

# **FREMONT ENVIRONMENTAL INC.**

Feb 22, 2024

Mr. Daniel Peterson  
Noble Energy Inc.  
2115 117<sup>th</sup> Avenue  
Greeley, CO 80634

Subject:           **Flowline Closure Data Submittal**  
Lucci B1-23  
API # 05-123-21508  
CSE Sec. 1, T5N, R64W  
Weld County, Colorado  
Fremont Project No. C023-269  
Remediation # 30908

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted flowline closure activities for the Noble Energy Inc. (Noble) Lucci B1-23. Impacted soil was not encountered during abandonment activities. Details of the Lucci B1-23 flowline closure activities are documented in the attached Closure Report. Groundwater was not encountered during flowline abandonment activities.

Please contact me at (336) 541-3048 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

**FREMONT ENVIRONMENTAL INC.**



Aaron Otilar  
Consultant

Attachments:

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

# 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 &amp; COGCC Facility Number:</i>		<i>Date:</i>						<i>Remediation Project #:</i>
<i>Associated Wells:</i>		<i>Age of Site:</i>						<i>Number of Photos Attached:</i>

*Starting point: (GPS coordinates and descriptions)*

*End point: (GPS coordinates and descriptions)*

<i>USCS Soil Type:</i>	<i>Estimated Depth to Groundwater:</i>
------------------------	--

*Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)*

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

### Flowlines

<i>Flowline type</i>							
<i>Depth</i>							
<i>Age</i>							
<i>Length</i>							
<i>Construction Material</i>							
<i>Were flowlines pulled?</i>							
<i>Visual Integrity of lines</i>							
<i>Visual impacts if trenched</i>							
<i>PID Readings if trenched</i>							
<i>Sample taken?</i>							
<i>Location/Sample ID#</i>							
<i>Photo Number(s)</i>							

*Other observations regarding on location flowlines:*

### Summary

<i>Was impacted soil identified?</i>		
No	Yes - less than 10 cubic yards	Yes - more than 10 cubic yards
<i>Total number of samples field screened:</i>		<i>Total number of samples collected:</i>
<i>Highest PID Reading:</i>		<i>Total number of samples submitted to lab for analysis:</i>
<i>If more than 10 cubic yards of impacted soil were observed:</i>		
<i>Vertical extent:</i>		<i>Estimated spill volume:</i>
<i>Lateral extent:</i>		<i>Volume of soil removed:</i>
<i>Is additional investigation required?</i>		
<i>Was groundwater encountered during the investigation?</i>		
No	Yes - not impacted or in contact with impacted soils	Yes - groundwater impacted and/or in contact with impacted soils
<i>Measured depth to groundwater:</i>		<i>Was remedial groundwater removal conducted? Yes No</i>
<i>Date Groundwater was encountered:</i>		<i>Commencement date of removal:</i>
<i>Sheen on groundwater? Yes No</i>		<i>Volume of groundwater removed prior to sampling:</i>
<i>Free product observed? Yes No</i>		<i>Volume of groundwater removed post sampling:</i>
<i>Total number of samples collected:</i>		<i>Total Volume of groundwater removed:</i>
<i>Total number of samples submitted to lab for analysis:</i>		

**TABLE 1**  
**SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA**  
**NOBLE ENERGY INC.**  
**LUCCI B01-23 FLOWLINE, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C023-269**

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)
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
FL01-02@4'	10/03/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
FL01-03@4'	10/03/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
FLR01@4'	10/03/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
SEP01-FL@4'	10/03/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<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.  
LUCCI B01-23 FLOWLINE, WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C023-269

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)
COGCC 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
COGCC 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
FL01-02@4'	10/03/2023	4'	<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
FL01-03@4'	10/03/2023	4'	<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
FLR01@4'	10/03/2023	4'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
SEP01-FL@4'	10/03/2023	4'	<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.**  
**LUCCI B01-23 FLOWLINE, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C023-269**

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
COGCC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
Max. Background Concentration			8.42	6.39	10.6	-
FL01-02@4'	10/03/2023	4'	8.06	<b>4.23</b>	<b>11.0</b>	<2.00
FL01-03@4'	10/03/2023	4'	<b>8.65</b>	0.578	3.44	<2.00
FLR01@4'	10/03/2023	4'	8.29	1.9	<b>11.9</b>	<2.00
SEP01-FL@4'	10/03/2023	4'	8.26	0.135	0.0205	<2.00
BKG01@4'	10/03/2023	4'	8.03	<b>6.39</b>	<b>10.6</b>	<2.00
BKG02@4'	10/03/2023	4'	8.25	2.050	<b>8.26</b>	<2.00
BKG03@4'	10/03/2023	4'	<b>8.36</b>	1.790	5.72	<2.00
BKG04@4'	10/03/2023	4'	<b>8.42</b>	2.170	<b>10.6</b>	<2.00
BKG05@4'	10/03/2023	4'	8.03	1.11	5.37	<2.00

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.  
LUCCI B01-23 FLOWLINE, WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C023-269

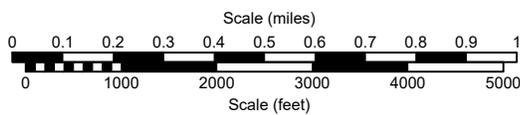
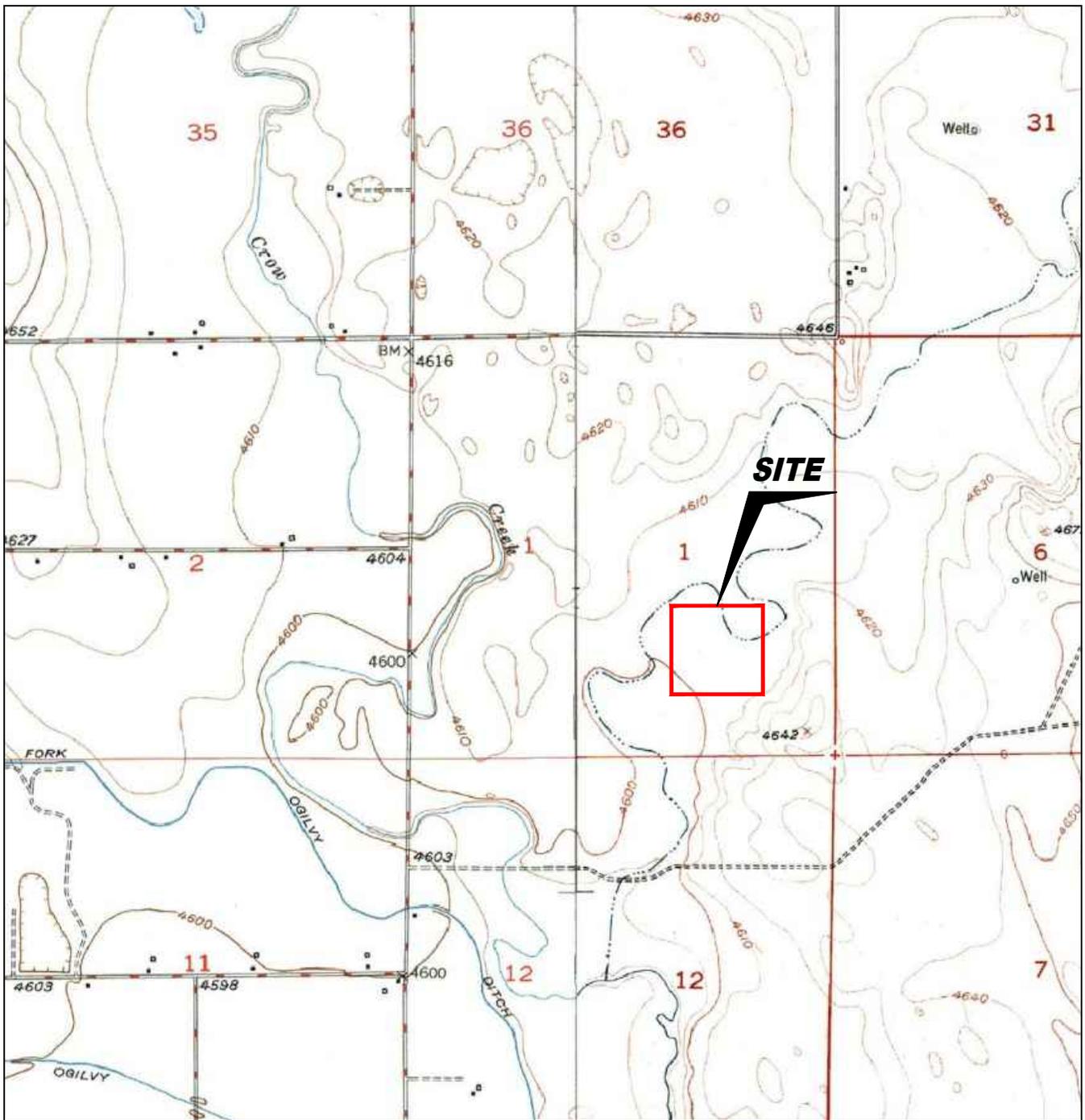
Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
Max. Background Concentration			2.61	92.8	-	-	-	-	-	0.302	-	-
FL01-02@4'	10/03/2023	4'	<b>3.33</b>	77.9	<0.200	<0.30	4.13	6.63	3.59	<0.260	<0.0200	16.8
FL01-03@4'	10/03/2023	4'	<b>4.49</b>	21.3	<0.200	<0.30	1.85	4.29	1.37	<0.260	<0.0200	6.46
FLR01@4'	10/03/2023	4'	<b>3.87</b>	<b>96.4</b>	0.253	<0.30	4.7	13	3.37	<b>0.266</b>	0.024	17.3
SEP01-FL@4'	10/03/2023	4'	<b>2.36</b>	37.1	<0.200	<0.30	2.28	4.99	1.73	<0.260	<0.0200	10.5
BKG01@4'	10/03/2023	4'	<b>2.47</b>	<b>92.8</b>	0.273	<0.30	4.6	7.36	3.5	<b>0.302</b>	0.0317	17.4
BKG02@4'	10/03/2023	4'	<b>2.61</b>	26.2	<0.200	<0.30	2.45	4.27	2.26	<0.260	<0.0200	12
BKG03@4'	10/03/2023	4'	<b>1.95</b>	33.6	<0.200	<0.30	1.96	3.74	1.63	<0.260	<0.0200	8.82
BKG04@4'	10/03/2023	4'	<b>1.61</b>	16.5	<0.200	<0.30	1.65	3.13	1.56	<0.260	<0.0200	7.76
BKG05@4'	10/03/2023	4'	<b>2.38</b>	32.7	<0.200	<0.30	2.77	5.34	2.2	<0.260	<0.0200	11.6

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



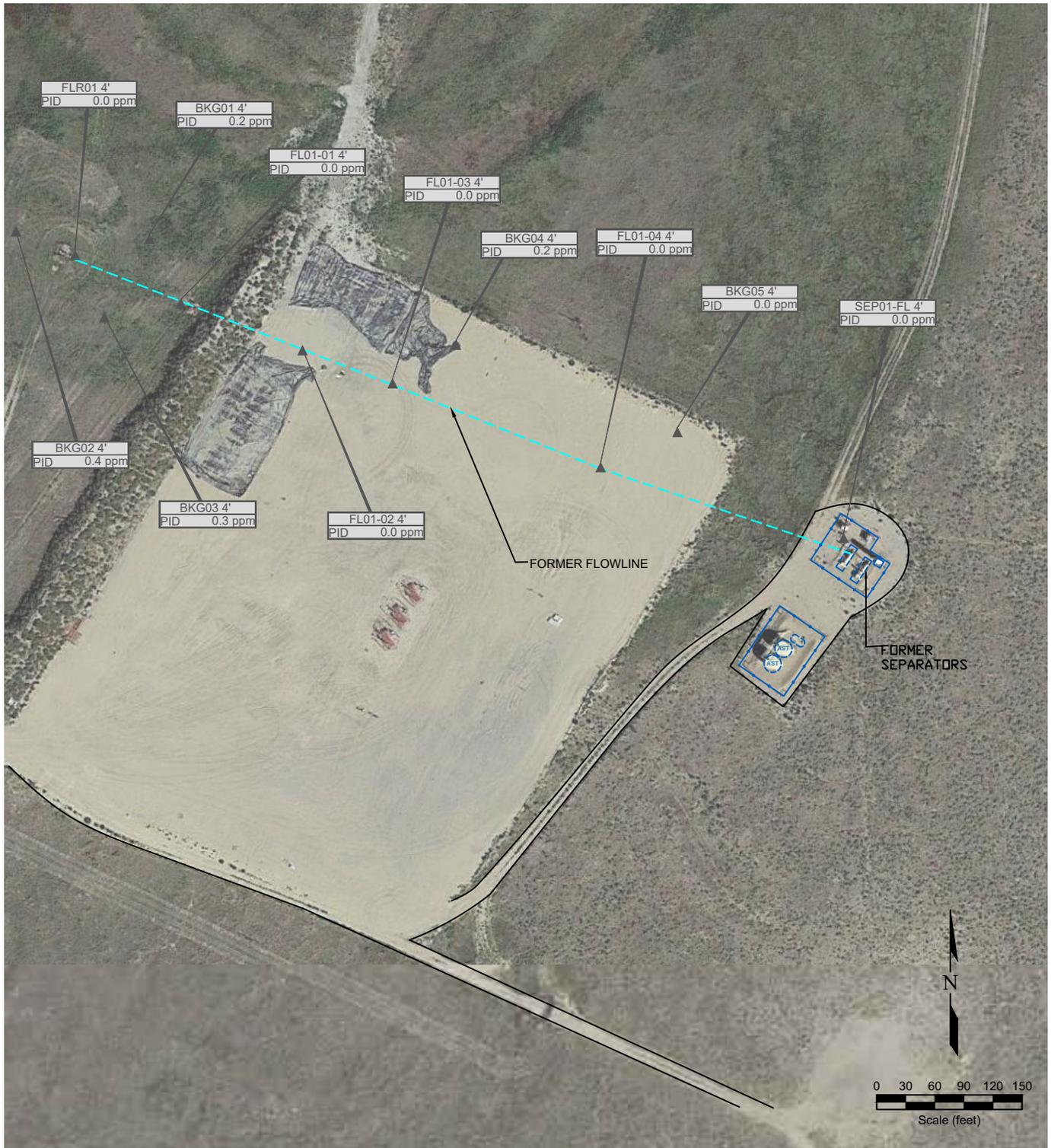
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
**SITE LOCATION MAP**  
**LUCCI B 1-23 ~ NOBLE ENERGY INC**

CSE Sec. 1, T5N, R64W, 6th PM  
 Weld County, Colorado  
 40.424910°, -104.493610°

Project # <b>C023-269</b>	API # <b>05-123-21508</b>	Facility #
Date <b>3/16/24</b>	Remediation # <b>30908</b>	Filename <b>23269T</b>





**LEGEND**

- ▲ PID READING LOCATION
- ▲ (AST) ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- FORMER FLOWLINE
- FENCE LINE
- CONTAINMENT BERM

**Figure 2  
SITE MAP  
LUCCI B 1-23 ~ NOBLE ENERGY INC**

CSE Sec. 1, T5N, R64W, 6th PM  
Weld County, Colorado  
40.424910°, -104.493610°

Project No. <b>C023-269</b>	API # <b>123-21508</b>	Facility #
Date <b>3/16/24</b>	Remediation # <b>30908</b>	Filename <b>23269Q</b>



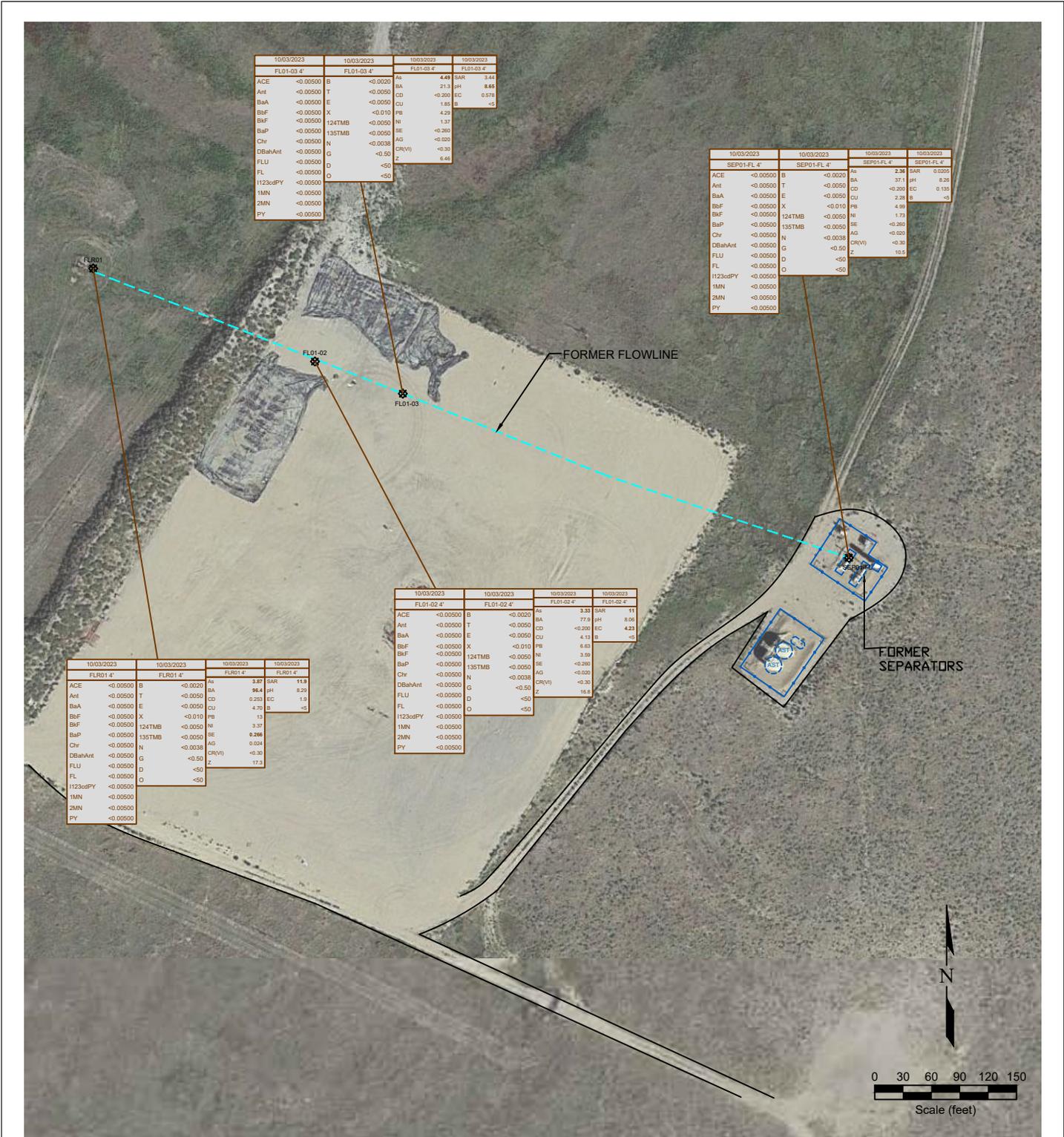


Figure 3  
**SOIL CHEMISTRY MAP**  
**LUCCI B 1-23 ~ NOBLE ENERGY INC**

CSE Sec. 1, T5N, R64W, 6th PM  
 Weld County, Colorado  
 40.424910°, -104.493610°

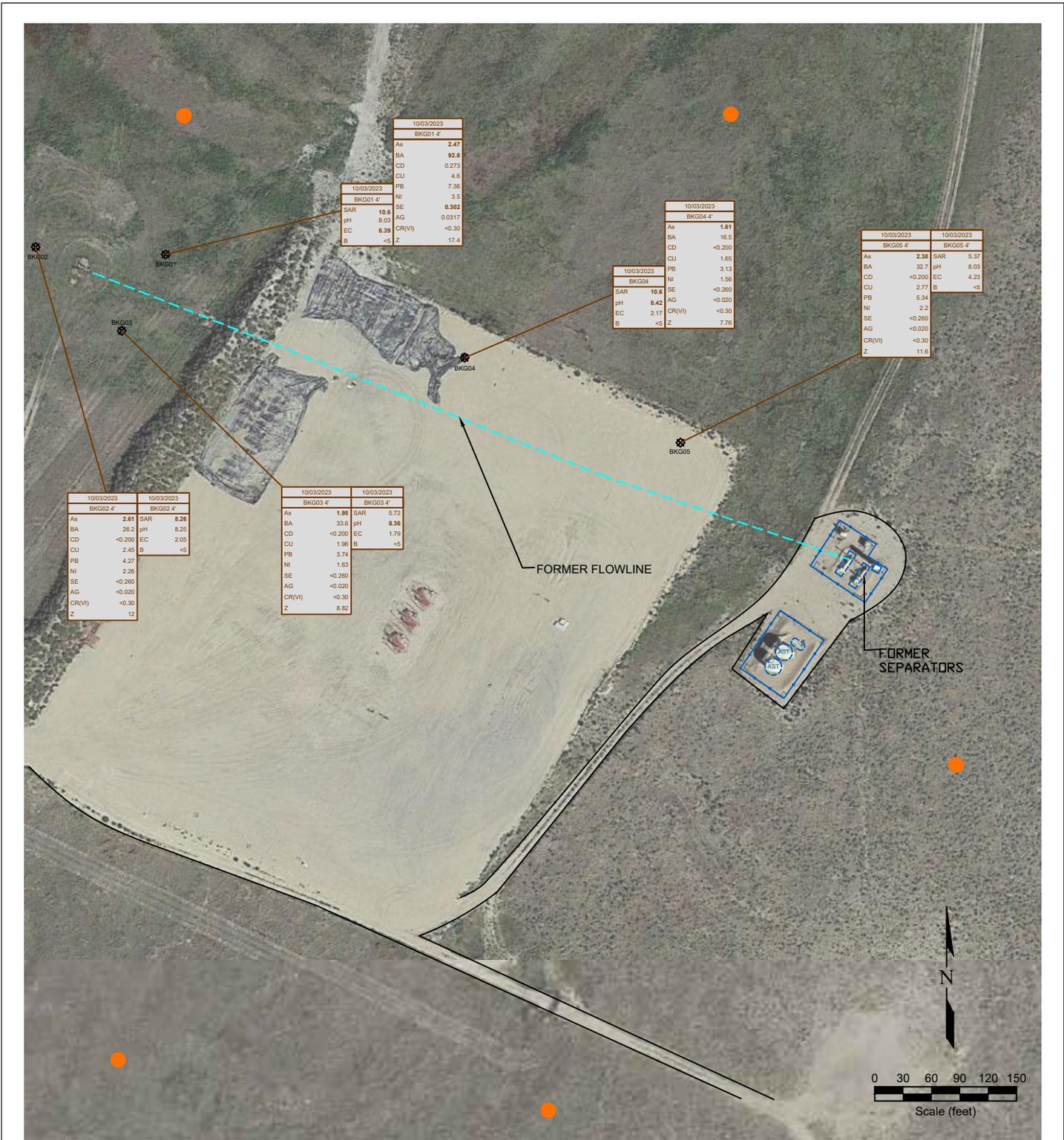
Project No. <b>C023-269</b>	API # <b>05-123-21508</b>	Facility #
Date <b>3/16/24</b>	Remediation # <b>30908</b>	Filename <b>23269Q</b>



**LEGEND**

- SOIL SAMPLE LOCATION (AST)
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- FORMER FLOWLINE
- FENCE LINE
- CONTAINMENT BERM

DATE	DATE SAMPLED	DATE SAMPLED	DATE SAMPLED
ID and Depth	SAMPLE ID and DEPTH (ft)	SAMPLE ID and DEPTH (ft)	SAMPLE ID and DEPTH (ft)
03/24/2021	08/16/2022	01/23/21	08/16/2022
N Wall @ 3'	K-22-34(3-10)	N Wall @ 1'	K-22-34(3-10)
ACE	As	SAR	As
Ant	BA	SAR	BA
BaA	CO	SAR	CO
BbF	CU	SAR	CU
BaP	Pb	SAR	Pb
Chr	Se	SAR	Se
DBahAnt	Ni	SAR	Ni
FLU	Ag	SAR	Ag
FL	Zn	SAR	Zn
1123cdPY	Cr(VI)	SAR	Cr(VI)
1MN		SAR	
2MN		SAR	
PY		SAR	



**LEGEND**

- SOIL SAMPLE LOCATION
- AST ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- FORMER FLOWLINE
- FENCE LINE
- CONTAINMENT BERM

Proposed Additional BKG Sample Locations

**Figure 4**  
**BACKGROUND SOIL CHEMISTRY MAP**  
**LUCCI B 1-23 ~ NOBLE ENERGY INC**

CSE Sec. 1, T5N, R64W, 6th PM  
Weld County, Colorado  
40.424910°, -104.493610°

Project No. <b>C023-269</b>	API # <b>05-123-21508</b>	Facility #
Date <b>3/16/24</b>	Remediation # <b>30908</b>	Filename <b>23269Q</b>



# Photo Log



*Description:*

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# Photo Log



*Description:*

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# Photo Log



*Description:*

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# Photo Log



*Description:*

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# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 12, 2023

Paul Henchan  
Fremont Environmental  
PO Box 1289  
Wellington, CO 80549

RE: Noble - Lucci B01-23 Flowline  
Work Order #2310049

Enclosed are the results of analyses for samples received by Summit Scientific on 10/03/23 16:45. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black 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 - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FLR01@4'	2310049-01	Soil	10/03/23 00:00	10/03/23 16:45
FL01-02@4'	2310049-02	Soil	10/03/23 00:00	10/03/23 16:45
FL01-03@4'	2310049-03	Soil	10/03/23 00:00	10/03/23 16:45
SEP01-FL@4'	2310049-04	Soil	10/03/23 00:00	10/03/23 16:45
BKG01@4'	2310049-05	Soil	10/03/23 00:00	10/03/23 16:45
BKG02@4'	2310049-06	Soil	10/03/23 00:00	10/03/23 16:45
BKG03@4'	2310049-07	Soil	10/03/23 00:00	10/03/23 16:45
BKG04@4'	2310049-08	Soil	10/03/23 00:00	10/03/23 16:45
BKG05@4'	2310049-09	Soil	10/03/23 00:00	10/03/23 16:45

Summit Scientific

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

# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2310049	

Send Data To:		Send Invoice To:
Client: Fremont Environmental	Project Manager: Paul Henehan	Company: Noble/Chevron
Address: 8305 6th Street	E-Mail: Fremont Distribution List	Project Name/Location:
City/State/Zip: Wellington, CO, 80549		AFE#: UWRWE - A2077A13N
Phone: 603-477-6907	Project Name: Lucci B01-23 Flowline	PO/Billing Codes:
Sampler Name: Aaron Otilar	Project Number: C023-256	Contact: Mike Montoya

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil		Other	BTEXN - 915	TPH (C6-C36)	PAH	SAR, EC, pH, Boron	Metals (915-1)	TDS, Cl, SO4	
1	FL01@4'	10/3/23		2			2			X		X	X	X	X	X			
2	FL01-02@4'																		
3	FL01-03@4'																		
4	SE01-FL@4'																		
5	BKG01@4'													X	X				
6	BKG02@4'																		
7	BKG03@4'																		
8	BKG04@4'																		
9	BKG05@4'																		
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>Aaron Otilar</i>	Date/Time: 10/3/23 1630	Received by: Summit North Office	Date/Time: 10/3/23 1630	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <i>SZ</i>	Date/Time: 10/3/23 1645	Received by: <i>[Signature]</i>	Date/Time: 10/3/23 1645	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 10.9	Corrected Temperature: 9	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2310049

Client: Fremont Client Project ID: Lucci B01-23 Flawline

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

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

Temp (°C) 16.9 Thermometer # 1

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

Additional Comments (if any):

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

AS 10/3/23  
Custodian Printed Name Date/Time

2023



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**FLR01@4'**  
**2310049-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0156	10/04/23	10/05/23	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: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0422	106 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0278	69.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0363	90.8 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0163	10/04/23	10/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.51	76.1 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**FLR01@4'**  
**2310049-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0289	10/06/23	10/07/23	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: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0226	67.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0235	70.6 %	40-150		"	"	"	"	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0363	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**FLR01@4'**  
**2310049-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	3.87	0.200	mg/kg dry	1	BGJ0323	10/09/23	10/10/23	EPA 6020B
Barium	96.4	0.400	"	"	"	"	"	"
Cadmium	0.253	0.200	"	"	"	"	"	"
Copper	4.70	0.400	"	"	"	"	"	"
Lead	13.0	0.200	"	"	"	"	"	"
Nickel	3.37	0.400	"	"	"	"	"	"
Silver	0.0240	0.0200	"	"	"	"	"	"
Zinc	17.3	0.400	"	"	"	"	"	"
Selenium	0.266	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/03/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0182	10/04/23	10/04/23	EPA 7196A	

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

Date Sampled: 10/03/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	59.2	0.0500	mg/L dry	1	BGJ0333	10/09/23	10/11/23	EPA 6020B	
Magnesium	11.5	0.0500	"	"	"	"	"	"	
Sodium	382	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/03/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	11.9	0.00100	units	1	BGJ0515	10/12/23	10/12/23	Calculation	

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

Date Sampled: 10/03/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
 PO Box 1289  
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Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**FLR01@4'**  
**2310049-01 (Soil)**

**Summit Scientific**

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

% Solids	76.8	%	1	BGJ0381	10/10/23	10/10/23	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.90	0.0100	mmhos/cm	1	BGJ0374	10/10/23	10/10/23	EPA 120.1	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.29		pH Units	1	BGJ0373	10/10/23	10/10/23	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**FL01-02@4'**  
**2310049-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0156	10/04/23	10/05/23	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: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0447	112 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0374	93.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0354	88.6 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0163	10/04/23	10/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.6	101 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**FL01-02@4'**  
**2310049-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0289	10/06/23	10/07/23	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: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0177	53.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0202	60.7 %	40-150		"	"	"	"	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0363	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**FL01-02@4'**  
**2310049-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.33	0.200	mg/kg dry	1	BGJ0323	10/09/23	10/10/23	EPA 6020B	
Barium	77.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.13	0.400	"	"	"	"	"	"	
Lead	6.63	0.200	"	"	"	"	"	"	
Nickel	3.59	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	16.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0182	10/04/23	10/04/23	EPA 7196A	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	140	0.0500	mg/L dry	1	BGJ0333	10/09/23	10/11/23	EPA 6020B	
Magnesium	69.2	0.0500	"	"	"	"	"	"	
Sodium	639	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	11.0	0.00100	units	1	BGJ0515	10/12/23	10/12/23	Calculation	

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

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
 Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**FL01-02@4'**  
**2310049-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.4		%	1	BGJ0381	10/10/23	10/10/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	4.23	0.0100	mmhos/cm	1	BGJ0374	10/10/23	10/10/23	EPA 120.1	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.06		pH Units	1	BGJ0373	10/10/23	10/10/23	EPA 9045D	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**FL01-03@4'**  
**2310049-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGJ0156	10/04/23	10/05/23	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: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0518	129 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0365	91.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0363	90.8 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGJ0163	10/04/23	10/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/03/23 00:00**

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

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**FL01-03@4'**  
**2310049-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0289	10/06/23	10/07/23	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: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0244	73.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0231	69.4 %	40-150		"	"	"	"	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0363	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**FL01-03@4'**  
**2310049-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.49	0.200	mg/kg dry	1	BGJ0323	10/09/23	10/10/23	EPA 6020B	
Barium	21.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.85	0.400	"	"	"	"	"	"	
Lead	4.29	0.200	"	"	"	"	"	"	
Nickel	1.37	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	6.46	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0182	10/04/23	10/04/23	EPA 7196A	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.2	0.0500	mg/L dry	1	BGJ0333	10/09/23	10/11/23	EPA 6020B	
Magnesium	5.98	0.0500	"	"	"	"	"	"	
Sodium	73.9	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.44	0.00100	units	1	BGJ0515	10/12/23	10/12/23	Calculation	

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

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**FL01-03@4'**  
**2310049-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	93.8			%	1	BGJ0381	10/10/23	10/10/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.578	0.0100		mmhos/cm	1	BGJ0374	10/10/23	10/10/23	EPA 120.1	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.65			pH Units	1	BGJ0373	10/10/23	10/10/23	EPA 9045D	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**SEP01-FL@4'**  
**2310049-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGJ0156	10/04/23	10/05/23	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: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0434	108 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0281	70.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0356	89.0 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGJ0163	10/04/23	10/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.75	78.0 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**SEP01-FL@4'**  
**2310049-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGJ0289	10/06/23	10/07/23	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: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0146	44.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.2 %	40-150		"	"	"	"	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGJ0363	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**SEP01-FL@4'**  
**2310049-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.36	0.200	mg/kg dry	1	BGJ0323	10/09/23	10/10/23	EPA 6020B	
Barium	37.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.28	0.400	"	"	"	"	"	"	
Lead	4.99	0.200	"	"	"	"	"	"	
Nickel	1.73	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	10.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0182	10/04/23	10/04/23	EPA 7196A	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	175	0.0500	mg/L dry	1	BGJ0333	10/09/23	10/11/23	EPA 6020B	
Magnesium	17.4	0.0500	"	"	"	"	"	"	
Sodium	1.06	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0205	0.00100	units	1	BGJ0515	10/12/23	10/12/23	Calculation	

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

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**SEP01-FL@4'**  
**2310049-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.0		%	1	BGJ0381	10/10/23	10/10/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.135	0.0100	mmhos/cm	1	BGJ0374	10/10/23	10/10/23	EPA 120.1	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.26		pH Units	1	BGJ0373	10/10/23	10/10/23	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG01@4'**  
**2310049-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ0363	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	2.47	0.200	mg/kg dry	1	BGJ0323	10/09/23	10/10/23	EPA 6020B	
Barium	92.8	0.400	"	"	"	"	"	"	
Cadmium	0.273	0.200	"	"	"	"	"	"	
Copper	4.60	0.400	"	"	"	"	"	"	
Lead	7.36	0.200	"	"	"	"	"	"	
Nickel	3.50	0.400	"	"	"	"	"	"	
Silver	0.0317	0.0200	"	"	"	"	"	"	
Zinc	17.4	0.400	"	"	"	"	"	"	
Selenium	0.302	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0182	10/04/23	10/04/23	EPA 7196A	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	371	0.0500	mg/L dry	1	BGJ0333	10/09/23	10/11/23	EPA 6020B	
Magnesium	103	0.0500	"	"	"	"	"	"	
Sodium	895	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG01@4'**  
**2310049-05 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.6	0.00100	units	1	BGJ0515	10/12/23	10/12/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.0		%	1	BGJ0381	10/10/23	10/10/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	6.39	0.0100	mmhos/cm	1	BGJ0374	10/10/23	10/10/23	EPA 120.1	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BGJ0373	10/10/23	10/10/23	EPA 9045D	

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG02@4'**  
**2310049-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ0363	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>2.61</b>	0.200	mg/kg dry	1	BGJ0323	10/09/23	10/10/23	EPA 6020B	
<b>Barium</b>	<b>26.2</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.45</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>4.27</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.26</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>12.0</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0182	10/04/23	10/04/23	EPA 7196A	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>64.4</b>	0.0500	mg/L dry	1	BGJ0333	10/09/23	10/11/23	EPA 6020B	
<b>Magnesium</b>	<b>29.1</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>318</b>	0.0500	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG02@4'**  
**2310049-06 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	8.26	0.00100	units	1	BGJ0515	10/12/23	10/12/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.2		%	1	BGJ0381	10/10/23	10/10/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.05	0.0100	mmhos/cm	1	BGJ0374	10/10/23	10/10/23	EPA 120.1	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.25		pH Units	1	BGJ0373	10/10/23	10/10/23	EPA 9045D	

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG03@4'**  
**2310049-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ0363	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.95</b>	0.200	mg/kg dry	1	BGJ0323	10/09/23	10/10/23	EPA 6020B	
<b>Barium</b>	<b>33.6</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>1.96</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>3.74</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>1.63</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>8.82</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0182	10/04/23	10/04/23	EPA 7196A	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>59.4</b>	0.0500	mg/L dry	1	BGJ0333	10/09/23	10/11/23	EPA 6020B	
<b>Magnesium</b>	<b>24.7</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>208</b>	0.0500	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG03@4'**  
**2310049-07 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.72	0.00100	units	1	BGJ0515	10/12/23	10/12/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.9		%	1	BGJ0381	10/10/23	10/10/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.79	0.0100	mmhos/cm	1	BGJ0374	10/10/23	10/10/23	EPA 120.1	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.36		pH Units	1	BGJ0373	10/10/23	10/10/23	EPA 9045D	

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG04@4'**  
**2310049-08 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ0363	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.61</b>	0.200	mg/kg dry	1	BGJ0323	10/09/23	10/10/23	EPA 6020B	
<b>Barium</b>	<b>16.5</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>1.65</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>3.13</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>1.56</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>7.76</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0182	10/04/23	10/04/23	EPA 7196A	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>37.7</b>	0.0500	mg/L dry	1	BGJ0333	10/09/23	10/11/23	EPA 6020B	
<b>Magnesium</b>	<b>22.9</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>333</b>	0.0500	"	"	"	"	"	"	

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG04@4'**  
**2310049-08 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	10.6	0.00100	units	1	BGJ0515	10/12/23	10/12/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.8		%	1	BGJ0381	10/10/23	10/10/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.17	0.0100	mmhos/cm	1	BGJ0374	10/10/23	10/10/23	EPA 120.1	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.42		pH Units	1	BGJ0373	10/10/23	10/10/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG05@4'**  
**2310049-09 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGJ0363	10/10/23	10/11/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>2.38</b>	0.200	mg/kg dry	1	BGJ0323	10/09/23	10/10/23	EPA 6020B	
<b>Barium</b>	<b>32.7</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.77</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>5.34</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.20</b>	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>11.6</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGJ0182	10/04/23	10/04/23	EPA 7196A	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>45.9</b>	0.0500	mg/L dry	1	BGJ0333	10/09/23	10/11/23	EPA 6020B	
<b>Magnesium</b>	<b>15.6</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>165</b>	0.0500	"	"	"	"	"	"	

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Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**BKG05@4'**  
**2310049-09 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	5.37	0.00100	units	1	BGJ0515	10/12/23	10/12/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.2		%	1	BGJ0381	10/10/23	10/10/23	Calculation	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.11	0.0100	mmhos/cm	1	BGJ0374	10/10/23	10/10/23	EPA 120.1	

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

Date Sampled: **10/03/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BGJ0373	10/10/23	10/10/23	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

### Volatile Organic Compounds by EPA Method 8260B - Quality Control

#### Summit Scientific

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

#### Batch BGJ0156 - EPA 5030 Soil MS

##### Blank (BGJ0156-BLK1)

Prepared: 10/04/23 Analyzed: 10/05/23

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>	0.0396		"	0.0400		99.0	50-150			
<i>Surrogate: Toluene-d8</i>	0.0391		"	0.0400		97.8	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0355		"	0.0400		88.7	50-150			

##### LCS (BGJ0156-BS1)

Prepared: 10/04/23 Analyzed: 10/05/23

Benzene	0.102	0.0020	mg/kg	0.100	ND	102	70-130			
Toluene	0.0899	0.0050	"	0.100	ND	89.9	70-130			
Ethylbenzene	0.0944	0.0050	"	0.100	ND	94.4	70-130			
m,p-Xylene	0.188	0.010	"	0.200	ND	94.0	70-130			
o-Xylene	0.0901	0.0050	"	0.100	ND	90.1	70-130			
1,2,4-Trimethylbenzene	0.0915	0.0050	"	0.100	ND	91.5	70-130			
1,3,5-Trimethylbenzene	0.0932	0.0050	"	0.100	ND	93.2	70-130			
Naphthalene	0.0711	0.0038	"	0.100	ND	71.1	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0412		"	0.0400		103	50-150			
<i>Surrogate: Toluene-d8</i>	0.0369		"	0.0400		92.3	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0380		"	0.0400		94.9	50-150			

##### Matrix Spike (BGJ0156-MS1)

Source: 2310049-01

Prepared: 10/04/23 Analyzed: 10/05/23

Benzene	0.125	0.0020	mg/kg	0.100	ND	125	70-130			
Toluene	0.0940	0.0050	"	0.100	ND	94.0	70-130			
Ethylbenzene	0.0940	0.0050	"	0.100	ND	94.0	70-130			
m,p-Xylene	0.189	0.010	"	0.200	ND	94.5	70-130			
o-Xylene	0.0915	0.0050	"	0.100	ND	91.5	70-130			
1,2,4-Trimethylbenzene	0.0909	0.0050	"	0.100	ND	90.9	70-130			
1,3,5-Trimethylbenzene	0.0917	0.0050	"	0.100	ND	91.7	70-130			
Naphthalene	0.0768	0.0038	"	0.100	ND	76.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0474		"	0.0400		118	50-150			
<i>Surrogate: Toluene-d8</i>	0.0376		"	0.0400		94.0	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0369		"	0.0400		92.2	50-150			

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

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

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

**Batch BGJ0156 - EPA 5030 Soil MS**

Matrix Spike Dup (BGJ0156-MSD1)	Source: 2310049-01			Prepared: 10/04/23 Analyzed: 10/05/23					
Benzene	0.0938	0.0020	mg/kg	0.100	ND	93.8	70-130	28.4	30
Toluene	0.0900	0.0050	"	0.100	ND	90.0	70-130	4.34	30
Ethylbenzene	0.0865	0.0050	"	0.100	ND	86.5	70-130	8.35	30
m,p-Xylene	0.175	0.010	"	0.200	ND	87.4	70-130	7.80	30
o-Xylene	0.0830	0.0050	"	0.100	ND	83.0	70-130	9.70	30
1,2,4-Trimethylbenzene	0.0868	0.0050	"	0.100	ND	86.8	70-130	4.62	30
1,3,5-Trimethylbenzene	0.0877	0.0050	"	0.100	ND	87.7	70-130	4.45	30
Naphthalene	0.0764	0.0038	"	0.100	ND	76.4	70-130	0.509	30
Surrogate: 1,2-Dichloroethane-d4	0.0417		"	0.0400		104	50-150		
Surrogate: Toluene-d8	0.0394		"	0.0400		98.4	50-150		
Surrogate: 4-Bromofluorobenzene	0.0367		"	0.0400		91.7	50-150		

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 Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline  
 Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**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 BGJ0163 - EPA 3550A**

**Blank (BGJ0163-BLK1)**

Prepared: 10/04/23 Analyzed: 10/07/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	15.0		"	12.5		120		30-150		

**LCS (BGJ0163-BS1)**

Prepared: 10/04/23 Analyzed: 10/07/23

C10-C28 (DRO)	411	50	mg/kg	500		82.1		70-130		
Surrogate: <i>o</i> -Terphenyl	4.98		"	12.5		39.9		30-150		

**Matrix Spike (BGJ0163-MS1)**

Source: 2310049-01

Prepared: 10/04/23 Analyzed: 10/07/23

C10-C28 (DRO)	435	50	mg/kg	500	11.7	84.6		70-130		
Surrogate: <i>o</i> -Terphenyl	9.35		"	12.5		74.8		30-150		

**Matrix Spike Dup (BGJ0163-MSD1)**

Source: 2310049-01

Prepared: 10/04/23 Analyzed: 10/07/23

C10-C28 (DRO)	466	50	mg/kg	500	11.7	90.9		70-130	7.04	20
Surrogate: <i>o</i> -Terphenyl	11.3		"	12.5		90.2		30-150		

Summit Scientific

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Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

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

**Summit Scientific**

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

**Batch BGJ0289 - EPA 5030 Soil MS**

**Blank (BGJ0289-BLK1)**

Prepared: 10/06/23 Analyzed: 10/07/23

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>0.0441</i>		"	<i>0.0333</i>		<i>132</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0326</i>		"	<i>0.0333</i>		<i>97.9</i>	<i>40-150</i>			

**LCS (BGJ0289-BS1)**

Prepared: 10/06/23 Analyzed: 10/07/23

Acenaphthene	0.0326	0.00500	mg/kg	0.0333	97.7	31-137
Anthracene	0.0319	0.00500	"	0.0333	95.7	30-120
Benzo (a) anthracene	0.0306	0.00500	"	0.0333	91.9	30-120
Benzo (a) pyrene	0.0300	0.00500	"	0.0333	90.1	30-120
Benzo (b) fluoranthene	0.0317	0.00500	"	0.0333	95.2	30-120
Benzo (k) fluoranthene	0.0345	0.00500	"	0.0333	103	30-120
Chrysene	0.0343	0.00500	"	0.0333	103	30-120
Dibenz (a,h) anthracene	0.0246	0.00500	"	0.0333	73.9	30-120
Fluoranthene	0.0319	0.00500	"	0.0333	95.7	30-120
Fluorene	0.0326	0.00500	"	0.0333	97.7	30-120
Indeno (1,2,3-cd) pyrene	0.0355	0.00500	"	0.0333	107	30-120
Pyrene	0.0398	0.00500	"	0.0333	119	35-142
1-Methylnaphthalene	0.0370	0.00500	"	0.0333	111	35-142
2-Methylnaphthalene	0.0438	0.00500	"	0.0333	131	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0375</i>		"	<i>0.0333</i>	<i>112</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0326</i>		"	<i>0.0333</i>	<i>97.8</i>	<i>40-150</i>

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Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

**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 BGJ0289 - EPA 5030 Soil MS**

<b>Matrix Spike (BGJ0289-MS1)</b>	<b>Source: 2310022-01</b>			Prepared: 10/06/23 Analyzed: 10/07/23					
Acenaphthene	0.0207	0.00500	mg/kg	0.0333	ND	62.1	31-137		
Anthracene	0.0181	0.00500	"	0.0333	ND	54.2	30-120		
Benzo (a) anthracene	0.0202	0.00500	"	0.0333	ND	60.7	30-120		
Benzo (a) pyrene	0.0192	0.00500	"	0.0333	ND	57.7	30-120		
Benzo (b) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.3	30-120		
Benzo (k) fluoranthene	0.0199	0.00500	"	0.0333	ND	59.6	30-120		
Chrysene	0.0211	0.00500	"	0.0333	ND	63.3	30-120		
Dibenz (a,h) anthracene	0.0140	0.00500	"	0.0333	ND	42.0	30-120		
Fluoranthene	0.0186	0.00500	"	0.0333	ND	55.7	30-120		
Fluorene	0.0200	0.00500	"	0.0333	ND	60.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0149	0.00500	"	0.0333	ND	44.6	30-120		
Pyrene	0.0248	0.00500	"	0.0333	ND	74.3	35-142		
1-Methylnaphthalene	0.0281	0.00500	"	0.0333	ND	84.2	15-130		
2-Methylnaphthalene	0.0261	0.00500	"	0.0333	ND	78.2	15-130		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0240</i>		<i>"</i>	<i>0.0333</i>		<i>72.0</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0191</i>		<i>"</i>	<i>0.0333</i>		<i>57.3</i>	<i>40-150</i>		

<b>Matrix Spike Dup (BGJ0289-MSD1)</b>	<b>Source: 2310022-01</b>			Prepared: 10/06/23 Analyzed: 10/07/23					
Acenaphthene	0.0212	0.00500	mg/kg	0.0333	ND	63.7	31-137	2.53	30
Anthracene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	9.00	30
Benzo (a) anthracene	0.0209	0.00500	"	0.0333	ND	62.6	30-120	3.09	30
Benzo (a) pyrene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	3.34	30
Benzo (b) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.3	30-120	0.101	30
Benzo (k) fluoranthene	0.0189	0.00500	"	0.0333	ND	56.8	30-120	4.75	30
Chrysene	0.0208	0.00500	"	0.0333	ND	62.5	30-120	1.25	30
Dibenz (a,h) anthracene	0.0167	0.00500	"	0.0333	ND	50.0	30-120	17.5	30
Fluoranthene	0.0203	0.00500	"	0.0333	ND	60.8	30-120	8.67	30
Fluorene	0.0208	0.00500	"	0.0333	ND	62.4	30-120	3.90	30
Indeno (1,2,3-cd) pyrene	0.0161	0.00500	"	0.0333	ND	48.4	30-120	8.15	30
Pyrene	0.0241	0.00500	"	0.0333	ND	72.4	35-142	2.59	30
1-Methylnaphthalene	0.0257	0.00500	"	0.0333	ND	77.0	15-130	8.96	50
2-Methylnaphthalene	0.0269	0.00500	"	0.0333	ND	80.7	15-130	3.16	50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0245</i>		<i>"</i>	<i>0.0333</i>		<i>73.5</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0203</i>		<i>"</i>	<i>0.0333</i>		<i>60.8</i>	<i>40-150</i>		

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**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 BGJ0363 - EPA 3050B**

**Blank (BGJ0363-BLK1)**

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

Boron ND 2.00 mg/L

**LCS (BGJ0363-BS1)**

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

Boron 4.98 2.00 mg/L 5.00 99.7 80-120

**Duplicate (BGJ0363-DUP1)**

Source: 2309279-01

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

Boron 0.234 2.00 mg/L 0.256 9.24 20

**Matrix Spike (BGJ0363-MS1)**

Source: 2309279-01

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

Boron 5.56 2.00 mg/L 5.00 0.256 106 75-125

**Matrix Spike Dup (BGJ0363-MSD1)**

Source: 2309279-01

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

Boron 5.54 2.00 mg/L 5.00 0.256 106 75-125 0.210 25

Summit Scientific

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Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

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

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

**Batch BGJ0323 - EPA 3050B**

**Blank (BGJ0323-BLK1)**

Prepared: 10/09/23 Analyzed: 10/10/23

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 (BGJ0323-BS1)**

Prepared: 10/09/23 Analyzed: 10/10/23

Arsenic	38.0	0.200	mg/kg wet	40.0	95.1	80-120
Barium	43.0	0.400	"	40.0	107	80-120
Cadmium	2.07	0.200	"	2.00	104	80-120
Copper	38.6	0.400	"	40.0	96.6	80-120
Lead	20.9	0.200	"	20.0	104	80-120
Nickel	37.9	0.400	"	40.0	94.9	80-120
Silver	2.03	0.0200	"	2.00	102	80-120
Zinc	38.4	0.400	"	40.0	96.0	80-120
Selenium	4.13	0.260	"	4.00	103	80-120

**Duplicate (BGJ0323-DUP1)**

Source: 2310048-01

Prepared: 10/09/23 Analyzed: 10/11/23

Arsenic	1.80	0.200	mg/kg dry	1.85	2.79	20
Barium	82.9	0.400	"	80.5	2.93	20
Cadmium	0.194	0.200	"	0.183	5.55	20
Copper	3.76	0.400	"	3.54	6.06	20
Lead	8.35	0.200	"	8.01	4.27	20
Nickel	3.02	0.400	"	2.95	2.41	20
Silver	0.0309	0.0200	"	0.0337	8.45	20
Zinc	16.1	0.400	"	15.5	4.10	20
Selenium	ND	0.260	"	ND		20

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Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**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 BGJ0323 - EPA 3050B**

**Matrix Spike (BGJ0323-MS1)**

Source: 2310048-01

Prepared: 10/09/23 Analyzed: 10/11/23

Arsenic	36.0	0.200	mg/kg dry	45.5	1.85	74.9	75-125				QM-07
Barium	123	0.400	"	45.5	80.5	94.2	75-125				
Cadmium	1.99	0.200	"	2.28	0.183	79.3	75-125				
Copper	30.3	0.400	"	45.5	3.54	58.8	75-125				QM-07
Lead	26.0	0.200	"	22.8	8.01	79.0	75-125				
Nickel	29.8	0.400	"	45.5	2.95	58.9	75-125				QM-07
Silver	1.33	0.0200	"	2.28	0.0337	56.9	75-125				QM-07
Zinc	44.5	0.400	"	45.5	15.5	63.8	75-125				QM-07
Selenium	4.14	0.260	"	4.55	ND	91.1	75-125				

**Matrix Spike Dup (BGJ0323-MSD1)**

Source: 2310048-01

Prepared: 10/09/23 Analyzed: 10/11/23

Arsenic	36.2	0.200	mg/kg dry	45.5	1.85	75.4	75-125	0.534	25		
Barium	125	0.400	"	45.5	80.5	97.1	75-125	1.06	25		
Cadmium	2.04	0.200	"	2.28	0.183	81.6	75-125	2.58	25		
Copper	31.1	0.400	"	45.5	3.54	60.6	75-125	2.68	25		QM-07
Lead	26.1	0.200	"	22.8	8.01	79.7	75-125	0.613	25		
Nickel	30.6	0.400	"	45.5	2.95	60.8	75-125	2.89	25		QM-07
Silver	1.37	0.0200	"	2.28	0.0337	58.5	75-125	2.84	25		QM-07
Zinc	45.8	0.400	"	45.5	15.5	66.5	75-125	2.76	25		QM-07
Selenium	4.06	0.260	"	4.55	ND	89.2	75-125	2.05	25		

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Project: Noble - Lucci B01-23 Flowline  
 Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

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

**Summit Scientific**

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

**Batch BGJ0182 - 3060A Mod**

**Blank (BGJ0182-BLK1)**

Prepared & Analyzed: 10/04/23

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BGJ0182-BS1)**

Prepared & Analyzed: 10/04/23

Chromium, Hexavalent 23.2 0.30 mg/kg wet 25.0 93.0 80-120

**Duplicate (BGJ0182-DUP1)**

Source: 2310048-01

Prepared & Analyzed: 10/04/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BGJ0182-MS1)**

Source: 2310048-01

Prepared & Analyzed: 10/04/23

Chromium, Hexavalent 25.1 0.30 mg/kg dry 28.4 ND 88.2 75-125

**Matrix Spike Dup (BGJ0182-MSD1)**

Source: 2310048-01

Prepared & Analyzed: 10/04/23

Chromium, Hexavalent 25.0 0.30 mg/kg dry 28.4 ND 87.8 75-125 0.455 20

Summit Scientific

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 Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**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 BGJ0333 - General Preparation**

**Blank (BGJ0333-BLK1)**

Prepared: 10/09/23 Analyzed: 10/11/23

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

**LCS (BGJ0333-BS1)**

Prepared: 10/09/23 Analyzed: 10/11/23

Calcium	5.37	0.0500	mg/L wet	5.00	107	70-130				
Magnesium	5.08	0.0500	"	5.00	102	70-130				
Sodium	5.21	0.0500	"	5.00	104	70-130				

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Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**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 BGJ0381 - General Preparation**

**Duplicate (BGJ0381-DUP1)**

**Source: 2310049-01**

**Prepared & Analyzed: 10/10/23**

% Solids	77.4		%		76.8			0.821	20	
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 Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**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 BGJ0374 - General Preparation**

**Blank (BGJ0374-BLK1)**

Prepared & Analyzed: 10/10/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGJ0374-BS1)**

Prepared & Analyzed: 10/10/23

Specific Conductance (EC) 0.149 0.0100 mmhos/cm 0.150 99.5 95-105

**Duplicate (BGJ0374-DUP1)**

Source: 2310048-01

Prepared & Analyzed: 10/10/23

Specific Conductance (EC) 0.274 0.0100 mmhos/cm 0.274 0.00 20

Summit Scientific

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Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256  
 Project Manager: Paul Henchan

**Reported:**  
 10/12/23 08:44

**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 BGJ0373 - General Preparation**

**LCS (BGJ0373-BS1)**

Prepared & Analyzed: 10/10/23

pH 9.15 pH Units 9.18 99.7 95-105

**Duplicate (BGJ0373-DUP1)**

Source: 2310048-01

Prepared & Analyzed: 10/10/23

pH 8.77 pH Units 8.77 0.00 20

Summit Scientific

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Wellington CO, 80549

Project: Noble - Lucci B01-23 Flowline

Project Number: UWRWE-A2077-ABN CO23-256

Project Manager: Paul Henchan

**Reported:**  
10/12/23 08:44

### Notes and Definitions

- 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