

Flowline Closure Checklist

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

Additional Attachments:		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
Site Name & COGCC Facility Number: Rural 21-31		Date: 06/12/2023			Remediation Project #: 27715			
Associated Wells:		Age of Site:			Number of Photos Attached: 2			
Starting point: (GPS coordinates and descriptions) 40.268682, -104.710929								
End point: (GPS coordinates and descriptions) 40.270242, -104.712369								
USCS Soil Type: Well Graded Sand - SW					Estimated Depth to Groundwater: >5'			
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								
Flowlines								
Flowline type	Oil/Water/Gas							
Depth	5'							
Age								
Length	828'							
Construction Material	Steel							
Were flowlines pulled?	No							
Visual Integrity of lines	NA							
Visual impacts if trenched	NA							
PID Readings if trenched	0.0-50.2							
Sample taken? Location/Sample ID#	Yes, see below							
Photo Number(s)	1 - 2							
Other observations regarding on location flowlines: Samples were taken at the wellhead and separator (FL01-A@5', FL01-B@5'). Flowline was ABIP to be removed at a later date.								
Summary								
Was impacted soil identified? No Yes - less than 10 cubic yards Yes - more than 10 cubic yards								
Total number of samples field screened: 2					Total number of samples collected: 2			
Highest PID Reading: 50.2					Total number of samples submitted to lab for analysis: 2			
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? The wells were cut at the top before I arrived on site which could have caused the high PID reading I dug as deep as I could but the ground was kind of wet which made it hard to dig really deep by hand								
Was groundwater encountered during the investigation? No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils								
Measured depth to groundwater:					Was remedial groundwater removal conducted? Yes No			
Date Groundwater was encountered:					Commencement date of removal:			
Sheen on groundwater? Yes No					Volume of groundwater removed prior to sampling:			
Free product observed? Yes No					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



Equipment ID: FL01-A@5'		Equipment Type: Flowline		Equipment ID: FL01-B@5'		Equipment Type: Dump Line	
Material: Steel	Volume:	Contents: Oil/Gas/Water		Material: Steel	Volume:	Contents: Oil/Gas/Water	
Notes/Conditions: Facing west				Notes/Conditions:			

TABLE 1
SOIL SAMPLE LOCATIONS
NOBLE ENERGY, INC. RURAL 21-31

Soil Sample ID	Date	PID (ppm)	Visual	Olfactory	Sample Type (Grab/Lab)	Latitude ¹	Longitude	PDOP
FL01-A@5'	06/12/23	0.0	No Staining	No Odor	Lab	40.26868864	-104.7109427	0.9
FL01-B@5'	06/12/23	50.2	No Staining	Slight HC Odor	Lab	40.27024634	-104.7123766	0.9

Notes:

PID = Photoionization 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. RURAL 21-31

Soil Sample ID	Date	¹ 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 SSL²		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^{2,3}		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
FL01-A@5'	06/12/23	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<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
FL01-B@5'	06/12/23	<0.0020	<0.0050	<0.0050	0.019	<0.0050	0.0074	<0.0038	0.57	<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 SSL²		6 - 8.3	<6	<4mmhos/cm	2
FL01-A@5'	06/12/23	8.08	0.526	0.364	0.136
FL01-B@5'	06/12/23	7.93	0.105	0.328	0.118

Notes:

- Compounds referenced from 2 CCR 404-1, Table 915-1, effective January 15, 2021.
- Soil Screening Levels (SSL) referenced from EPA Regional Screening Levels (EPA RSLs) for Chemical Contaminants at Superfund Sites, effective November 2020.
- SSLs are applicable if a pathway for communication with groundwater is present.

Definitions:

COGCC = Colorado Oil and Gas Conservation 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 = Millimhos 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 COGCC 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



Legend

- Flowline Location
- ⊕ Soil Sample Location – Lab Analyzed (Collected via Trimble GPS)

Notes

- 1) All locations are approximate unless otherwise noted.
- 2) Buried infrastructure has been spatially projected.
- 3) Analytical results below laboratory detection limits or within compliance of COGCC Table 915-1 not shown.
- 4) Concentration in exceedance of COGCC table 915-1 soil standards indicated in **RED**.

GPS – Global Positioning System
 mg/kg – Milligrams per kilogram
 PID – Photoionization Detector
 ppm – parts per million

0 ft. 100 ft. 200 ft.

Image Source: Google Earth; Google 2020

DATE:	07/06/2023
DESIGNED BY:	JW
DRAWN BY:	MP



TASMAN
 GEOSCIENCES

Tasman Geosciences, Inc.
 6855 W 119th Avenue
 Broomfield, CO 80020

**Noble Energy, Inc. – DJ Basin
 Rural 21-31**
 NWSW, Section 31, Township 4 North, Range 65 West
 Weld County, Colorado

Flowline Closure & Soil
 Analytical Results Map
 (06/12/2023)

FIGURE
 1

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 18, 2023

Jacob Whritenour

Tasman Geosciences

6855 W. 119th Ave.

Broomfield, CO 80020

RE: Noble - Rural 21-31

Work Order #2306216

Enclosed are the results of analyses for samples received by Summit Scientific on 06/12/23 17:35. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



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

Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715

Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01-A@5'	2306216-01	Soil	06/12/23 12:07	06/12/23 17:35
FL01-B@5'	2306216-02	Soil	06/12/23 13:40	06/12/23 17:35

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.

Client: Noble/Tasman		Project Manager: Jake Whritenour		Company: Noble	
Address: 6855 W. 119th Ave.		E-Mail: Jwhritenour@tasman-geo.com		Project Name/Location:	
City/State/Zip: Broomfield/CO/ 80020		Project Name: <u>Rural 21-31</u>		AFE#: <u>UWR6E-A3077-ABIV</u>	
Phone: 937-554-5108		Project Number: <u>27715</u>		PO/Billing Codes:	
Sampler Name: Molly Parks				Contact: <u>Wade F.</u>	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil			Metals - 915	VOC - 915	TPH - 915	PAH - 915	SAR, EC, pH	Boron - HWS	HOLD	
1	F101-A @ 5'	6-12-23	1207	2			X			X			X	X	X	X	X	X		SAR, EC, pH by saturated paste
2	F101-B @ 5'	6-12-23	1340	2			X			X			X	X	X	X	X	X		
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <u>MP</u>	Date/Time: <u>6-12-23 / 1548</u>	Received by: <u>Tasman Lock Box</u>	Date/Time: <u>6-12-23 / 1548</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>Tasman Lock Box</u>	Date/Time: <u>6-12-23 / 1735</u>	Received by: <u>[Signature]</u>	Date/Time: <u>6-12-23 / 1735</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: <u>12.3</u>	Corrected Temperature: <u>6</u>	IR gun #: <u>1</u>	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order # 2306216

Client: Noble Trasmann Client Project ID: Rural 21-31

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

-

Matrix (Check all that apply) Air Soil/Solid Water Other

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	ON ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

AS

Custodian Printed Name

6/12/23

Date/Time

13



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

Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

FL01-A@5'
2306216-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/12/23 12:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGF0471	06/13/23	06/13/23	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: **06/12/23 12:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0374	93.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0389	97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0401	100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/12/23 12:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGF0480	06/13/23	06/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/12/23 12:07**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	12.2	97.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Rural 21-31
Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

FL01-A@5'
2306216-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/12/23 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0464	06/13/23	06/13/23	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: **06/12/23 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0212	63.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0267	80.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/12/23 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.136	0.0100	mg/L	1	BGF0472	06/13/23	06/18/23	EPA 6020B	

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

Date Sampled: **06/12/23 12:07**

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 - Rural 21-31
Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

FL01-A@5'
2306216-01 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	315	0.0553	mg/L dry	1	BGF0467	06/13/23	06/17/23	EPA 6020B	
Magnesium	69.6	0.0553	"	"	"	"	"	"	
Sodium	39.6	0.0553	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/12/23 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.526	0.00100	units	1	BGF0630	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/12/23 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.4		%	1	BGF0473	06/13/23	06/13/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/12/23 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.364	0.0100	mmhos/cm	1	BGF0496	06/14/23	06/14/23	EPA 120.1	

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

Date Sampled: **06/12/23 12:07**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.08		pH Units	1	BGF0492	06/14/23	06/14/23	EPA 9045D	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

FL01-B@5'
2306216-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGF0471	06/13/23	06/13/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	0.019	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	0.57	0.50	"	"	"	"	"	"	

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0356	89.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0397	99.2 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGF0480	06/13/23	06/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.1	96.5 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

FL01-B@5'
2306216-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0464	06/13/23	06/13/23	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: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0216	64.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0295	88.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.118	0.0100	mg/L	1	BGF0472	06/13/23	06/18/23	EPA 6020B	

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

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.2	0.0644	mg/L dry	1	BGF0467	06/13/23	06/17/23	EPA 6020B	
Magnesium	10.7	0.0644	"	"	"	"	"	"	
Sodium	2.75	0.0644	"	"	"	"	"	"	

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Rural 21-31
Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

FL01-B@5'
2306216-02 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.105	0.00100	units	1	BGF0630	06/17/23	06/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	77.6		%	1	BGF0473	06/13/23	06/13/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.328	0.0100	mmhos/cm	1	BGF0496	06/14/23	06/14/23	EPA 120.1	

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

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.93		pH Units	1	BGF0492	06/14/23	06/14/23	EPA 9045D	

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Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

FL01-B@5'
2306216-02 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
1,3,5-Trimethylbenzene	0.0074	0.0050	mg/kg	1	BGF0766	06/21/23	06/22/23	EPA 8260B	

Date Sampled: **06/12/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0372	93.1 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0399	99.8 %	50-150		"	"	"	"	

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Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BGF0471 - EPA 5030 Soil MS

Blank (BGF0471-BLK1)

Prepared: 06/06/23 Analyzed: 06/13/23

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0382		"	0.0400		95.4	50-150				
<i>Surrogate: Toluene-d8</i>	0.0380		"	0.0400		95.0	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0413		"	0.0400		103	50-150				

LCS (BGF0471-BS1)

Prepared: 06/06/23 Analyzed: 06/13/23

Benzene	0.0688	0.0020	mg/kg	0.0750		91.7	70-130				
Toluene	0.0800	0.0050	"	0.0750		107	70-130				
Ethylbenzene	0.0940	0.0050	"	0.0750		125	70-130				
m,p-Xylene	0.185	0.010	"	0.150		123	70-130				
o-Xylene	0.0819	0.0050	"	0.0750		109	70-130				
1,2,4-Trimethylbenzene	0.0847	0.0050	"	0.0750		113	70-130				
1,3,5-Trimethylbenzene	0.0903	0.0050	"	0.0750		120	70-130				
Naphthalene	0.0654	0.0038	"	0.0750		87.2	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0333		"	0.0400		83.2	50-150				
<i>Surrogate: Toluene-d8</i>	0.0385		"	0.0400		96.3	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0391		"	0.0400		97.8	50-150				

Matrix Spike (BGF0471-MS1)

Source: 2306210-01

Prepared: 06/06/23 Analyzed: 06/13/23

Benzene	0.0651	0.0020	mg/kg	0.0750	ND	86.8	70-130				
Toluene	0.0732	0.0050	"	0.0750	ND	97.6	70-130				
Ethylbenzene	0.0876	0.0050	"	0.0750	ND	117	70-130				
m,p-Xylene	0.172	0.010	"	0.150	ND	115	70-130				
o-Xylene	0.0779	0.0050	"	0.0750	ND	104	70-130				
1,2,4-Trimethylbenzene	0.0822	0.0050	"	0.0750	ND	110	70-130				
1,3,5-Trimethylbenzene	0.0846	0.0050	"	0.0750	ND	113	70-130				
Naphthalene	0.0705	0.0038	"	0.0750	ND	94.0	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0348		"	0.0400		86.9	50-150				
<i>Surrogate: Toluene-d8</i>	0.0378		"	0.0400		94.5	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0404		"	0.0400		101	50-150				

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Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control
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Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD		

Batch BGF0471 - EPA 5030 Soil MS

Matrix Spike Dup (BGF0471-MSD1)	Source: 2306210-01			Prepared: 06/06/23		Analyzed: 06/13/23				
Benzene	0.0662	0.0020	mg/kg	0.0750	ND	88.3	70-130	1.64	30	
Toluene	0.0751	0.0050	"	0.0750	ND	100	70-130	2.51	30	
Ethylbenzene	0.0872	0.0050	"	0.0750	ND	116	70-130	0.446	30	
m,p-Xylene	0.173	0.010	"	0.150	ND	115	70-130	0.191	30	
o-Xylene	0.0770	0.0050	"	0.0750	ND	103	70-130	1.20	30	
1,2,4-Trimethylbenzene	0.0818	0.0050	"	0.0750	ND	109	70-130	0.512	30	
1,3,5-Trimethylbenzene	0.0853	0.0050	"	0.0750	ND	114	70-130	0.777	30	
Naphthalene	0.0730	0.0038	"	0.0750	ND	97.4	70-130	3.55	30	
Surrogate: 1,2-Dichloroethane-d4	0.0356		"	0.0400		88.9	50-150			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		100	50-150			

Batch BGF0766 - EPA 5030 Soil MS

Blank (BGF0766-BLK1)				Prepared: 06/21/23		Analyzed: 06/22/23				
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	0.0345		"	0.0400		86.3	50-150			
Surrogate: Toluene-d8	0.0397		"	0.0400		99.3	50-150			
Surrogate: 4-Bromofluorobenzene	0.0400		"	0.0400		99.9	50-150			

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Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BGF0766 - EPA 5030 Soil MS

LCS (BGF0766-BS1)

Prepared: 06/21/23 Analyzed: 06/22/23

Benzene	0.0983	0.0020	mg/kg	0.100		98.3	70-130			
Toluene	0.0784	0.0050	"	0.100		78.4	70-130			
Ethylbenzene	0.0869	0.0050	"	0.100		86.9	70-130			
m,p-Xylene	0.174	0.010	"	0.200		86.9	70-130			
o-Xylene	0.0787	0.0050	"	0.100		78.7	70-130			
1,2,4-Trimethylbenzene	0.0812	0.0050	"	0.100		81.2	70-130			
1,3,5-Trimethylbenzene	0.0844	0.0050	"	0.100		84.4	70-130			
Naphthalene	0.0710	0.0038	"	0.100		71.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0374		"	0.0400		93.4	50-150			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

Matrix Spike (BGF0766-MS1)

Source: 2306190-02

Prepared: 06/21/23 Analyzed: 06/22/23

Benzene	0.0984	0.0020	mg/kg	0.100	ND	98.4	70-130			
Toluene	0.0793	0.0050	"	0.100	ND	79.3	70-130			
Ethylbenzene	0.0938	0.0050	"	0.100	ND	93.8	70-130			
m,p-Xylene	0.186	0.010	"	0.200	ND	93.0	70-130			
o-Xylene	0.0827	0.0050	"	0.100	ND	82.7	70-130			
1,2,4-Trimethylbenzene	0.0867	0.0050	"	0.100	ND	86.7	70-130			
1,3,5-Trimethylbenzene	0.0911	0.0050	"	0.100	ND	91.1	70-130			
Naphthalene	0.0745	0.0038	"	0.100	ND	74.5	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0342		"	0.0400		85.5	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	50-150			

Matrix Spike Dup (BGF0766-MSD1)

Source: 2306190-02

Prepared: 06/21/23 Analyzed: 06/22/23

Benzene	0.0971	0.0020	mg/kg	0.100	ND	97.1	70-130	1.32	30	
Toluene	0.0767	0.0050	"	0.100	ND	76.7	70-130	3.31	30	
Ethylbenzene	0.0865	0.0050	"	0.100	ND	86.5	70-130	8.09	30	
m,p-Xylene	0.171	0.010	"	0.200	ND	85.5	70-130	8.49	30	
o-Xylene	0.0783	0.0050	"	0.100	ND	78.3	70-130	5.48	30	
1,2,4-Trimethylbenzene	0.0802	0.0050	"	0.100	ND	80.2	70-130	7.73	30	
1,3,5-Trimethylbenzene	0.0838	0.0050	"	0.100	ND	83.8	70-130	8.40	30	
Naphthalene	0.0739	0.0038	"	0.100	ND	73.9	70-130	0.768	30	
Surrogate: 1,2-Dichloroethane-d4	0.0328		"	0.0400		82.0	50-150			
Surrogate: Toluene-d8	0.0391		"	0.0400		97.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.8	50-150			

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Project: Noble - Rural 21-31
Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGF0480 - EPA 3550A

Blank (BGF0480-BLK1)

Prepared & Analyzed: 06/13/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.9		"	12.5		95.5	30-150				

LCS (BGF0480-BS1)

Prepared & Analyzed: 06/13/23

C10-C28 (DRO)	449	50	mg/kg	500		89.8	70-130				
Surrogate: <i>o</i> -Terphenyl	11.7		"	12.5		93.3	30-150				

Matrix Spike (BGF0480-MS1)

Source: 2306210-01

Prepared & Analyzed: 06/13/23

C10-C28 (DRO)	421	50	mg/kg	500	18.5	80.5	70-130				
Surrogate: <i>o</i> -Terphenyl	11.5		"	12.5		91.9	30-150				

Matrix Spike Dup (BGF0480-MSD1)

Source: 2306210-01

Prepared & Analyzed: 06/13/23

C10-C28 (DRO)	465	50	mg/kg	500	18.5	89.3	70-130	9.89	20		
Surrogate: <i>o</i> -Terphenyl	12.3		"	12.5		98.7	30-150				

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Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

PAH by EPA Method 8270D SIM - Quality Control

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

Batch BGF0464 - EPA 5030 Soil MS

Blank (BGF0464-BLK1)

Prepared & Analyzed: 06/13/23

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	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0279		"	0.0333		83.6	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0345		"	0.0333		104	40-150			

LCS (BGF0464-BS1)

Prepared & Analyzed: 06/13/23

Acenaphthene	0.0328	0.00500	mg/kg	0.0333		98.5	31-137			
Anthracene	0.0347	0.00500	"	0.0333		104	30-120			
Benzo (a) anthracene	0.0292	0.00500	"	0.0333		87.5	30-120			
Benzo (a) pyrene	0.0278	0.00500	"	0.0333		83.5	30-120			
Benzo (b) fluoranthene	0.0294	0.00500	"	0.0333		88.3	30-120			
Benzo (k) fluoranthene	0.0315	0.00500	"	0.0333		94.5	30-120			
Chrysene	0.0345	0.00500	"	0.0333		103	30-120			
Dibenz (a,h) anthracene	0.0212	0.00500	"	0.0333		63.7	30-120			
Fluoranthene	0.0325	0.00500	"	0.0333		97.4	30-120			
Fluorene	0.0325	0.00500	"	0.0333		97.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0189	0.00500	"	0.0333		56.7	30-120			
Pyrene	0.0360	0.00500	"	0.0333		108	35-142			
1-Methylnaphthalene	0.0268	0.00500	"	0.0333		80.4	35-142			
2-Methylnaphthalene	0.0287	0.00500	"	0.0333		86.0	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0294		"	0.0333		88.2	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0327		"	0.0333		98.2	40-150			

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Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGF0464 - EPA 5030 Soil MS

Matrix Spike (BGF0464-MS1)	Source: 2306210-01			Prepared & Analyzed: 06/13/23						
Acenaphthene	0.0145	0.00500	mg/kg	0.0333	ND	43.4	31-137			
Anthracene	0.0134	0.00500	"	0.0333	ND	40.1	30-120			
Benzo (a) anthracene	0.0136	0.00500	"	0.0333	ND	40.9	30-120			
Benzo (a) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120			
Benzo (b) fluoranthene	0.0140	0.00500	"	0.0333	ND	42.1	30-120			
Benzo (k) fluoranthene	0.0160	0.00500	"	0.0333	ND	47.9	30-120			
Chrysene	0.0151	0.00500	"	0.0333	ND	45.3	30-120			
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.2	30-120			
Fluoranthene	0.0134	0.00500	"	0.0333	ND	40.1	30-120			
Fluorene	0.0146	0.00500	"	0.0333	ND	43.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0137	0.00500	"	0.0333	ND	41.0	30-120			
Pyrene	0.0144	0.00500	"	0.0333	ND	43.1	35-142			
1-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.0	15-130			
2-Methylnaphthalene	0.0136	0.00500	"	0.0333	ND	40.7	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0151</i>		<i>"</i>	<i>0.0333</i>		<i>45.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0139</i>		<i>"</i>	<i>0.0333</i>		<i>41.6</i>	<i>40-150</i>			

Matrix Spike Dup (BGF0464-MSD1)	Source: 2306210-01			Prepared & Analyzed: 06/13/23						
Acenaphthene	0.0158	0.00500	mg/kg	0.0333	ND	47.3	31-137	8.70	30	
Anthracene	0.0151	0.00500	"	0.0333	ND	45.3	30-120	12.1	30	
Benzo (a) anthracene	0.0170	0.00500	"	0.0333	ND	51.1	30-120	22.2	30	
Benzo (a) pyrene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	0.149	30	
Benzo (b) fluoranthene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	9.34	30	
Benzo (k) fluoranthene	0.0150	0.00500	"	0.0333	ND	44.9	30-120	6.63	30	
Chrysene	0.0178	0.00500	"	0.0333	ND	53.3	30-120	16.2	30	
Dibenz (a,h) anthracene	0.0143	0.00500	"	0.0333	ND	42.9	30-120	4.06	30	
Fluoranthene	0.0158	0.00500	"	0.0333	ND	47.5	30-120	16.8	30	
Fluorene	0.0150	0.00500	"	0.0333	ND	44.9	30-120	2.32	30	
Indeno (1,2,3-cd) pyrene	0.0148	0.00500	"	0.0333	ND	44.4	30-120	7.93	30	
Pyrene	0.0193	0.00500	"	0.0333	ND	57.8	35-142	29.1	30	
1-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.3	15-130	13.5	50	
2-Methylnaphthalene	0.0167	0.00500	"	0.0333	ND	50.1	15-130	20.5	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0174</i>		<i>"</i>	<i>0.0333</i>		<i>52.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0208</i>		<i>"</i>	<i>0.0333</i>		<i>62.5</i>	<i>40-150</i>			

Summit Scientific

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

Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

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

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

Batch BGF0472 - EPA 3050B

Blank (BGF0472-BLK1)

Prepared: 06/13/23 Analyzed: 06/18/23

Boron ND 0.0100 mg/L

LCS (BGF0472-BS1)

Prepared: 06/13/23 Analyzed: 06/18/23

Boron 4.87 0.0100 mg/L 5.00 97.3 80-120

Duplicate (BGF0472-DUP1)

Source: 2306213-01

Prepared: 06/13/23 Analyzed: 06/18/23

Boron 0.849 0.0100 mg/L 0.814 4.15 20

Matrix Spike (BGF0472-MS1)

Source: 2306213-01

Prepared: 06/13/23 Analyzed: 06/18/23

Boron 5.18 0.0100 mg/L 5.00 0.814 87.3 75-125

Matrix Spike Dup (BGF0472-MSD1)

Source: 2306213-01

Prepared: 06/13/23 Analyzed: 06/18/23

Boron 5.36 0.0100 mg/L 5.00 0.814 90.9 75-125 3.40 25

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6855 W. 119th Ave.
Broomfield CO, 80020

Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

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

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

Batch BGF0467 - General Preparation

Blank (BGF0467-BLK1)

Prepared: 06/13/23 Analyzed: 06/17/23

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

LCS (BGF0467-BS1)

Prepared: 06/13/23 Analyzed: 06/17/23

Calcium	4.99	0.0500	mg/L wet	5.00	99.8	70-130				
Magnesium	4.85	0.0500	"	5.00	96.9	70-130				
Sodium	4.87	0.0500	"	5.00	97.3	70-130				

Summit Scientific

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

Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

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

Summit Scientific

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

Batch BGF0473 - General Preparation

Duplicate (BGF0473-DUP1)

Source: 2305547-01

Prepared & Analyzed: 06/13/23

% Solids	90.3		%		90.1			0.244		20	
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Summit Scientific

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

Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

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

Summit Scientific

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

Batch BGF0496 - General Preparation

Blank (BGF0496-BLK1)

Prepared & Analyzed: 06/14/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGF0496-BS1)

Prepared & Analyzed: 06/14/23

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BGF0496-DUP1)

Source: 2305670-04

Prepared & Analyzed: 06/14/23

Specific Conductance (EC) 1.08 0.0100 mmhos/cm 1.10 2.02 20

Summit Scientific

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Broomfield CO, 80020

Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

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

Summit Scientific

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

Batch BGF0492 - General Preparation

LCS (BGF0492-BS1)

Prepared & Analyzed: 06/14/23

pH 9.13 pH Units 9.18 99.5 95-105

Duplicate (BGF0492-DUP1)

Source: 2306215-01

Prepared & Analyzed: 06/14/23

pH 7.23 pH Units 7.12 1.53 20

Summit Scientific

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Tasman Geosciences
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Broomfield CO, 80020

Project: Noble - Rural 21-31

Project Number: UWRWE-A3077-ABN 27715
Project Manager: Jacob Whritenour

Reported:
07/18/23 11:20

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference