

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 27, 2023

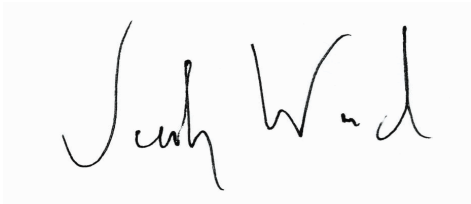
Paul Hengan  
Fremont Environmental  
PO Box 1289  
Wellington, CO 80549

RE: Noble - Derr 21-4 Wellhead

Work Order #2311233

Enclosed are the results of analyses for samples received by Summit Scientific on 11/10/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury  
President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SEP01-FL@4'	2311233-01	Soil	11/10/23 00:00	11/10/23 16:30
SEP02-FL@4'	2311233-02	Soil	11/10/23 00:00	11/10/23 16:30
FLR01@4'	2311233-03	Soil	11/10/23 00:00	11/10/23 16:30
FL01-01@4'	2311233-04	Soil	11/10/23 00:00	11/10/23 16:30
FL01-04@4'	2311233-05	Soil	11/10/23 00:00	11/10/23 16:30
BKG02@4'	2311233-06	Soil	11/10/23 00:00	11/10/23 16:30
BKG01@4'	2311233-07	Soil	11/10/23 00:00	11/10/23 16:30

Summit Scientific

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

# SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2311233	

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: <i>Derr 21-4 Wellhead</i>	
City/State/Zip: Wellington, CO, 80549		AFE#: <i>UWRWE-A1987-ABN</i>	
Phone: 603-477-6907	Project Name: <i>Derr 21-4 Wellhead</i>	PO/Billing Codes:	
Sampler Name: Aaron Otilar	Project Number:	Contact: Mike Montoya	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEXN - 915	TPH (C6-C36)	PAH	TMB's - 915	Metals (915-1)		SAR, EC, pH, Boron
1	SEPO1-FL04'	11/10/23		2			X			X			X	X	X	X	X		
2	SEPO2-FL04'																		
3	FLR0104'																		
4	FL01-0104'																		
5	FL01-0404'																		
6	BK60104'			1											X	X			
7	BK60204'			1											X	X			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>[Signature]</i>	Date/Time: 11/10/23 1945	Received by: <i>Summit North Office</i>	Date/Time: 11/10/23 1545	TAT Business Days	Field DO	Notes:
Relinquished by: <i>[Signature]</i>	Date/Time: 11/10/23 1630	Received by: <i>[Signature]</i>	Date/Time: 11/10/23 1630	Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 8.4	Corrected Temperature: 8	IR gun #:		Standard	X Field Turb.	
				HNO3 lot #:		

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2311233

Client: Fremont

Client Project ID: Derr 21-4 wellhead

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

Airbill #: \_\_\_\_\_

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply)

Air

Soil/Solid

Water

Other

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? (1) NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	OK
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? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? (1)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? (1)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No sample jar w labels BK602 et
For volatiles in water - is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? (1) Note the type of preservative in the comments column - HCl, H <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? (1) Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				
(1) If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS  
Custodian Printed Name

11/21/03  
Date/Time



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**SEP01-FL@4'**  
**2311233-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0419	105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.2 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

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

**PAH by EPA Method 8270D SIM**

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Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**SEP01-FL@4'**  
**2311233-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	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: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0174	52.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0161	48.4 %	40-150		"	"	"	"	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/10/23 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 - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**SEP01-FL@4'**  
**2311233-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.25	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B
Barium	59.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.41	0.400	"	"	"	"	"	"
Lead	5.86	0.200	"	"	"	"	"	"
Nickel	2.10	0.400	"	"	"	"	"	"
Silver	0.0278	0.0200	"	"	"	"	"	"
Zinc	9.61	0.400	"	"	"	"	"	"
Selenium	0.280	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

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

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	218	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	23.4	0.0500	"	"	"	"	"	"	
Sodium	2.65	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0456	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

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

Date Sampled: 11/10/23 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 - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**SEP01-FL@4'**  
**2311233-01 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>86.2</b>	%	1	BGK0665	11/17/23	11/17/23	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/10/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>0.176</b>	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>8.37</b>		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

Summit Scientific



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Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**SEP02-FL@4'**  
**2311233-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0436	109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0383	95.8 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.5	91.9 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**SEP02-FL@4'**  
**2311233-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	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: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0170	51.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0170	50.9 %	40-150		"	"	"	"	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/10/23 00:00**

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

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**SEP02-FL@4'**  
**2311233-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.68	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B
Barium	82.6	0.400	"	"	"	"	"	"
Cadmium	0.320	0.200	"	"	"	"	"	"
Copper	3.31	0.400	"	"	"	"	"	"
Lead	6.61	0.200	"	"	"	"	"	"
Nickel	2.54	0.400	"	"	"	"	"	"
Silver	0.0354	0.0200	"	"	"	"	"	"
Zinc	12.5	0.400	"	"	"	"	"	"
Selenium	0.405	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

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

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	90.2	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	9.29	0.0500	"	"	"	"	"	"	
Sodium	1.71	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0458	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

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

Date Sampled: 11/10/23 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 - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**SEP02-FL@4'**  
**2311233-02 (Soil)**

**Summit Scientific**

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

% Solids	89.3	%	1	BGK0665	11/17/23	11/17/23	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/10/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.217	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.77		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

Summit Scientific



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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**FLR01@4'**  
**2311233-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0437	109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0384	96.0 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	16.6	133 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**FLR01@4'**  
**2311233-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	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: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0157	47.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0174	52.1 %	40-150		"	"	"	"	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/10/23 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 - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**FLR01@4'**  
**2311233-03 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.52	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B
Barium	74.2	0.400	"	"	"	"	"	"
Cadmium	0.233	0.200	"	"	"	"	"	"
Copper	4.12	0.400	"	"	"	"	"	"
Lead	5.57	0.200	"	"	"	"	"	"
Nickel	2.16	0.400	"	"	"	"	"	"
Silver	0.0271	0.0200	"	"	"	"	"	"
Zinc	9.18	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

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

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	165	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	8.41	0.0500	"	"	"	"	"	"	
Sodium	4.28	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0881	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

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

Date Sampled: 11/10/23 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 - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**FLR01@4'**  
**2311233-03 (Soil)**

**Summit Scientific**

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

% Solids	94.4	%	1	BGK0665	11/17/23	11/17/23	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/10/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.116	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.65		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**FL01-01@4'**  
**2311233-04 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0430	108 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0390	97.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0376	94.1 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	13.2	106 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**FL01-01@4'**  
**2311233-04 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	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: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0164	49.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.2 %	40-150		"	"	"	"	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/10/23 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 - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**FL01-01@4'**  
**2311233-04 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.70	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B
Barium	65.4	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.39	0.400	"	"	"	"	"	"
Lead	4.30	0.200	"	"	"	"	"	"
Nickel	2.27	0.400	"	"	"	"	"	"
Silver	0.0277	0.0200	"	"	"	"	"	"
Zinc	7.85	0.400	"	"	"	"	"	"
Selenium	0.267	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

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

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	182	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	40.0	0.0500	"	"	"	"	"	"	
Sodium	47.9	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.838	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

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

Date Sampled: 11/10/23 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 - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**FL01-01@4'**  
**2311233-04 (Soil)**

**Summit Scientific**

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

<b>% Solids</b>	<b>95.4</b>	%	1	BGK0665	11/17/23	11/17/23	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **11/10/23 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>Specific Conductance (EC)</b>	<b>1.31</b>	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>pH</b>	<b>9.02</b>		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**FL01-04@4'**  
**2311233-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGK0460	11/13/23	11/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0449	112 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0413	103 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.6 %		50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGK0462	11/13/23	11/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	17.0	136 %		30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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 PO Box 1289  
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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**FL01-04@4'**  
**2311233-05 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGK0486	11/14/23	11/14/23	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: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0164	49.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0197	59.2 %	40-150		"	"	"	"	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/10/23 00:00**

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

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**FL01-04@4'**  
**2311233-05 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.33	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B
Barium	18.2	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	1.65	0.400	"	"	"	"	"	"
Lead	2.21	0.200	"	"	"	"	"	"
Nickel	1.60	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	5.20	0.400	"	"	"	"	"	"
Selenium	0.716	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

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

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	17.0	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
Magnesium	6.61	0.0500	"	"	"	"	"	"	
Sodium	20.0	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 11/10/23 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.04	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

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

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Fremont Environmental  
 PO Box 1289  
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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**FL01-04@4'**  
**2311233-05 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
% Solids	98.4			%	1	BGK0665	11/17/23	11/17/23	Calculation	

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

Date Sampled: **11/10/23 00:00**

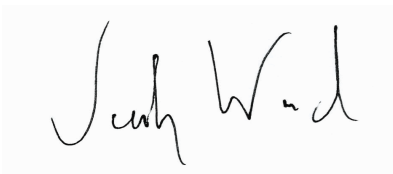
Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.143	0.0100		mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.48			pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**BKG02@4'**  
**2311233-06 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.53</b>	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B	
<b>Barium</b>	<b>59.1</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.09</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>4.19</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.09</b>	0.400	"	"	"	"	"	"	
<b>Silver</b>	<b>0.0238</b>	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>7.23</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>144</b>	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
<b>Magnesium</b>	<b>37.0</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>58.4</b>	0.0500	"	"	"	"	"	"	

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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**BKG02@4'**  
**2311233-06 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.12	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.9		%	1	BGK0665	11/17/23	11/17/23	Calculation	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.21	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.94		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**BKG01@4'**  
**2311233-07 (Soil)**

**Summit Scientific**

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	ND	2.00	mg/L	1	BGK0618	11/16/23	11/17/23	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Arsenic</b>	<b>1.81</b>	0.200	mg/kg dry	1	BGK0805	11/21/23	11/22/23	EPA 6020B	
<b>Barium</b>	<b>61.1</b>	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
<b>Copper</b>	<b>2.45</b>	0.400	"	"	"	"	"	"	
<b>Lead</b>	<b>4.72</b>	0.200	"	"	"	"	"	"	
<b>Nickel</b>	<b>2.44</b>	0.400	"	"	"	"	"	"	
<b>Silver</b>	<b>0.0269</b>	0.0200	"	"	"	"	"	"	
<b>Zinc</b>	<b>8.27</b>	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGK0662	11/17/23	11/17/23	EPA 7196A	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
<b>Calcium</b>	<b>153</b>	0.0500	mg/L dry	1	BGK0695	11/17/23	11/22/23	EPA 6020B	
<b>Magnesium</b>	<b>39.6</b>	0.0500	"	"	"	"	"	"	
<b>Sodium</b>	<b>61.1</b>	0.0500	"	"	"	"	"	"	

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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**BKG01@4'**  
**2311233-07 (Soil)**

**Summit Scientific**

**Calculated Analysis**

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100	units	1	BGK0852	11/22/23	11/22/23	Calculation	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.0		%	1	BGK0665	11/17/23	11/17/23	Calculation	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.24	0.0100	mmhos/cm	1	BGK0723	11/20/23	11/21/23	EPA 120.1	

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

Date Sampled: **11/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.77		pH Units	1	BGK0724	11/20/23	11/21/23	EPA 9045D	

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PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

### 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 BGK0460 - EPA 5030 Soil MS

##### Blank (BGK0460-BLK1)

Prepared: 11/13/23 Analyzed: 11/14/23

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>	0.0414		"	0.0400		103	50-150			
<i>Surrogate: Toluene-d8</i>	0.0386		"	0.0400		96.5	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0387		"	0.0400		96.7	50-150			

##### LCS (BGK0460-BS1)

Prepared: 11/13/23 Analyzed: 11/14/23

Benzene	0.0973	0.0020	mg/kg	0.100		97.3	70-130			
Toluene	0.0920	0.0050	"	0.100		92.0	70-130			
Ethylbenzene	0.0873	0.0050	"	0.100		87.3	70-130			
m,p-Xylene	0.173	0.010	"	0.200		86.4	70-130			
o-Xylene	0.0858	0.0050	"	0.100		85.8	70-130			
1,2,4-Trimethylbenzene	0.0855	0.0050	"	0.100		85.5	70-130			
1,3,5-Trimethylbenzene	0.0852	0.0050	"	0.100		85.2	70-130			
Naphthalene	0.0823	0.0038	"	0.100		82.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0436		"	0.0400		109	50-150			
<i>Surrogate: Toluene-d8</i>	0.0408		"	0.0400		102	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0393		"	0.0400		98.3	50-150			

##### Matrix Spike (BGK0460-MS1)

Source: 2311233-01

Prepared: 11/13/23 Analyzed: 11/14/23

Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130			
Toluene	0.0884	0.0050	"	0.100	ND	88.4	70-130			
Ethylbenzene	0.0917	0.0050	"	0.100	ND	91.7	70-130			
m,p-Xylene	0.176	0.010	"	0.200	ND	87.8	70-130			
o-Xylene	0.0871	0.0050	"	0.100	ND	87.1	70-130			
1,2,4-Trimethylbenzene	0.0714	0.0050	"	0.100	ND	71.4	70-130			
1,3,5-Trimethylbenzene	0.0718	0.0050	"	0.100	ND	71.8	70-130			
Naphthalene	0.0768	0.0038	"	0.100	ND	76.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0448		"	0.0400		112	50-150			
<i>Surrogate: Toluene-d8</i>	0.0476		"	0.0400		119	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0447		"	0.0400		112	50-150			

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 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**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		

**Batch BGK0460 - EPA 5030 Soil MS**

Matrix Spike Dup (BGK0460-MSD1)	Source: 2311233-01			Prepared: 11/13/23 Analyzed: 11/14/23						
Benzene	0.115	0.0020	mg/kg	0.100	ND	115	70-130	10.2	30	
Toluene	0.102	0.0050	"	0.100	ND	102	70-130	14.3	30	
Ethylbenzene	0.0873	0.0050	"	0.100	ND	87.3	70-130	4.89	30	
m,p-Xylene	0.171	0.010	"	0.200	ND	85.6	70-130	2.56	30	
o-Xylene	0.0855	0.0050	"	0.100	ND	85.5	70-130	1.91	30	
1,2,4-Trimethylbenzene	0.0711	0.0050	"	0.100	ND	71.1	70-130	0.421	30	
1,3,5-Trimethylbenzene	0.0727	0.0050	"	0.100	ND	72.7	70-130	1.25	30	
Naphthalene	0.0820	0.0038	"	0.100	ND	82.0	70-130	6.54	30	
Surrogate: 1,2-Dichloroethane-d4	0.0412		"	0.0400		103	50-150			
Surrogate: Toluene-d8	0.0468		"	0.0400		117	50-150			
Surrogate: 4-Bromofluorobenzene	0.0447		"	0.0400		112	50-150			

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 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**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 BGK0462 - EPA 3550A**

**Blank (BGK0462-BLK1)**

Prepared: 11/13/23 Analyzed: 11/14/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.4		"	12.5		108		30-150			

**LCS (BGK0462-BS1)**

Prepared: 11/13/23 Analyzed: 11/14/23

C10-C28 (DRO)	388	50	mg/kg	500		77.6		70-130			
Surrogate: <i>o</i> -Terphenyl	15.6		"	12.5		125		30-150			

**Matrix Spike (BGK0462-MS1)**

Source: 2311233-01

Prepared: 11/13/23 Analyzed: 11/14/23

C10-C28 (DRO)	455	50	mg/kg	500	26.3	85.8		70-130			
Surrogate: <i>o</i> -Terphenyl	15.3		"	12.5		122		30-150			

**Matrix Spike Dup (BGK0462-MSD1)**

Source: 2311233-01

Prepared: 11/13/23 Analyzed: 11/14/23

C10-C28 (DRO)	466	50	mg/kg	500	26.3	87.9		70-130	2.26	20	
Surrogate: <i>o</i> -Terphenyl	12.8		"	12.5		102		30-150			

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Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**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 BGK0486 - EPA 5030 Soil MS**

**Blank (BGK0486-BLK1)**

Prepared & Analyzed: 11/14/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0372		"	0.0333	112	40-150				
<i>Surrogate: Fluoranthene-d10</i>	0.0403		"	0.0333	121	40-150				

**LCS (BGK0486-BS1)**

Prepared & Analyzed: 11/14/23

Acenaphthene	0.0327	0.00500	mg/kg	0.0333	98.1	31-137				
Anthracene	0.0325	0.00500	"	0.0333	97.6	30-120				
Benzo (a) anthracene	0.0310	0.00500	"	0.0333	93.0	30-120				
Benzo (a) pyrene	0.0304	0.00500	"	0.0333	91.1	30-120				
Benzo (b) fluoranthene	0.0314	0.00500	"	0.0333	94.2	30-120				
Benzo (k) fluoranthene	0.0318	0.00500	"	0.0333	95.5	30-120				
Chrysene	0.0326	0.00500	"	0.0333	97.9	30-120				
Dibenz (a,h) anthracene	0.0283	0.00500	"	0.0333	85.0	30-120				
Fluoranthene	0.0323	0.00500	"	0.0333	96.9	30-120				
Fluorene	0.0350	0.00500	"	0.0333	105	30-120				
Indeno (1,2,3-cd) pyrene	0.0205	0.00500	"	0.0333	61.6	30-120				
Pyrene	0.0323	0.00500	"	0.0333	97.0	35-142				
1-Methylnaphthalene	0.0326	0.00500	"	0.0333	97.8	35-142				
2-Methylnaphthalene	0.0321	0.00500	"	0.0333	96.2	35-142				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0314		"	0.0333	94.3	40-150				
<i>Surrogate: Fluoranthene-d10</i>	0.0318		"	0.0333	95.3	40-150				

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

**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 BGK0486 - EPA 5030 Soil MS**

**Matrix Spike (BGK0486-MS1)**

Source: 2311216-03

Prepared & Analyzed: 11/14/23

Acenaphthene	0.0190	0.00500	mg/kg	0.0333	ND	57.1	31-137			
Anthracene	0.0168	0.00500	"	0.0333	ND	50.3	30-120			
Benzo (a) anthracene	0.0171	0.00500	"	0.0333	ND	51.2	30-120			
Benzo (a) pyrene	0.0163	0.00500	"	0.0333	ND	49.0	30-120			
Benzo (b) fluoranthene	0.0163	0.00500	"	0.0333	ND	49.0	30-120			
Benzo (k) fluoranthene	0.0151	0.00500	"	0.0333	ND	45.4	30-120			
Chrysene	0.0177	0.00500	"	0.0333	ND	53.1	30-120			
Dibenz (a,h) anthracene	0.0141	0.00500	"	0.0333	ND	42.3	30-120			
Fluoranthene	0.0203	0.00500	"	0.0333	ND	60.8	30-120			
Fluorene	0.0175	0.00500	"	0.0333	ND	52.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0146	0.00500	"	0.0333	ND	43.7	30-120			
Pyrene	0.0185	0.00500	"	0.0333	ND	55.6	35-142			
1-Methylnaphthalene	0.0169	0.00500	"	0.0333	ND	50.7	15-130			
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.4	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0163		"	0.0333		49.0	40-150			
Surrogate: Fluoranthene-d10	0.0162		"	0.0333		48.7	40-150			

**Matrix Spike Dup (BGK0486-MSD1)**

Source: 2311216-03

Prepared & Analyzed: 11/14/23

Acenaphthene	0.0242	0.00500	mg/kg	0.0333	ND	72.6	31-137	23.9	30
Anthracene	0.0202	0.00500	"	0.0333	ND	60.7	30-120	18.7	30
Benzo (a) anthracene	0.0209	0.00500	"	0.0333	ND	62.7	30-120	20.1	30
Benzo (a) pyrene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	15.2	30
Benzo (b) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.2	30-120	17.2	30
Benzo (k) fluoranthene	0.0190	0.00500	"	0.0333	ND	57.0	30-120	22.7	30
Chrysene	0.0213	0.00500	"	0.0333	ND	63.8	30-120	18.4	30
Dibenz (a,h) anthracene	0.0161	0.00500	"	0.0333	ND	48.3	30-120	13.3	30
Fluoranthene	0.0221	0.00500	"	0.0333	ND	66.2	30-120	8.49	30
Fluorene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	27.5	30
Indeno (1,2,3-cd) pyrene	0.0177	0.00500	"	0.0333	ND	53.1	30-120	19.4	30
Pyrene	0.0218	0.00500	"	0.0333	ND	65.5	35-142	16.3	30
1-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	63.8	15-130	22.8	50
2-Methylnaphthalene	0.0217	0.00500	"	0.0333	ND	65.0	15-130	25.2	50
Surrogate: 2-Methylnaphthalene-d10	0.0212		"	0.0333		63.6	40-150		
Surrogate: Fluoranthene-d10	0.0206		"	0.0333		61.8	40-150		

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

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

**Summit Scientific**

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

**Batch BGK0618 - EPA 3050B**

**Blank (BGK0618-BLK1)**

Prepared: 11/16/23 Analyzed: 11/17/23

Boron ND 2.00 mg/L

**LCS (BGK0618-BS1)**

Prepared: 11/16/23 Analyzed: 11/17/23

Boron 5.04 2.00 mg/L 5.00 101 80-120

**Duplicate (BGK0618-DUP1)**

Source: 2311233-01

Prepared: 11/16/23 Analyzed: 11/17/23

Boron 0.671 2.00 mg/L 0.680 1.33 20

**Matrix Spike (BGK0618-MS1)**

Source: 2311233-01

Prepared: 11/16/23 Analyzed: 11/17/23

Boron 5.48 2.00 mg/L 5.00 0.680 96.0 75-125

**Matrix Spike Dup (BGK0618-MSD1)**

Source: 2311233-01

Prepared: 11/16/23 Analyzed: 11/17/23

Boron 5.48 2.00 mg/L 5.00 0.680 96.0 75-125 0.00858 25

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

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

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

**Batch BGK0805 - EPA 3050B**

**Blank (BGK0805-BLK1)**

Prepared: 11/21/23 Analyzed: 11/22/23

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 (BGK0805-BS1)**

Prepared: 11/21/23 Analyzed: 11/22/23

Arsenic	41.2	0.200	mg/kg wet	40.0		103	80-120
Barium	41.4	0.400	"	40.0		104	80-120
Cadmium	2.13	0.200	"	2.00		106	80-120
Copper	39.5	0.400	"	40.0		98.8	80-120
Lead	20.1	0.200	"	20.0		100	80-120
Nickel	39.0	0.400	"	40.0		97.6	80-120
Silver	2.09	0.0200	"	2.00		105	80-120
Zinc	40.7	0.400	"	40.0		102	80-120
Selenium	4.35	0.260	"	4.00		109	80-120

**Duplicate (BGK0805-DUP1)**

Source: 2311233-01

Prepared: 11/21/23 Analyzed: 11/22/23

Arsenic	1.60	0.200	mg/kg dry	1.25		24.0	20	QR-01
Barium	99.1	0.400	"	59.8		49.4	20	QR-04
Cadmium	0.327	0.200	"	0.185		55.3	20	QR-01
Copper	3.52	0.400	"	2.41		37.3	20	QR-01
Lead	10.3	0.200	"	5.86		55.1	20	QR-04
Nickel	2.93	0.400	"	2.10		32.9	20	QR-01
Silver	0.0515	0.0200	"	0.0278		59.6	20	QR-01
Zinc	13.4	0.400	"	9.61		33.0	20	QR-04
Selenium	0.442	0.260	"	0.280		44.9	20	QR-01

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**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 BGK0805 - EPA 3050B**

<b>Matrix Spike (BGK0805-MS1)</b>	<b>Source: 2311233-01</b>			Prepared: 11/21/23		Analyzed: 11/22/23					
Arsenic	18.4	0.200	mg/kg dry	46.4	1.25	37.0	75-125				QM-07
Barium	115	0.400	"	46.4	59.8	120	75-125				
Cadmium	2.27	0.200	"	2.32	0.185	90.1	75-125				
Copper	18.9	0.400	"	46.4	2.41	35.5	75-125				QM-07
Lead	24.7	0.200	"	23.2	5.86	81.3	75-125				
Nickel	18.5	0.400	"	46.4	2.10	35.5	75-125				QM-07
Silver	2.02	0.0200	"	2.32	0.0278	85.8	75-125				
Zinc	28.5	0.400	"	46.4	9.61	40.8	75-125				QM-07
Selenium	5.57	0.260	"	4.64	0.280	114	75-125				

<b>Matrix Spike Dup (BGK0805-MSD1)</b>	<b>Source: 2311233-01</b>			Prepared: 11/21/23		Analyzed: 11/22/23					
Arsenic	18.3	0.200	mg/kg dry	46.4	1.25	36.7	75-125	0.773	25		QM-07
Barium	125	0.400	"	46.4	59.8	142	75-125	8.36	25		QM-07
Cadmium	2.45	0.200	"	2.32	0.185	97.6	75-125	7.37	25		
Copper	19.1	0.400	"	46.4	2.41	36.0	75-125	1.17	25		QM-07
Lead	26.5	0.200	"	23.2	5.86	89.1	75-125	7.14	25		
Nickel	18.9	0.400	"	46.4	2.10	36.1	75-125	1.67	25		QM-07
Silver	2.16	0.0200	"	2.32	0.0278	91.9	75-125	6.73	25		
Zinc	28.8	0.400	"	46.4	9.61	41.3	75-125	0.844	25		QM-07
Selenium	6.22	0.260	"	4.64	0.280	128	75-125	11.0	25		QM-07

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

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

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

**Batch BGK0662 - 3060A Mod**

**Blank (BGK0662-BLK1)**

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent      ND      0.30    mg/kg wet

**LCS (BGK0662-BS1)**

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent      27.0      0.30    mg/kg wet      25.0      108      80-120

**Duplicate (BGK0662-DUP1)**

**Source: 2311233-01**

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent      ND      0.30    mg/kg dry      ND      20

**Matrix Spike (BGK0662-MS1)**

**Source: 2311233-01**

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent      29.5      0.30    mg/kg dry      29.0      ND      102      75-125

**Matrix Spike Dup (BGK0662-MSD1)**

**Source: 2311233-01**

Prepared & Analyzed: 11/17/23

Chromium, Hexavalent      28.8      0.30    mg/kg dry      29.0      ND      99.4      75-125      2.19      20

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**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 BGK0695 - General Preparation**

**Blank (BGK0695-BLK1)**

Prepared: 11/17/23 Analyzed: 11/22/23

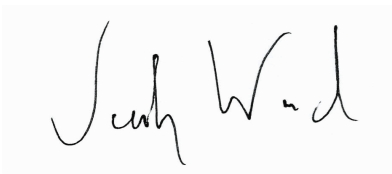
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

**LCS (BGK0695-BS1)**

Prepared: 11/17/23 Analyzed: 11/22/23

Calcium	5.42	0.0500	mg/L wet	5.00	108	70-130				
Magnesium	4.77	0.0500	"	5.00	95.4	70-130				
Sodium	4.71	0.0500	"	5.00	94.1	70-130				

Summit Scientific



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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**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 BGK0665 - General Preparation**


**Duplicate (BGK0665-DUP1)**

**Source: 2311233-01**

**Prepared & Analyzed: 11/17/23**

% Solids	87.6		%		86.2			1.52	20	
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Summit Scientific



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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**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 BGK0723 - General Preparation**

**Blank (BGK0723-BLK1)**

Prepared: 11/20/23 Analyzed: 11/21/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BGK0723-BS1)**

Prepared: 11/20/23 Analyzed: 11/21/23

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

**Duplicate (BGK0723-DUP1)**

Source: 2311165-01

Prepared: 11/20/23 Analyzed: 11/21/23

Specific Conductance (EC) 0.363 0.0100 mmhos/cm 0.363 0.00 20

Summit Scientific

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
 Project Manager: Paul Henchan

**Reported:**  
 11/27/23 15:37

**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 BGK0724 - General Preparation**

**LCS (BGK0724-BS1)**

Prepared: 11/20/23 Analyzed: 11/21/23

pH	9.17	pH Units	9.18	99.9	95-105
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**Duplicate (BGK0724-DUP1)**

Source: 2311165-01

Prepared: 11/20/23 Analyzed: 11/21/23

pH	8.60	pH Units	8.60	0.00	20
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Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Derr 21-4 Wellhead

Project Number: [none]  
Project Manager: Paul Henchan

**Reported:**  
11/27/23 15:37

### Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference