

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 30, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Bernhardt 13-12

Work Order #2305380

Enclosed are the results of analyses for samples received by Summit Scientific on 05/16/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01 3 feet	2305380-01	Soil	05/16/23 11:17	05/16/23 16:30
FL06 3 feet	2305380-02	Soil	05/16/23 11:45	05/16/23 16:30

		Send Data To:	Send Invoice To:
Client: Fremont Environmental		Project Manager: Paul Henehan	Company: <u>Noble</u>
Address:		E-Mail: Fremont Distribution List	Project Name/Location: <u>Bernhardt 13-12</u>
City/State/Zip:			AFE#:
Phone: 303-261-6246		Project Name: <u>Bernhardt 13-12</u>	PO/Billing Codes: <u>UWRWE-A2C60-ABN</u>
Sampler Name: Stanley Gilbert		Project Number:	Contact: <u>Mike Mowley</u>

					Preservative				Matrix				Analysis Requested					Special Instructions	
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron	Metals (915)	TDS, Chloride, Sulfate	HOLD
1	FLO1 3 feet	5/16/23	11:17	2			X			X			X	X	X	X			
2	FLO6 3 feet	5/16/23	11:45	2			X			X			X	X	X	X			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <u>[Signature]</u>	Date/Time: <u>5/16/23 12:50</u>	Received by: <u>Summit North</u>	Date/Time: <u>5/16/23 12:50</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>C2</u>	Date/Time: <u>5/16/23 11:30</u>	Received by: <u>[Signature]</u>	Date/Time: <u>5/16/23 11:30</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>8.9</u>	Corrected Temperature: <u>8</u>	IR gun #:	<u>1</u>	HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2305380Client: FremontClient Project ID: Bernhardt 13-12Shipped 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)

8.9

Thermometer #

1

	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"/>	<u>on ICE</u>
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 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.

 Custodian Printed Name

5/18/23
 Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/30/23 08:38

FL01 3 feet
2305380-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGE0650	05/18/23	05/19/23	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: **05/16/23 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0437	109 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0400	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGE0652	05/18/23	05/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.6	117 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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FL01 3 feet
2305380-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGE0633	05/18/23	05/19/23	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: **05/16/23 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0225	67.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0224	67.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0799	0.0100	mg/L	1	BGE0748	05/22/23	05/24/23	EPA 6020B	

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

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Manager: Paul Henchan

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FL01 3 feet
2305380-01 (Soil)

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

Calcium	20.9	0.0514	mg/L dry	1	BGE0768	05/22/23	05/25/23	EPA 6020B
Magnesium	5.69	0.0514	"	"	"	"	"	"
Sodium	14.0	0.0514	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.701	0.00100	units	1	BGE0946	05/26/23	05/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.3		%	1	BGE0740	05/22/23	05/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.320	0.0100	mmhos/cm	1	BGE0806	05/23/23	05/23/23	EPA 120.1	

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

Date Sampled: **05/16/23 11:17**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.80		pH Units	1	BGE0805	05/23/23	05/23/23	EPA 9045D	

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Project Manager: Paul Henehan

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FL06 3 feet
2305380-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BGE0650	05/18/23	05/19/23	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: **05/16/23 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0425	106 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BGE0652	05/18/23	05/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	14.1	113 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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FL06 3 feet
2305380-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGE0633	05/18/23	05/19/23	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: **05/16/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0178	53.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0202	60.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0936	0.0100	mg/L	1	BGE0748	05/22/23	05/24/23	EPA 6020B	

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

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

FL06 3 feet
2305380-02 (Soil)

Summit Scientific

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

Calcium	64.6	0.0563	mg/L dry	1	BGE0768	05/22/23	05/25/23	EPA 6020B
Magnesium	22.8	0.0563	"	"	"	"	"	"
Sodium	2.24	0.0563	"	"	"	"	"	"

Calculated Analysis

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0610	0.00100	units	1	BGE0946	05/26/23	05/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.8		%	1	BGE0740	05/22/23	05/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.187	0.0100	mmhos/cm	1	BGE0806	05/23/23	05/23/23	EPA 120.1	

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

Date Sampled: **05/16/23 11:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	4.09		pH Units	1	BGE0805	05/23/23	05/23/23	EPA 9045D	

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Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGE0650 - EPA 5030 Soil MS

Blank (BGE0650-BLK1)

Prepared & Analyzed: 05/18/23

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	0.0460		"	0.0400		115	50-150			
Surrogate: Toluene-d8	0.0387		"	0.0400		96.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.4	50-150			

LCS (BGE0650-BS1)

Prepared & Analyzed: 05/18/23

Benzene	0.0752	0.0020	mg/kg	0.100		75.2	70-130			
Toluene	0.0898	0.0050	"	0.100		89.8	70-130			
Ethylbenzene	0.106	0.0050	"	0.100		106	70-130			
m,p-Xylene	0.215	0.010	"	0.200		108	70-130			
o-Xylene	0.103	0.0050	"	0.100		103	70-130			
1,2,4-Trimethylbenzene	0.117	0.0050	"	0.100		117	70-130			
1,3,5-Trimethylbenzene	0.120	0.0050	"	0.100		120	70-130			
Naphthalene	0.102	0.0038	"	0.100		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0409		"	0.0400		102	50-150			
Surrogate: Toluene-d8	0.0383		"	0.0400		95.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.4	50-150			

Matrix Spike (BGE0650-MS1)

Source: 2305367-01

Prepared & Analyzed: 05/18/23

Benzene	0.0747	0.0020	mg/kg	0.100	ND	74.7	70-130			
Toluene	0.0900	0.0050	"	0.100	ND	90.0	70-130			
Ethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
m,p-Xylene	0.209	0.010	"	0.200	ND	105	70-130			
o-Xylene	0.100	0.0050	"	0.100	ND	100	70-130			
1,2,4-Trimethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130			
1,3,5-Trimethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130			
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0428		"	0.0400		107	50-150			
Surrogate: Toluene-d8	0.0386		"	0.0400		96.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0378		"	0.0400		94.6	50-150			

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Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

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

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

Batch BGE0650 - EPA 5030 Soil MS

Matrix Spike Dup (BGE0650-MSD1)	Source: 2305367-01			Prepared & Analyzed: 05/18/23						
Benzene	0.0745	0.0020	mg/kg	0.100	ND	74.5	70-130	0.322	30	
Toluene	0.0889	0.0050	"	0.100	ND	88.9	70-130	1.24	30	
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130	2.12	30	
m,p-Xylene	0.212	0.010	"	0.200	ND	106	70-130	1.45	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	0.209	30	
1,2,4-Trimethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130	2.45	30	
1,3,5-Trimethylbenzene	0.120	0.0050	"	0.100	ND	120	70-130	1.85	30	
Naphthalene	0.106	0.0038	"	0.100	ND	106	70-130	1.68	30	
Surrogate: 1,2-Dichloroethane-d4	0.0400		"	0.0400		100	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0385		"	0.0400		96.2	50-150			



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGE0652 - EPA 3550A

Blank (BGE0652-BLK1)

Prepared: 05/18/23 Analyzed: 05/19/23

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	14.9		"	12.5		119	30-150			

LCS (BGE0652-BS1)

Prepared: 05/18/23 Analyzed: 05/19/23

C10-C28 (DRO)	363	50	mg/kg	500		72.7	70-130			
Surrogate: o-Terphenyl	14.6		"	12.5		117	30-150			

Matrix Spike (BGE0652-MS1)

Source: 2305367-01

Prepared: 05/18/23 Analyzed: 05/19/23

C10-C28 (DRO)	463	50	mg/kg	500	26.2	87.3	70-130			
Surrogate: o-Terphenyl	9.97		"	12.5		79.8	30-150			

Matrix Spike Dup (BGE0652-MSD1)

Source: 2305367-01

Prepared: 05/18/23 Analyzed: 05/19/23

C10-C28 (DRO)	469	50	mg/kg	500	26.2	88.5	70-130	1.33	20	
Surrogate: o-Terphenyl	14.6		"	12.5		117	30-150			



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PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGE0633 - EPA 5030 Soil MS

Blank (BGE0633-BLK1)

Prepared & Analyzed: 05/18/23

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	0.0398		"	0.0333		119	40-150			
Surrogate: Fluoranthene-d10	0.0354		"	0.0333		106	40-150			

LCS (BGE0633-BS1)

Prepared & Analyzed: 05/18/23

Acenaphthene	0.0329	0.00500	mg/kg	0.0333	98.7	31-137
Anthracene	0.0341	0.00500	"	0.0333	102	30-120
Benzo (a) anthracene	0.0341	0.00500	"	0.0333	102	30-120
Benzo (a) pyrene	0.0323	0.00500	"	0.0333	96.8	30-120
Benzo (b) fluoranthene	0.0352	0.00500	"	0.0333	105	30-120
Benzo (k) fluoranthene	0.0344	0.00500	"	0.0333	103	30-120
Chrysene	0.0331	0.00500	"	0.0333	99.4	30-120
Dibenz (a,h) anthracene	0.0314	0.00500	"	0.0333	94.2	30-120
Fluoranthene	0.0340	0.00500	"	0.0333	102	30-120
Fluorene	0.0348	0.00500	"	0.0333	104	30-120
Indeno (1,2,3-cd) pyrene	0.0334	0.00500	"	0.0333	100	30-120
Pyrene	0.0369	0.00500	"	0.0333	111	35-142
1-Methylnaphthalene	0.0379	0.00500	"	0.0333	114	35-142
2-Methylnaphthalene	0.0391	0.00500	"	0.0333	117	35-142
Surrogate: 2-Methylnaphthalene-d10	0.0289		"	0.0333	86.7	40-150
Surrogate: Fluoranthene-d10	0.0346		"	0.0333	104	40-150

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.



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGE0633 - EPA 5030 Soil MS

Matrix Spike (BGE0633-MS1)				Source: 2305374-01		Prepared & Analyzed: 05/18/23				
Acenaphthene	0.0373	0.00500	mg/kg	0.0333	ND	112	31-137			
Anthracene	0.0238	0.00500	"	0.0333	ND	71.5	30-120			
Benzo (a) anthracene	0.0277	0.00500	"	0.0333	0.00980	53.8	30-120			
Benzo (a) pyrene	0.0227	0.00500	"	0.0333	ND	68.0	30-120			
Benzo (b) fluoranthene	0.0258	0.00500	"	0.0333	ND	77.4	30-120			
Benzo (k) fluoranthene	0.0249	0.00500	"	0.0333	ND	74.8	30-120			
Chrysene	0.0309	0.00500	"	0.0333	0.00400	80.8	30-120			
Dibenz (a,h) anthracene	0.0215	0.00500	"	0.0333	ND	64.6	30-120			
Fluoranthene	0.0285	0.00500	"	0.0333	ND	85.6	30-120			
Fluorene	0.0413	0.00500	"	0.0333	0.0322	27.5	30-120			QM-01
Indeno (1,2,3-cd) pyrene	0.0184	0.00500	"	0.0333	ND	55.3	30-120			
Pyrene	0.0285	0.00500	"	0.0333	0.00292	76.9	35-142			
1-Methylnaphthalene	0.314	0.00500	"	0.0333	0.415	NR	15-130			QM-01
2-Methylnaphthalene	0.505	0.00500	"	0.0333	0.889	NR	15-130			QM-01
Surrogate: 2-Methylnaphthalene-d10	0.0200		"	0.0333		60.1	40-150			
Surrogate: Fluoranthene-d10	0.0274		"	0.0333		82.3	40-150			

Matrix Spike Dup (BGE0633-MSD1)				Source: 2305374-01		Prepared & Analyzed: 05/18/23				
Acenaphthene	0.0434	0.00500	mg/kg	0.0333	ND	130	31-137	15.3	30	
Anthracene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	9.26	30	
Benzo (a) anthracene	0.0278	0.00500	"	0.0333	0.00980	54.1	30-120	0.264	30	
Benzo (a) pyrene	0.0216	0.00500	"	0.0333	ND	64.8	30-120	4.74	30	
Benzo (b) fluoranthene	0.0245	0.00500	"	0.0333	ND	73.5	30-120	5.20	30	
Benzo (k) fluoranthene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	10.7	30	
Chrysene	0.0325	0.00500	"	0.0333	0.00400	85.5	30-120	4.93	30	
Dibenz (a,h) anthracene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	3.87	30	
Fluoranthene	0.0259	0.00500	"	0.0333	ND	77.8	30-120	9.55	30	
Fluorene	0.0458	0.00500	"	0.0333	0.0322	40.9	30-120	10.3	30	
Indeno (1,2,3-cd) pyrene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	3.27	30	
Pyrene	0.0256	0.00500	"	0.0333	0.00292	67.9	35-142	11.0	30	
1-Methylnaphthalene	0.667	0.00500	"	0.0333	0.415	757	15-130	71.9	50	QM-01
2-Methylnaphthalene	0.926	0.00500	"	0.0333	0.889	110	15-130	58.7	50	QM-01
Surrogate: 2-Methylnaphthalene-d10	0.0258		"	0.0333		77.5	40-150			
Surrogate: Fluoranthene-d10	0.0238		"	0.0333		71.4	40-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henehan

Reported:
05/30/23 08:38

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

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

Batch BGE0748 - EPA 3050B

Blank (BGE0748-BLK1)

Prepared: 05/22/23 Analyzed: 05/24/23

Boron ND 0.0100 mg/L

LCS (BGE0748-BS1)

Prepared: 05/22/23 Analyzed: 05/24/23

Boron 5.59 0.0100 mg/L 5.00 112 80-120

Duplicate (BGE0748-DUP1)

Source: 2305367-01

Prepared: 05/22/23 Analyzed: 05/24/23

Boron 0.125 0.0100 mg/L 0.155 20.8 20 QM-03

Matrix Spike (BGE0748-MS1)

Source: 2305367-01

Prepared: 05/22/23 Analyzed: 05/24/23

Boron 5.21 0.0100 mg/L 5.00 0.155 101 75-125

Matrix Spike Dup (BGE0748-MSD1)

Source: 2305367-01

Prepared: 05/22/23 Analyzed: 05/24/23

Boron 5.28 0.0100 mg/L 5.00 0.155 103 75-125 1.30 25



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Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

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

Summit Scientific

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

Batch BGE0768 - General Preparation

Blank (BGE0768-BLK1)

Prepared: 05/22/23 Analyzed: 05/25/23

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

LCS (BGE0768-BS1)

Prepared: 05/22/23 Analyzed: 05/25/23

Calcium	3.89	0.0500	mg/L wet	5.00	77.7	70-130
Magnesium	5.42	0.0500	"	5.00	108	70-130
Sodium	5.52	0.0500	"	5.00	110	70-130



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PO Box 1289
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Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

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

Summit Scientific

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

Batch BGE0740 - General Preparation

Duplicate (BGE0740-DUP1)		Source: 2305380-01			Prepared & Analyzed: 05/22/23					
% Solids	97.4		%		97.3		0.197		20	



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PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

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

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

Batch BGE0806 - General Preparation

Blank (BGE0806-BLK1)

Prepared & Analyzed: 05/23/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGE0806-BS1)

Prepared & Analyzed: 05/23/23

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

Duplicate (BGE0806-DUP1)

Source: 2305380-01

Prepared & Analyzed: 05/23/23

Specific Conductance (EC) 0.314 0.0100 mmhos/cm 0.320 1.80 20



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

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

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

Batch BGE0805 - General Preparation

LCS (BGE0805-BS1)

Prepared & Analyzed: 05/23/23

pH	9.08	pH Units	9.18	98.9	95-105
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Duplicate (BGE0805-DUP1)

Source: 2305380-01

Prepared & Analyzed: 05/23/23

pH	7.78	pH Units	7.80	0.257	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
05/30/23 08:38

Notes and Definitions

QM-03 Multiple analyses indicate the percent recovery exceeds the Quality Control acceptance criteria due to a matrix effect.

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