

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 17, 2024

Paul Henchan  
Fremont Environmental  
PO Box 1289  
Wellington, CO 80549

RE: Noble - Goldberg N14-13,20D

Work Order #2410232

Enclosed are the results of analyses for samples received by Summit Scientific on 10/15/24 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Natalie Tessier For Paul Shrewsbury  
President



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**ANALYTICAL REPORT FOR SAMPLES**

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
S1@3'	2410232-01	Soil	10/15/24 00:00	10/15/24 16:30
SW1@3'	2410232-02	Soil	10/15/24 00:00	10/15/24 16:30
SE1@3'	2410232-03	Soil	10/15/24 00:00	10/15/24 16:30

Summit Scientific

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

Lab ID	Page 1 of 1
2410232	

Send Data To:		Send Invoice To:	
Client: Fremont	Project Manager: Paul Henehan	Company: Noble/Chvron	
Address:	E-Mail:	Project Name/Location:	
City/State/Zip:		AFE#: UWRWE - 2139-ABN	
Phone:	Project Name: Goldberg NH-1320D	PO/Billing Codes:	
Sampler Name: Aaron O'Hara	Project Number: C023-211	Contact: Dan Peterson	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Other	Full Table 915	Analysis Requested	Special Instructions
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #				
1	S103	10/15/24		2			2				X		X		
2	SW103	↓		↓			↓				↓		↓		
3	SE103	↓		↓			↓				↓		↓		
4															
5															
6															
7															
8															
9															
10															
11															
12															
13															
14															
15															

Relinquished by: <i>Aaron O'Hara</i>	Date/Time: 10/15/24 1208	Received by: <i>Summit North Office</i>	Date/Time: 10/15/24 1208	TAT Business Days	Field DO	Notes:	
				Same Day	X		Field EC
Relinquished by: <i>SZ</i>	Date/Time: 10/15/24 1630	Received by: <i>[Signature]</i>	Date/Time: 10/15/24 1630	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: 5.9	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:				

S<sub>2</sub>

Sample Receipt Checklist

S2 Work Order# 2410232

Client: Fremont

Client Project ID: Goldberg N14-13 20D

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

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

-

Matrix (Check all that apply)

Air

Soil/Solid

Water

Other

Temp (°C)

59

Thermometer #

1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? <sup>(1)</sup> 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 20E</u>
If custody seals are present, are they intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe <sup>2+</sup> ), Hexavalent Chromium (Cr <sup>6+</sup> , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? <sup>(1)</sup>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? <sup>(1)</sup>	<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)? <sup>(1)</sup> Note the type of preservative in the comments column – HCl, H <sub>2</sub> SO <sub>4</sub> , NaOH, HNO <sub>3</sub> , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? <sup>(1)</sup> 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):

<sup>(1)</sup> If NO, then contact the client before proceeding with analysis and note in case narrative.

SN

Custodian Printed Name

10/15/24

Date/Time



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**S1@3'**  
**2410232-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHJ0592	10/15/24	10/15/24	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: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0380	95.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0415	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0387	96.7 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHJ0594	10/15/24	10/15/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.98	79.9 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**S1@3'**  
**2410232-01 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0604	10/16/24	10/17/24	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: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0191	57.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0209	62.6 %	40-150		"	"	"	"	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0609	10/16/24	10/16/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**S1@3'**  
**2410232-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.86	0.200	mg/kg dry	1	BHJ0612	10/16/24	10/16/24	EPA 6020B	
Barium	152	0.400	"	"	"	"	"	"	
Cadmium	0.319	0.200	"	"	"	"	"	"	
Copper	11.8	0.400	"	"	"	"	"	"	
Lead	8.41	0.200	"	"	"	"	"	"	
Nickel	14.6	0.400	"	"	"	"	"	"	
Silver	0.0519	0.0200	"	"	"	"	"	"	
Zinc	44.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: 10/15/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ0619	10/16/24	10/16/24	EPA 7196A	

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

Date Sampled: 10/15/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	43.5	0.0500	mg/L dry	1	BHJ0586	10/15/24	10/16/24	EPA 6020B	
Magnesium	7.64	0.0500	"	"	"	"	"	"	
Sodium	1.87	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: 10/15/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0688	0.00100	units	1	BHJ0674	10/17/24	10/17/24	Calculation	

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

Date Sampled: 10/15/24 00:00

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

**Reported:**  
 10/17/24 12:36

**S1@3'**  
**2410232-01 (Soil)**

**Summit Scientific**

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

% Solids	84.2	%	1	BHJ0602	10/16/24	10/16/24	Calculation
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**Specific Conductance by EPA Method 120.1, Saturated Paste Extraction**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.30	0.0100	mmhos/cm	1	BHJ0588	10/15/24	10/16/24	EPA 120.1	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.77		pH Units	1	BHJ0587	10/15/24	10/16/24	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**SW1@3'**  
**2410232-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHJ0592	10/15/24	10/15/24	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: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0369	92.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0411	103 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0388	96.9 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHJ0594	10/15/24	10/15/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.04	72.3 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

**SW1@3'**  
**2410232-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0604	10/16/24	10/17/24	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: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0138	41.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0154	46.2 %	40-150		"	"	"	"	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0609	10/16/24	10/16/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**SW1@3'**  
**2410232-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.04	0.200	mg/kg dry	1	BHJ0612	10/16/24	10/16/24	EPA 6020B	
Barium	60.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.46	0.400	"	"	"	"	"	"	
Lead	4.64	0.200	"	"	"	"	"	"	
Nickel	5.52	0.400	"	"	"	"	"	"	
Silver	0.0277	0.0200	"	"	"	"	"	"	
Zinc	20.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ0619	10/16/24	10/16/24	EPA 7196A	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.3	0.0500	mg/L dry	1	BHJ0586	10/15/24	10/16/24	EPA 6020B	
Magnesium	12.6	0.0500	"	"	"	"	"	"	
Sodium	10.9	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.428	0.00100	units	1	BHJ0674	10/17/24	10/17/24	Calculation	

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

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 PO Box 1289  
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Project: Noble - Goldberg N14-13,20D  
 Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

**SW1@3'**  
**2410232-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.0		%	1	BHJ0602	10/16/24	10/16/24	Calculation	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	2.48	0.0100	mmhos/cm	1	BHJ0588	10/15/24	10/16/24	EPA 120.1	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.44		pH Units	1	BHJ0587	10/15/24	10/16/24	EPA 9045D	

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Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**SE1@3'**  
**2410232-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHJ0592	10/15/24	10/15/24	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: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0383	95.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0414	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0386	96.6 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHJ0594	10/15/24	10/15/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.2	113 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**SE1@3'**  
**2410232-03 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0604	10/16/24	10/17/24	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: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0147	44.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0159	47.8 %	40-150		"	"	"	"	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0609	10/16/24	10/16/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **10/15/24 00:00**

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

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**SE1@3'**  
**2410232-03 (Soil)**

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**Total Metals by EPA 6020B**

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.89	0.200	mg/kg dry	1	BHJ0612	10/16/24	10/16/24	EPA 6020B	
Barium	56.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.17	0.400	"	"	"	"	"	"	
Lead	4.62	0.200	"	"	"	"	"	"	
Nickel	5.18	0.400	"	"	"	"	"	"	
Silver	0.0250	0.0200	"	"	"	"	"	"	
Zinc	19.5	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ0619	10/16/24	10/16/24	EPA 7196A	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	18.3	0.0500	mg/L dry	1	BHJ0586	10/15/24	10/16/24	EPA 6020B	
Magnesium	23.6	0.0500	"	"	"	"	"	"	
Sodium	5.29	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.193	0.00100	units	1	BHJ0674	10/17/24	10/17/24	Calculation	

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

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 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

**SE1@3'**  
**2410232-03 (Soil)**

**Summit Scientific**

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.8		%	1	BHJ0602	10/16/24	10/16/24	Calculation	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.291	0.0100	mmhos/cm	1	BHJ0588	10/15/24	10/16/24	EPA 120.1	

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

Date Sampled: **10/15/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.78		pH Units	1	BHJ0587	10/15/24	10/16/24	EPA 9045D	

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Project: Noble - Goldberg N14-13,20D

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Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

### 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 BHJ0592 - EPA 5030 Soil MS

##### Blank (BHJ0592-BLK1)

Prepared: 10/15/24 Analyzed: 10/16/24

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	0.0320		"	0.0400		79.9	50-150			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0375		"	0.0400		93.8	50-150			

##### LCS (BHJ0592-BS1)

Prepared: 10/15/24 Analyzed: 10/16/24

Benzene	0.0766	0.0020	mg/kg	0.0750		102	70-130			
Toluene	0.0755	0.0050	"	0.0750		101	70-130			
Ethylbenzene	0.0741	0.0050	"	0.0750		98.8	70-130			
m,p-Xylene	0.146	0.010	"	0.150		97.2	70-130			
o-Xylene	0.0737	0.0050	"	0.0750		98.3	70-130			
1,2,4-Trimethylbenzene	0.0684	0.0050	"	0.0750		91.2	70-130			
1,3,5-Trimethylbenzene	0.0706	0.0050	"	0.0750		94.2	70-130			
Naphthalene	0.0823	0.0038	"	0.0750		110	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0342		"	0.0400		85.4	50-150			
Surrogate: Toluene-d8	0.0412		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.4	50-150			

##### Matrix Spike (BHJ0592-MS1)

Source: 2410232-01

Prepared: 10/15/24 Analyzed: 10/16/24

Benzene	0.0650	0.0020	mg/kg	0.0750	ND	86.6	70-130			
Toluene	0.0641	0.0050	"	0.0750	ND	85.4	70-130			
Ethylbenzene	0.0630	0.0050	"	0.0750	ND	84.0	70-130			
m,p-Xylene	0.124	0.010	"	0.150	ND	82.8	70-130			
o-Xylene	0.0626	0.0050	"	0.0750	ND	83.4	70-130			
1,2,4-Trimethylbenzene	0.0553	0.0050	"	0.0750	ND	73.7	70-130			
1,3,5-Trimethylbenzene	0.0579	0.0050	"	0.0750	ND	77.2	70-130			
Naphthalene	0.0445	0.0038	"	0.0750	ND	59.3	70-130			QM-05
Surrogate: 1,2-Dichloroethane-d4	0.0349		"	0.0400		87.2	50-150			
Surrogate: Toluene-d8	0.0410		"	0.0400		103	50-150			
Surrogate: 4-Bromofluorobenzene	0.0386		"	0.0400		96.4	50-150			

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 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

**Volatile Organic Compounds by EPA Method 8260B - Quality Control**

**Summit Scientific**

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

**Batch BHJ0592 - EPA 5030 Soil MS**

Matrix Spike Dup (BHJ0592-MSD1)	Source: 2410232-01			Prepared: 10/15/24 Analyzed: 10/16/24						
Benzene	0.0632	0.0020	mg/kg	0.0750	ND	84.3	70-130	2.71	30	
Toluene	0.0611	0.0050	"	0.0750	ND	81.5	70-130	4.70	30	
Ethylbenzene	0.0601	0.0050	"	0.0750	ND	80.1	70-130	4.78	30	
m,p-Xylene	0.120	0.010	"	0.150	ND	79.7	70-130	3.82	30	
o-Xylene	0.0594	0.0050	"	0.0750	ND	79.2	70-130	5.16	30	
1,2,4-Trimethylbenzene	0.0526	0.0050	"	0.0750	ND	70.2	70-130	4.84	30	
1,3,5-Trimethylbenzene	0.0549	0.0050	"	0.0750	ND	73.2	70-130	5.32	30	
Naphthalene	0.0416	0.0038	"	0.0750	ND	55.5	70-130	6.69	30	QM-05
Surrogate: 1,2-Dichloroethane-d4	0.0345		"	0.0400		86.2	50-150			
Surrogate: Toluene-d8	0.0408		"	0.0400		102	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.0	50-150			

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 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

**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 BHJ0594 - EPA 3550A**

**Blank (BHJ0594-BLK1)**

Prepared: 10/15/24 Analyzed: 10/16/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.9		"	12.5	95.6	30-150					

**LCS (BHJ0594-BS1)**

Prepared: 10/15/24 Analyzed: 10/16/24

C10-C28 (DRO)	562	50	mg/kg	500	112	70-130					
Surrogate: <i>o</i> -Terphenyl	12.4		"	12.5	99.6	30-150					

**Matrix Spike (BHJ0594-MS1)**

Source: 2410232-01

Prepared: 10/15/24 Analyzed: 10/16/24

C10-C28 (DRO)	487	50	mg/kg	500	9.02	95.6	70-130				
Surrogate: <i>o</i> -Terphenyl	9.34		"	12.5	74.7	30-150					

**Matrix Spike Dup (BHJ0594-MSD1)**

Source: 2410232-01

Prepared: 10/15/24 Analyzed: 10/16/24

C10-C28 (DRO)	515	50	mg/kg	500	9.02	101	70-130	5.47	20		
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5	85.8	30-150					

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Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**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 BHJ0604 - EPA 5030 Soil MS**

**Blank (BHJ0604-BLK1)**

Prepared & Analyzed: 10/16/24

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>0.0274</i>		<i>"</i>	<i>0.0333</i>		<i>82.1</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0305</i>		<i>"</i>	<i>0.0333</i>		<i>91.5</i>	<i>40-150</i>			

**LCS (BHJ0604-BS1)**

Prepared & Analyzed: 10/16/24

Acenaphthene	0.0274	0.00500	mg/kg	0.0333		82.1	31-137			
Anthracene	0.0270	0.00500	"	0.0333		80.9	30-120			
Benzo (a) anthracene	0.0272	0.00500	"	0.0333		81.5	30-120			
Benzo (a) pyrene	0.0255	0.00500	"	0.0333		76.4	30-120			
Benzo (b) fluoranthene	0.0260	0.00500	"	0.0333		78.0	30-120			
Benzo (k) fluoranthene	0.0264	0.00500	"	0.0333		79.1	30-120			
Chrysene	0.0272	0.00500	"	0.0333		81.5	30-120			
Dibenz (a,h) anthracene	0.0226	0.00500	"	0.0333		67.7	30-120			
Fluoranthene	0.0272	0.00500	"	0.0333		81.5	30-120			
Fluorene	0.0283	0.00500	"	0.0333		84.8	30-120			
Indeno (1,2,3-cd) pyrene	0.0177	0.00500	"	0.0333		53.2	30-120			
Pyrene	0.0266	0.00500	"	0.0333		79.8	35-142			
1-Methylnaphthalene	0.0259	0.00500	"	0.0333		77.6	35-142			
2-Methylnaphthalene	0.0255	0.00500	"	0.0333		76.6	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0264</i>		<i>"</i>	<i>0.0333</i>		<i>79.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0276</i>		<i>"</i>	<i>0.0333</i>		<i>82.8</i>	<i>40-150</i>			

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Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

**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 BHJ0604 - EPA 5030 Soil MS**

<b>Matrix Spike (BHJ0604-MS1)</b>	<b>Source: 2410227-01</b>			<b>Prepared &amp; Analyzed: 10/16/24</b>							
Acenaphthene	0.0180	0.00500	mg/kg	0.0333	ND	54.0	31-137				
Anthracene	0.0179	0.00500	"	0.0333	ND	53.7	30-120				
Benzo (a) anthracene	0.0156	0.00500	"	0.0333	ND	46.7	30-120				
Benzo (a) pyrene	0.0134	0.00500	"	0.0333	ND	40.3	30-120				
Benzo (b) fluoranthene	0.0134	0.00500	"	0.0333	ND	40.3	30-120				
Benzo (k) fluoranthene	0.0137	0.00500	"	0.0333	ND	41.2	30-120				
Chrysene	0.0155	0.00500	"	0.0333	ND	46.4	30-120				
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.1	30-120				
Fluoranthene	0.0168	0.00500	"	0.0333	0.00622	31.7	30-120				
Fluorene	0.0168	0.00500	"	0.0333	ND	50.4	30-120				
Indeno (1,2,3-cd) pyrene	0.0148	0.00500	"	0.0333	ND	44.2	30-120				
Pyrene	0.0148	0.00500	"	0.0333	ND	44.4	35-142				
1-Methylnaphthalene	0.0150	0.00500	"	0.0333	ND	45.1	15-130				
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	46.0	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0155</i>		<i>"</i>	<i>0.0333</i>		<i>46.5</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0170</i>		<i>"</i>	<i>0.0333</i>		<i>51.0</i>	<i>40-150</i>				

<b>Matrix Spike Dup (BHJ0604-MSD1)</b>	<b>Source: 2410227-01</b>			<b>Prepared &amp; Analyzed: 10/16/24</b>							
Acenaphthene	0.0179	0.00500	mg/kg	0.0333	ND	53.8	31-137	0.223	30		
Anthracene	0.0176	0.00500	"	0.0333	ND	52.8	30-120	1.82	30		
Benzo (a) anthracene	0.0171	0.00500	"	0.0333	ND	51.2	30-120	9.11	30		
Benzo (a) pyrene	0.0155	0.00500	"	0.0333	ND	46.4	30-120	14.2	30		
Benzo (b) fluoranthene	0.0155	0.00500	"	0.0333	ND	46.6	30-120	14.6	30		
Benzo (k) fluoranthene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	15.3	30		
Chrysene	0.0166	0.00500	"	0.0333	ND	49.8	30-120	7.08	30		
Dibenz (a,h) anthracene	0.0136	0.00500	"	0.0333	ND	40.8	30-120	0.676	30		
Fluoranthene	0.0171	0.00500	"	0.0333	0.00622	32.6	30-120	1.85	30		
Fluorene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	9.09	30		
Indeno (1,2,3-cd) pyrene	0.0190	0.00500	"	0.0333	ND	56.9	30-120	24.9	30		
Pyrene	0.0155	0.00500	"	0.0333	ND	46.6	35-142	4.93	30		
1-Methylnaphthalene	0.0156	0.00500	"	0.0333	ND	46.8	15-130	3.82	50		
2-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.9	15-130	0.266	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0158</i>		<i>"</i>	<i>0.0333</i>		<i>47.4</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0176</i>		<i>"</i>	<i>0.0333</i>		<i>52.8</i>	<i>40-150</i>				

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Fremont Environmental  
 PO Box 1289  
 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

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

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

**Batch BHJ0609 - EPA 3050B**

**Blank (BHJ0609-BLK1)**

Prepared & Analyzed: 10/16/24

Boron ND 2.00 mg/L

**LCS (BHJ0609-BS1)**

Prepared & Analyzed: 10/16/24

Boron 5.09 2.00 mg/L 5.00 102 80-120

**Duplicate (BHJ0609-DUP1)**

Source: 2410232-01

Prepared & Analyzed: 10/16/24

Boron 0.303 2.00 mg/L 0.348 13.8 20

**Matrix Spike (BHJ0609-MS1)**

Source: 2410232-01

Prepared & Analyzed: 10/16/24

Boron 4.87 2.00 mg/L 5.02 0.348 90.1 75-125

**Matrix Spike Dup (BHJ0609-MSD1)**

Source: 2410232-01

Prepared & Analyzed: 10/16/24

Boron 5.10 2.00 mg/L 5.02 0.348 94.7 75-125 4.58 25

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Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

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

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

**Batch BHJ0612 - EPA 3050B**

**Blank (BHJ0612-BLK1)**

Prepared & Analyzed: 10/16/24

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

**LCS (BHJ0612-BS1)**

Prepared & Analyzed: 10/16/24

Arsenic	36.1	0.200	mg/kg wet	40.0	90.2	80-120
Barium	35.2	0.400	"	40.0	87.9	80-120
Cadmium	1.70	0.200	"	2.00	85.1	80-120
Copper	36.2	0.400	"	40.0	90.5	80-120
Lead	16.9	0.200	"	20.0	84.5	80-120
Nickel	36.5	0.400	"	40.0	91.2	80-120
Silver	1.70	0.0200	"	2.00	85.0	80-120
Zinc	36.7	0.400	"	40.0	91.9	80-120
Selenium	3.53	0.260	"	4.00	88.2	80-120

**Duplicate (BHJ0612-DUP1)**

Source: 2410228-01

Prepared & Analyzed: 10/16/24

Arsenic	3.25	0.200	mg/kg dry	6.19	62.3	20	QR-02
Barium	90.2	0.400	"	214	81.4	20	QR-02
Cadmium	0.256	0.200	"	0.301	16.2	20	
Copper	11.5	0.400	"	15.9	32.3	20	QR-02
Lead	8.77	0.200	"	10.8	20.8	20	QR-02
Nickel	10.4	0.400	"	13.9	28.9	20	QR-02
Silver	0.0358	0.0200	"	0.0513	35.7	20	QR-01
Zinc	41.3	0.400	"	56.4	31.0	20	QR-02
Selenium	ND	0.260	"	ND		20	

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Fremont Environmental  
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 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

**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 BHJ0612 - EPA 3050B**

**Matrix Spike (BHJ0612-MS1)**

Source: 2410228-01

Prepared & Analyzed: 10/16/24

Arsenic	53.7	0.200	mg/kg dry	55.5	6.19	85.7	75-125			
Barium	134	0.400	"	55.5	214	NR	75-125			QM-05
Cadmium	2.64	0.200	"	2.77	0.301	84.5	75-125			
Copper	61.7	0.400	"	55.5	15.9	82.5	75-125			
Lead	31.8	0.200	"	27.7	10.8	75.8	75-125			
Nickel	61.9	0.400	"	55.5	13.9	86.7	75-125			
Silver	2.45	0.0200	"	2.77	0.0513	86.4	75-125			
Zinc	93.4	0.400	"	55.5	56.4	66.6	75-125			QM-05
Selenium	4.74	0.260	"	5.55	ND	85.5	75-125			

**Matrix Spike Dup (BHJ0612-MSD1)**

Source: 2410228-01

Prepared & Analyzed: 10/16/24

Arsenic	52.6	0.200	mg/kg dry	57.3	6.19	81.1	75-125	2.09	25	
Barium	120	0.400	"	57.3	214	NR	75-125	10.8	25	QM-05
Cadmium	2.63	0.200	"	2.86	0.301	81.4	75-125	0.475	25	
Copper	59.9	0.400	"	57.3	15.9	76.9	75-125	2.88	25	
Lead	31.2	0.200	"	28.6	10.8	71.3	75-125	1.93	25	QM-05
Nickel	60.3	0.400	"	57.3	13.9	81.1	75-125	2.63	25	
Silver	2.41	0.0200	"	2.86	0.0513	82.5	75-125	1.37	25	
Zinc	89.4	0.400	"	57.3	56.4	57.5	75-125	4.37	25	QM-05
Selenium	4.89	0.260	"	5.73	ND	85.4	75-125	3.07	25	

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Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

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

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

**Batch BHJ0619 - 3060A Mod**

**Blank (BHJ0619-BLK1)**

Prepared & Analyzed: 10/16/24

Chromium, Hexavalent      ND      0.30 mg/kg wet

**LCS (BHJ0619-BS1)**

Prepared & Analyzed: 10/16/24

Chromium, Hexavalent      26.5      0.30 mg/kg wet      25.0      106      80-120

**Duplicate (BHJ0619-DUP1)**

**Source: 2410198-21**

Prepared & Analyzed: 10/16/24

Chromium, Hexavalent      ND      0.30 mg/kg dry      ND      20

**Matrix Spike (BHJ0619-MS1)**

**Source: 2410198-21**

Prepared & Analyzed: 10/16/24

Chromium, Hexavalent      26.3      0.30 mg/kg dry      28.0      ND      94.0      75-125

**Matrix Spike Dup (BHJ0619-MSD1)**

**Source: 2410198-21**

Prepared & Analyzed: 10/16/24

Chromium, Hexavalent      29.2      0.30 mg/kg dry      28.0      ND      104      75-125      10.3      20

Summit Scientific

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Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

**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 BHJ0586 - General Preparation**

**Blank (BHJ0586-BLK1)**

Prepared: 10/15/24 Analyzed: 10/16/24

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

**LCS (BHJ0586-BS1)**

Prepared: 10/15/24 Analyzed: 10/16/24

Calcium	5.62	0.0500	mg/L wet	5.00	112	70-130				
Magnesium	5.32	0.0500	"	5.00	106	70-130				
Sodium	5.31	0.0500	"	5.00	106	70-130				

Summit Scientific

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Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

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

**Summit Scientific**

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

**Batch BHJ0602 - General Preparation**

**Duplicate (BHJ0602-DUP1)**

**Source: 2410222-01**

**Prepared & Analyzed: 10/16/24**

% Solids	93.1		%		91.8			1.43	20	
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Fremont Environmental  
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Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

**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 BHJ0588 - General Preparation**

**Blank (BHJ0588-BLK1)**

Prepared: 10/15/24 Analyzed: 10/16/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHJ0588-BS1)**

Prepared: 10/15/24 Analyzed: 10/16/24

Specific Conductance (EC) 0.157 0.0100 mmhos/cm 0.150 105 95-105

**Duplicate (BHJ0588-DUP1)**

**Source: 2410225-01**

Prepared: 10/15/24 Analyzed: 10/16/24

Specific Conductance (EC) 3.18 0.0100 mmhos/cm 3.17 0.252 20

Summit Scientific

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Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
 Project Manager: Paul Henchan

**Reported:**  
 10/17/24 12:36

**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 BHJ0587 - General Preparation**

**LCS (BHJ0587-BS1)**

Prepared: 10/15/24 Analyzed: 10/16/24

pH	9.24		pH Units	9.18		101	95-105			
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**Duplicate (BHJ0587-DUP1)**

Source: 2410225-01

Prepared: 10/15/24 Analyzed: 10/16/24

pH	7.88		pH Units	7.92		0.506	20			
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Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN CO23-211  
Project Manager: Paul Henchan

**Reported:**  
10/17/24 12:36

### Notes and Definitions

- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QR-01 Analyses are not controlled on RPD values from sample concentrations below the reporting limit. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. Sample results were accepted based on LCS and/or LCSD recoveries and/or RPD values.
- 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