

# **FREMONT ENVIRONMENTAL INC.**

May 5, 2023

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

Subject:           **Wellhead Closure Data Submittal**  
Wells Ranch AA 21-02  
API # 05-123-26818  
NWNE Sec. 21, T6N, R63W  
Weld County, Colorado  
Fremont Project No. C023-064  
Remediation # 26837

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted wellhead abandonment activities for the Noble Energy Inc. (Noble) Wells Ranch AA 21-02 location. Details of the Wells Ranch AA 21-02 wellhead abandonment are documented in the attached Closure Report. Groundwater was not encountered.

Please contact me at (603) 477-6907 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

**FREMONT ENVIRONMENTAL INC.**



Ethan D. Black, P.G.  
Consultant

Attachments:

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

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

# Wellhead Closure Checklist

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

Additional attachments (optional):		Pit Closure		Tank Battery Closure		Flowline Closure		Partially Buried Vault Closure	
Site Name & COGCC Facility Number:		Date:						Remediation Project #:	
Associated Wells:		Age of Site:						Number of Photos Attached:	
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)							Estimated Facility Size (acres):		
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)									
USCS Soil Type:				Estimated Depth to Groundwater:					
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)									
Wellhead(s)									
Well API									
Age									
Condition of surface around wellhead									
PID Readings									
Condition of subsurface (staining present)									
PID Readings									
Sample taken?									
Location/Sample ID#									
Photo Number(s)									
Other observations regarding wellheads:									
Summary									
Was impacted soil identified? <div style="display: flex; justify-content: space-around;"> <span>No</span> <span>Yes - less than 10 cubic yards</span> <span>Yes - more than 10 cubic yards</span> </div>									
Total number of samples field screened:				Total number of samples collected:					
Highest PID Reading:				Total number of samples submitted to lab for analysis:					
If more than 10 cubic yards of impacted soil were observed:									
Vertical extent:				Estimated spill volume:					
Lateral extent:				Volume of soil removed:					
Is additional investigation required?									
Was groundwater encountered during the investigation? <div style="display: flex; justify-content: space-around;"> <span>No</span> <span>Yes - not impacted or in contact with impacted soils</span> <span>Yes - groundwater impacted and/or in contact with impacted soils</span> </div>									
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.**  
**WELLS RANCH AA 21-02, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C023-064**

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**		
WH FLOOR 5FT	03/01/2023	5	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50

Bold faced values exceed the ECMC 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.  
WELLS RANCH AA 21-02, WELD COUNTY, COLORADO  
FREMONT PROJECT NO. C023-064

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
WH FLOOR 5FT	03/01/2023	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

Bold faced values exceed the ECMC 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

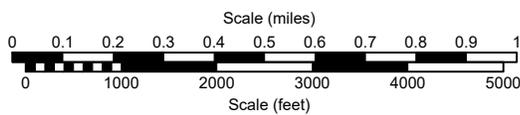
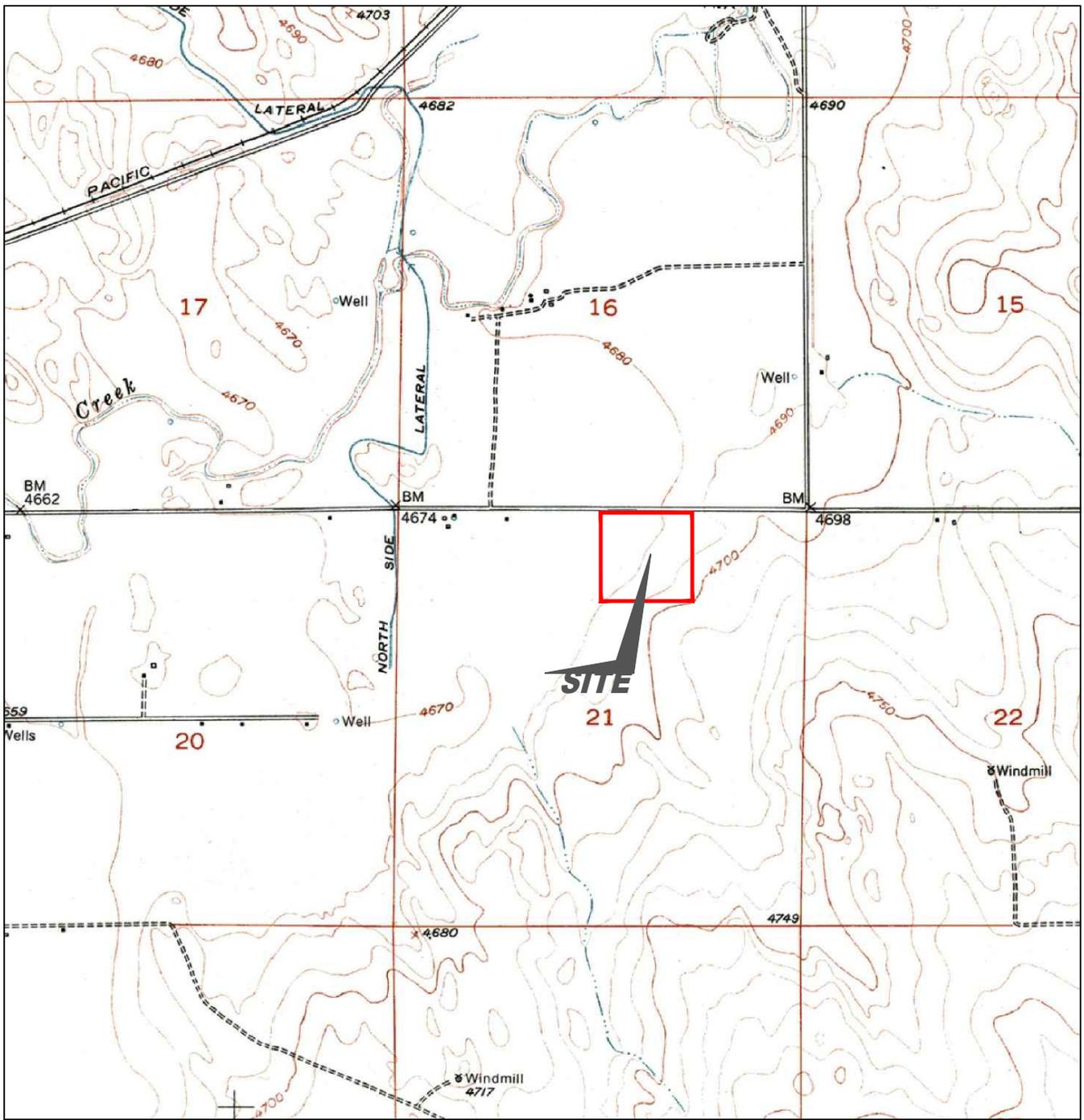
**TABLE 3**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE ENERGY, INC.**  
**WELLS RANCH AA 21-02, WELD COUNTY, COLORADO**  
**FREMONT PROJECT NO. C023-064**

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
WH FLOOR 5FT	03/01/2023	5	7.7	0.173	1.01	0.164

Bold faced values exceed the ECMC Table 915-1 concentrations

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

NA - Not analyzed



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
SITE LOCATION MAP

**NOBLE ENERGY INC - WELLS RANCH AA 21-02**  
 NWNE Sec. 21, T6N, R63W, 6th PM  
 Weld County, Colorado  
 40.477674°, -104.439623°

Project # <b>CO23-064</b>	API # <b>05-123-26818</b>	Facility #
Date <b>08/20/2023</b>	Remediation # <b>26837</b>	Filename <b>23064T</b>





**LEGEND**

- WELLHEAD LOCATION
- ▲ PID READING LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FORMER FACILITY

FID	PID READING LOCATION IDENTIFICATION
0.1	PHOTO IONIZATION DETECTION (ppm)

Figure 2  
**SITE MAP**

**NOBLE ENERGY INC - WELLS RANCH AA 21-02**  
 NWNE Sec. 21, T6N, R63W, 6th PM  
 Weld County, Colorado  
 40.477674°, -104.439623°

Project # <b>CO23-064</b>	API # <b>05-123-26818</b>	Facility #
Date <b>08/20/2023</b>	Remediation # <b>26837</b>	Filename <b>23064Q</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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# Photo Log



***Description:***

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# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 09, 2023

Paul Henchan  
Fremont Environmental  
PO Box 1289  
Wellington, CO 80549

RE: Noble - Wells Ranch AA 21-02

Work Order #2303078

Enclosed are the results of analyses for samples received by Summit Scientific on 03/02/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury  
President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
03/09/23 12:16

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WH FLOOR 5FT	2303078-01	Soil	03/01/23 00:00	03/02/23 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.*

# Summit Scientific

S<sub>2</sub>

4653 Table Mountain Drive ♦ Golden, Colorado 80403

303-277-9310 ♦ 303-374-5933 (f)

Client: Fremont Environmental

Project Manager: Paul Henehan

Address:

E-Mail: Fremont Distribution List: PaulH, EthanB, JeffG and ChrisL. @fremontenv.com

City/State/Zip:

Bill to: Dan

Phone:

Project Name: Noble - Wells Ranch AA 21-02

Sampler Name: EB

Project Number:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions				
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, pH, Boron	Metals (915)	TDS, Chloride, Sulfate		HOLD			
1	WH FLOOR SFT	3/1/23		2			X			X				X	X	X	X						
2																							
3																							
4																							
5																							
6																							
7																							
8																							
9																							
10																							
Relinquished by: <i>Ch Black</i>		Date/Time: 3/1/23 1424		Received by: S2		Date/Time: 3/1/23 1424		Turn Around Time (Check)				Notes:											
Same Day		—		72 hours		—				—													
24 hours		—		Standard		—				X													
48 hours		—		Sample Integrity:																			
Temperature Upon Receipt: 10.1																							
Samples Intact: (Yes) No																							

S<sub>2</sub>

S2 Work Order# 2303078

Sample Receipt Checklist

Client: Fremont Client Project ID: Nodde-wells Ranch AA21-02

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

Grid of boxes for shipping method selection

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

Temp (°C) 10.1 Thermometer # 1

Table with 5 columns: Question, Yes, No, N/A, Comments (if any). Contains 14 rows of checklist items with handwritten responses.

Additional Comments (if any):

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

AS Custodian Printed Name

3/2/23 Date/Time



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
03/09/23 12:16

**WH FLOOR 5FT**  
**2303078-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/01/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGC0128	03/06/23	03/06/23	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: **03/01/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0269	67.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0329	82.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0354	88.6 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/01/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGC0131	03/06/23	03/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/01/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.04	72.3 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
03/09/23 12:16

**WH FLOOR 5FT**  
**2303078-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/01/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGC0123	03/06/23	03/06/23	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: **03/01/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0285	85.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0223	67.0 %	40-150		"	"	"	"	

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

Date Sampled: **03/01/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Boron</b>	<b>0.164</b>	0.0100	mg/L	1	BGC0145	03/06/23	03/08/23	EPA 6020B	

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

Date Sampled: **03/01/23 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 - Wells Ranch AA 21-02

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
03/09/23 12:16

**WH FLOOR 5FT**  
**2303078-01 (Soil)**

**Summit Scientific**

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	221	0.0551	mg/L dry	1	BGC0144	03/06/23	03/08/23	EPA 6020B	
Magnesium	34.6	0.0551	"	"	"	"	"	"	
Sodium	61.3	0.0551	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/01/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.01	0.00100	units	1	BGC0222	03/08/23	03/08/23	Calculation	

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

Date Sampled: **03/01/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.7		%	1	BGC0196	03/07/23	03/08/23	Calculation	

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

Date Sampled: **03/01/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.173	0.0100	mmhos/cm	1	BGC0192	03/07/23	03/07/23	EPA 120.1	

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

Date Sampled: **03/01/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.70		pH Units	1	BGC0193	03/07/23	03/07/23	EPA 9045D	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
03/09/23 12:16

### 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 BGC0128 - EPA 5030 Soil MS

##### Blank (BGC0128-BLK1)

Prepared & Analyzed: 03/06/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0429		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0396		"	0.0400		99.1	50-150			
Surrogate: 4-Bromofluorobenzene	0.0416		"	0.0400		104	50-150			

##### LCS (BGC0128-BS1)

Prepared & Analyzed: 03/06/23

Benzene	0.154	0.0020	mg/kg	0.150		103	70-130			
Toluene	0.156	0.0050	"	0.150		104	70-130			
Ethylbenzene	0.159	0.0050	"	0.150		106	70-130			
m,p-Xylene	0.322	0.010	"	0.300		107	70-130			
o-Xylene	0.156	0.0050	"	0.150		104	70-130			
1,2,4-Trimethylbenzene	0.162	0.0050	"	0.150		108	70-130			
1,3,5-Trimethylbenzene	0.162	0.0050	"	0.150		108	70-130			
Naphthalene	0.181	0.0038	"	0.150		121	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0422		"	0.0400		106	50-150			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	50-150			

##### Matrix Spike (BGC0128-MS1)

Source: 2303077-01

Prepared & Analyzed: 03/06/23

Benzene	0.141	0.0020	mg/kg	0.150	ND	93.7	70-130			
Toluene	0.144	0.0050	"	0.150	ND	96.2	70-130			
Ethylbenzene	0.144	0.0050	"	0.150	ND	95.8	70-130			
m,p-Xylene	0.290	0.010	"	0.300	ND	96.7	70-130			
o-Xylene	0.141	0.0050	"	0.150	ND	93.8	70-130			
1,2,4-Trimethylbenzene	0.144	0.0050	"	0.150	ND	96.0	70-130			
1,3,5-Trimethylbenzene	0.145	0.0050	"	0.150	ND	96.7	70-130			
Naphthalene	0.166	0.0038	"	0.150	ND	111	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0441		"	0.0400		110	50-150			
Surrogate: Toluene-d8	0.0402		"	0.0400		100	50-150			
Surrogate: 4-Bromofluorobenzene	0.0408		"	0.0400		102	50-150			

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 03/09/23 12:16

**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 BGC0128 - EPA 5030 Soil MS**

<b>Matrix Spike Dup (BGC0128-MSD1)</b>	<b>Source: 2303077-01</b>			<b>Prepared &amp; Analyzed: 03/06/23</b>						
Benzene	0.141	0.0020	mg/kg	0.150	ND	93.7	70-130	0.00	30	
Toluene	0.143	0.0050	"	0.150	ND	95.3	70-130	0.961	30	
Ethylbenzene	0.143	0.0050	"	0.150	ND	95.1	70-130	0.817	30	
m,p-Xylene	0.288	0.010	"	0.300	ND	96.0	70-130	0.758	30	
o-Xylene	0.139	0.0050	"	0.150	ND	92.7	70-130	1.16	30	
1,2,4-Trimethylbenzene	0.142	0.0050	"	0.150	ND	94.4	70-130	1.72	30	
1,3,5-Trimethylbenzene	0.142	0.0050	"	0.150	ND	94.9	70-130	1.82	30	
Naphthalene	0.164	0.0038	"	0.150	ND	109	70-130	1.69	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0440</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 03/09/23 12:16

**Extractable Petroleum Hydrocarbons by 8015 - Quality Control**  
**Summit Scientific**

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

**Batch BGC0131 - EPA 3550A**

**Blank (BGC0131-BLK1)**

Prepared & Analyzed: 03/06/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	12.5		"	12.5	100	30-150					

**LCS (BGC0131-BS1)**

Prepared & Analyzed: 03/06/23

C10-C28 (DRO)	469	50	mg/kg	500	93.9	70-130					
Surrogate: <i>o</i> -Terphenyl	13.0		"	12.5	104	30-150					

**Matrix Spike (BGC0131-MS1)**

Source: 2303077-01

Prepared & Analyzed: 03/06/23

C10-C28 (DRO)	497	50	mg/kg	500	11.1	97.1	70-130				
Surrogate: <i>o</i> -Terphenyl	8.06		"	12.5	64.5	30-150					

**Matrix Spike Dup (BGC0131-MSD1)**

Source: 2303077-01

Prepared & Analyzed: 03/06/23

C10-C28 (DRO)	504	50	mg/kg	500	11.1	98.6	70-130	1.51	20		
Surrogate: <i>o</i> -Terphenyl	7.71		"	12.5	61.7	30-150					

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
03/09/23 12:16

**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 BGC0123 - EPA 5030 Soil MS**

**Blank (BGC0123-BLK1)**

Prepared & Analyzed: 03/06/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0491		"	0.0333		147	40-150			
Surrogate: Fluoranthene-d10	0.0269		"	0.0333		80.8	40-150			

**LCS (BGC0123-BS1)**

Prepared & Analyzed: 03/06/23

Acenaphthene	0.0308	0.00500	mg/kg	0.0333		92.5	31-137			
Anthracene	0.0334	0.00500	"	0.0333		100	30-120			
Benzo (a) anthracene	0.0257	0.00500	"	0.0333		77.0	30-120			
Benzo (a) pyrene	0.0338	0.00500	"	0.0333		101	30-120			
Benzo (b) fluoranthene	0.0293	0.00500	"	0.0333		87.9	30-120			
Benzo (k) fluoranthene	0.0311	0.00500	"	0.0333		93.3	30-120			
Chrysene	0.0325	0.00500	"	0.0333		97.5	30-120			
Dibenz (a,h) anthracene	0.0323	0.00500	"	0.0333		96.8	30-120			
Fluoranthene	0.0364	0.00500	"	0.0333		109	30-120			
Fluorene	0.0399	0.00500	"	0.0333		120	30-120			
Indeno (1,2,3-cd) pyrene	0.0322	0.00500	"	0.0333		96.7	30-120			
Pyrene	0.0332	0.00500	"	0.0333		99.7	35-142			
1-Methylnaphthalene	0.0330	0.00500	"	0.0333		99.0	35-142			
2-Methylnaphthalene	0.0303	0.00500	"	0.0333		90.8	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0333		"	0.0333		99.9	40-150			
Surrogate: Fluoranthene-d10	0.0355		"	0.0333		107	40-150			

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Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
03/09/23 12:16

**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 BGC0123 - EPA 5030 Soil MS**

<b>Matrix Spike (BGC0123-MS1)</b>	<b>Source: 2303077-01</b>			<b>Prepared &amp; Analyzed: 03/06/23</b>							
Acenaphthene	0.0188	0.00500	mg/kg	0.0333	ND	56.5	31-137				
Anthracene	0.0212	0.00500	"	0.0333	ND	63.7	30-120				
Benzo (a) anthracene	0.0187	0.00500	"	0.0333	ND	56.1	30-120				
Benzo (a) pyrene	0.0198	0.00500	"	0.0333	ND	59.3	30-120				
Benzo (b) fluoranthene	0.0156	0.00500	"	0.0333	ND	46.7	30-120				
Benzo (k) fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120				
Chrysene	0.0165	0.00500	"	0.0333	ND	49.4	30-120				
Dibenz (a,h) anthracene	0.0213	0.00500	"	0.0333	ND	63.9	30-120				
Fluoranthene	0.0248	0.00500	"	0.0333	ND	74.3	30-120				
Fluorene	0.0278	0.00500	"	0.0333	ND	83.3	30-120				
Indeno (1,2,3-cd) pyrene	0.0188	0.00500	"	0.0333	ND	56.5	30-120				
Pyrene	0.0221	0.00500	"	0.0333	ND	66.4	35-142				
1-Methylnaphthalene	0.0233	0.00500	"	0.0333	ND	70.0	15-130				
2-Methylnaphthalene	0.0256	0.00500	"	0.0333	ND	76.8	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0260</i>		<i>"</i>	<i>0.0333</i>		<i>78.0</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0259</i>		<i>"</i>	<i>0.0333</i>		<i>77.7</i>	<i>40-150</i>				

<b>Matrix Spike Dup (BGC0123-MSD1)</b>	<b>Source: 2303077-01</b>			<b>Prepared &amp; Analyzed: 03/06/23</b>							
Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.5	31-137	1.87	30		
Anthracene	0.0227	0.00500	"	0.0333	ND	68.0	30-120	6.58	30		
Benzo (a) anthracene	0.0209	0.00500	"	0.0333	ND	62.8	30-120	11.3	30		
Benzo (a) pyrene	0.0212	0.00500	"	0.0333	ND	63.7	30-120	7.22	30		
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.4	30-120	5.54	30		
Benzo (k) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.6	30-120	7.46	30		
Chrysene	0.0180	0.00500	"	0.0333	ND	53.9	30-120	8.81	30		
Dibenz (a,h) anthracene	0.0234	0.00500	"	0.0333	ND	70.2	30-120	9.39	30		
Fluoranthene	0.0252	0.00500	"	0.0333	ND	75.7	30-120	1.84	30		
Fluorene	0.0290	0.00500	"	0.0333	ND	87.0	30-120	4.35	30		
Indeno (1,2,3-cd) pyrene	0.0220	0.00500	"	0.0333	ND	66.1	30-120	15.7	30		
Pyrene	0.0233	0.00500	"	0.0333	ND	69.8	35-142	5.04	30		
1-Methylnaphthalene	0.0220	0.00500	"	0.0333	ND	65.9	15-130	6.10	50		
2-Methylnaphthalene	0.0242	0.00500	"	0.0333	ND	72.5	15-130	5.81	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0244</i>		<i>"</i>	<i>0.0333</i>		<i>73.1</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0256</i>		<i>"</i>	<i>0.0333</i>		<i>76.8</i>	<i>40-150</i>				

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 03/09/23 12:16

**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 BGC0145 - EPA 3050B**

**Blank (BGC0145-BLK1)**

Prepared: 03/06/23 Analyzed: 03/08/23

Boron ND 0.0100 mg/L

**LCS (BGC0145-BS1)**

Prepared: 03/06/23 Analyzed: 03/08/23

Boron 10.1 0.0100 mg/L 10.0 101 80-120

**Duplicate (BGC0145-DUP1)**

Source: 2303075-02

Prepared: 03/06/23 Analyzed: 03/08/23

Boron 0.128 0.0100 mg/L 0.141 9.93 20

**Matrix Spike (BGC0145-MS1)**

Source: 2303075-02

Prepared: 03/06/23 Analyzed: 03/08/23

Boron 10.1 0.0100 mg/L 10.0 0.141 99.6 75-125

**Matrix Spike Dup (BGC0145-MSD1)**

Source: 2303075-02

Prepared: 03/06/23 Analyzed: 03/08/23

Boron 10.1 0.0100 mg/L 10.0 0.141 99.3 75-125 0.286 25

Summit Scientific

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Fremont Environmental  
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Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 03/09/23 12:16

**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 BGC0144 - General Preparation**

**Blank (BGC0144-BLK1)**

Prepared: 03/06/23 Analyzed: 03/08/23

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

**LCS (BGC0144-BS1)**

Prepared: 03/06/23 Analyzed: 03/08/23

Calcium	4.00	0.0500	mg/L wet	5.00	80.0	70-130				
Magnesium	4.51	0.0500	"	5.00	90.2	70-130				
Sodium	4.79	0.0500	"	5.00	95.9	70-130				

Summit Scientific

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 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 03/09/23 12:16

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

**Summit Scientific**

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

**Batch BGC0196 - General Preparation**

<b>Duplicate (BGC0196-DUP1)</b>		<b>Source: 2302120-32</b>		Prepared: 03/07/23 Analyzed: 03/08/23	
% Solids	88.6	%		88.7	0.128 20

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 03/09/23 12:16

**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 BGC0192 - General Preparation**

**Blank (BGC0192-BLK1)**

Prepared & Analyzed: 03/07/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGC0192-BS1)**

Prepared & Analyzed: 03/07/23

Specific Conductance (EC) 0.151 0.0100 mmhos/cm 0.150 101 95-105

**Duplicate (BGC0192-DUP1)**

Source: 2303068-01

Prepared & Analyzed: 03/07/23

Specific Conductance (EC) 0.392 0.0100 mmhos/cm 0.397 1.27 20

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 03/09/23 12:16

**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 BGC0193 - General Preparation**

**LCS (BGC0193-BS1)**

Prepared & Analyzed: 03/07/23

pH	9.17	pH Units	9.18	99.9	95-105
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**Duplicate (BGC0193-DUP1)**

Source: 2303068-01

Prepared & Analyzed: 03/07/23

pH	7.84	pH Units	7.66	2.32	20
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Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Wells Ranch AA 21-02

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
03/09/23 12:16

### Notes and Definitions

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