

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 16, 2024

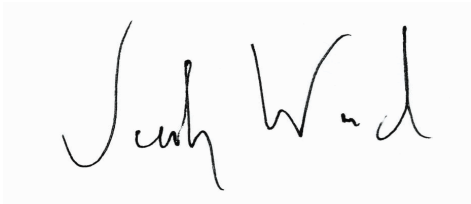
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Goldberg N14-13,20D

Work Order #2410204

Enclosed are the results of analyses for samples received by Summit Scientific on 10/14/24 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and a long, sweeping underline.

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

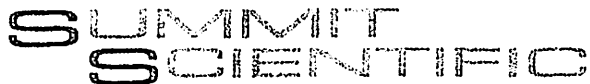
Reported:
10/16/24 17:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N1@3'	2410204-01	Soil	10/14/24 00:00	10/14/24 16:30
NE1@3'	2410204-02	Soil	10/14/24 00:00	10/14/24 16:30
NW1@3'	2410204-03	Soil	10/14/24 00:00	10/14/24 16:30
B1@7'	2410204-04	Soil	10/14/24 00:00	10/14/24 16:30

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

Lab ID 204
Page 1 of 1
2410

Client: Fremont		Send Data To: Project Manager: Paul Henehan		Send Invoice To: Company: <u>Noble/Cheson</u>	
Address:		E-Mail:		Project Name/Location:	
City/State/Zip:		Project Name: <u>Goldberg N14-13, 20D</u>		AFE#: <u>UWRWE-2139-ABN</u>	
Phone:		Project Number: <u>CD23-211</u>		PO/Billing Codes:	
Sampler Name: <u>Aaron Ollar</u>				Contact: <u>Den Peterson</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
1	N1E3'	10/14/24		2			2			X				
2	NE1E3'	↓		↓			↓			↓				
3	NW1E3'	↓		↓			↓			↓				
4	BE7'	↓		↓			↓			↓				
5														
6														
7														
8														
9														
10														
11														
12														
13														
14														
15														

Relinquished by: <u>Aaron Ollar</u>	Date/Time: <u>10/14/24 1556</u>	Received by: <u>Summit North Office</u>	Date/Time: <u>10/14/24 1556</u>	TAT Business Days	Field DO	Notes:
Relinquished by: <u>SZ</u>	Date/Time: <u>10/14/24 1630</u>	Received by: <u>[Signature]</u>	Date/Time: <u>10/14/24 1630</u>	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>8.3</u>	Corrected Temperature: <u>8</u>	IR gun #:	HNO3 lot #:			



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

N1@3'
2410204-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0516	10/14/24	10/14/24	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: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0504	126 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0419	105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0519	10/14/24	10/14/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.34	74.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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

Reported:
10/16/24 17:07

N1@3'
2410204-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0526	10/15/24	10/15/24	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: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0222	66.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0232	69.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0550	10/15/24	10/16/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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N1@3'
2410204-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.50	0.200	mg/kg dry	1	BHJ0530	10/15/24	10/16/24	EPA 6020B
Barium	149	0.400	"	"	"	"	"	"
Cadmium	0.303	0.200	"	"	"	"	"	"
Copper	6.03	0.400	"	"	"	"	"	"
Lead	8.98	0.200	"	"	"	"	"	"
Nickel	7.64	0.400	"	"	"	"	"	"
Silver	0.0469	0.0200	"	"	"	"	"	"
Zinc	22.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ0542	10/15/24	10/15/24	EPA 7196A	

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

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29.4	0.0500	mg/L dry	1	BHJ0527	10/15/24	10/15/24	EPA 6020B	
Magnesium	10.1	0.0500	"	"	"	"	"	"	
Sodium	2.46	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0998	0.00100	units	1	BHJ0615	10/16/24	10/16/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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N1@3'
2410204-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.7	%	1	BHJ0524	10/15/24	10/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/14/24 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.139	0.0100	mmhos/cm	1	BHJ0529	10/15/24	10/15/24	EPA 120.1	

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

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.77		pH Units	1	BHJ0531	10/15/24	10/15/24	EPA 9045D	

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Project: Noble - Goldberg N14-13,20D

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

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10/16/24 17:07

NE1@3'
2410204-02 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0516	10/14/24	10/14/24	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: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0399	99.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0407	102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0519	10/14/24	10/14/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.91	71.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: UWRWE-A2139-ABN
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10/16/24 17:07

NE1@3'
2410204-02 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0526	10/15/24	10/15/24	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: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0167	50.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0183	55.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0550	10/15/24	10/16/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWE-A2139-ABN
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10/16/24 17:07

NE1@3'
2410204-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.65	0.200	mg/kg dry	1	BHJ0530	10/15/24	10/16/24	EPA 6020B
Barium	153	0.400	"	"	"	"	"	"
Cadmium	0.336	0.200	"	"	"	"	"	"
Copper	6.49	0.400	"	"	"	"	"	"
Lead	9.38	0.200	"	"	"	"	"	"
Nickel	7.74	0.400	"	"	"	"	"	"
Silver	0.0524	0.0200	"	"	"	"	"	"
Zinc	24.4	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ0542	10/15/24	10/15/24	EPA 7196A	

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

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	35.3	0.0500	mg/L dry	1	BHJ0527	10/15/24	10/15/24	EPA 6020B	
Magnesium	10.9	0.0500	"	"	"	"	"	"	
Sodium	5.55	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.209	0.00100	units	1	BHJ0615	10/16/24	10/16/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 10/16/24 17:07

NE1@3'
2410204-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	83.8	%	1	BHJ0524	10/15/24	10/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/14/24 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.163	0.0100	mmhos/cm	1	BHJ0529	10/15/24	10/15/24	EPA 120.1	

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

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.81		pH Units	1	BHJ0531	10/15/24	10/15/24	EPA 9045D	

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Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

NW1@3'
2410204-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0516	10/14/24	10/14/24	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: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0410	102 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0416	104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0411	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0519	10/14/24	10/14/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.1	81.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: UWRWE-A2139-ABN
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Reported:
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NW1@3'
2410204-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0526	10/15/24	10/15/24	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: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0210	63.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0221	66.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0550	10/15/24	10/16/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/14/24 00:00**

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

Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

NW1@3'
2410204-03 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	2.39	0.200	mg/kg dry	1	BHJ0530	10/15/24	10/15/24	EPA 6020B
Barium	159	0.400	"	"	"	"	"	"
Cadmium	0.341	0.200	"	"	"	"	"	"
Copper	14.1	0.400	"	"	"	"	"	"
Lead	9.45	0.200	"	"	"	"	"	"
Nickel	17.5	0.400	"	"	"	"	"	"
Silver	0.0463	0.0200	"	"	"	"	"	"
Zinc	53.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ0542	10/15/24	10/15/24	EPA 7196A	

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

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	24.2	0.0500	mg/L dry	1	BHJ0527	10/15/24	10/15/24	EPA 6020B	
Magnesium	10.7	0.0500	"	"	"	"	"	"	
Sodium	2.27	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0966	0.00100	units	1	BHJ0615	10/16/24	10/16/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 PO Box 1289
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Project: Noble - Goldberg N14-13,20D

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

Reported:
 10/16/24 17:07

NW1@3'
2410204-03 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.9	%	1	BHJ0524	10/15/24	10/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/14/24 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.160	0.0100	mmhos/cm	1	BHJ0529	10/15/24	10/15/24	EPA 120.1	

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

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.54		pH Units	1	BHJ0531	10/15/24	10/15/24	EPA 9045D	

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Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

B1@7'
2410204-04 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHJ0516	10/14/24	10/14/24	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: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0415	104 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0418	105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0404	101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHJ0519	10/14/24	10/14/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.7	85.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

B1@7'
2410204-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHJ0526	10/15/24	10/15/24	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: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0193	58.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHJ0550	10/15/24	10/16/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **10/14/24 00:00**

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

Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

B1@7'
2410204-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.39	0.200	mg/kg dry	1	BHJ0530	10/15/24	10/15/24	EPA 6020B	
Barium	136	0.400	"	"	"	"	"	"	
Cadmium	0.269	0.200	"	"	"	"	"	"	
Copper	11.9	0.400	"	"	"	"	"	"	
Lead	8.61	0.200	"	"	"	"	"	"	
Nickel	14.7	0.400	"	"	"	"	"	"	
Silver	0.0548	0.0200	"	"	"	"	"	"	
Zinc	46.1	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHJ0542	10/15/24	10/15/24	EPA 7196A	

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

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	20.8	0.0500	mg/L dry	1	BHJ0527	10/15/24	10/15/24	EPA 6020B	
Magnesium	11.2	0.0500	"	"	"	"	"	"	
Sodium	10.5	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 10/14/24 00:00

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.461	0.00100	units	1	BHJ0615	10/16/24	10/16/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 10/14/24 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
 Project Manager: Paul Henchan

Reported:
 10/16/24 17:07

B1@7'
2410204-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	86.8	%	1	BHJ0524	10/15/24	10/15/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **10/14/24 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.185	0.0100	mmhos/cm	1	BHJ0529	10/15/24	10/15/24	EPA 120.1	

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

Date Sampled: **10/14/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.75		pH Units	1	BHJ0531	10/15/24	10/15/24	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHJ0516 - EPA 5030 Soil MS

Blank (BHJ0516-BLK1)

Prepared: 10/14/24 Analyzed: 10/15/24

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	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0382		"	0.0400		95.4	50-150				
<i>Surrogate: Toluene-d8</i>	0.0410		"	0.0400		102	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0408		"	0.0400		102	50-150				

LCS (BHJ0516-BS1)

Prepared: 10/14/24 Analyzed: 10/15/24

Benzene	0.0863	0.0020	mg/kg	0.100		86.3	70-130				
Toluene	0.0889	0.0050	"	0.100		88.9	70-130				
Ethylbenzene	0.0928	0.0050	"	0.100		92.8	70-130				
m,p-Xylene	0.181	0.010	"	0.200		90.3	70-130				
o-Xylene	0.0930	0.0050	"	0.100		93.0	70-130				
1,2,4-Trimethylbenzene	0.0895	0.0050	"	0.100		89.5	70-130				
1,3,5-Trimethylbenzene	0.0880	0.0050	"	0.100		88.0	70-130				
Naphthalene	0.0768	0.0038	"	0.100		76.8	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0381		"	0.0400		95.3	50-150				
<i>Surrogate: Toluene-d8</i>	0.0404		"	0.0400		101	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0392		"	0.0400		97.9	50-150				

Matrix Spike (BHJ0516-MS1)

Source: 2410209-01

Prepared: 10/14/24 Analyzed: 10/15/24

Benzene	0.0804	0.0020	mg/kg	0.100	ND	80.4	70-130				
Toluene	0.0828	0.0050	"	0.100	ND	82.8	70-130				
Ethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130				
m,p-Xylene	0.198	0.010	"	0.200	ND	99.2	70-130				
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130				
1,2,4-Trimethylbenzene	0.0993	0.0050	"	0.100	ND	99.3	70-130				
1,3,5-Trimethylbenzene	0.0975	0.0050	"	0.100	ND	97.5	70-130				
Naphthalene	0.0910	0.0038	"	0.100	ND	91.0	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0410		"	0.0400		103	50-150				
<i>Surrogate: Toluene-d8</i>	0.0409		"	0.0400		102	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0471		"	0.0400		118	50-150				

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Project: Noble - Goldberg N14-13,20D

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

Reported:
 10/16/24 17:07

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 BHJ0516 - EPA 5030 Soil MS

Matrix Spike Dup (BHJ0516-MSD1)	Source: 2410209-01			Prepared: 10/14/24 Analyzed: 10/15/24						
Benzene	0.0685	0.0020	mg/kg	0.100	ND	68.5	70-130	16.0	30	QM-05
Toluene	0.0715	0.0050	"	0.100	ND	71.5	70-130	14.7	30	
Ethylbenzene	0.0856	0.0050	"	0.100	ND	85.6	70-130	16.1	30	
m,p-Xylene	0.169	0.010	"	0.200	ND	84.4	70-130	16.1	30	
o-Xylene	0.0857	0.0050	"	0.100	ND	85.7	70-130	16.1	30	
1,2,4-Trimethylbenzene	0.0843	0.0050	"	0.100	ND	84.3	70-130	16.3	30	
1,3,5-Trimethylbenzene	0.0842	0.0050	"	0.100	ND	84.2	70-130	14.6	30	
Naphthalene	0.0756	0.0038	"	0.100	ND	75.6	70-130	18.6	30	
Surrogate: 1,2-Dichloroethane-d4	0.0421		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0414		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0490		"	0.0400		122	50-150			

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Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHJ0519 - EPA 3550A

Blank (BHJ0519-BLK1)

Prepared: 10/14/24 Analyzed: 10/15/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: <i>o</i> -Terphenyl	12.0		"	12.5		96.4	30-150			

LCS (BHJ0519-BS1)

Prepared: 10/14/24 Analyzed: 10/15/24

C10-C28 (DRO)	553	50	mg/kg	500		111	70-130			
Surrogate: <i>o</i> -Terphenyl	12.4		"	12.5		99.6	30-150			

Matrix Spike (BHJ0519-MS1)

Source: 2410204-01

Prepared: 10/14/24 Analyzed: 10/15/24

C10-C28 (DRO)	523	50	mg/kg	500	ND	105	70-130			
Surrogate: <i>o</i> -Terphenyl	11.3		"	12.5		90.6	30-150			

Matrix Spike Dup (BHJ0519-MSD1)

Source: 2410204-01

Prepared: 10/14/24 Analyzed: 10/15/24

C10-C28 (DRO)	493	50	mg/kg	500	ND	98.6	70-130	6.03	20	
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5		85.2	30-150			

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Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

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 BHJ0526 - EPA 5030 Soil MS

Blank (BHJ0526-BLK1)

Prepared & Analyzed: 10/15/24

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>	0.0246		"	0.0333		73.7	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0264		"	0.0333		79.3	40-150			

LCS (BHJ0526-BS1)

Prepared & Analyzed: 10/15/24

Acenaphthene	0.0263	0.00500	mg/kg	0.0333		78.8	31-137			
Anthracene	0.0265	0.00500	"	0.0333		79.5	30-120			
Benzo (a) anthracene	0.0273	0.00500	"	0.0333		82.0	30-120			
Benzo (a) pyrene	0.0258	0.00500	"	0.0333		77.3	30-120			
Benzo (b) fluoranthene	0.0255	0.00500	"	0.0333		76.6	30-120			
Benzo (k) fluoranthene	0.0257	0.00500	"	0.0333		77.0	30-120			
Chrysene	0.0271	0.00500	"	0.0333		81.4	30-120			
Dibenz (a,h) anthracene	0.0242	0.00500	"	0.0333		72.6	30-120			
Fluoranthene	0.0262	0.00500	"	0.0333		78.5	30-120			
Fluorene	0.0274	0.00500	"	0.0333		82.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0344	0.00500	"	0.0333		103	30-120			
Pyrene	0.0284	0.00500	"	0.0333		85.2	35-142			
1-Methylnaphthalene	0.0270	0.00500	"	0.0333		81.0	35-142			
2-Methylnaphthalene	0.0270	0.00500	"	0.0333		81.0	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0273		"	0.0333		82.0	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0271		"	0.0333		81.4	40-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

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 BHJ0526 - EPA 5030 Soil MS

Matrix Spike (BHJ0526-MS1)	Source: 2410190-01			Prepared & Analyzed: 10/15/24							
Acenaphthene	0.0273	0.00500	mg/kg	0.0333	ND	81.8	31-137				
Anthracene	0.0268	0.00500	"	0.0333	ND	80.5	30-120				
Benzo (a) anthracene	0.0286	0.00500	"	0.0333	ND	85.9	30-120				
Benzo (a) pyrene	0.0262	0.00500	"	0.0333	ND	78.5	30-120				
Benzo (b) fluoranthene	0.0261	0.00500	"	0.0333	ND	78.2	30-120				
Benzo (k) fluoranthene	0.0253	0.00500	"	0.0333	ND	75.8	30-120				
Chrysene	0.0275	0.00500	"	0.0333	ND	82.5	30-120				
Dibenz (a,h) anthracene	0.0251	0.00500	"	0.0333	ND	75.3	30-120				
Fluoranthene	0.0273	0.00500	"	0.0333	ND	82.0	30-120				
Fluorene	0.0278	0.00500	"	0.0333	ND	83.5	30-120				
Indeno (1,2,3-cd) pyrene	0.0151	0.00500	"	0.0333	ND	45.4	30-120				
Pyrene	0.0298	0.00500	"	0.0333	ND	89.5	35-142				
1-Methylnaphthalene	0.0290	0.00500	"	0.0333	ND	86.9	15-130				
2-Methylnaphthalene	0.0290	0.00500	"	0.0333	ND	87.1	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0283</i>		<i>"</i>	<i>0.0333</i>		<i>84.8</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0271</i>		<i>"</i>	<i>0.0333</i>		<i>81.3</i>	<i>40-150</i>				

Matrix Spike Dup (BHJ0526-MSD1)	Source: 2410190-01			Prepared & Analyzed: 10/15/24							
Acenaphthene	0.0233	0.00500	mg/kg	0.0333	ND	69.8	31-137	15.9	30		
Anthracene	0.0232	0.00500	"	0.0333	ND	69.7	30-120	14.4	30		
Benzo (a) anthracene	0.0243	0.00500	"	0.0333	ND	72.8	30-120	16.5	30		
Benzo (a) pyrene	0.0224	0.00500	"	0.0333	ND	67.2	30-120	15.5	30		
Benzo (b) fluoranthene	0.0222	0.00500	"	0.0333	ND	66.7	30-120	15.9	30		
Benzo (k) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.0	30-120	15.3	30		
Chrysene	0.0230	0.00500	"	0.0333	ND	69.0	30-120	17.9	30		
Dibenz (a,h) anthracene	0.0218	0.00500	"	0.0333	ND	65.4	30-120	14.0	30		
Fluoranthene	0.0233	0.00500	"	0.0333	ND	69.8	30-120	16.1	30		
Fluorene	0.0235	0.00500	"	0.0333	ND	70.5	30-120	16.8	30		
Indeno (1,2,3-cd) pyrene	0.0135	0.00500	"	0.0333	ND	40.4	30-120	11.7	30		
Pyrene	0.0257	0.00500	"	0.0333	ND	77.2	35-142	14.7	30		
1-Methylnaphthalene	0.0236	0.00500	"	0.0333	ND	70.8	15-130	20.4	50		
2-Methylnaphthalene	0.0249	0.00500	"	0.0333	ND	74.8	15-130	15.2	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0242</i>		<i>"</i>	<i>0.0333</i>		<i>72.6</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0242</i>		<i>"</i>	<i>0.0333</i>		<i>72.5</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
 Project Manager: Paul Henchan

Reported:
 10/16/24 17:07

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 BHJ0550 - EPA 3050B

Blank (BHJ0550-BLK1)

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

Boron ND 2.00 mg/L

LCS (BHJ0550-BS1)

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

Boron 4.99 2.00 mg/L 5.00 99.9 80-120

Duplicate (BHJ0550-DUP1)

Source: 2410204-01

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

Boron 0.197 2.00 mg/L 0.202 2.53 20

Matrix Spike (BHJ0550-MS1)

Source: 2410204-01

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

Boron 5.07 2.00 mg/L 5.00 0.202 97.4 75-125

Matrix Spike Dup (BHJ0550-MSD1)

Source: 2410204-01

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

Boron 5.10 2.00 mg/L 5.00 0.202 98.0 75-125 0.622 25

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

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 BHJ0530 - EPA 3050B

Blank (BHJ0530-BLK1)

Prepared: 10/15/24 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 (BHJ0530-BS1)

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

Arsenic	40.7	0.200	mg/kg wet	38.2	107	80-120
Barium	36.3	0.400	"	38.2	95.2	80-120
Cadmium	1.86	0.200	"	1.91	97.2	80-120
Copper	40.9	0.400	"	38.2	107	80-120
Lead	18.0	0.200	"	19.1	94.2	80-120
Nickel	40.1	0.400	"	38.2	105	80-120
Silver	1.86	0.0200	"	1.91	97.6	80-120
Zinc	40.2	0.400	"	38.2	105	80-120
Selenium	3.63	0.260	"	3.82	95.1	80-120

Duplicate (BHJ0530-DUP1)

Source: 2410204-01

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

Arsenic	2.58	0.200	mg/kg dry	2.50	3.08	20
Barium	145	0.400	"	149	2.69	20
Cadmium	0.316	0.200	"	0.303	4.02	20
Copper	6.16	0.400	"	6.03	2.08	20
Lead	8.93	0.200	"	8.98	0.554	20
Nickel	7.68	0.400	"	7.64	0.471	20
Silver	0.0470	0.0200	"	0.0469	0.185	20
Zinc	23.5	0.400	"	22.9	2.59	20
Selenium	ND	0.260	"	ND		20

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
10/16/24 17:07

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 BHJ0530 - EPA 3050B

Matrix Spike (BHJ0530-MS1)

Source: 2410204-01

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

Arsenic	26.7	0.200	mg/kg dry	47.7	2.50	50.8	75-125				QM-05
Barium	188	0.400	"	47.7	149	82.2	75-125				
Cadmium	2.72	0.200	"	2.38	0.303	101	75-125				
Copper	29.9	0.400	"	47.7	6.03	50.1	75-125				QM-05
Lead	31.5	0.200	"	23.8	8.98	94.5	75-125				
Nickel	31.2	0.400	"	47.7	7.64	49.4	75-125				QM-05
Silver	2.35	0.0200	"	2.38	0.0469	96.7	75-125				
Zinc	47.7	0.400	"	47.7	22.9	52.1	75-125				QM-05
Selenium	4.46	0.260	"	4.77	ND	93.5	75-125				

Matrix Spike Dup (BHJ0530-MSD1)

Source: 2410204-01

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

Arsenic	26.8	0.200	mg/kg dry	47.7	2.50	51.0	75-125	0.347	25		QM-05
Barium	192	0.400	"	47.7	149	90.8	75-125	2.17	25		
Cadmium	2.71	0.200	"	2.38	0.303	101	75-125	0.298	25		
Copper	29.9	0.400	"	47.7	6.03	50.1	75-125	0.00161	25		QM-05
Lead	31.5	0.200	"	23.8	8.98	94.5	75-125	0.00454	25		
Nickel	31.6	0.400	"	47.7	7.64	50.2	75-125	1.10	25		QM-05
Silver	2.34	0.0200	"	2.38	0.0469	96.1	75-125	0.610	25		
Zinc	48.4	0.400	"	47.7	22.9	53.5	75-125	1.33	25		QM-05
Selenium	4.58	0.260	"	4.77	ND	96.2	75-125	2.78	25		

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
 10/16/24 17:07

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 BHJ0542 - 3060A Mod

Blank (BHJ0542-BLK1)

Prepared & Analyzed: 10/15/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHJ0542-BS1)

Prepared & Analyzed: 10/15/24

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

Duplicate (BHJ0542-DUP1)

Source: 2410204-01

Prepared & Analyzed: 10/15/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHJ0542-MS1)

Source: 2410204-01

Prepared & Analyzed: 10/15/24

Chromium, Hexavalent 31.9 0.30 mg/kg dry 28.8 ND 111 75-125

Matrix Spike Dup (BHJ0542-MSD1)

Source: 2410204-01

Prepared & Analyzed: 10/15/24

Chromium, Hexavalent 31.6 0.30 mg/kg dry 28.8 ND 109 75-125 1.09 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
 10/16/24 17:07

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 BHJ0527 - General Preparation

Blank (BHJ0527-BLK1)

Prepared & Analyzed: 10/15/24

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

LCS (BHJ0527-BS1)

Prepared & Analyzed: 10/15/24

Calcium	5.95	0.0500	mg/L wet	5.00	119	70-130				
Magnesium	5.58	0.0500	"	5.00	112	70-130				
Sodium	5.58	0.0500	"	5.00	112	70-130				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
 10/16/24 17:07

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 BHJ0524 - General Preparation

Duplicate (BHJ0524-DUP1)

Source: 2410204-01

Prepared & Analyzed: 10/15/24

% Solids	85.2		%		86.7			1.71	20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
 10/16/24 17:07

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

Summit Scientific

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

Batch BHJ0529 - General Preparation

Blank (BHJ0529-BLK1)

Prepared & Analyzed: 10/15/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHJ0529-BS1)

Prepared & Analyzed: 10/15/24

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

Duplicate (BHJ0529-DUP1)

Source: 2410204-01

Prepared & Analyzed: 10/15/24

Specific Conductance (EC) 0.139 0.0100 mmhos/cm 0.139 0.359 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

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

Reported:
 10/16/24 17:07

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 BHJ0531 - General Preparation

LCS (BHJ0531-BS1)

Prepared & Analyzed: 10/15/24

pH	9.24	pH Units	9.18	101	95-105
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Duplicate (BHJ0531-DUP1)

Source: 2410204-01

Prepared & Analyzed: 10/15/24

pH	8.77	pH Units	8.77	0.00	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Goldberg N14-13,20D

Project Number: UWRWE-A2139-ABN

Project Manager: Paul Henchan

Reported:
10/16/24 17:07

Notes and Definitions

- 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