

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

July 09, 2024

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Spike State Excavation
Work Order #2407021

Enclosed are the results of analyses for samples received by Summit Scientific on 07/02/24 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black ink, appearing to read "Natalie Tessier". The signature is written in a cursive, flowing style.

Natalie Tessier For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N Wall - 4FT	2407021-01	Soil	07/02/24 00:00	07/02/24 16:30
E Wall - 4FT	2407021-02	Soil	07/02/24 00:00	07/02/24 16:30
S Wall - 4FT	2407021-03	Soil	07/02/24 00:00	07/02/24 16:30
W Wall - 4FT	2407021-04	Soil	07/02/24 00:00	07/02/24 16:30
B - 5FT	2407021-05	Soil	07/02/24 00:00	07/02/24 16:30
Backfill	2407021-06	Soil	07/02/24 00:00	07/02/24 16:30



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

Lab ID 2407021 Page 1 of 1

Client: Fremont Environmental		Send Data To: Project Manager: Paul Henehan		Send Invoice To: Company: <u>Noble</u>	
Address:		E-Mail: Fremont Distribution List		Project Name/Location:	
City/State/Zip:				AFE#:	
Phone: 303-261-6246		Project Name: <u>Spike State Excavation</u>		PO/Billing Codes:	
Sampler Name: Stanley Gilbert		Project Number: <u>CO23-156</u>		Contact: <u>Dan 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	BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron	Metals (915)		TDS, Chloride, Sulfate	HOLD	
1	N Wall - 4ft	7/2/24		2			X			X				X	X	X	X	X			
2	E Wall - 4ft																				
3	S Wall - 4ft																				
4	W Wall - 4ft																				
5	B - 5ft																				
6	Backfill																				
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>[Signature]</u>	Date/Time: <u>7/2/24 15:50</u>	Received by: <u>Summit North</u>	Date/Time: <u>7/2/24 15:50</u>	TAT Business Days	Field DO	Notes:
Relinquished by: <u>[Signature]</u>	Date/Time: <u>7/2/24 16:30</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7/2/24 16:30</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>9.6</u>	Corrected Temperature: <u>9</u>	IR gun #: <u>1</u>	HNO3 lot #: _____			

S₂

Sample Receipt Checklist

S2 Work Order# 2407021

Client: Fremont Client Project ID: Spike State Excavation

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

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

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Same day
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"/>	no sample times
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

AS
Custodian Printed Name

7/2/24
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

N Wall - 4FT
2407021-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0087	07/02/24	07/02/24	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: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0357	89.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHG0088	"	07/02/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	9.99	80.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Number: CO23-156
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N Wall - 4FT
2407021-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0097	07/03/24	07/04/24	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0125	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.00772	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0117	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	0.0120	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.0258	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.00795	0.00500	"	"	"	"	"	"	
Pyrene	0.0245	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0200	59.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0229	68.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0111	07/03/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

N Wall - 4FT
2407021-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.83	0.200	mg/kg dry	1	BHG0092	07/03/24	07/04/24	EPA 6020B	
Barium	37.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.59	0.400	"	"	"	"	"	"	
Lead	4.87	0.200	"	"	"	"	"	"	
Nickel	3.41	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	15.6	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0107	07/03/24	07/03/24	EPA 7196A	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	101	0.0500	mg/L dry	1	BHG0089	07/02/24	07/04/24	EPA 6020B	
Magnesium	11.6	0.0500	"	"	"	"	"	"	
Sodium	1.98	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0497	0.00100	units	1	BHG0192	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

N Wall - 4FT
2407021-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.4		%	1	BHG0118	07/03/24	07/03/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.297	0.0100	mmhos/cm	1	BHG0091	07/02/24	07/08/24	EPA 120.1	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.33		pH Units	1	BHG0090	07/02/24	07/08/24	EPA 9045D	

Summit Scientific

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Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

E Wall - 4FT
2407021-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0087	07/02/24	07/02/24	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: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0328	82.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0389	97.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHG0088	"	07/02/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.0	80.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

E Wall - 4FT
2407021-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0097	07/03/24	07/04/24	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: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0190	57.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0231	69.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0111	07/03/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/02/24 00:00**

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

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

**E Wall - 4FT
2407021-02 (Soil)**

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.34	0.180	mg/kg dry	1	BHG0092	07/03/24	07/04/24	EPA 6020B	
Barium	40.1	0.360	"	"	"	"	"	"	
Cadmium	ND	0.180	"	"	"	"	"	"	
Copper	4.77	0.360	"	"	"	"	"	"	
Lead	7.28	0.180	"	"	"	"	"	"	
Nickel	4.24	0.360	"	"	"	"	"	"	
Silver	ND	0.0180	"	"	"	"	"	"	
Zinc	18.2	0.360	"	"	"	"	"	"	
Selenium	ND	0.234	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0107	07/03/24	07/03/24	EPA 7196A	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	95.6	0.0500	mg/L dry	1	BHG0089	07/02/24	07/04/24	EPA 6020B	
Magnesium	16.3	0.0500	"	"	"	"	"	"	
Sodium	0.959	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0239	0.00100	units	1	BHG0192	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

**E Wall - 4FT
 2407021-02 (Soil)**

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.7		%	1	BHG0118	07/03/24	07/03/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.354	0.0100	mmhos/cm	1	BHG0091	07/02/24	07/08/24	EPA 120.1	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.66		pH Units	1	BHG0090	07/02/24	07/08/24	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

S Wall - 4FT
2407021-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0087	07/02/24	07/02/24	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: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0406	101 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0422	105 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHG0088	"	07/02/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.01	56.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

S Wall - 4FT
2407021-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0097	07/03/24	07/04/24	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: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0201	60.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0211	63.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0111	07/03/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/02/24 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 - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

S Wall - 4FT
2407021-03 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.37	0.200	mg/kg dry	1	BHG0092	07/03/24	07/04/24	EPA 6020B
Barium	33.4	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.72	0.400	"	"	"	"	"	"
Lead	3.84	0.200	"	"	"	"	"	"
Nickel	2.44	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	11.2	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0107	07/03/24	07/03/24	EPA 7196A	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	66.6	0.0500	mg/L dry	1	BHG0089	07/02/24	07/04/24	EPA 6020B	
Magnesium	8.65	0.0500	"	"	"	"	"	"	
Sodium	3.37	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.103	0.00100	units	1	BHG0192	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

S Wall - 4FT
2407021-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.3		%	1	BHG0118	07/03/24	07/03/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.323	0.0100	mmhos/cm	1	BHG0091	07/02/24	07/08/24	EPA 120.1	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.95		pH Units	1	BHG0090	07/02/24	07/08/24	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

W Wall - 4FT
2407021-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0087	07/02/24	07/02/24	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: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0419	105 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0415	104 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0417	104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHG0088	"	07/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.26	66.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

W Wall - 4FT
2407021-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0097	07/03/24	07/04/24	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: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0181	54.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0234	70.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0111	07/03/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/02/24 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 - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

W Wall - 4FT
2407021-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.84	0.200	mg/kg dry	1	BHG0092	07/03/24	07/04/24	EPA 6020B	
Barium	41.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.82	0.400	"	"	"	"	"	"	
Lead	5.14	0.200	"	"	"	"	"	"	
Nickel	3.58	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	15.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0107	07/03/24	07/03/24	EPA 7196A	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	125	0.0500	mg/L dry	1	BHG0089	07/02/24	07/04/24	EPA 6020B	
Magnesium	24.5	0.0500	"	"	"	"	"	"	
Sodium	1.53	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0328	0.00100	units	1	BHG0192	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State Excavation
 Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

**W Wall - 4FT
 2407021-04 (Soil)**

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.4		%	1	BHG0118	07/03/24	07/03/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.222	0.0100	mmhos/cm	1	BHG0091	07/02/24	07/08/24	EPA 120.1	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88		pH Units	1	BHG0090	07/02/24	07/08/24	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

B - 5FT
2407021-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0087	07/02/24	07/03/24	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: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0360	90.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0396	99.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0396	98.9 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHG0088	"	07/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.62	69.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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PO Box 1289
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Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

B - 5FT
2407021-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0097	07/03/24	07/04/24	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	0.00645	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	0.00745	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0192	57.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0227	68.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0111	07/03/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/02/24 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 - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

B - 5FT
2407021-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.51	0.200	mg/kg dry	1	BHG0092	07/03/24	07/04/24	EPA 6020B	
Barium	36.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.51	0.400	"	"	"	"	"	"	
Lead	4.83	0.200	"	"	"	"	"	"	
Nickel	3.12	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	15.2	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0107	07/03/24	07/03/24	EPA 7196A	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	126	0.0500	mg/L dry	1	BHG0089	07/02/24	07/04/24	EPA 6020B	
Magnesium	18.9	0.0500	"	"	"	"	"	"	
Sodium	4.26	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0936	0.00100	units	1	BHG0192	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

B - 5FT
2407021-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.7		%	1	BHG0118	07/03/24	07/03/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.331	0.0100	mmhos/cm	1	BHG0091	07/02/24	07/08/24	EPA 120.1	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.17		pH Units	1	BHG0090	07/02/24	07/08/24	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

Backfill
2407021-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHG0087	07/02/24	07/03/24	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: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0339	84.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0402	100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0411	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHG0088	"	07/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.6	84.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

Backfill
2407021-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHG0097	07/03/24	07/04/24	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: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0136	40.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHG0111	07/03/24	07/04/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.55	0.181	mg/kg dry	1	BHG0092	07/03/24	07/04/24	EPA 6020B
Barium	35.0	0.362	"	"	"	"	"	"
Cadmium	ND	0.181	"	"	"	"	"	"
Copper	3.03	0.362	"	"	"	"	"	"
Lead	3.66	0.181	"	"	"	"	"	"
Nickel	2.99	0.362	"	"	"	"	"	"
Silver	0.0184	0.0181	"	"	"	"	"	"
Zinc	13.2	0.362	"	"	"	"	"	"
Selenium	ND	0.236	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0107	07/03/24	07/03/24	EPA 7196A	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	50.3	0.0500	mg/L dry	1	BHG0089	07/02/24	07/04/24	EPA 6020B	
Magnesium	11.3	0.0500	"	"	"	"	"	"	
Sodium	3.09	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.102	0.00100	units	1	BHG0192	07/08/24	07/08/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

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2407021-06 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.5		%	1	BHG0118	07/03/24	07/03/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.307	0.0100	mmhos/cm	1	BHG0091	07/02/24	07/08/24	EPA 120.1	

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

Date Sampled: **07/02/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.90		pH Units	1	BHG0090	07/02/24	07/08/24	EPA 9045D	

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Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BHG0087 - EPA 5030 Soil MS

Blank (BHG0087-BLK1)

Prepared: 07/02/24 Analyzed: 07/03/24

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	0.0351		"	0.0400		87.8	50-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		102	50-150			

LCS (BHG0087-BS1)

Prepared: 07/02/24 Analyzed: 07/03/24

Benzene	0.0802	0.0020	mg/kg	0.100		80.2	70-130			
Toluene	0.0921	0.0050	"	0.100		92.1	70-130			
Ethylbenzene	0.0929	0.0050	"	0.100		92.9	70-130			
m,p-Xylene	0.184	0.010	"	0.200		91.8	70-130			
o-Xylene	0.0918	0.0050	"	0.100		91.8	70-130			
1,2,4-Trimethylbenzene	0.0856	0.0050	"	0.100		85.6	70-130			
1,3,5-Trimethylbenzene	0.0865	0.0050	"	0.100		86.5	70-130			
Naphthalene	0.0728	0.0038	"	0.100		72.8	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0362		"	0.0400		90.4	50-150			
Surrogate: Toluene-d8	0.0425		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0414		"	0.0400		103	50-150			

Matrix Spike (BHG0087-MS1)

Source: 2407019-01

Prepared: 07/02/24 Analyzed: 07/03/24

Benzene	0.0740	0.0020	mg/kg	0.100	ND	74.0	70-130			
Toluene	0.0853	0.0050	"	0.100	ND	85.3	70-130			
Ethylbenzene	0.0793	0.0050	"	0.100	ND	79.3	70-130			
m,p-Xylene	0.159	0.010	"	0.200	ND	79.7	70-130			
o-Xylene	0.0785	0.0050	"	0.100	ND	78.5	70-130			
1,2,4-Trimethylbenzene	0.0729	0.0050	"	0.100	ND	72.9	70-130			
1,3,5-Trimethylbenzene	0.0736	0.0050	"	0.100	ND	73.6	70-130			
Naphthalene	0.0678	0.0038	"	0.100	ND	67.8	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0360		"	0.0400		90.0	50-150			
Surrogate: Toluene-d8	0.0427		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0394		"	0.0400		98.5	50-150			

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Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

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 BHG0087 - EPA 5030 Soil MS

Matrix Spike Dup (BHG0087-MSD1)	Source: 2407019-01			Prepared: 07/02/24 Analyzed: 07/03/24						
Benzene	0.0772	0.0020	mg/kg	0.100	ND	77.2	70-130	4.29	30	
Toluene	0.0897	0.0050	"	0.100	ND	89.7	70-130	5.04	30	
Ethylbenzene	0.0800	0.0050	"	0.100	ND	80.0	70-130	0.829	30	
m,p-Xylene	0.161	0.010	"	0.200	ND	80.6	70-130	1.12	30	
o-Xylene	0.0793	0.0050	"	0.100	ND	79.3	70-130	1.03	30	
1,2,4-Trimethylbenzene	0.0747	0.0050	"	0.100	ND	74.7	70-130	2.44	30	
1,3,5-Trimethylbenzene	0.0760	0.0050	"	0.100	ND	76.0	70-130	3.21	30	
Naphthalene	0.0699	0.0038	"	0.100	ND	69.9	70-130	3.05	30	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0351</i>		<i>"</i>	<i>0.0400</i>		<i>87.7</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0420</i>		<i>"</i>	<i>0.0400</i>		<i>105</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0392</i>		<i>"</i>	<i>0.0400</i>		<i>97.9</i>	<i>50-150</i>			

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Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

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 BHG0088 - EPA 3550A

Blank (BHG0088-BLK1)

Prepared: 07/02/24 Analyzed: 07/03/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.1		"	12.5		88.8	30-150				

LCS (BHG0088-BS1)

Prepared: 07/02/24 Analyzed: 07/03/24

C10-C28 (DRO)	509	50	mg/kg	500		102	70-130				
Surrogate: <i>o</i> -Terphenyl	18.1		"	12.5		145	30-150				

Matrix Spike (BHG0088-MS1)

Source: 2407019-01

Prepared: 07/02/24 Analyzed: 07/03/24

C10-C28 (DRO)	406	50	mg/kg	500	ND	81.1	70-130				
Surrogate: <i>o</i> -Terphenyl	13.2		"	12.5		106	30-150				

Matrix Spike Dup (BHG0088-MSD1)

Source: 2407019-01

Prepared: 07/02/24 Analyzed: 07/03/24

C10-C28 (DRO)	400	50	mg/kg	500	ND	80.0	70-130	1.41	20		
Surrogate: <i>o</i> -Terphenyl	13.1		"	12.5		105	30-150				

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Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

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 BHG0097 - EPA 5030 Soil MS

Blank (BHG0097-BLK1)

Prepared & Analyzed: 07/03/24

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>0.0234</i>		<i>"</i>	<i>0.0333</i>		<i>70.2</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0241</i>		<i>"</i>	<i>0.0333</i>		<i>72.3</i>		<i>40-150</i>		

LCS (BHG0097-BS1)

Prepared & Analyzed: 07/03/24

Acenaphthene	0.0257	0.00500	mg/kg	0.0333		77.1		31-137		
Anthracene	0.0256	0.00500	"	0.0333		76.7		30-120		
Benzo (a) anthracene	0.0259	0.00500	"	0.0333		77.6		30-120		
Benzo (a) pyrene	0.0231	0.00500	"	0.0333		69.3		30-120		
Benzo (b) fluoranthene	0.0251	0.00500	"	0.0333		75.4		30-120		
Benzo (k) fluoranthene	0.0261	0.00500	"	0.0333		78.4		30-120		
Chrysene	0.0259	0.00500	"	0.0333		77.8		30-120		
Dibenz (a,h) anthracene	0.0196	0.00500	"	0.0333		58.9		30-120		
Fluoranthene	0.0258	0.00500	"	0.0333		77.4		30-120		
Fluorene	0.0252	0.00500	"	0.0333		75.6		30-120		
Indeno (1,2,3-cd) pyrene	0.0199	0.00500	"	0.0333		59.8		30-120		
Pyrene	0.0287	0.00500	"	0.0333		86.1		35-142		
1-Methylnaphthalene	0.0241	0.00500	"	0.0333		72.3		35-142		
2-Methylnaphthalene	0.0241	0.00500	"	0.0333		72.3		35-142		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0254</i>		<i>"</i>	<i>0.0333</i>		<i>76.2</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0273</i>		<i>"</i>	<i>0.0333</i>		<i>81.8</i>		<i>40-150</i>		

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Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

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 BHG0097 - EPA 5030 Soil MS

Matrix Spike (BHG0097-MS1)	Source: 2407018-01			Prepared & Analyzed: 07/03/24							
Acenaphthene	0.0186	0.00500	mg/kg	0.0333	ND	55.7	31-137				
Anthracene	0.0181	0.00500	"	0.0333	ND	54.2	30-120				
Benzo (a) anthracene	0.0186	0.00500	"	0.0333	ND	55.8	30-120				
Benzo (a) pyrene	0.0163	0.00500	"	0.0333	ND	49.0	30-120				
Benzo (b) fluoranthene	0.0176	0.00500	"	0.0333	ND	52.9	30-120				
Benzo (k) fluoranthene	0.0183	0.00500	"	0.0333	ND	54.9	30-120				
Chrysene	0.0183	0.00500	"	0.0333	ND	54.9	30-120				
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.1	30-120				
Fluoranthene	0.0182	0.00500	"	0.0333	ND	54.7	30-120				
Fluorene	0.0183	0.00500	"	0.0333	ND	54.9	30-120				
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	ND	42.9	30-120				
Pyrene	0.0195	0.00500	"	0.0333	ND	58.5	35-142				
1-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.4	15-130				
2-Methylnaphthalene	0.0159	0.00500	"	0.0333	ND	47.7	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0179</i>		<i>"</i>	<i>0.0333</i>		<i>53.7</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0191</i>		<i>"</i>	<i>0.0333</i>		<i>57.2</i>	<i>40-150</i>				

Matrix Spike Dup (BHG0097-MSD1)	Source: 2407018-01			Prepared & Analyzed: 07/03/24							
Acenaphthene	0.0197	0.00500	mg/kg	0.0333	ND	59.0	31-137	5.78	30		
Anthracene	0.0192	0.00500	"	0.0333	ND	57.7	30-120	6.32	30		
Benzo (a) anthracene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	5.95	30		
Benzo (a) pyrene	0.0177	0.00500	"	0.0333	ND	53.0	30-120	7.78	30		
Benzo (b) fluoranthene	0.0184	0.00500	"	0.0333	ND	55.1	30-120	4.06	30		
Benzo (k) fluoranthene	0.0192	0.00500	"	0.0333	ND	57.6	30-120	4.66	30		
Chrysene	0.0194	0.00500	"	0.0333	ND	58.3	30-120	6.02	30		
Dibenz (a,h) anthracene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	8.71	30		
Fluoranthene	0.0195	0.00500	"	0.0333	ND	58.5	30-120	6.75	30		
Fluorene	0.0194	0.00500	"	0.0333	ND	58.3	30-120	5.97	30		
Indeno (1,2,3-cd) pyrene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	3.10	30		
Pyrene	0.0210	0.00500	"	0.0333	ND	63.1	35-142	7.58	30		
1-Methylnaphthalene	0.0177	0.00500	"	0.0333	ND	53.1	15-130	3.18	50		
2-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130	5.78	50		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0177</i>		<i>"</i>	<i>0.0333</i>		<i>53.2</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0205</i>		<i>"</i>	<i>0.0333</i>		<i>61.6</i>	<i>40-150</i>				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

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

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

Batch BHG0111 - EPA 3050B

Blank (BHG0111-BLK1)

Prepared: 07/03/24 Analyzed: 07/04/24

Boron ND 2.00 mg/L

LCS (BHG0111-BS1)

Prepared: 07/03/24 Analyzed: 07/04/24

Boron 5.02 2.00 mg/L 5.00 100 80-120

Duplicate (BHG0111-DUP1)

Source: 2407020-01

Prepared: 07/03/24 Analyzed: 07/04/24

Boron 0.0649 2.00 mg/L 0.107 48.6 20 QR-01

Matrix Spike (BHG0111-MS1)

Source: 2407020-01

Prepared: 07/03/24 Analyzed: 07/04/24

Boron 5.13 2.00 mg/L 4.98 0.107 101 75-125

Matrix Spike Dup (BHG0111-MSD1)

Source: 2407020-01

Prepared: 07/03/24 Analyzed: 07/04/24

Boron 5.57 2.00 mg/L 4.98 0.107 110 75-125 8.34 25

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PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

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 BHG0092 - EPA 3050B

Blank (BHG0092-BLK1)

Prepared: 07/03/24 Analyzed: 07/04/24

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 (BHG0092-BS1)

Prepared: 07/03/24 Analyzed: 07/04/24

Arsenic	38.9	0.200	mg/kg wet	40.0	97.3	80-120		
Barium	39.7	0.400	"	40.0	99.1	80-120		
Cadmium	1.90	0.200	"	2.00	95.2	80-120		
Copper	39.0	0.400	"	40.0	97.4	80-120		
Lead	19.1	0.200	"	20.0	95.5	80-120		
Nickel	38.6	0.400	"	40.0	96.5	80-120		
Silver	1.91	0.0200	"	2.00	95.4	80-120		
Zinc	38.5	0.400	"	40.0	96.4	80-120		
Selenium	4.48	0.260	"	4.00	112	80-120		

Duplicate (BHG0092-DUP1)

Source: 2407020-01

Prepared: 07/03/24 Analyzed: 07/09/24

Arsenic	1.24	0.200	mg/kg dry	1.15	7.39	20		
Barium	30.2	0.400	"	38.7	24.5	20		QR-04
Cadmium	0.0867	0.200	"	0.0759	13.3	20		
Copper	4.99	0.400	"	4.61	8.04	20		
Lead	2.74	0.200	"	2.40	13.3	20		
Nickel	4.06	0.400	"	3.75	7.93	20		
Silver	0.00945	0.0200	"	0.0171	57.7	20		QR-01
Zinc	14.1	0.400	"	13.7	3.18	20		
Selenium	ND	0.260	"	ND		20		

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Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

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 BHG0092 - EPA 3050B

Matrix Spike (BHG0092-MS1)

Source: 2407020-01

Prepared: 07/03/24 Analyzed: 07/09/24

Arsenic	31.0	0.200	mg/kg dry	41.1	1.15	72.7	75-125				QM-07
Barium	78.0	0.400	"	41.1	38.7	95.8	75-125				
Cadmium	2.14	0.200	"	2.05	0.0759	100	75-125				
Copper	44.7	0.400	"	41.1	4.61	97.5	75-125				
Lead	22.4	0.200	"	20.5	2.40	97.3	75-125				
Nickel	44.3	0.400	"	41.1	3.75	98.6	75-125				
Silver	1.99	0.0200	"	2.05	0.0171	96.2	75-125				
Zinc	54.2	0.400	"	41.1	13.7	98.7	75-125				
Selenium	3.53	0.260	"	4.11	ND	86.0	75-125				

Matrix Spike Dup (BHG0092-MSD1)

Source: 2407020-01

Prepared: 07/03/24 Analyzed: 07/09/24

Arsenic	30.1	0.200	mg/kg dry	41.1	1.15	70.6	75-125	2.87	25		QM-07
Barium	92.7	0.400	"	41.1	38.7	132	75-125	17.3	25		QM-05
Cadmium	2.17	0.200	"	2.05	0.0759	102	75-125	1.36	25		
Copper	45.6	0.400	"	41.1	4.61	99.7	75-125	1.96	25		
Lead	23.0	0.200	"	20.5	2.40	100	75-125	2.89	25		
Nickel	44.9	0.400	"	41.1	3.75	100	75-125	1.35	25		
Silver	2.02	0.0200	"	2.05	0.0171	97.3	75-125	1.09	25		
Zinc	56.1	0.400	"	41.1	13.7	103	75-125	3.38	25		
Selenium	3.52	0.260	"	4.11	ND	85.7	75-125	0.338	25		

Post Spike (BHG0092-PS1)

Source: 2407020-01

Prepared: 07/03/24 Analyzed: 07/04/24

Arsenic	110		ug/l	100	2.80	107	75-125				
Barium	168		"	100	94.1	74.3	75-125				QM-01
Cadmium	5.13		"	5.00	0.185	99.0	75-125				
Copper	114		"	100	11.2	103	75-125				
Lead	54.5		"	50.0	5.85	97.3	75-125				
Nickel	112		"	100	9.14	102	75-125				
Silver	4.98		"	5.00	0.0417	98.7	75-125				
Zinc	136		"	100	33.3	102	75-125				
Selenium	10.9		"	10.0	0.0540	108	75-125				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

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 BHG0107 - 3060A Mod

Blank (BHG0107-BLK1)

Prepared & Analyzed: 07/03/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHG0107-BS1)

Prepared & Analyzed: 07/03/24

Chromium, Hexavalent 25.9 0.30 mg/kg wet 25.0 104 80-120

Duplicate (BHG0107-DUP1)

Source: 2407020-01

Prepared & Analyzed: 07/03/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHG0107-MS1)

Source: 2407020-01

Prepared & Analyzed: 07/03/24

Chromium, Hexavalent 26.9 0.30 mg/kg dry 25.7 ND 105 75-125

Matrix Spike Dup (BHG0107-MSD1)

Source: 2407020-01

Prepared & Analyzed: 07/03/24

Chromium, Hexavalent 26.0 0.30 mg/kg dry 25.7 ND 101 75-125 3.50 20

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Fremont Environmental
 PO Box 1289
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Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

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 BHG0089 - General Preparation

Blank (BHG0089-BLK1)

Prepared: 07/02/24 Analyzed: 07/03/24

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

LCS (BHG0089-BS1)

Prepared: 07/02/24 Analyzed: 07/03/24

Calcium	5.48	0.0500	mg/L wet	5.00	110	70-130				
Magnesium	5.38	0.0500	"	5.00	108	70-130				
Sodium	5.50	0.0500	"	5.00	110	70-130				

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Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

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 BHG0118 - General Preparation

Duplicate (BHG0118-DUP1)

Source: 2407020-01

Prepared & Analyzed: 07/03/24

% Solids	96.6		%		97.4			0.757		20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

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 BHG0091 - General Preparation

Blank (BHG0091-BLK1)

Prepared: 07/02/24 Analyzed: 07/08/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHG0091-BS1)

Prepared: 07/02/24 Analyzed: 07/08/24

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BHG0091-DUP1)

Source: 2407020-01

Prepared: 07/02/24 Analyzed: 07/08/24

Specific Conductance (EC) 0.243 0.0100 mmhos/cm 0.247 1.84 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
 Project Manager: Paul Henchan

Reported:
 07/09/24 13:48

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 BHG0090 - General Preparation

LCS (BHG0090-BS1)

Prepared: 07/02/24 Analyzed: 07/08/24

pH	9.16	pH Units	9.18	99.8	95-105
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Duplicate (BHG0090-DUP1)

Source: 2407020-01

Prepared: 07/02/24 Analyzed: 07/08/24

pH	8.82	pH Units	8.85	0.340	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State Excavation

Project Number: CO23-156
Project Manager: Paul Henchan

Reported:
07/09/24 13:48

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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.
- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- DET Analyte DETECTED
- ND Analyte NOT DETECTED at or above the reporting limit
- NR Not Reported
- dry Sample results reported on a dry weight basis
- RPD Relative Percent Difference