C10-C28 (DRO)	428	50	mg/kg	500		85.6	70-130			
Surrogate: o-Terphenyl	13.3		"	12.5		107	30-150			

**Matrix Spike (BGG0297-MS1)**

Source: 2307150-02

Prepared: 07/11/23 Analyzed: 07/12/23

C10-C28 (DRO)	597	50	mg/kg	500	12.0	117	70-130			
Surrogate: o-Terphenyl	16.9		"	12.5		135	30-150			

**Matrix Spike Dup (BGG0297-MSD1)**

Source: 2307150-02

Prepared: 07/11/23 Analyzed: 07/12/23

C10-C28 (DRO)	645	50	mg/kg	500	12.0	127	70-130	7.61	20	
Surrogate: o-Terphenyl	16.2		"	12.5		130	30-150			

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Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGG0266 - EPA 5030 Soil MS

##### Blank (BGG0266-BLK1)

Prepared & Analyzed: 07/11/23

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	0.0253		"	0.0333		76.0	40-150			
Surrogate: Fluoranthene-d10	0.0309		"	0.0333		92.8	40-150			

##### LCS (BGG0266-BS1)

Prepared & Analyzed: 07/11/23

Acenaphthene	0.0300	0.00500	mg/kg	0.0333		90.0	31-137			
Anthracene	0.0325	0.00500	"	0.0333		97.6	30-120			
Benzo (a) anthracene	0.0294	0.00500	"	0.0333		88.3	30-120			
Benzo (a) pyrene	0.0267	0.00500	"	0.0333		80.2	30-120			
Benzo (b) fluoranthene	0.0275	0.00500	"	0.0333		82.6	30-120			
Benzo (k) fluoranthene	0.0302	0.00500	"	0.0333		90.6	30-120			
Chrysene	0.0325	0.00500	"	0.0333		97.4	30-120			
Dibenz (a,h) anthracene	0.0249	0.00500	"	0.0333		74.8	30-120			
Fluoranthene	0.0307	0.00500	"	0.0333		92.1	30-120			
Fluorene	0.0289	0.00500	"	0.0333		86.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0243	0.00500	"	0.0333		72.8	30-120			
Pyrene	0.0339	0.00500	"	0.0333		102	35-142			
1-Methylnaphthalene	0.0234	0.00500	"	0.0333		70.3	35-142			
2-Methylnaphthalene	0.0257	0.00500	"	0.0333		77.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0265		"	0.0333		79.6	40-150			
Surrogate: Fluoranthene-d10	0.0344		"	0.0333		103	40-150			

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

## 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 BGG0266 - EPA 5030 Soil MS

Matrix Spike (BGG0266-MS1)			Source: 2307150-02		Prepared & Analyzed: 07/11/23						
Acenaphthene	0.0171	0.00500	mg/kg	0.0333	ND	51.2	31-137				
Anthracene	0.0190	0.00500	"	0.0333	ND	57.0	30-120				
Benzo (a) anthracene	0.0199	0.00500	"	0.0333	ND	59.7	30-120				
Benzo (a) pyrene	0.0161	0.00500	"	0.0333	ND	48.4	30-120				
Benzo (b) fluoranthene	0.0160	0.00500	"	0.0333	ND	48.1	30-120				
Benzo (k) fluoranthene	0.0161	0.00500	"	0.0333	ND	48.4	30-120				
Chrysene	0.0195	0.00500	"	0.0333	ND	58.4	30-120				
Dibenz (a,h) anthracene	0.0150	0.00500	"	0.0333	ND	45.0	30-120				
Fluoranthene	0.0177	0.00500	"	0.0333	ND	53.2	30-120				
Fluorene	0.0177	0.00500	"	0.0333	ND	53.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0149	0.00500	"	0.0333	ND	44.7	30-120				
Pyrene	0.0210	0.00500	"	0.0333	ND	62.9	35-142				
1-Methylnaphthalene	0.0185	0.00500	"	0.0333	ND	55.6	15-130				
2-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.7	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0216		"	0.0333		64.9	40-150				
Surrogate: Fluoranthene-d10	0.0214		"	0.0333		64.2	40-150				

Matrix Spike Dup (BGG0266-MSD1)			Source: 2307150-02		Prepared & Analyzed: 07/11/23						
Acenaphthene	0.0145	0.00500	mg/kg	0.0333	ND	43.5	31-137	16.3	30		
Anthracene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	25.1	30		
Benzo (a) anthracene	0.0174	0.00500	"	0.0333	ND	52.1	30-120	13.7	30		
Benzo (a) pyrene	0.0143	0.00500	"	0.0333	ND	42.9	30-120	11.9	30		
Benzo (b) fluoranthene	0.0140	0.00500	"	0.0333	ND	41.9	30-120	13.8	30		
Benzo (k) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.6	30-120	15.1	30		
Chrysene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	17.1	30		
Dibenz (a,h) anthracene	0.0138	0.00500	"	0.0333	ND	41.4	30-120	8.22	30		
Fluoranthene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	19.4	30		
Fluorene	0.0134	0.00500	"	0.0333	ND	40.2	30-120	27.9	30		
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	3.40	30		
Pyrene	0.0181	0.00500	"	0.0333	ND	54.4	35-142	14.6	30		
1-Methylnaphthalene	0.0145	0.00500	"	0.0333	ND	43.4	15-130	24.7	50		
2-Methylnaphthalene	0.0144	0.00500	"	0.0333	ND	43.3	15-130	26.8	50		
Surrogate: 2-Methylnaphthalene-d10	0.0162		"	0.0333		48.6	40-150				
Surrogate: Fluoranthene-d10	0.0178		"	0.0333		53.3	40-150				

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGG0998 - EPA 5030 Soil MS

##### Blank (BGG0998-BLK1)

Prepared & Analyzed: 07/31/23

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	0.0343		"	0.0333		103	40-150			
Surrogate: Fluoranthene-d10	0.0377		"	0.0333		113	40-150			

##### LCS (BGG0998-BS1)

Prepared & Analyzed: 07/31/23

Acenaphthene	0.0277	0.00500	mg/kg	0.0333	83.0	31-137
Anthracene	0.0246	0.00500	"	0.0333	73.8	30-120
Benzo (a) anthracene	0.0239	0.00500	"	0.0333	71.8	30-120
Benzo (a) pyrene	0.0256	0.00500	"	0.0333	76.8	30-120
Benzo (b) fluoranthene	0.0195	0.00500	"	0.0333	58.4	30-120
Benzo (k) fluoranthene	0.0203	0.00500	"	0.0333	60.8	30-120
Chrysene	0.0305	0.00500	"	0.0333	91.4	30-120
Dibenz (a,h) anthracene	0.0277	0.00500	"	0.0333	83.0	30-120
Fluoranthene	0.0289	0.00500	"	0.0333	86.6	30-120
Fluorene	0.0312	0.00500	"	0.0333	93.6	30-120
Indeno (1,2,3-cd) pyrene	0.0184	0.00500	"	0.0333	55.1	30-120
Pyrene	0.0231	0.00500	"	0.0333	69.4	35-142
1-Methylnaphthalene	0.0149	0.00500	"	0.0333	44.8	35-142
2-Methylnaphthalene	0.0315	0.00500	"	0.0333	94.6	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0277		"	0.0333	83.2	40-150
Surrogate: Fluoranthene-d10	0.0302		"	0.0333	90.6	40-150

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

## PAH by EPA Method 8270D SIM - Quality Control

### Summit Scientific

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

#### Batch BGG0998 - EPA 5030 Soil MS

##### Matrix Spike (BGG0998-MS1)

Source: 2307535-01

Prepared & Analyzed: 07/31/23

Acenaphthene	0.0190	0.00500	mg/kg	0.0333	ND	56.9	31-137		
Anthracene	0.0211	0.00500	"	0.0333	ND	63.4	30-120		
Benzo (a) anthracene	0.0196	0.00500	"	0.0333	ND	58.8	30-120		
Benzo (a) pyrene	0.0191	0.00500	"	0.0333	ND	57.2	30-120		
Benzo (b) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.8	30-120		
Benzo (k) fluoranthene	0.0178	0.00500	"	0.0333	ND	53.3	30-120		
Chrysene	0.0192	0.00500	"	0.0333	ND	57.5	30-120		
Dibenz (a,h) anthracene	0.0212	0.00500	"	0.0333	ND	63.6	30-120		
Fluoranthene	0.0339	0.00500	"	0.0333	ND	102	30-120		
Fluorene	0.0249	0.00500	"	0.0333	ND	74.8	30-120		
Indeno (1,2,3-cd) pyrene	0.0137	0.00500	"	0.0333	ND	41.0	30-120		
Pyrene	0.0214	0.00500	"	0.0333	ND	64.3	35-142		
1-Methylnaphthalene	0.0244	0.00500	"	0.0333	ND	73.1	15-130		
2-Methylnaphthalene	0.0226	0.00500	"	0.0333	ND	67.9	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0218		"	0.0333		65.5	40-150		
Surrogate: Fluoranthene-d10	0.0360		"	0.0333		108	40-150		

##### Matrix Spike Dup (BGG0998-MSD1)

Source: 2307535-01

Prepared & Analyzed: 07/31/23

Acenaphthene	0.0189	0.00500	mg/kg	0.0333	ND	56.8	31-137	0.118	30
Anthracene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	10.5	30
Benzo (a) anthracene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	15.0	30
Benzo (a) pyrene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	12.6	30
Benzo (b) fluoranthene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	14.5	30
Benzo (k) fluoranthene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	15.1	30
Chrysene	0.0165	0.00500	"	0.0333	ND	49.4	30-120	15.1	30
Dibenz (a,h) anthracene	0.0177	0.00500	"	0.0333	ND	53.0	30-120	18.3	30
Fluoranthene	0.0308	0.00500	"	0.0333	ND	92.5	30-120	9.55	30
Fluorene	0.0186	0.00500	"	0.0333	ND	55.8	30-120	29.0	30
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.7	30-120	4.10	30
Pyrene	0.0255	0.00500	"	0.0333	ND	76.5	35-142	17.3	30
1-Methylnaphthalene	0.0202	0.00500	"	0.0333	ND	60.6	15-130	18.7	50
2-Methylnaphthalene	0.0204	0.00500	"	0.0333	ND	61.3	15-130	10.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0192		"	0.0333		57.5	40-150		
Surrogate: Fluoranthene-d10	0.0327		"	0.0333		98.1	40-150		

Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**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 BGG0384 - EPA 3050B**

**Blank (BGG0384-BLK1)**

Prepared: 07/13/23 Analyzed: 07/15/23

Boron ND 0.0100 mg/L

**LCS (BGG0384-BS1)**

Prepared: 07/13/23 Analyzed: 07/15/23

Boron 4.57 0.0100 mg/L 5.00 91.5 80-120

**Duplicate (BGG0384-DUP1)**

Source: 2307150-02

Prepared: 07/13/23 Analyzed: 07/15/23

Boron 0.249 0.0100 mg/L 0.256 3.08 20

**Matrix Spike (BGG0384-MS1)**

Source: 2307150-02

Prepared: 07/13/23 Analyzed: 07/15/23

Boron 4.65 0.0100 mg/L 5.00 0.256 87.8 75-125

**Matrix Spike Dup (BGG0384-MSD1)**

Source: 2307150-02

Prepared: 07/13/23 Analyzed: 07/15/23

Boron 4.91 0.0100 mg/L 5.00 0.256 93.0 75-125 5.44 25

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**Total Metals by EPA 6020B - Quality Control**  
**Summit Scientific**

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

**Batch BGH0516 - EPA 3050B**

**Blank (BGH0516-BLK1)**

Prepared & Analyzed: 08/14/23

Arsenic	ND	0.200	mg/kg wet
Barium	ND	0.400	"
Cadmium	ND	0.200	"
Copper	ND	0.400	"
Lead	ND	0.200	"
Nickel	ND	0.400	"
Silver	ND	0.0200	"
Zinc	ND	0.400	"
Selenium	ND	0.260	"

**LCS (BGH0516-BS1)**

Prepared & Analyzed: 08/14/23

Arsenic	37.8	0.200	mg/kg wet	40.0	94.6	80-120
Barium	36.5	0.400	"	40.0	91.2	80-120
Cadmium	1.85	0.200	"	2.00	92.7	80-120
Copper	37.8	0.400	"	40.0	94.6	80-120
Lead	18.8	0.200	"	20.0	93.8	80-120
Nickel	35.7	0.400	"	40.0	89.3	80-120
Silver	1.83	0.0200	"	2.00	91.3	80-120
Zinc	39.5	0.400	"	40.0	98.8	80-120

**Duplicate (BGH0516-DUP1)**

Source: 2307150-17

Prepared: 08/14/23 Analyzed: 08/15/23

Arsenic	0.775	0.200	mg/kg dry	0.840	8.09	20
Barium	43.0	0.400	"	38.5	11.0	20
Cadmium	0.135	0.200	"	0.147	8.37	20
Copper	1.63	0.400	"	1.79	9.45	20
Lead	2.99	0.200	"	2.82	5.86	20
Nickel	1.15	0.400	"	1.27	9.77	20
Silver	0.0175	0.0200	"	0.0149	16.2	20
Zinc	6.40	0.400	"	7.18	11.6	20
Selenium	ND	0.260	"	ND		200

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**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 BGH0516 - EPA 3050B**

Matrix Spike (BGH0516-MS1)		Source: 2307150-17			Prepared: 08/14/23 Analyzed: 08/15/23					
Arsenic	18.8	0.200	mg/kg dry	43.8	0.840	41.0	75-125			QM-01
Barium	61.6	0.400	"	43.8	38.5	52.9	75-125			QM-01
Cadmium	1.57	0.200	"	2.19	0.147	65.1	75-125			QM-01
Copper	19.1	0.400	"	43.8	1.79	39.6	75-125			QM-01
Lead	16.2	0.200	"	21.9	2.82	60.9	75-125			QM-01
Nickel	18.2	0.400	"	43.8	1.27	38.6	75-125			QM-01
Silver	1.41	0.0200	"	2.19	0.0149	63.7	75-125			QM-01
Zinc	25.4	0.400	"	43.8	7.18	41.6	75-125			QM-01

Matrix Spike Dup (BGH0516-MSD1)		Source: 2307150-17			Prepared: 08/14/23 Analyzed: 08/15/23					
Arsenic	16.8	0.200	mg/kg dry	43.8	0.840	36.4	75-125	11.2	25	QM-01
Barium	63.2	0.400	"	43.8	38.5	56.4	75-125	2.49	25	QM-01
Cadmium	1.61	0.200	"	2.19	0.147	66.6	75-125	2.07	25	QM-01
Copper	17.2	0.400	"	43.8	1.79	35.1	75-125	10.8	25	QM-01
Lead	16.6	0.200	"	21.9	2.82	62.8	75-125	2.54	25	QM-01
Nickel	16.5	0.400	"	43.8	1.27	34.8	75-125	9.57	25	QM-01
Silver	1.43	0.0200	"	2.19	0.0149	64.8	75-125	1.57	25	QM-01
Zinc	22.9	0.400	"	43.8	7.18	35.8	75-125	10.5	25	QM-01

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**Hexavalent Chromium by EPA Method 7196 - Quality Control**  
**Summit Scientific**

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

**Batch BGH0375 - 3060A Mod**

**Blank (BGH0375-BLK1)**

Prepared & Analyzed: 08/09/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGH0375-BS1)**

Prepared & Analyzed: 08/09/23

Chromium, Hexavalent 22.8 0.30 mg/kg wet 25.0 91.0 80-120

**Duplicate (BGH0375-DUP1)**

**Source: 2308188-01**

Prepared & Analyzed: 08/09/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGH0375-MS1)**

**Source: 2308188-01**

Prepared & Analyzed: 08/09/23

Chromium, Hexavalent 24.4 0.30 mg/kg dry 26.4 ND 92.4 75-125

**Matrix Spike Dup (BGH0375-MSD1)**

**Source: 2308188-01**

Prepared & Analyzed: 08/09/23

Chromium, Hexavalent 25.2 0.30 mg/kg dry 26.4 ND 95.4 75-125 3.19 20

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**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 BGG0376 - General Preparation**

**Blank (BGG0376-BLK1)**

Prepared: 07/13/23 Analyzed: 07/18/23

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

**LCS (BGG0376-BS1)**

Prepared: 07/13/23 Analyzed: 07/18/23

Calcium	5.56	0.0500	mg/L wet	5.00	111	70-130
Magnesium	4.96	0.0500	"	5.00	99.2	70-130
Sodium	5.25	0.0500	"	5.00	105	70-130

Summit Scientific

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6855 W. 119th Ave.  
Broomfield CO, 80020

Project: Noble - Booth C35-27

Project Number: UWRWE-A3163-ABN

Project Manager: Jacob Whritenour

**Reported:**

08/16/23 08:55

**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 BGG0298 - General Preparation**

**Duplicate (BGG0298-DUP1)**

**Source: 2307150-02**

Prepared & Analyzed: 07/11/23

% Solids	91.1	%	91.0	0.0845	20
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Summit Scientific

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

Project: Noble - Booth C35-27  
Project Number: UWRWE-A3163-ABN  
Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

**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 BGG0422 - General Preparation**

**Blank (BGG0422-BLK1)**

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGG0422-BS1)**

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

**Duplicate (BGG0422-DUP1)**

**Source: 2307150-02**

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) 0.349 0.0100 mmhos/cm 0.369 5.57 20

Summit Scientific

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





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

Project: Noble - Booth C35-27

Project Number: UWRWE-A3163-ABN

Project Manager: Jacob Whritenour

**Reported:**  
08/16/23 08:55

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

**Summit Scientific**

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

**Batch BGG0424 - General Preparation**

**LCS (BGG0424-BS1)**

Prepared & Analyzed: 07/14/23

pH	9.09	pH Units	9.18	99.0	95-105
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**Duplicate (BGG0424-DUP1)**

Source: 2307150-02

Prepared & Analyzed: 07/14/23

pH	7.90	pH Units	7.85	0.635	20
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Summit Scientific

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**Reported:**  
08/16/23 08:55

### Notes and Definitions

QM-01      The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.

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