

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

June 12, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Bernhardt 013-07

Work Order # 2305416

Enclosed are the results of analyses for samples received by Summit Scientific on 05/17/23 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 013-07

Project Number: UWRWE-A2660-ABN

Project Manager: Paul Henehan

Reported:
06/12/23 11:53

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01 3feet	2305416-01	Soil	05/17/23 11:00	05/17/23 16:30
FL06 3feet	2305416-02	Soil	05/17/23 11:21	05/17/23 16:30
FL20 4feet	2305416-03	Soil	05/17/23 13:04	05/17/23 16:30

Case Narrative

Dan Peterson requested Metals be added to FL01-@3' on 5/31/2023. This report includes those results.



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

Lab ID	Page <u>1</u> of <u>1</u>
2305416	

		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 013-07</u>
City/State/Zip:			AFE#:
Phone: 303-261-6246		Project Name: <u>Bernhardt 013-07</u>	PO/Billing Codes: <u>UWRWE-A2660-ABN</u>
Sampler Name: Stanley Gilbert		Project Number: <u>UWRWE-A2660-ABN</u>	Contact: <u>Mike Montoya</u>

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested							Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron	Metals (915)		TDS, Chloride, Sulfate	HOLD
1	FL02 3 feet	5/17/23	11:00	2			X			X			X	X	X	X				
2	FL06 3 feet	5/17/23	11:21	2			X			X			X	X	X	X				
3	FL20 4 feet	5/17/23	13:04	2			X			X			X	X	X	X				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <u>[Signature]</u>	Date/Time: <u>5/17/23 15:08</u>	Received by: <u>Summit North</u>	Date/Time: <u>5/17/23 15:08</u>	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by: <u>SZ</u>	Date/Time: <u>5/17/23 16:30</u>	Received by: <u>[Signature]</u>	Date/Time: <u>5/17/23 16:00</u>	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	<input checked="" type="checkbox"/> Field Turb.	
Temperature Upon Receipt: <u>12.2</u>	Corrected Temperature: <u>0</u>	IR gun #:	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2305418

Client: Fremont Client Project ID: Bernhardt 013-07

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

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

Temp (°C) 12.2 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"/>	
<u>Additional Comments (if any):</u>				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS

Custodian Printed Name

5/17/23

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
Project Manager: Paul Henehan

Reported:
06/12/23 11:53

FL01 3feet
2305416-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGE0708	05/19/23	05/20/23	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: **05/17/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		109 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		95.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		98.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	79	50		mg/kg	1	BGE0710	05/19/23	05/20/23	EPA 8015M	
C28-C36 (ORO)	69	50		"	"	"	"	"	"	

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		84.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - Bernhardt 013-07

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Reported:
06/12/23 11:53

FL01 3feet
2305416-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGE0676	05/19/23	05/20/23	EPA 8270D SIM	
Anthracene	0.00718	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	0.0982	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	0.104	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	0.123	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0444	0.00500		"	"	"	"	"	"	
Chrysene	0.0988	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0140	0.00500		"	"	"	"	"	"	
Fluoranthene	0.191	0.00500		"	"	"	"	"	"	E
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0881	0.00500		"	"	"	"	"	"	
Pyrene	0.188	0.00500		"	"	"	"	"	"	E
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		85.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		40.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.150	0.0100		mg/L	1	BGE0819	05/23/23	05/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **05/17/23 11:00**

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

Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
 06/12/23 11:53

FL01 3feet
2305416-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.73	0.238		mg/kg dry	1	BGF0090	06/02/23	06/08/23	EPA 6020B	
Barium	100	0.475		"	"	"	"	"	"	
Cadmium	ND	0.238		"	"	"	"	"	"	
Copper	2.65	0.475		"	"	"	"	"	"	
Lead	14.5	0.238		"	"	"	"	"	"	
Nickel	2.79	0.475		"	"	"	"	"	"	
Selenium	ND	0.309	0.208	"	"	"	"	"	"	
Silver	0.0242	0.0238		"	"	"	"	"	"	
Zinc	13.8	0.475		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGF0260	06/07/23	06/08/23	EPA 7196A	

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

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	68.1	0.0594		mg/L dry	1	BGE0828	05/23/23	05/26/23	EPA 6020B	
Magnesium	9.22	0.0594		"	"	"	"	"	"	
Sodium	15.2	0.0594		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.459	0.00100		units	1	BGE0937	05/26/23	05/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Reported:
 06/12/23 11:53

**FL01 3feet
 2305416-01 (Soil)**

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.2			%	1	BGE0761	05/22/23	05/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.298	0.0100		mmhos/cm	1	BGE0866	05/24/23	05/24/23	EPA 120.1	

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

Date Sampled: **05/17/23 11:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.75			pH Units	1	BGE0865	05/24/23	05/24/23	EPA 9045D	



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
Project Manager: Paul Henehan

Reported:
06/12/23 11:53

FL06 3feet
2305416-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGE0708	05/19/23	05/20/23	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: **05/17/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		116 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGE0710	05/19/23	05/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		86.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
Project Manager: Paul Henehan

Reported:
06/12/23 11:53

FL06 3feet
2305416-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGE0676	05/19/23	05/20/23	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	0.00581	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		87.3 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		51.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.226	0.0100		mg/L	1	BGE0819	05/23/23	05/26/23	EPA 6020B	

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

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
 06/12/23 11:53

FL06 3feet
2305416-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	44.0	0.0530		mg/L dry	1	BGE0828	05/23/23	05/26/23	EPA 6020B	
Magnesium	23.6	0.0530		"	"	"	"	"	"	
Sodium	85.8	0.0530		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.59	0.00100		units	1	BGE0937	05/26/23	05/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.3			%	1	BGE0761	05/22/23	05/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.08	0.0100		mmhos/cm	1	BGE0866	05/24/23	05/24/23	EPA 120.1	

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

Date Sampled: **05/17/23 11:21**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.71			pH Units	1	BGE0865	05/24/23	05/24/23	EPA 9045D	

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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
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Reported:
 06/12/23 11:53

FL20 4feet
2305416-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGE0708	05/19/23	05/20/23	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: **05/17/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		114 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.7 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGE0710	05/19/23	05/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		82.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
Project Manager: Paul Henehan

Reported:
06/12/23 11:53

FL20 4feet
2305416-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGE0676	05/19/23	05/20/23	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: **05/17/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		78.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		41.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.145	0.0100		mg/L	1	BGE0819	05/23/23	05/26/23	EPA 6020B	

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

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
 06/12/23 11:53

FL20 4feet
2305416-03 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	173	0.0555		mg/L dry	1	BGE0828	05/23/23	05/26/23	EPA 6020B	
Magnesium	75.6	0.0555		"	"	"	"	"	"	
Sodium	2.01	0.0555		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0321	0.00100		units	1	BGE0937	05/26/23	05/26/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.1			%	1	BGE0761	05/22/23	05/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.134	0.0100		mmhos/cm	1	BGE0866	05/24/23	05/24/23	EPA 120.1	

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

Date Sampled: **05/17/23 13:04**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.67			pH Units	1	BGE0865	05/24/23	05/24/23	EPA 9045D	

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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
 06/12/23 11:53

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 BGE0708 - EPA 5030 Soil MS

Blank (BGE0708-BLK1)

Prepared: 05/19/23 Analyzed: 05/20/23

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>	0.0443		"	0.0400		111	50-150				
<i>Surrogate: Toluene-d8</i>	0.0386		"	0.0400		96.4	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0374		"	0.0400		93.4	50-150				

LCS (BGE0708-BS1)

Prepared: 05/19/23 Analyzed: 05/20/23

Benzene	0.0769	0.0020	mg/kg	0.100		76.9	70-130				
Toluene	0.0925	0.0050	"	0.100		92.5	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	0.107	0.0050	"	0.100		107	70-130				
1,2,4-Trimethylbenzene	0.125	0.0050	"	0.100		125	70-130				
1,3,5-Trimethylbenzene	0.129	0.0050	"	0.100		129	70-130				
Naphthalene	0.0869	0.0038	"	0.100		86.9	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0398		"	0.0400		99.6	50-150				
<i>Surrogate: Toluene-d8</i>	0.0373		"	0.0400		93.2	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0408		"	0.0400		102	50-150				

Matrix Spike (BGE0708-MS1)

Source: 2305388-01

Prepared: 05/19/23 Analyzed: 05/20/23

Benzene	0.0783	0.0020	mg/kg	0.100	ND	78.3	70-130				
Toluene	0.0943	0.0050	"	0.100	ND	94.3	70-130				
Ethylbenzene	0.114	0.0050	"	0.100	ND	114	70-130				
m,p-Xylene	0.231	0.010	"	0.200	ND	115	70-130				
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130				
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130				
1,3,5-Trimethylbenzene	0.126	0.0050	"	0.100	ND	126	70-130				
Naphthalene	0.0824	0.0038	"	0.100	ND	82.4	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0378		"	0.0400		94.5	50-150				
<i>Surrogate: Toluene-d8</i>	0.0385		"	0.0400		96.3	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0381		"	0.0400		95.3	50-150				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
 06/12/23 11:53

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 BGE0708 - EPA 5030 Soil MS

Matrix Spike Dup (BGE0708-MSD1)	Source: 2305388-01			Prepared: 05/19/23 Analyzed: 05/20/23						
Benzene	0.0760	0.0020	mg/kg	0.100	ND	76.0	70-130	2.92	30	
Toluene	0.0940	0.0050	"	0.100	ND	94.0	70-130	0.319	30	
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130	1.05	30	
m,p-Xylene	0.232	0.010	"	0.200	ND	116	70-130	0.376	30	
o-Xylene	0.105	0.0050	"	0.100	ND	105	70-130	0.934	30	
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130	1.20	30	
1,3,5-Trimethylbenzene	0.129	0.0050	"	0.100	ND	129	70-130	1.91	30	
Naphthalene	0.0902	0.0038	"	0.100	ND	90.2	70-130	9.11	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0370</i>		<i>"</i>	<i>0.0400</i>		<i>92.6</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0384</i>		<i>"</i>	<i>0.0400</i>		<i>95.9</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0386</i>		<i>"</i>	<i>0.0400</i>		<i>96.6</i>	<i>50-150</i>			



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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
 06/12/23 11:53

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 BGE0710 - EPA 3550A

Blank (BGE0710-BLK1)

Prepared: 05/19/23 Analyzed: 05/20/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	9.61		"	12.5		76.9	30-150				

LCS (BGE0710-BS1)

Prepared: 05/19/23 Analyzed: 05/20/23

C10-C28 (DRO)	491	50	mg/kg	500		98.2	70-130				
Surrogate: <i>o</i> -Terphenyl	9.56		"	12.5		76.5	30-150				

Matrix Spike (BGE0710-MS1)

Source: 2305388-01

Prepared: 05/19/23 Analyzed: 05/20/23

C10-C28 (DRO)	506	50	mg/kg	500	12.4	98.7	70-130				
Surrogate: <i>o</i> -Terphenyl	9.66		"	12.5		77.3	30-150				

Matrix Spike Dup (BGE0710-MSD1)

Source: 2305388-01

Prepared: 05/19/23 Analyzed: 05/20/23

C10-C28 (DRO)	524	50	mg/kg	500	12.4	102	70-130	3.61	20		
Surrogate: <i>o</i> -Terphenyl	9.70		"	12.5		77.6	30-150				



Fremont Environmental
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 Wellington CO, 80549

Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
 06/12/23 11:53

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 BGE0676 - EPA 5030 Soil MS

Blank (BGE0676-BLK1)

Prepared: 05/19/23 Analyzed: 05/20/23

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>0.0294</i>		"	<i>0.0333</i>		<i>88.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0274</i>		"	<i>0.0333</i>		<i>82.1</i>	<i>40-150</i>			

LCS (BGE0676-BS1)

Prepared: 05/19/23 Analyzed: 05/20/23

Acenaphthene	0.0310	0.00500	mg/kg	0.0333	93.0	31-137
Anthracene	0.0302	0.00500	"	0.0333	90.7	30-120
Benzo (a) anthracene	0.0333	0.00500	"	0.0333	100	30-120
Benzo (a) pyrene	0.0297	0.00500	"	0.0333	89.2	30-120
Benzo (b) fluoranthene	0.0301	0.00500	"	0.0333	90.3	30-120
Benzo (k) fluoranthene	0.0295	0.00500	"	0.0333	88.5	30-120
Chrysene	0.0324	0.00500	"	0.0333	97.1	30-120
Dibenz (a,h) anthracene	0.0306	0.00500	"	0.0333	91.9	30-120
Fluoranthene	0.0262	0.00500	"	0.0333	78.7	30-120
Fluorene	0.0290	0.00500	"	0.0333	87.1	30-120
Indeno (1,2,3-cd) pyrene	0.0325	0.00500	"	0.0333	97.4	30-120
Pyrene	0.0328	0.00500	"	0.0333	98.5	35-142
1-Methylnaphthalene	0.0391	0.00500	"	0.0333	117	35-142
2-Methylnaphthalene	0.0393	0.00500	"	0.0333	118	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0383</i>		"	<i>0.0333</i>	<i>115</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0277</i>		"	<i>0.0333</i>	<i>83.0</i>	<i>40-150</i>

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
Project Manager: Paul Henehan

Reported:
06/12/23 11:53

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 BGE0676 - EPA 5030 Soil MS

Matrix Spike (BGE0676-MS1)	Source: 2305388-01			Prepared: 05/19/23 Analyzed: 05/20/23						
Acenaphthene	0.0179	0.00500	mg/kg	0.0333	ND	53.7	31-137			
Anthracene	0.0182	0.00500	"	0.0333	ND	54.7	30-120			
Benzo (a) anthracene	0.0196	0.00500	"	0.0333	ND	58.9	30-120			
Benzo (a) pyrene	0.0155	0.00500	"	0.0333	ND	46.4	30-120			
Benzo (b) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.1	30-120			
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	52.0	30-120			
Chrysene	0.0193	0.00500	"	0.0333	ND	58.0	30-120			
Dibenz (a,h) anthracene	0.0176	0.00500	"	0.0333	ND	52.9	30-120			
Fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120			
Fluorene	0.0166	0.00500	"	0.0333	ND	49.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0151	0.00500	"	0.0333	ND	45.3	30-120			
Pyrene	0.0194	0.00500	"	0.0333	ND	58.3	35-142			
1-Methylnaphthalene	0.0285	0.00500	"	0.0333	ND	85.6	15-130			
2-Methylnaphthalene	0.0200	0.00500	"	0.0333	ND	60.1	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0278</i>		<i>"</i>	<i>0.0333</i>		<i>83.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0168</i>		<i>"</i>	<i>0.0333</i>		<i>50.3</i>	<i>40-150</i>			

Matrix Spike Dup (BGE0676-MSD1)	Source: 2305388-01			Prepared: 05/19/23 Analyzed: 05/20/23						
Acenaphthene	0.0150	0.00500	mg/kg	0.0333	ND	45.0	31-137	17.5	30	
Anthracene	0.0152	0.00500	"	0.0333	ND	45.6	30-120	18.2	30	
Benzo (a) anthracene	0.0168	0.00500	"	0.0333	ND	50.4	30-120	15.5	30	
Benzo (a) pyrene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	3.23	30	
Benzo (b) fluoranthene	0.0149	0.00500	"	0.0333	ND	44.7	30-120	17.1	30	
Benzo (k) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.9	30-120	16.8	30	
Chrysene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	17.2	30	
Dibenz (a,h) anthracene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	17.7	30	
Fluoranthene	0.0133	0.00500	"	0.0333	ND	40.0	30-120	19.8	30	
Fluorene	0.0149	0.00500	"	0.0333	ND	44.6	30-120	10.9	30	
Indeno (1,2,3-cd) pyrene	0.0162	0.00500	"	0.0333	ND	48.5	30-120	6.92	30	
Pyrene	0.0163	0.00500	"	0.0333	ND	48.9	35-142	17.6	30	
1-Methylnaphthalene	0.0224	0.00500	"	0.0333	ND	67.3	15-130	23.9	50	
2-Methylnaphthalene	0.0162	0.00500	"	0.0333	ND	48.7	15-130	21.0	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0221</i>		<i>"</i>	<i>0.0333</i>		<i>66.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0139</i>		<i>"</i>	<i>0.0333</i>		<i>41.8</i>	<i>40-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
 06/12/23 11:53

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 BGE0819 - EPA 3050B

Blank (BGE0819-BLK1)

Prepared: 05/23/23 Analyzed: 05/26/23

Boron ND 0.0100 mg/L

LCS (BGE0819-BS1)

Prepared: 05/23/23 Analyzed: 05/26/23

Boron 7.00 0.0100 mg/L 6.25 112 80-120

Duplicate (BGE0819-DUP1)

Source: 2305414-01

Prepared: 05/23/23 Analyzed: 05/26/23

Boron 0.630 0.0100 mg/L 0.291 73.5 20 QR-03

Matrix Spike (BGE0819-MS1)

Source: 2305414-01

Prepared: 05/23/23 Analyzed: 05/26/23

Boron 6.60 0.0100 mg/L 6.25 0.291 101 75-125

Matrix Spike Dup (BGE0819-MSD1)

Source: 2305414-01

Prepared: 05/23/23 Analyzed: 05/26/23

Boron 6.77 0.0100 mg/L 6.25 0.291 104 75-125 2.58 25



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
 06/12/23 11:53

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 BGF0090 - EPA 3050B

Blank (BGF0090-BLK1)

Prepared: 06/02/23 Analyzed: 06/08/23

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	"						
Selenium	ND	0.260	"						
Silver	ND	0.0200	"						
Zinc	ND	0.400	"						

LCS (BGF0090-BS1)

Prepared: 06/02/23 Analyzed: 06/08/23

Arsenic	38.9	0.200	mg/kg wet	40.0	97.3	80-120
Barium	39.5	0.400	"	40.0	98.9	80-120
Cadmium	1.99	0.200	"	2.00	99.3	80-120
Copper	40.6	0.400	"	40.0	102	80-120
Lead	20.6	0.200	"	20.0	103	80-120
Nickel	39.7	0.400	"	40.0	99.3	80-120
Selenium	4.26	0.260	"	4.00	106	80-120
Silver	2.00	0.0200	"	2.00	100	80-120
Zinc	39.0	0.400	"	40.0	97.4	80-120

Duplicate (BGF0090-DUP1)

Source: 2305416-01

Prepared: 06/02/23 Analyzed: 06/08/23

Arsenic	2.41	0.238	mg/kg dry	2.73	12.7	20
Barium	101	0.475	"	100	1.12	20
Cadmium	0.154	0.238	"	0.154	0.309	20
Copper	2.51	0.475	"	2.65	5.58	20
Lead	15.1	0.238	"	14.5	3.94	20
Nickel	2.64	0.475	"	2.79	5.38	20
Selenium	ND	0.309	"	ND		20
Silver	0.0257	0.0238	"	0.0242	5.71	20
Zinc	13.1	0.475	"	13.8	5.53	20



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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
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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 BGF0090 - EPA 3050B

Matrix Spike (BGF0090-MS1)

Source: 2305416-01

Prepared: 06/02/23 Analyzed: 06/08/23

Arsenic	16.1	0.238	mg/kg dry	47.5	2.73	28.1	75-125				QM-05
Barium	121	0.475	"	47.5	100	43.8	75-125				QM-05
Cadmium	2.36	0.238	"	2.38	0.154	92.9	75-125				
Copper	16.8	0.475	"	47.5	2.65	29.8	75-125				QM-05
Lead	34.0	0.238	"	23.8	14.5	82.1	75-125				
Nickel	17.2	0.475	"	47.5	2.79	30.3	75-125				QM-05
Selenium	4.09	0.309	"	4.75	ND	86.1	75-125				
Silver	2.27	0.0238	"	2.38	0.0242	94.5	75-125				
Zinc	28.2	0.475	"	47.5	13.8	30.1	75-125				QM-05

Matrix Spike Dup (BGF0090-MSD1)

Source: 2305416-01

Prepared: 06/02/23 Analyzed: 06/08/23

Arsenic	16.5	0.238	mg/kg dry	47.5	2.73	28.9	75-125	2.37	25		QM-05
Barium	127	0.475	"	47.5	100	56.2	75-125	4.75	25		QM-05
Cadmium	2.54	0.238	"	2.38	0.154	100	75-125	7.25	25		
Copper	17.2	0.475	"	47.5	2.65	30.7	75-125	2.35	25		QM-05
Lead	35.6	0.238	"	23.8	14.5	88.6	75-125	4.44	25		
Nickel	17.6	0.475	"	47.5	2.79	31.1	75-125	2.29	25		QM-05
Selenium	4.42	0.309	"	4.75	ND	93.0	75-125	7.68	25		
Silver	2.36	0.0238	"	2.38	0.0242	98.5	75-125	4.04	25		
Zinc	28.9	0.475	"	47.5	13.8	31.8	75-125	2.72	25		QM-05



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 Project Manager: Paul Henehan

Reported:
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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 BGF0260 - 3060A Mod

Blank (BGF0260-BLK1)											
											Prepared: 06/07/23 Analyzed: 06/08/23
Chromium, Hexavalent	ND	0.30	mg/kg wet								
LCS (BGF0260-BS1)											
											Prepared: 06/07/23 Analyzed: 06/08/23
Chromium, Hexavalent	23.4	0.30	mg/kg wet	25.0		93.6	80-120				
Duplicate (BGF0260-DUP1)											
											Source: 2305319-01 Prepared: 06/07/23 Analyzed: 06/08/23
Chromium, Hexavalent	ND	0.30	mg/kg dry		ND						20
Matrix Spike (BGF0260-MS1)											
											Source: 2305319-01 Prepared: 06/07/23 Analyzed: 06/08/23
Chromium, Hexavalent	33.4	0.30	mg/kg dry	32.2	ND	104	75-125				
Matrix Spike Dup (BGF0260-MSD1)											
											Source: 2305319-01 Prepared: 06/07/23 Analyzed: 06/08/23
Chromium, Hexavalent	35.0	0.30	mg/kg dry	32.2	ND	109	75-125	4.52			20



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

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

Batch BGE0828 - General Preparation

Blank (BGE0828-BLK1)

Prepared: 05/23/23 Analyzed: 05/26/23

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

LCS (BGE0828-BS1)

Prepared: 05/23/23 Analyzed: 05/26/23

Calcium	3.53	0.0500	mg/L wet	5.00	70.6	70-130
Magnesium	5.68	0.0500	"	5.00	114	70-130
Sodium	5.79	0.0500	"	5.00	116	70-130



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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
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Reported:
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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 BGE0866 - General Preparation

Blank (BGE0866-BLK1)

Prepared & Analyzed: 05/24/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGE0866-BS1)

Prepared & Analyzed: 05/24/23

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

Duplicate (BGE0866-DUP1)

Source: 2305086-05

Prepared & Analyzed: 05/24/23

Specific Conductance (EC) 0.572 0.0100 mmhos/cm 0.574 0.314 20



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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
 Project Manager: Paul Henehan

Reported:
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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 BGE0865 - General Preparation

LCS (BGE0865-BS1)

Prepared & Analyzed: 05/24/23

pH	9.03		pH Units	9.18		98.4	95-105		
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Duplicate (BGE0865-DUP1)

Source: 2305086-05

Prepared & Analyzed: 05/24/23

pH	7.58		pH Units	7.48			1.33	20	
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Project: Noble - Bernhardt 013-07

Project Number: UWRWE-A2660-ABN
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Reported:
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Notes and Definitions

- QR-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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