

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 14, 2023

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Born Sitzman 1
Work Order #2303101

Enclosed are the results of analyses for samples received by Summit Scientific on 03/03/23 13:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Born Sitzman 1

Project Number: [none]
Project Manager: Paul Henchan

Reported:
03/14/23 10:54

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
1FL01@4.0'	2303101-01	Soil	03/03/23 00:00	03/03/23 13:55
1FL05@3.0'	2303101-02	Soil	03/03/23 00:00	03/03/23 13:55

Summit Scientific

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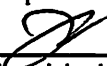

SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2303101	

Client: Fremont Env	Send Data To: Project Manager: Paul Henehan	Send Invoice To: Company: Noble
Address:	E-Mail: Paulh@Fremontenv.com	Project Name/Location:
City/State/Zip:	jeffg@Fremontenv.com Ethahb@Fremontenv.com	AFE#:
Phone:	Project Name: Ron Sitzman 1	PO/Billing Codes:
Sampler Name: J6	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested					Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	GR0, OR0, DR0	PAHs (915)	EC, PH, SAR, GERM		
1	1FL01@4.0'	03/03/23		1			X			X				X	X	X	X	X	
2	1FL05@3.0'	03/03/23		1			X			X				X	X	X	X	X	
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by:  Date/Time: 03/03/23	Received by:  Date/Time: 03-03-23 13:55	TAT Business Days	Field DO	Notes: Bill to Noble
		Same Day	Field EC	
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____	1 Day	Field ORP	
		2 Days	Field pH	
Relinquished by: _____ Date/Time: _____	Received by: _____ Date/Time: _____	3 Days	Field Temp.	
Temperature Upon Receipt: 8.4	Corrected Temperature _____	Standard	<input checked="" type="checkbox"/> Field Turb.	
	IR gun #: 02	HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2303101

Client: Fremont End Client Project ID: Born Sitzman 7

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

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

Temp (°C) 8.4 Thermometer # 02

	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"/>	
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	pH
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.

Gavin Stonehouse
Custodian Printed Name

03-03-23 13:59
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Born Sitzman 1

Project Number: [none]
Project Manager: Paul Henchan

Reported:
03/14/23 10:54

1FL01@4.0'
2303101-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGC0128	03/06/23	03/06/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0285	71.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0326	81.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0340	85.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.27	74.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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2303101-01 (Soil)

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PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0196	58.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0182	54.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.490	0.0100	mg/L	1	BGC0145	03/06/23	03/08/23	EPA 6020B	

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

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

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

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Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 03/14/23 10:54

1FL01@4.0'
2303101-01 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	48.8	0.0620	mg/L dry	1	BGC0273	03/09/23	03/14/23	EPA 6020B	
Magnesium	12.0	0.0620	"	"	"	"	"	"	
Sodium	25.0	0.0620	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.831	0.00100	units	1	BGC0379	03/14/23	03/14/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.7		%	1	BGC0196	03/07/23	03/08/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.174	0.0100	mmhos/cm	1	BGC0303	03/10/23	03/10/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BGC0304	03/10/23	03/10/23	EPA 9045D	

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Reported:
03/14/23 10:54

1FL05@3.0'
2303101-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGC0128	03/06/23	03/06/23	EPA 8260B	
Toluene	ND	0.0050	"	"	"	"	"	"	
Ethylbenzene	ND	0.0050	"	"	"	"	"	"	
Xylenes (total)	ND	0.010	"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050	"	"	"	"	"	"	
Naphthalene	ND	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0279	69.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0331	82.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0343	85.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.5	83.9 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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1FL05@3.0'
2303101-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGC0123	03/06/23	03/07/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.00512	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	0.00728	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00843	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0224	67.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0244	73.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.325	0.0100	mg/L	1	BGC0145	03/06/23	03/08/23	EPA 6020B	

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

Date Sampled: **03/03/23 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 - Born Sitzman 1

Project Number: [none]
Project Manager: Paul Henchan

Reported:
03/14/23 10:54

1FL05@3.0'
2303101-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.4	0.0608	mg/L dry	1	BGC0273	03/09/23	03/14/23	EPA 6020B	
Magnesium	13.1	0.0608	"	"	"	"	"	"	
Sodium	7.12	0.0608	"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.245	0.00100	units	1	BGC0379	03/14/23	03/14/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.2		%	1	BGC0196	03/07/23	03/08/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.146	0.0100	mmhos/cm	1	BGC0303	03/10/23	03/10/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BGC0304	03/10/23	03/10/23	EPA 9045D	

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Project: Noble - Born Sitzman 1

Project Number: [none]
Project Manager: Paul Henchan

Reported:
03/14/23 10:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGC0128 - EPA 5030 Soil MS

Blank (BGC0128-BLK1)

Prepared & Analyzed: 03/06/23

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

LCS (BGC0128-BS1)

Prepared & Analyzed: 03/06/23

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

Matrix Spike (BGC0128-MS1)

Source: 2303077-01

Prepared & Analyzed: 03/06/23

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

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Project: Noble - Born Sitzman 1

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 03/14/23 10:54

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGC0128 - EPA 5030 Soil MS

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

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 PO Box 1289
 Wellington CO, 80549

Project: Noble - Born Sitzman 1

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 03/14/23 10:54

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGC0131 - EPA 3550A

Blank (BGC0131-BLK1)

Prepared & Analyzed: 03/06/23

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

LCS (BGC0131-BS1)

Prepared & Analyzed: 03/06/23

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

Matrix Spike (BGC0131-MS1)

Source: 2303077-01

Prepared & Analyzed: 03/06/23

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

Matrix Spike Dup (BGC0131-MSD1)

Source: 2303077-01

Prepared & Analyzed: 03/06/23

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

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PO Box 1289
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Project: Noble - Born Sitzman 1

Project Number: [none]
Project Manager: Paul Henchan

Reported:
03/14/23 10:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGC0123 - EPA 5030 Soil MS

Blank (BGC0123-BLK1)

Prepared & Analyzed: 03/06/23

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

LCS (BGC0123-BS1)

Prepared & Analyzed: 03/06/23

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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Born Sitzman 1

Project Number: [none]
Project Manager: Paul Henchan

Reported:
03/14/23 10:54

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGC0123 - EPA 5030 Soil MS

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

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

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Fremont Environmental
 PO Box 1289
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Project: Noble - Born Sitzman 1

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 03/14/23 10:54

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

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

Batch BGC0145 - EPA 3050B

Blank (BGC0145-BLK1)

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

Boron ND 0.0100 mg/L

LCS (BGC0145-BS1)

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

Boron 10.1 0.0100 mg/L 10.0 101 80-120

Duplicate (BGC0145-DUP1)

Source: 2303075-02

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

Boron 0.128 0.0100 mg/L 0.141 9.93 20

Matrix Spike (BGC0145-MS1)

Source: 2303075-02

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

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

Matrix Spike Dup (BGC0145-MSD1)

Source: 2303075-02

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

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

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Project: Noble - Born Sitzman 1

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 03/14/23 10:54

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 BGC0273 - General Preparation

Blank (BGC0273-BLK1)

Prepared: 03/09/23 Analyzed: 03/14/23

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

LCS (BGC0273-BS1)

Prepared: 03/09/23 Analyzed: 03/14/23

Calcium	5.40	0.0500	mg/L wet	5.00	108	70-130
Magnesium	5.10	0.0500	"	5.00	102	70-130
Sodium	4.97	0.0500	"	5.00	99.5	70-130

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Project: Noble - Born Sitzman 1

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 03/14/23 10:54

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

Summit Scientific

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

Batch BGC0196 - General Preparation

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

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Fremont Environmental
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Project: Noble - Born Sitzman 1

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 03/14/23 10:54

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 BGC0303 - General Preparation

Blank (BGC0303-BLK1)

Prepared & Analyzed: 03/10/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGC0303-BS1)

Prepared & Analyzed: 03/10/23

Specific Conductance (EC) 0.150 0.0100 mmhos/cm 0.150 100 95-105

Duplicate (BGC0303-DUP1)

Source: 2303075-01

Prepared & Analyzed: 03/10/23

Specific Conductance (EC) 0.101 0.0100 mmhos/cm 0.100 0.199 20

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Project: Noble - Born Sitzman 1

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 03/14/23 10:54

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 BGC0304 - General Preparation

LCS (BGC0304-BS1)

Prepared & Analyzed: 03/10/23

pH 9.21 pH Units 9.18 100 95-105

Duplicate (BGC0304-DUP1)

Source: 2303075-01

Prepared & Analyzed: 03/10/23

pH 7.80 pH Units 7.90 1.27 20

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Born Sitzman 1

Project Number: [none]
Project Manager: Paul Henchan

Reported:
03/14/23 10:54

Notes and Definitions

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