

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 22, 2023

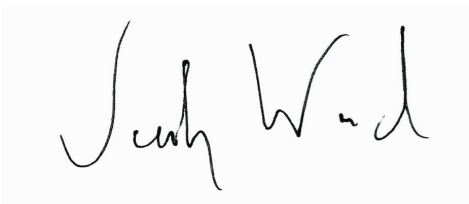
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Jepsen 1

Work Order #2308249

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

Sincerely,

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

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

Project Number: UWRWE-A3009-ABN

Project Manager: Paul Henchan

Reported:

08/22/23 16:16

ANALYTICAL REPORT FOR SAMPLES

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

Summit Scientific

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

Lab ID	Page 1 of 1
2308249	

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

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

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

S₂

Sample Receipt Checklist

S2 Work Order# 2308249

Client: Fremont Client Project ID: Jepsen I

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

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

Temp (°C) Thermometer #

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

Josh
Custodian Printed Name

08/10/23
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

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

Reported:
08/22/23 16:16

FL01@4.5'
2308249-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGH0480	08/11/23	08/14/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

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

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

Extractable Petroleum Hydrocarbons by 8015

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

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

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

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

PAH by EPA Method 8270D SIM

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2308249-01 (Soil)

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PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGH0577	08/15/23	08/16/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

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

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

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

Total Metals by EPA 6020B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Jepsen 1
Project Number: UWRWE-A3009-ABN
Project Manager: Paul Henchan

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08/22/23 16:16

FL01@4.5'
2308249-01 (Soil)

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Total Metals by EPA 6020B

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

Hexavalent Chromium by EPA Method 7196

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

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

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

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

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

Calculated Analysis

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

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

Physical Parameters by APHA/ASTM/EPA Methods

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FL01@4.5'
2308249-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

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

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

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

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

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

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

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

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Project: Noble - Jepsen 1

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

Reported:
08/22/23 16:16

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGH0480 - EPA 5030 Soil MS

Blank (BGH0480-BLK1)

Prepared & Analyzed: 08/11/23

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0447</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>50-150</i>				
<i>Surrogate: Toluene-d8</i>	<i>0.0394</i>		<i>"</i>	<i>0.0400</i>		<i>98.6</i>	<i>50-150</i>				
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0430</i>		<i>"</i>	<i>0.0400</i>		<i>108</i>	<i>50-150</i>				

LCS (BGH0480-BS1)

Prepared & Analyzed: 08/11/23

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

Matrix Spike (BGH0480-MS1)

Source: 2308236-01

Prepared & Analyzed: 08/11/23

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

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

Reported:
 08/22/23 16:16

Volatile Organic Compounds by EPA Method 8260B - Quality Control

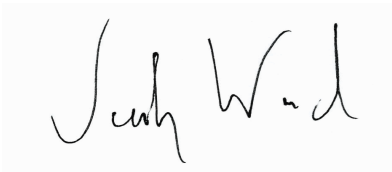
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Analyte	Reporting			Spike	Source	%REC			RPD	Notes
	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	

Batch BGH0480 - EPA 5030 Soil MS

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

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

Reported:
 08/22/23 16:16

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGH0483 - EPA 3550A

Blank (BGH0483-BLK1)

Prepared & Analyzed: 08/11/23

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

LCS (BGH0483-BS1)

Prepared & Analyzed: 08/11/23

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

Matrix Spike (BGH0483-MS1)

Source: 2308236-01

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

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

Matrix Spike Dup (BGH0483-MSD1)

Source: 2308236-01

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

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

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08/22/23 16:16

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGH0577 - EPA 5030 Soil MS

Blank (BGH0577-BLK1)

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

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0270		"	0.0333		80.9	40-150			
Surrogate: Fluoranthene-d10	0.0262		"	0.0333		78.6	40-150			

LCS (BGH0577-BS1)

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

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

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Jepsen 1

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

Reported:
08/22/23 16:16

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGH0577 - EPA 5030 Soil MS

Matrix Spike (BGH0577-MS1)

Source: 2308249-01

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

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

Matrix Spike Dup (BGH0577-MSD1)

Source: 2308249-01

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

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

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

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

Reported:
 08/22/23 16:16

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

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

Batch BGH0667 - EPA 3050B

Blank (BGH0667-BLK1)

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

Boron ND 0.0100 mg/L

LCS (BGH0667-BS1)

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

Boron 5.89 0.0100 mg/L 5.00 118 80-120

Duplicate (BGH0667-DUP1)

Source: 2308238-01

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

Boron 4.55 0.0100 mg/L 4.31 5.35 20

Matrix Spike (BGH0667-MS1)

Source: 2308238-01

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

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

Matrix Spike Dup (BGH0667-MSD1)

Source: 2308238-01

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

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

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

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

Reported:
 08/22/23 16:16

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0516 - EPA 3050B

Blank (BGH0516-BLK1)

Prepared & Analyzed: 08/14/23

Arsenic	ND	0.200	mg/kg wet						
Barium	ND	0.400	"						
Cadmium	ND	0.200	"						
Copper	ND	0.400	"						
Lead	ND	0.200	"						
Nickel	ND	0.400	"						
Silver	ND	0.0200	"						
Zinc	ND	0.400	"						
Selenium	ND	0.260	"						

LCS (BGH0516-BS1)

Prepared & Analyzed: 08/14/23

Arsenic	37.8	0.200	mg/kg wet	40.0	94.6	80-120
Barium	36.5	0.400	"	40.0	91.2	80-120
Cadmium	1.85	0.200	"	2.00	92.7	80-120
Copper	37.8	0.400	"	40.0	94.6	80-120
Lead	18.8	0.200	"	20.0	93.8	80-120
Nickel	35.7	0.400	"	40.0	89.3	80-120
Silver	1.83	0.0200	"	2.00	91.3	80-120
Zinc	39.5	0.400	"	40.0	98.8	80-120

Duplicate (BGH0516-DUP1)

Source: 2307150-17

Prepared: 08/14/23 Analyzed: 08/15/23

Arsenic	0.775	0.200	mg/kg dry	0.840	8.09	20
Barium	43.0	0.400	"	38.5	11.0	20
Cadmium	0.135	0.200	"	0.147	8.37	20
Copper	1.63	0.400	"	1.79	9.45	20
Lead	2.99	0.200	"	2.82	5.86	20
Nickel	1.15	0.400	"	1.27	9.77	20
Silver	0.0175	0.0200	"	0.0149	16.2	20
Zinc	6.40	0.400	"	7.18	11.6	20
Selenium	ND	0.260	"	ND		200

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

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

Reported:
 08/22/23 16:16

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0516 - EPA 3050B

Matrix Spike (BGH0516-MS1)

Source: 2307150-17

Prepared: 08/14/23 Analyzed: 08/15/23

Arsenic	18.8	0.200	mg/kg dry	43.8	0.840	41.0	75-125				QM-01
Barium	61.6	0.400	"	43.8	38.5	52.9	75-125				QM-01
Cadmium	1.57	0.200	"	2.19	0.147	65.1	75-125				QM-01
Copper	19.1	0.400	"	43.8	1.79	39.6	75-125				QM-01
Lead	16.2	0.200	"	21.9	2.82	60.9	75-125				QM-01
Nickel	18.2	0.400	"	43.8	1.27	38.6	75-125				QM-01
Silver	1.41	0.0200	"	2.19	0.0149	63.7	75-125				QM-01
Zinc	25.4	0.400	"	43.8	7.18	41.6	75-125				QM-01

Matrix Spike Dup (BGH0516-MSD1)

Source: 2307150-17

Prepared: 08/14/23 Analyzed: 08/15/23

Arsenic	16.8	0.200	mg/kg dry	43.8	0.840	36.4	75-125	11.2	25		QM-01
Barium	63.2	0.400	"	43.8	38.5	56.4	75-125	2.49	25		QM-01
Cadmium	1.61	0.200	"	2.19	0.147	66.6	75-125	2.07	25		QM-01
Copper	17.2	0.400	"	43.8	1.79	35.1	75-125	10.8	25		QM-01
Lead	16.6	0.200	"	21.9	2.82	62.8	75-125	2.54	25		QM-01
Nickel	16.5	0.400	"	43.8	1.27	34.8	75-125	9.57	25		QM-01
Silver	1.43	0.0200	"	2.19	0.0149	64.8	75-125	1.57	25		QM-01
Zinc	22.9	0.400	"	43.8	7.18	35.8	75-125	10.5	25		QM-01

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

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

Reported:
 08/22/23 16:16

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGH0500 - 3060A Mod

Blank (BGH0500-BLK1)

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGH0500-BS1)

Prepared & Analyzed: 08/11/23

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

Duplicate (BGH0500-DUP1)

Source: 2308127-01

Prepared & Analyzed: 08/11/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGH0500-MS1)

Source: 2308127-01

Prepared & Analyzed: 08/11/23

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

Matrix Spike Dup (BGH0500-MSD1)

Source: 2308127-01

Prepared & Analyzed: 08/11/23

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

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1

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

Reported:
 08/22/23 16:16

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

Summit Scientific

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

Batch BGH0654 - General Preparation

Blank (BGH0654-BLK1)

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

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

LCS (BGH0654-BS1)

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

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

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Jepsen 1

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

Reported:
 08/22/23 16:16

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

Summit Scientific

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

Batch BGH0664 - General Preparation

Duplicate (BGH0664-DUP1)

Source: 2308155-02

Prepared & Analyzed: 08/16/23

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

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

Reported:
 08/22/23 16:16

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

Summit Scientific

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

Batch BGH0725 - General Preparation

Blank (BGH0725-BLK1)

Prepared & Analyzed: 08/17/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGH0725-BS1)

Prepared & Analyzed: 08/17/23

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

Duplicate (BGH0725-DUP1)

Source: 2308155-02

Prepared & Analyzed: 08/17/23

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

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

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

Reported:
 08/22/23 16:16

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

Summit Scientific

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

Batch BGH0724 - General Preparation

LCS (BGH0724-BS1)

Prepared & Analyzed: 08/17/23

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

Source: 2308155-02

Prepared & Analyzed: 08/17/23

pH	7.90	pH Units	7.87	0.380	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

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

Reported:
08/22/23 16:16

Notes and Definitions

- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference