

FREMONT ENVIRONMENTAL INC.

June 3, 2024

Mr. Daniel Peterson
Noble Energy Inc.
2115 117th Avenue
Greeley, CO 80634

Subject: **Flowline Closure Data Submittal**
 Jepsen 1
 API # 05-123-10192
 SESW Sec. 2, T3N, R65W
 Weld County, Colorado
 Fremont Project No. C023-217
 Remediation # 27049

Dear Mr. Peterson:

As requested, Fremont Environmental Inc. (Fremont) personnel conducted flowline closure activities for the Noble Energy Inc. (Noble) Jepsen 1 flowline. Organic compound-impacted soil was not encountered during abandonment activities, however, elevated concentrations of constituents including arsenic, barium, and lead were present. The attached Closure Report documents details of the Jepsen 1 flowline closure activities. Groundwater was not encountered during flowline abandonment activities.

Please contact me at (970) 213-7488 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

FREMONT ENVIRONMENTAL INC.



Chris Lattes
Consultant

Attachments:

- Facility Closure Checklist
- Tables
- Figures
- Photos
- Laboratory Report

1759 REDWING LANE, BROOMFIELD, CO 80020
(303) 956-8714 (DIRECT)

Flowline Closure Checklist

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

<i>Additional Attachments:</i>		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
<i>Site Name & COGCC Facility Number:</i> Jepsen 1		<i>Date:</i> 8/8/2024		<i>Remediation Project #:</i> 27049				
<i>Associated Wells:</i> 05-123-10192		<i>Age of Site:</i> ~1981		<i>Number of Photos Attached:</i> See attached				

Starting point: (GPS coordinates and descriptions)
40.2500268, -104.6338456

End point: (GPS coordinates and descriptions)
40.2490776, -104.6337852

USCS Soil Type: Sand (SW) *Estimated Depth to Groundwater:* Unknown

Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)
No observed hydrocarbon impacted soil or spills.

Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)
No observed salt crusted soil or impacted vegetation.

Flowlines

<i>Flowline type</i>	Wellhead Line						
<i>Depth</i>	4.5 to 6 feet						
<i>Age</i>	~1981						
<i>Length</i>	~350 feet						
<i>Construction Material</i>	2" FBE Steel						
<i>Were flowlines pulled?</i>	Partial						
<i>Visual Integrity of lines</i>	Good condition						
<i>Visual impacts if trenched</i>	None observed						
<i>PID Readings if trenched</i>	0 to 9.2 ppm						
<i>Sample taken? Location/Sample ID#</i>	See attached figure						
<i>Photo Number(s)</i>	See attached						

Other observations regarding on location flowlines:
Flowline was abandoned in place between FL03 and SEP01 (50 feet) because the facility will remain active.

Summary

Was impacted soil identified?
 No Yes - less than 10 cubic yards Yes - more than 10 cubic yards

Total number of samples field screened: 4 *Total number of samples collected:* 2

Highest PID Reading: 9.2 ppm *Total number of samples submitted to lab for analysis:* 2

If more than 10 cubic yards of impacted soil were observed: NA

Vertical extent: *Estimated spill volume:*

Lateral extent: *Volume of soil removed:*

Is additional investigation required?

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:

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
JEPSEN 1, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-217

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
FL01 @ 4.5'	8/3/2023	4.5'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
SEP01 @ 6.0'	8/8/2023	6.0'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50

Bold faced values exceed the COGCC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

* Indicates laboratory minimum detection limit in excess of SSL

** Summation of GRO+DRO+ORO must be less than 500 mg/kg

NA - Not analyzed

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
JEPSEN 1, WELD COUNTY, COLORADO
FREMONT PROJECT NO. CO23-217

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FL01 @ 4.5'	8/3/2023	4.5'	<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 @ 6.0'	8/8/2023	6.0'	<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

Bold faced values exceed the COGCC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
JEPSEN 1, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-217

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL01 @ 4.5'	8/3/2023	4.5'	8.05	0.500	1.69	0.349
SEP01 @ 6.0'	8/8/2023	6.0'	7.44	0.220	0.0591	1.05

Bold faced values exceed the COGCC Table 915-1 concentrations

Yellow highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

NA - Not analyzed

TABLE 4
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
JEPSEN 1, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-217

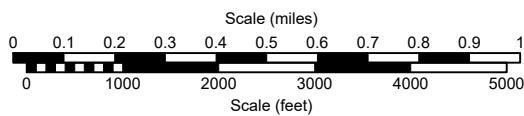
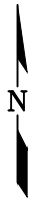
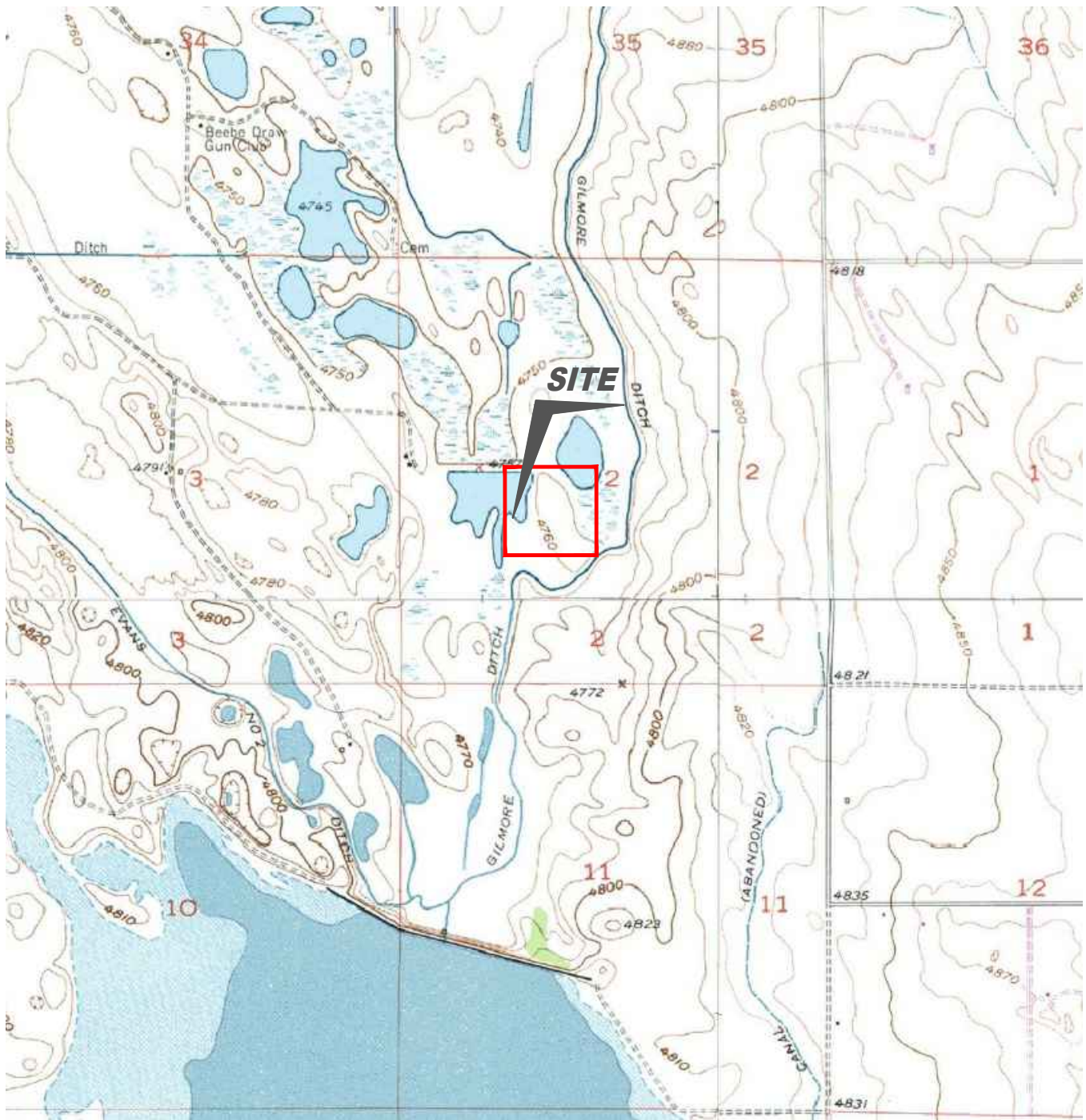
Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
FL01 @ 4.5'	8/3/2023	4.5'	0.610	253	<0.200	<0.30	4.64	20.3	1.06	<0.260	<0.0200	8.46
SEP01 @ 6.0'	8/8/2023	6.0'	0.366	32.4	<0.200	<0.30	0.696	1.94	0.776	<0.260	<0.0200	2.90

Bold faced values exceed the COGCC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed



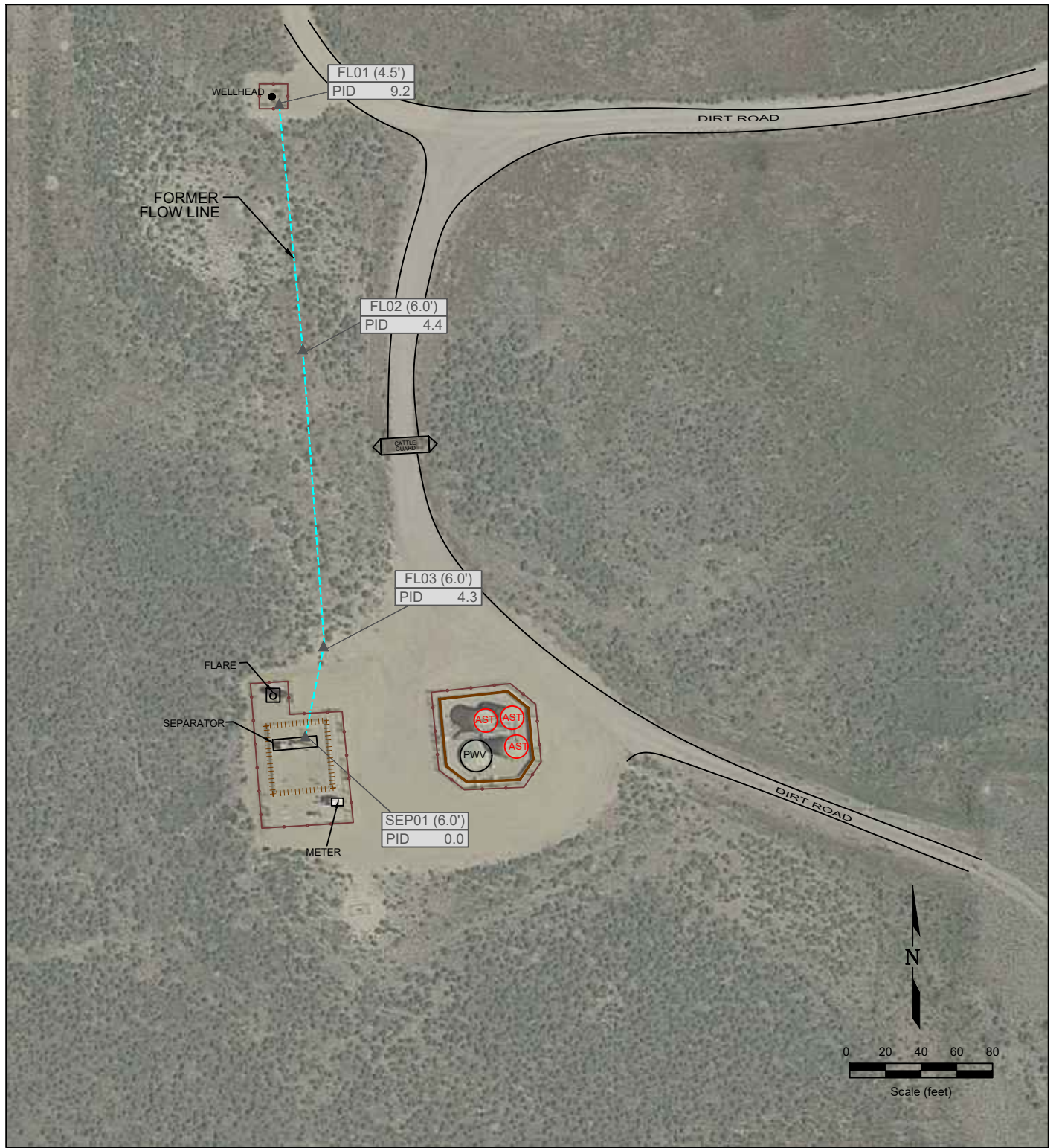
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Energy, Inc. ~ Jepsen 1
 SESW Sec. 2, T3N, R65W, 6th PM
 Weld County, Colorado
 40.250054°, -104.633833°

Project # CO23-217	API # 05-123-10192	Facility #
Date 3/8/24	Remediation # 27049	Filename 23217T





LEGEND

- WELLHEAD LOCATION
 - ▲ PID READING LOCATION
 - ABOVE GROUND STORAGE TANK
 - FORMER FACILITY
 - FORMER FLOW LINE
 - CONTAINMENT BERM
 - CONTAINMENT WALL
 - FENCE LINE
- FL01 (4.5') PID 9.2 PID READING SAMPLE IDENTIFICATION AND DEPTH (ft)
 SEP01 (6.0') PID 0.0 PHOTO IONIZATION DETECTION / PARTS PER MILLION

**Figure 2
SITE MAP**

Noble Energy, Inc. ~ Jepsen 1
 SESW Sec. 2, T3N, R65W, 6th PM
 Weld County, Colorado
 40.250054°, -104.633833°

Project # CO23-217	API # 05-123-10192	Facility #
Date 3/8/24	Remediation # 27049	Filename 23217Q



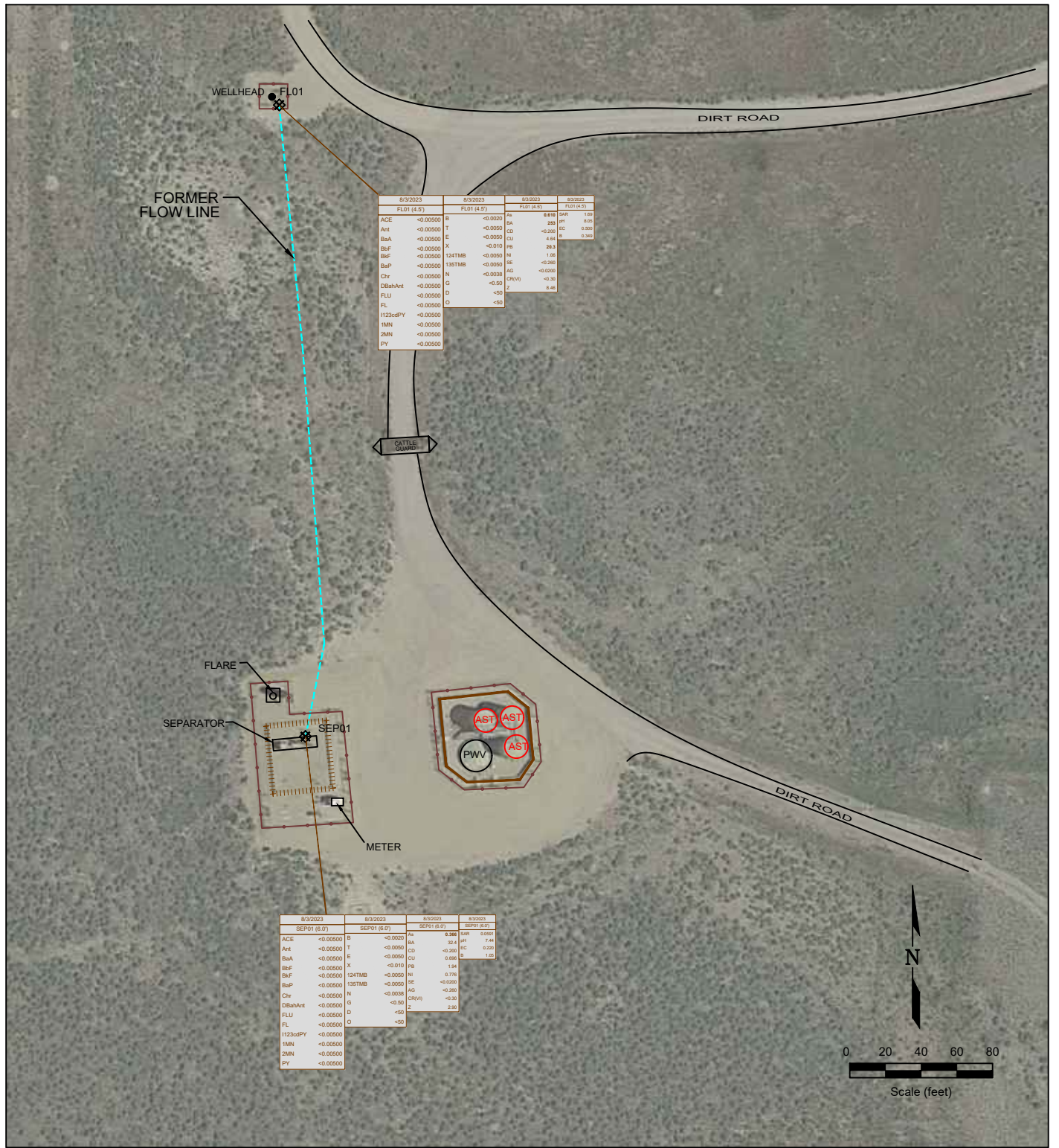


Figure 3
SOIL CHEMISTRY MAP

Noble Energy, Inc. ~ Jepsen 1
SESW Sec. 2, T3N, R65W, 6th PM
Weld County, Colorado
40.250054°, -104.633833°

Project # CO23-217	API # 05-123-10192	Facility #
Date 3/8/24	Remediation # 27049	Filename 23217Q



LEGEND

● WELLHEAD LOCATION	○ ABOVE GROUND STORAGE TANK	FORMER FLOW LINE	FORMER FACILITY	CONTAINMENT BERM	CONTAINMENT WALL	FENCE LINE
⊗ SOIL SAMPLE LOCATION						

<p>8/3/2023</p> <p>DATE SAMPLED</p> <p>SAMPLE ID and DEPTH (ft)</p> <p>ACENAPHTHENE (mg/kg)</p> <p>ANTHRACENE (mg/kg)</p> <p>BENZO (A) ANTHRACENE (mg/kg)</p> <p>BENZO (B) FLUORANTHENE (mg/kg)</p> <p>BENZO (K) FLUORANTHENE (mg/kg)</p> <p>BENZO (A) PYRENE (mg/kg)</p> <p>CHRYSENE (mg/kg)</p> <p>DIBENZ (A,H) ANTHRACENE (mg/kg)</p> <p>FLUORANTHENE (mg/kg)</p> <p>FLUORENE (mg/kg)</p> <p>INDENO (1,2,3-CD) PYRENE (mg/kg)</p> <p>1-METHYLNAPHTHALENE (mg/kg)</p> <p>2-METHYLNAPHTHALENE (mg/kg)</p> <p>PYRENE (mg/kg)</p>	<p>8/3/2023</p> <p>DATE SAMPLED</p> <p>SAMPLE ID and DEPTH (ft)</p> <p>BENZENE (mg/kg)</p> <p>TOLUENE (mg/kg)</p> <p>ETHYLBENZENE (mg/kg)</p> <p>TOTAL XYLENES (mg/kg)</p> <p>1,2,4-TRIMETHYLBENZENE (mg/kg)</p> <p>1,3,5-TRIMETHYLBENZENE (mg/kg)</p> <p>NAPHTHALENE (mg/kg)</p> <p>TPH-GRO (mg/kg)</p> <p>TPH-CRO (mg/kg)</p> <p>TPH-ORO (mg/kg)</p>	<p>8/3/2023</p> <p>DATE SAMPLED</p> <p>SAMPLE ID & DEPTH (ft)</p> <p>ARSENIC (mg/kg)</p> <p>BARIUM (mg/kg)</p> <p>CADMIUM (mg/kg)</p> <p>COPPER (mg/kg)</p> <p>LEAD (mg/kg)</p> <p>NICKEL (mg/kg)</p> <p>SELENIUM (mg/kg)</p> <p>SILVER (mg/kg)</p> <p>HEXAVALENT CHROMIUM (mg/kg)</p> <p>ZINC (mg/kg)</p>
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Photo Log



Description:

Jepsen 1 Wellhead Placard

Photo Log

DIRECTION
S (T)

40.25004°N
104.63385°W

ACCURACY 5 m
DATUM WGS84



Jepsen 1

2023-08-03
11:46:16-06:00

Description:

Jepsen 1 Overview

Photo Log



Description:

FL01@4.5'

Photo Log



Description:

FL02@6'

Photo Log



Description:

FL03@6'



Description:

SEP01@6'

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 21, 2023

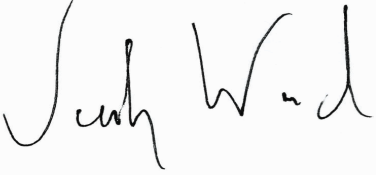
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Jepsen 1

Work Order #2308189

Enclosed are the results of analyses for samples received by Summit Scientific on 08/08/23 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a long horizontal stroke at the end.

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN

Project Manager: Paul Henchan

Reported:
08/21/23 14:55

ANALYTICAL REPORT FOR SAMPLES

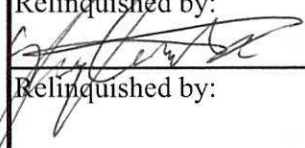

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01 6'	2308189-01	Soil	08/08/23 13:33	08/08/23 16:15

Summit Scientific

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

		Send Data To:	Send Invoice To:
Client: Fremont Environmental		Project Manager: Paul Henehan	Company: Noble
Address:		E-Mail: Fremont Distribution List	Project Name/Location: JEPSEN 1
City/State/Zip:			AFE#:
Phone: 303-261-6246		Project Name: JEPSEN 1	PO/Billing Codes: UWRWE-A3009-ABN
Sampler Name: Stanley Gilbert		Project Number:	Contact: Mike Montoya

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil			BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron	Metals (915)	TDS, Chloride, Sulfate	
1	SEP01 6'	8/8/23	13:33	2			X			X			X	X	X	X			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: 	Date/Time: 8/8/23 16:20	Received by: 	Date/Time: 8/8/23 16:20	TAT Business Days	Field DO	Notes:
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 11.7	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:	Standard	<input checked="" type="checkbox"/> Field Turb.	



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/21/23 14:55

SEP01 6'
2308189-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGH0405	08/10/23	08/11/23	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: **08/08/23 13:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0458	114 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0396	99.1 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGH0408	08/10/23	08/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	5.83	46.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/21/23 14:55

SEP01 6'
2308189-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGH0465	08/11/23	08/12/23	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: **08/08/23 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0135	40.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0165	49.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	1.05	0.0100	mg/L	1	BGH0497	08/11/23	08/12/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/08/23 13:33**

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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/21/23 14:55

SEP01 6'
2308189-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.366	0.200	mg/kg dry	1	BGH0328	08/09/23	08/10/23	EPA 6020B	
Barium	32.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	0.696	0.400	"	"	"	"	"	"	
Lead	1.94	0.200	"	"	"	"	"	"	
Nickel	0.776	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	2.90	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0462	08/11/23	08/11/23	EPA 7196A	

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

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	60.8	0.0535	mg/L dry	1	BGH0552	08/14/23	08/16/23	EPA 6020B	
Magnesium	16.9	0.0535	"	"	"	"	"	"	
Sodium	2.02	0.0535	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0591	0.00100	units	1	BGH0692	08/17/23	08/17/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/21/23 14:55

SEP01 6'
2308189-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.5		%	1	BGH0499	08/11/23	08/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.220	0.0100	mmhos/cm	1	BGH0605	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/08/23 13:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.44		pH Units	1	BGH0608	08/15/23	08/15/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/21/23 14:55

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 BGH0405 - EPA 5030 Soil MS

Blank (BGH0405-BLK1)

Prepared & Analyzed: 08/10/23

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>	<i>0.0478</i>		<i>"</i>	<i>0.0400</i>		<i>119</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0437</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>50-150</i>			

LCS (BGH0405-BS1)

Prepared & Analyzed: 08/10/23

Benzene	0.121	0.0020	mg/kg	0.100		121	70-130			
Toluene	0.111	0.0050	"	0.100		111	70-130			
Ethylbenzene	0.118	0.0050	"	0.100		118	70-130			
m,p-Xylene	0.238	0.010	"	0.200		119	70-130			
o-Xylene	0.101	0.0050	"	0.100		101	70-130			
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100		110	70-130			
1,3,5-Trimethylbenzene	0.108	0.0050	"	0.100		108	70-130			
Naphthalene	0.0881	0.0038	"	0.100		88.1	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0428</i>		<i>"</i>	<i>0.0400</i>		<i>107</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0398</i>		<i>"</i>	<i>0.0400</i>		<i>99.6</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0377</i>		<i>"</i>	<i>0.0400</i>		<i>94.2</i>	<i>50-150</i>			

Matrix Spike (BGH0405-MS1)

Source: 2308181-01

Prepared & Analyzed: 08/10/23

Benzene	0.132	0.0020	mg/kg	0.100	ND	132	70-130			QM-07
Toluene	0.121	0.0050	"	0.100	ND	121	70-130			
Ethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130			
m,p-Xylene	0.248	0.010	"	0.200	ND	124	70-130			
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130			
1,2,4-Trimethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130			
1,3,5-Trimethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130			
Naphthalene	0.0962	0.0038	"	0.100	ND	96.2	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0464</i>		<i>"</i>	<i>0.0400</i>		<i>116</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0407</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.6</i>	<i>50-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/21/23 14:55

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

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

Batch BGH0405 - EPA 5030 Soil MS

Matrix Spike Dup (BGH0405-MSD1)	Source: 2308181-01			Prepared & Analyzed: 08/10/23						
Benzene	0.123	0.0020	mg/kg	0.100	ND	123	70-130	6.52	30	
Toluene	0.114	0.0050	"	0.100	ND	114	70-130	5.94	30	
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130	5.71	30	
m,p-Xylene	0.236	0.010	"	0.200	ND	118	70-130	5.15	30	
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130	4.42	30	
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100	ND	109	70-130	5.63	30	
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	4.83	30	
Naphthalene	0.0959	0.0038	"	0.100	ND	95.9	70-130	0.250	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0446</i>		<i>"</i>	<i>0.0400</i>		<i>111</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0408</i>		<i>"</i>	<i>0.0400</i>		<i>102</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0372</i>		<i>"</i>	<i>0.0400</i>		<i>93.0</i>	<i>50-150</i>			

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 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/21/23 14:55

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGH0408 - EPA 3550A

Blank (BGH0408-BLK1)

Prepared: 08/10/23 Analyzed: 08/11/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	11.0		"	12.5		88.0		30-150		

LCS (BGH0408-BS1)

Prepared: 08/10/23 Analyzed: 08/11/23

C10-C28 (DRO)	398	50	mg/kg	500		79.6		70-130		
Surrogate: <i>o</i> -Terphenyl	10.6		"	12.5		84.6		30-150		

Matrix Spike (BGH0408-MS1)

Source: 2308181-01

Prepared: 08/10/23 Analyzed: 08/11/23

C10-C28 (DRO)	402	50	mg/kg	500	6.28	79.2		70-130		
Surrogate: <i>o</i> -Terphenyl	10.6		"	12.5		84.7		30-150		

Matrix Spike Dup (BGH0408-MSD1)

Source: 2308181-01

Prepared: 08/10/23 Analyzed: 08/11/23

C10-C28 (DRO)	413	50	mg/kg	500	6.28	81.4		70-130	2.75	20
Surrogate: <i>o</i> -Terphenyl	10.4		"	12.5		82.9		30-150		

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PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/21/23 14:55

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 BGH0465 - EPA 5030 Soil MS

Blank (BGH0465-BLK1)

Prepared: 08/11/23 Analyzed: 08/12/23

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>	<i>0.0199</i>		"	<i>0.0333</i>		<i>59.7</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0209</i>		"	<i>0.0333</i>		<i>62.6</i>	<i>40-150</i>			

LCS (BGH0465-BS1)

Prepared: 08/11/23 Analyzed: 08/12/23

Acenaphthene	0.0213	0.00500	mg/kg	0.0333		63.9	31-137			
Anthracene	0.0216	0.00500	"	0.0333		64.8	30-120			
Benzo (a) anthracene	0.0183	0.00500	"	0.0333		54.8	30-120			
Benzo (a) pyrene	0.0208	0.00500	"	0.0333		62.5	30-120			
Benzo (b) fluoranthene	0.0206	0.00500	"	0.0333		61.7	30-120			
Benzo (k) fluoranthene	0.0201	0.00500	"	0.0333		60.4	30-120			
Chrysene	0.0228	0.00500	"	0.0333		68.3	30-120			
Dibenz (a,h) anthracene	0.0218	0.00500	"	0.0333		65.4	30-120			
Fluoranthene	0.0212	0.00500	"	0.0333		63.7	30-120			
Fluorene	0.0214	0.00500	"	0.0333		64.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0218	0.00500	"	0.0333		65.3	30-120			
Pyrene	0.0248	0.00500	"	0.0333		74.5	35-142			
1-Methylnaphthalene	0.0183	0.00500	"	0.0333		54.9	35-142			
2-Methylnaphthalene	0.0221	0.00500	"	0.0333		66.3	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0228</i>		"	<i>0.0333</i>		<i>68.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0234</i>		"	<i>0.0333</i>		<i>70.2</i>	<i>40-150</i>			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/21/23 14:55

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 BGH0465 - EPA 5030 Soil MS

Matrix Spike (BGH0465-MS1)

Source: 2308180-01

Prepared: 08/11/23 Analyzed: 08/12/23

Acenaphthene	0.0150	0.00500	mg/kg	0.0333	ND	45.1	31-137		
Anthracene	0.0156	0.00500	"	0.0333	ND	46.9	30-120		
Benzo (a) anthracene	0.0153	0.00500	"	0.0333	ND	45.9	30-120		
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.9	30-120		
Benzo (b) fluoranthene	0.0159	0.00500	"	0.0333	ND	47.6	30-120		
Benzo (k) fluoranthene	0.0161	0.00500	"	0.0333	ND	48.4	30-120		
Chrysene	0.0167	0.00500	"	0.0333	ND	50.0	30-120		
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.7	30-120		
Fluoranthene	0.0159	0.00500	"	0.0333	ND	47.8	30-120		
Fluorene	0.0162	0.00500	"	0.0333	ND	48.6	30-120		
Indeno (1,2,3-cd) pyrene	0.0162	0.00500	"	0.0333	ND	48.7	30-120		
Pyrene	0.0176	0.00500	"	0.0333	ND	52.8	35-142		
1-Methylnaphthalene	0.0149	0.00500	"	0.0333	ND	44.8	15-130		
2-Methylnaphthalene	0.0163	0.00500	"	0.0333	ND	48.8	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0179		"	0.0333		53.8	40-150		
Surrogate: Fluoranthene-d10	0.0178		"	0.0333		53.3	40-150		

Matrix Spike Dup (BGH0465-MSD1)

Source: 2308180-01

Prepared: 08/11/23 Analyzed: 08/12/23

Acenaphthene	0.0133	0.00500	mg/kg	0.0333	ND	40.0	31-137	11.9	30
Anthracene	0.0145	0.00500	"	0.0333	ND	43.4	30-120	7.60	30
Benzo (a) anthracene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	3.51	30
Benzo (a) pyrene	0.0145	0.00500	"	0.0333	ND	43.5	30-120	7.57	30
Benzo (b) fluoranthene	0.0148	0.00500	"	0.0333	ND	44.4	30-120	6.97	30
Benzo (k) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.5	30-120	1.86	30
Chrysene	0.0151	0.00500	"	0.0333	ND	45.4	30-120	9.70	30
Dibenz (a,h) anthracene	0.0134	0.00500	"	0.0333	ND	40.3	30-120	14.8	30
Fluoranthene	0.0142	0.00500	"	0.0333	ND	42.5	30-120	11.8	30
Fluorene	0.0152	0.00500	"	0.0333	ND	45.5	30-120	6.52	30
Indeno (1,2,3-cd) pyrene	0.0144	0.00500	"	0.0333	ND	43.3	30-120	11.7	30
Pyrene	0.0142	0.00500	"	0.0333	ND	42.7	35-142	21.2	30
1-Methylnaphthalene	0.0160	0.00500	"	0.0333	ND	47.9	15-130	6.80	50
2-Methylnaphthalene	0.0152	0.00500	"	0.0333	ND	45.7	15-130	6.61	50
Surrogate: 2-Methylnaphthalene-d10	0.0137		"	0.0333		41.1	40-150		
Surrogate: Fluoranthene-d10	0.0149		"	0.0333		44.8	40-150		

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/21/23 14:55

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 BGH0497 - EPA 3050B

Blank (BGH0497-BLK1)

Prepared: 08/11/23 Analyzed: 08/12/23

Boron ND 0.0100 mg/L

LCS (BGH0497-BS1)

Prepared: 08/11/23 Analyzed: 08/12/23

Boron 5.63 0.0100 mg/L 5.00 113 80-120

Duplicate (BGH0497-DUP1)

Source: 2308184-01

Prepared: 08/11/23 Analyzed: 08/12/23

Boron 1.26 0.0100 mg/L 1.27 0.574 20

Matrix Spike (BGH0497-MS1)

Source: 2308184-01

Prepared: 08/11/23 Analyzed: 08/12/23

Boron 6.11 0.0100 mg/L 5.00 1.27 96.7 75-125

Matrix Spike Dup (BGH0497-MSD1)

Source: 2308184-01

Prepared: 08/11/23 Analyzed: 08/12/23

Boron 6.41 0.0100 mg/L 5.00 1.27 103 75-125 4.85 25

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/21/23 14:55

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0328 - EPA 3050B

Blank (BGH0328-BLK1)

Prepared & Analyzed: 08/09/23

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 (BGH0328-BS1)

Prepared & Analyzed: 08/09/23

Arsenic	40.1	0.200	mg/kg wet	40.0	100	80-120
Barium	41.1	0.400	"	40.0	103	80-120
Cadmium	2.01	0.200	"	2.00	101	80-120
Copper	40.6	0.400	"	40.0	101	80-120
Lead	20.7	0.200	"	20.0	103	80-120
Nickel	39.4	0.400	"	40.0	98.5	80-120
Silver	1.98	0.0200	"	2.00	99.0	80-120
Zinc	40.4	0.400	"	40.0	101	80-120

Duplicate (BGH0328-DUP1)

Source: 2307355-06RE1

Prepared & Analyzed: 08/09/23

Arsenic	0.479	0.200	mg/kg wet	0.591	20.9	20	QR-01
Barium	149	0.400	"	152	1.61	20	
Cadmium	0.142	0.200	"	0.0940	40.7	20	QR-01
Copper	2.00	0.400	"	2.31	14.2	20	
Lead	9.61	0.200	"	8.95	7.09	20	
Nickel	1.87	0.400	"	2.16	14.3	20	
Silver	0.0680	0.0200	"	0.0584	15.2	20	
Zinc	8.04	0.400	"	9.43	15.9	20	
Selenium	0.312	0.260	"	0.279	11.1	200	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/21/23 14:55

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0328 - EPA 3050B

Matrix Spike (BGH0328-MS1)

Source: 2307355-06RE1 Prepared & Analyzed: 08/09/23

Arsenic	6.03	0.200	mg/kg wet	40.0	0.591	13.6	75-125				QM-07
Barium	197	0.400	"	40.0	152	113	75-125				
Cadmium	2.13	0.200	"	2.00	0.0940	102	75-125				
Copper	7.88	0.400	"	40.0	2.31	13.9	75-125				QM-07
Lead	24.4	0.200	"	20.0	8.95	77.4	75-125				
Nickel	7.58	0.400	"	40.0	2.16	13.5	75-125				QM-07
Silver	1.89	0.0200	"	2.00	0.0584	91.5	75-125				
Zinc	13.4	0.400	"	40.0	9.43	9.87	75-125				QM-07

Matrix Spike Dup (BGH0328-MSD1)

Source: 2307355-06RE1 Prepared: 08/09/23 Analyzed: 08/10/23

Arsenic	6.05	0.200	mg/kg wet	40.0	0.591	13.6	75-125	0.278	25		QM-07
Barium	199	0.400	"	40.0	152	118	75-125	0.915	25		
Cadmium	2.18	0.200	"	2.00	0.0940	105	75-125	2.67	25		
Copper	7.90	0.400	"	40.0	2.31	14.0	75-125	0.299	25		QM-07
Lead	24.8	0.200	"	20.0	8.95	79.5	75-125	1.71	25		
Nickel	7.63	0.400	"	40.0	2.16	13.7	75-125	0.647	25		QM-07
Silver	1.94	0.0200	"	2.00	0.0584	94.2	75-125	2.86	25		
Zinc	13.4	0.400	"	40.0	9.43	10.0	75-125	0.483	25		QM-07

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.



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/21/23 14:55

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGH0462 - 3060A Mod

Blank (BGH0462-BLK1)

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGH0462-BS1)

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent 25.8 0.30 mg/kg wet 25.0 103 80-120

Duplicate (BGH0462-DUP1)

Source: 2308038-08

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGH0462-MS1)

Source: 2308038-08

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent 31.6 0.30 mg/kg dry 31.2 ND 101 75-125

Matrix Spike Dup (BGH0462-MSD1)

Source: 2308038-08

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent 32.6 0.30 mg/kg dry 31.2 ND 104 75-125 2.92 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/21/23 14:55

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

Summit Scientific

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

Batch BGH0552 - General Preparation

Blank (BGH0552-BLK1)

Prepared: 08/14/23 Analyzed: 08/16/23

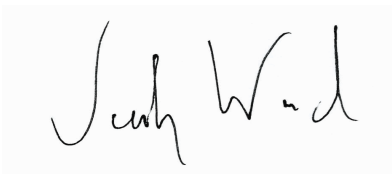
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BGH0552-BS1)

Prepared: 08/14/23 Analyzed: 08/16/23

Calcium	4.98	0.0500	mg/L wet	5.00		99.7	70-130			
Magnesium	5.46	0.0500	"	5.00		109	70-130			
Sodium	5.42	0.0500	"	5.00		108	70-130			

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/21/23 14:55

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 BGH0499 - General Preparation

Duplicate (BGH0499-DUP1)

Source: 2308182-01

Prepared & Analyzed: 08/11/23

% Solids	81.4		%		80.2			1.44	20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/21/23 14:55

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 BGH0605 - General Preparation

Blank (BGH0605-BLK1)

Prepared & Analyzed: 08/15/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGH0605-BS1)

Prepared & Analyzed: 08/15/23

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

Duplicate (BGH0605-DUP1)

Source: 2308183-01

Prepared & Analyzed: 08/15/23

Specific Conductance (EC) 0.659 0.0100 mmhos/cm 0.669 1.51 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/21/23 14:55

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 BGH0608 - General Preparation

LCS (BGH0608-BS1)

Prepared & Analyzed: 08/15/23

pH	9.08	pH Units	9.18	98.9	95-105
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Duplicate (BGH0608-DUP1)

Source: 2308183-01

Prepared & Analyzed: 08/15/23

pH	7.74	pH Units	7.73	0.129	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN

Project Manager: Paul Henchan

Reported:
08/21/23 14:55

Notes and Definitions

- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 22, 2023

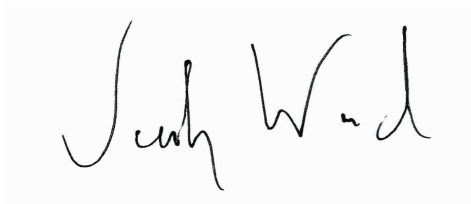
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Jepsen 1

Work Order #2308249

Enclosed are the results of analyses for samples received by Summit Scientific on 08/10/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a distinct "W".

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN

Project Manager: Paul Henchan

Reported:
08/22/23 16:16

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01@4.5'	2308249-01	Soil	08/03/23 00:00	08/10/23 16:30

Summit Scientific

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



4653 Table Mountain Drive
 Golden, CO 80403
 303-277-9310

Lab ID 2308249 Page 1 of 1

Client: Fremont Environmental Inc.		Send Data To: Project Manager: Paul Henehan		Send Invoice To: Company: Noble Energy Inc.	
Address: 8305 6th Steet		E-Mail: Fremont Distribution List: PaulH, EthanB, JeffG, ChrisL, StanG, etc.		Project Name/Location: <u>Jepsen 1</u>	
City/State/Zip: Wellington, CO, 80549		@fremontenv.com		AFE#:	
Phone: (970) 213-7488		Project Name: <u>Jepsen 1</u>		PO/Billing Codes: <u>UWRWE - A3009 - ABN</u>	
Sampler Name: Chris Lattes (chrisl@fremontenv.com)		Project Number:		Contact: Dan Peterson	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions			
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	TPH (GRO/DRO/ORO)	BTEX, TMB's, Naphtlene	PAH's	pH, EC, SAR, Boron	Table 915 Metals		TDS, Chloride, Sulfate	HOLD	
1	FLQ1@ 4.5'	8/3/23		1			X			X			X	X	X	X					
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>Chris Lattes</u>	Date/Time: <u>8/10/23 16:00</u>	Received by: <u>S2</u>	Date/Time: <u>8/10/23 16:00</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>S2</u>	Date/Time: <u>8/10/23 1630</u>	Received by: <u>[Signature]</u>	Date/Time: <u>8/10/23 1430</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	<input checked="" type="checkbox"/> Field Turb.	
Temperature Upon Receipt: <u>12.1</u>	Corrected Temperature: <u>8</u>	IR gun #: <u>1</u>	HNO3 lot #:			



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:16

FL01@4.5'
2308249-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGH0480	08/11/23	08/14/23	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: **08/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0421	105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGH0483	08/11/23	08/12/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.73	61.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:16

FL01@4.5'
2308249-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGH0577	08/15/23	08/16/23	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: **08/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0190	56.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.349	0.0100	mg/L	1	BGH0667	08/16/23	08/18/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/03/23 00:00**

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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:16

FL01@4.5'
2308249-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.610	0.200	mg/kg dry	1	BGH0516	08/14/23	08/15/23	EPA 6020B	
Barium	253	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.64	0.400	"	"	"	"	"	"	
Lead	20.3	0.200	"	"	"	"	"	"	
Nickel	1.06	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	8.46	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0500	08/11/23	08/11/23	EPA 7196A	

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

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	95.3	0.0550	mg/L dry	1	BGH0654	08/16/23	08/18/23	EPA 6020B	
Magnesium	39.9	0.0550	"	"	"	"	"	"	
Sodium	77.8	0.0550	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.69	0.00100	units	1	BGH0764	08/18/23	08/18/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:16

FL01@4.5'
2308249-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.9		%	1	BGH0664	08/16/23	08/16/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.500	0.0100	mmhos/cm	1	BGH0725	08/17/23	08/17/23	EPA 120.1	

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

Date Sampled: **08/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.05		pH Units	1	BGH0724	08/17/23	08/17/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:16

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGH0480 - EPA 5030 Soil MS

Blank (BGH0480-BLK1)

Prepared & Analyzed: 08/11/23

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0447		"	0.0400		112	50-150				
<i>Surrogate: Toluene-d8</i>	0.0394		"	0.0400		98.6	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0430		"	0.0400		108	50-150				

LCS (BGH0480-BS1)

Prepared & Analyzed: 08/11/23

Benzene	0.121	0.0020	mg/kg	0.100		121	70-130				
Toluene	0.110	0.0050	"	0.100		110	70-130				
Ethylbenzene	0.116	0.0050	"	0.100		116	70-130				
m,p-Xylene	0.233	0.010	"	0.200		117	70-130				
o-Xylene	0.101	0.0050	"	0.100		101	70-130				
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130				
1,3,5-Trimethylbenzene	0.106	0.0050	"	0.100		106	70-130				
Naphthalene	0.0927	0.0038	"	0.100		92.7	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0438		"	0.0400		109	50-150				
<i>Surrogate: Toluene-d8</i>	0.0402		"	0.0400		101	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0382		"	0.0400		95.4	50-150				

Matrix Spike (BGH0480-MS1)

Source: 2308236-01

Prepared & Analyzed: 08/11/23

Benzene	0.110	0.0020	mg/kg	0.100	ND	110	70-130				
Toluene	0.0945	0.0050	"	0.100	ND	94.5	70-130				
Ethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130				
m,p-Xylene	0.172	0.010	"	0.200	ND	86.2	70-130				
o-Xylene	0.0778	0.0050	"	0.100	ND	77.8	70-130				
1,2,4-Trimethylbenzene	0.0700	0.0050	"	0.100	ND	70.0	70-130				
1,3,5-Trimethylbenzene	0.0980	0.0050	"	0.100	ND	98.0	70-130				
Naphthalene	0.114	0.0038	"	0.100	ND	114	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0446		"	0.0400		112	50-150				
<i>Surrogate: Toluene-d8</i>	0.0411		"	0.0400		103	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0404		"	0.0400		101	50-150				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:16

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 BGH0480 - EPA 5030 Soil MS

Matrix Spike Dup (BGH0480-MSD1)	Source: 2308236-01			Prepared & Analyzed: 08/11/23						
Benzene	0.115	0.0020	mg/kg	0.100	ND	115	70-130	4.21	30	
Toluene	0.101	0.0050	"	0.100	ND	101	70-130	6.33	30	
Ethylbenzene	0.0959	0.0050	"	0.100	ND	95.9	70-130	9.91	30	
m,p-Xylene	0.192	0.010	"	0.200	ND	95.8	70-130	10.5	30	
o-Xylene	0.0861	0.0050	"	0.100	ND	86.1	70-130	10.1	30	
1,2,4-Trimethylbenzene	0.0819	0.0050	"	0.100	ND	81.9	70-130	15.7	30	
1,3,5-Trimethylbenzene	0.0790	0.0050	"	0.100	ND	79.0	70-130	21.4	30	
Naphthalene	0.0970	0.0038	"	0.100	ND	97.0	70-130	16.0	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0448</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0379</i>		<i>"</i>	<i>0.0400</i>		<i>94.8</i>	<i>50-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:16

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGH0483 - EPA 3550A

Blank (BGH0483-BLK1)

Prepared & Analyzed: 08/11/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	10.1		"	12.5		81.0		30-150		

LCS (BGH0483-BS1)

Prepared & Analyzed: 08/11/23

C10-C28 (DRO)	382	50	mg/kg	500		76.4		70-130		
Surrogate: <i>o</i> -Terphenyl	9.95		"	12.5		79.6		30-150		

Matrix Spike (BGH0483-MS1)

Source: 2308236-01

Prepared: 08/11/23 Analyzed: 08/12/23

C10-C28 (DRO)	443	50	mg/kg	500	6.71	87.2		70-130		
Surrogate: <i>o</i> -Terphenyl	9.50		"	12.5		76.0		30-150		

Matrix Spike Dup (BGH0483-MSD1)

Source: 2308236-01

Prepared: 08/11/23 Analyzed: 08/12/23

C10-C28 (DRO)	380	50	mg/kg	500	6.71	74.7		70-130	15.2	20
Surrogate: <i>o</i> -Terphenyl	9.56		"	12.5		76.5		30-150		

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:16

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 BGH0577 - EPA 5030 Soil MS

Blank (BGH0577-BLK1)

Prepared: 08/15/23 Analyzed: 08/16/23

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>	<i>0.0270</i>		<i>"</i>	<i>0.0333</i>		<i>80.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0262</i>		<i>"</i>	<i>0.0333</i>		<i>78.6</i>	<i>40-150</i>			

LCS (BGH0577-BS1)

Prepared: 08/15/23 Analyzed: 08/16/23

Acenaphthene	0.0307	0.00500	mg/kg	0.0333	92.0	31-137
Anthracene	0.0300	0.00500	"	0.0333	89.9	30-120
Benzo (a) anthracene	0.0270	0.00500	"	0.0333	80.9	30-120
Benzo (a) pyrene	0.0306	0.00500	"	0.0333	91.9	30-120
Benzo (b) fluoranthene	0.0317	0.00500	"	0.0333	95.1	30-120
Benzo (k) fluoranthene	0.0334	0.00500	"	0.0333	100	30-120
Chrysene	0.0317	0.00500	"	0.0333	95.0	30-120
Dibenz (a,h) anthracene	0.0332	0.00500	"	0.0333	99.5	30-120
Fluoranthene	0.0284	0.00500	"	0.0333	85.2	30-120
Fluorene	0.0297	0.00500	"	0.0333	89.0	30-120
Indeno (1,2,3-cd) pyrene	0.0327	0.00500	"	0.0333	98.0	30-120
Pyrene	0.0337	0.00500	"	0.0333	101	35-142
1-Methylnaphthalene	0.0281	0.00500	"	0.0333	84.3	35-142
2-Methylnaphthalene	0.0328	0.00500	"	0.0333	98.5	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0287</i>		<i>"</i>	<i>0.0333</i>	<i>86.2</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0294</i>		<i>"</i>	<i>0.0333</i>	<i>88.3</i>	<i>40-150</i>

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:16

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 BGH0577 - EPA 5030 Soil MS

Matrix Spike (BGH0577-MS1)

Source: 2308249-01

Prepared: 08/15/23 Analyzed: 08/16/23

Acenaphthene	0.0257	0.00500	mg/kg	0.0333	ND	77.1	31-137			
Anthracene	0.0231	0.00500	"	0.0333	ND	69.3	30-120			
Benzo (a) anthracene	0.0258	0.00500	"	0.0333	ND	77.3	30-120			
Benzo (a) pyrene	0.0268	0.00500	"	0.0333	ND	80.4	30-120			
Benzo (b) fluoranthene	0.0282	0.00500	"	0.0333	ND	84.7	30-120			
Benzo (k) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.9	30-120			
Chrysene	0.0260	0.00500	"	0.0333	ND	77.9	30-120			
Dibenz (a,h) anthracene	0.0237	0.00500	"	0.0333	ND	71.0	30-120			
Fluoranthene	0.0245	0.00500	"	0.0333	ND	73.4	30-120			
Fluorene	0.0254	0.00500	"	0.0333	ND	76.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0272	0.00500	"	0.0333	ND	81.5	30-120			
Pyrene	0.0259	0.00500	"	0.0333	ND	77.8	35-142			
1-Methylnaphthalene	0.0242	0.00500	"	0.0333	ND	72.6	15-130			
2-Methylnaphthalene	0.0259	0.00500	"	0.0333	ND	77.8	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0245		"	0.0333		73.5	40-150			
Surrogate: Fluoranthene-d10	0.0236		"	0.0333		70.8	40-150			

Matrix Spike Dup (BGH0577-MSD1)

Source: 2308249-01

Prepared: 08/15/23 Analyzed: 08/16/23

Acenaphthene	0.0241	0.00500	mg/kg	0.0333	ND	72.3	31-137	6.52	30	
Anthracene	0.0224	0.00500	"	0.0333	ND	67.1	30-120	3.23	30	
Benzo (a) anthracene	0.0254	0.00500	"	0.0333	ND	76.3	30-120	1.32	30	
Benzo (a) pyrene	0.0250	0.00500	"	0.0333	ND	74.9	30-120	7.17	30	
Benzo (b) fluoranthene	0.0266	0.00500	"	0.0333	ND	79.8	30-120	6.02	30	
Benzo (k) fluoranthene	0.0223	0.00500	"	0.0333	ND	67.0	30-120	17.6	30	
Chrysene	0.0249	0.00500	"	0.0333	ND	74.7	30-120	4.29	30	
Dibenz (a,h) anthracene	0.0223	0.00500	"	0.0333	ND	67.0	30-120	5.80	30	
Fluoranthene	0.0245	0.00500	"	0.0333	ND	73.4	30-120	0.0231	30	
Fluorene	0.0243	0.00500	"	0.0333	ND	72.9	30-120	4.65	30	
Indeno (1,2,3-cd) pyrene	0.0280	0.00500	"	0.0333	ND	84.1	30-120	3.14	30	
Pyrene	0.0254	0.00500	"	0.0333	ND	76.3	35-142	1.93	30	
1-Methylnaphthalene	0.0221	0.00500	"	0.0333	ND	66.3	15-130	9.17	50	
2-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.2	15-130	17.7	50	
Surrogate: 2-Methylnaphthalene-d10	0.0235		"	0.0333		70.6	40-150			
Surrogate: Fluoranthene-d10	0.0235		"	0.0333		70.6	40-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:16

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 BGH0667 - EPA 3050B

Blank (BGH0667-BLK1)

Prepared: 08/16/23 Analyzed: 08/17/23

Boron ND 0.0100 mg/L

LCS (BGH0667-BS1)

Prepared: 08/16/23 Analyzed: 08/17/23

Boron 5.89 0.0100 mg/L 5.00 118 80-120

Duplicate (BGH0667-DUP1)

Source: 2308238-01

Prepared: 08/16/23 Analyzed: 08/18/23

Boron 4.55 0.0100 mg/L 4.31 5.35 20

Matrix Spike (BGH0667-MS1)

Source: 2308238-01

Prepared: 08/16/23 Analyzed: 08/18/23

Boron 9.21 0.0100 mg/L 5.00 4.31 98.0 75-125

Matrix Spike Dup (BGH0667-MSD1)

Source: 2308238-01

Prepared: 08/16/23 Analyzed: 08/18/23

Boron 9.65 0.0100 mg/L 5.00 4.31 107 75-125 4.68 25

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:16

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

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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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:16

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

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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PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:16

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGH0500 - 3060A Mod

Blank (BGH0500-BLK1)

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGH0500-BS1)

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent 24.2 0.30 mg/kg wet 25.0 96.6 80-120

Duplicate (BGH0500-DUP1)

Source: 2308127-01

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGH0500-MS1)

Source: 2308127-01

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent 27.0 0.30 mg/kg dry 33.2 ND 81.2 75-125

Matrix Spike Dup (BGH0500-MSD1)

Source: 2308127-01

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent 27.2 0.30 mg/kg dry 33.2 ND 82.0 75-125 0.980 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:16

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

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

Batch BGH0654 - General Preparation

Blank (BGH0654-BLK1)

Prepared: 08/16/23 Analyzed: 08/18/23

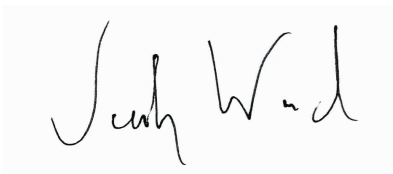
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BGH0654-BS1)

Prepared: 08/16/23 Analyzed: 08/18/23

Calcium	4.75	0.0500	mg/L wet	5.00	95.0	70-130				
Magnesium	6.37	0.0500	"	5.00	127	70-130				
Sodium	6.10	0.0500	"	5.00	122	70-130				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:16

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 BGH0664 - General Preparation


Duplicate (BGH0664-DUP1)

Source: 2308155-02

Prepared & Analyzed: 08/16/23

% Solids	94.7		%		94.7			0.0179	20	
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 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1
 Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:16

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 BGH0725 - General Preparation

Blank (BGH0725-BLK1)

Prepared & Analyzed: 08/17/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGH0725-BS1)

Prepared & Analyzed: 08/17/23

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


Duplicate (BGH0725-DUP1)

Source: 2308155-02

Prepared & Analyzed: 08/17/23

Specific Conductance (EC) 0.400 0.0100 mmhos/cm 0.411 2.69 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:16

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 BGH0724 - General Preparation

LCS (BGH0724-BS1)

Prepared & Analyzed: 08/17/23

pH	9.02	pH Units	9.18	98.3	95-105
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Duplicate (BGH0724-DUP1)

Source: 2308155-02

Prepared & Analyzed: 08/17/23

pH	7.90	pH Units	7.87	0.380	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:16

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