

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 02, 2024

Paul Henchan

Fremont Environmental

PO Box 1289

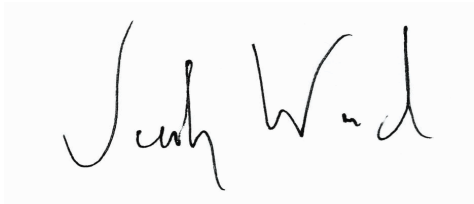
Wellington, CO 80549

RE: Noble - Farr T4N-R64W-S18 L01

Work Order #2407074

Enclosed are the results of analyses for samples received by Summit Scientific on 07/08/24 15:55. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B04@13.0'	2407074-01	Soil	07/08/24 00:00	07/08/24 15:55

Case Narrative

Rerun analyses were performed by client request on 7/24/2024.
The rerun results included in this report are denoted with "RE#."

This is a revision of the report originally sent on 7/15/2024 at 07:42 MT.

Summit Scientific

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

Lab ID	Page <u>1</u> of <u>1</u>
2407074	

Client: <u>Fremont Env</u>		Send Data To:		Send Invoice To:	
Address:		Project Manager: <u>Paul Henehan</u>		Company: <u>Noble</u>	
City/State/Zip:		E-Mail: <u>Paulh@fremontenv.com</u>		Project Name/Location:	
Phone:		<u>jeff@fremontenv.com</u> <u>Ethan@fremontenv.com</u>		AFE#:	
Sampler Name: <u>JG</u>		Project Name: <u>Farr TUN-R64W-S18 L01</u>		PO/Billing Codes:	
		Project Number:		Contact:	

					Preservative				Matrix				Analysis Requested						Special Instructions		
ID	Sample Description	Date Sampled	Time Sampled	# of containers	HCl	HNO3	None	Other _____	Water	Soil	Air-Canister #	Other _____	BTEX+N	TMBs (915)	DRD, ORO, GRO	PAHs (915)	EC, pH, SAR, ^{Boron}	Metals (915)			
1	B04@13.0'	7/8/24		2			X			X			X	X	X	X	X	X			
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>[Signature]</u>	Date/Time: <u>7/8/24 15:55</u>	Received by: <u>[Signature]</u>	Date/Time: <u>7/8/24 15:55</u>	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: <u>24.8</u>		Corrected Temperature _____		IR gun #: _____	HNO3 lot #: _____	

S₂

Sample Receipt Checklist

S2 Work Order# 2407074Client: Fremont Client Project ID: Fair T4N-R64V-S18 L61Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐ Airbill #: ☐
☒ ☐ ☐ ☐ ☐
Matrix (Check all that apply) Air ☐ Soil/Solid ☒ Water ☐ Other ☐Temp (°C) 24.8 Thermometer # 2

	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"/>	on site
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No Sample time
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.				

J. H. U. d
Custodian Printed Name

7/8/24 15:55
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

B04@13.0'
2407074-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHG0197	07/08/24	07/08/24	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: **07/08/24 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0347	86.8 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0395	98.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0408	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHG0198	"	07/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	8.05	64.4 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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B04@13.0'
2407074-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHG0203	07/09/24	07/09/24	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: **07/08/24 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0160	47.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0163	48.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHG0213	07/09/24	07/11/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henahan

Reported:
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B04@13.0'
2407074-01 (Soil)

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Total Metals by EPA 6020B

Barium	25.6	0.400	mg/kg dry	1	BHG0199	07/09/24	07/11/24	EPA 6020B
Cadmium	0.229	0.200	"	"	"	"	"	"
Copper	6.13	0.400	"	"	"	"	"	"
Lead	10.2	0.200	"	"	"	"	"	"
Nickel	5.75	0.400	"	"	"	"	"	"
Silver	0.0236	0.0200	"	"	"	"	"	"
Zinc	31.1	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHG0219	07/09/24	07/09/24	EPA 7196A	

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

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	22.0	0.0500	mg/L dry	1	BHG0194	07/08/24	07/09/24	EPA 6020B	
Magnesium	26.6	0.0500	"	"	"	"	"	"	
Sodium	76.4	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.59	0.00100	units	1	BHG0260	07/10/24	07/10/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.7		%	1	BHG0212	07/09/24	07/09/24	Calculation	

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Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/02/24 14:35

B04@13.0'
2407074-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.848	0.0100		mmhos/cm	1	BHG0195	07/08/24	07/09/24	EPA 120.1	

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

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	8.16			pH Units	1	BHG0196	07/08/24	07/09/24	EPA 9045D	

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Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

B04@13.0'
2407074-01RE1 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **07/08/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	2.10	0.200		mg/kg dry	1	BHG0875	07/09/24	08/02/24	EPA 6020B	

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Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHG0197 - EPA 5030 Soil MS

Blank (BHG0197-BLK1)

Prepared & Analyzed: 07/08/24

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	0.0299	"	0.0400	74.8	50-150
Surrogate: Toluene-d8	0.0410	"	0.0400	102	50-150
Surrogate: 4-Bromofluorobenzene	0.0408	"	0.0400	102	50-150

LCS (BHG0197-BS1)

Prepared: 07/08/24 Analyzed: 07/09/24

Benzene	0.0855	0.0020	mg/kg	0.100	85.5	70-130
Toluene	0.102	0.0050	"	0.100	102	70-130
Ethylbenzene	0.100	0.0050	"	0.100	100	70-130
m,p-Xylene	0.199	0.010	"	0.200	99.6	70-130
o-Xylene	0.100	0.0050	"	0.100	100	70-130
1,2,4-Trimethylbenzene	0.0967	0.0050	"	0.100	96.7	70-130
1,3,5-Trimethylbenzene	0.0967	0.0050	"	0.100	96.7	70-130
Naphthalene	0.0790	0.0038	"	0.100	79.0	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0340	"	0.0400	85.1	50-150
Surrogate: Toluene-d8	0.0417	"	0.0400	104	50-150
Surrogate: 4-Bromofluorobenzene	0.0397	"	0.0400	99.2	50-150

Matrix Spike (BHG0197-MS1)

Source: 2407074-01

Prepared: 07/08/24 Analyzed: 07/09/24

Benzene	0.0799	0.0020	mg/kg	0.100	ND	79.9	70-130
Toluene	0.0947	0.0050	"	0.100	ND	94.7	70-130
Ethylbenzene	0.0916	0.0050	"	0.100	ND	91.6	70-130
m,p-Xylene	0.177	0.010	"	0.200	ND	88.6	70-130
o-Xylene	0.0914	0.0050	"	0.100	ND	91.4	70-130
1,2,4-Trimethylbenzene	0.0889	0.0050	"	0.100	ND	88.9	70-130
1,3,5-Trimethylbenzene	0.0884	0.0050	"	0.100	ND	88.4	70-130
Naphthalene	0.0765	0.0038	"	0.100	ND	76.5	70-130

Surrogate: 1,2-Dichloroethane-d4	0.0296	"	0.0400	74.0	50-150
Surrogate: Toluene-d8	0.0428	"	0.0400	107	50-150
Surrogate: 4-Bromofluorobenzene	0.0391	"	0.0400	97.6	50-150

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Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHG0197 - EPA 5030 Soil MS

Matrix Spike Dup (BHG0197-MSD1)		Source: 2407074-01			Prepared: 07/08/24 Analyzed: 07/09/24					
Benzene	0.0730	0.0020	mg/kg	0.100	ND	73.0	70-130	8.95	30	
Toluene	0.0872	0.0050	"	0.100	ND	87.2	70-130	8.35	30	
Ethylbenzene	0.0862	0.0050	"	0.100	ND	86.2	70-130	5.97	30	
m,p-Xylene	0.171	0.010	"	0.200	ND	85.5	70-130	3.62	30	
o-Xylene	0.0844	0.0050	"	0.100	ND	84.4	70-130	7.89	30	
1,2,4-Trimethylbenzene	0.0833	0.0050	"	0.100	ND	83.3	70-130	6.55	30	
1,3,5-Trimethylbenzene	0.0840	0.0050	"	0.100	ND	84.0	70-130	5.08	30	
Naphthalene	0.0698	0.0038	"	0.100	ND	69.8	70-130	9.14	30	QM-07
Surrogate: 1,2-Dichloroethane-d4		0.0334	"	0.0400		83.6	50-150			
Surrogate: Toluene-d8		0.0419	"	0.0400		105	50-150			
Surrogate: 4-Bromofluorobenzene		0.0394	"	0.0400		98.6	50-150			

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Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BHG0198 - EPA 3550A

Blank (BHG0198-BLK1)

Prepared & Analyzed: 07/08/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	12.7		"	12.5		102	30-150			

LCS (BHG0198-BS1)

Prepared & Analyzed: 07/08/24

C10-C28 (DRO)	488	50	mg/kg	500		97.5	70-130			
Surrogate: o-Terphenyl	11.9		"	12.5		95.0	30-150			

Matrix Spike (BHG0198-MS1)

Source: 2407074-01

Prepared & Analyzed: 07/08/24

C10-C28 (DRO)	492	50	mg/kg	500	14.4	95.5	70-130			
Surrogate: o-Terphenyl	8.40		"	12.5		67.2	30-150			

Matrix Spike Dup (BHG0198-MSD1)

Source: 2407074-01

Prepared: 07/08/24 Analyzed: 07/09/24

C10-C28 (DRO)	498	50	mg/kg	500	14.4	96.6	70-130	1.15	20	
Surrogate: o-Terphenyl	10.4		"	12.5		82.9	30-150			

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Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHG0203 - EPA 5030 Soil MS

Blank (BHG0203-BLK1)

Prepared & Analyzed: 07/09/24

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	"

Surrogate: 2-Methylnaphthalene-d10	0.0201	"	0.0333	60.3	40-150
Surrogate: Fluoranthene-d10	0.0236	"	0.0333	70.8	40-150

LCS (BHG0203-BS1)

Prepared & Analyzed: 07/09/24

Acenaphthene	0.0268	0.00500	mg/kg	0.0333	80.4	31-137
Anthracene	0.0266	0.00500	"	0.0333	79.9	30-120
Benzo (a) anthracene	0.0292	0.00500	"	0.0333	87.7	30-120
Benzo (a) pyrene	0.0264	0.00500	"	0.0333	79.1	30-120
Benzo (b) fluoranthene	0.0274	0.00500	"	0.0333	82.1	30-120
Benzo (k) fluoranthene	0.0281	0.00500	"	0.0333	84.2	30-120
Chrysene	0.0286	0.00500	"	0.0333	85.9	30-120
Dibenz (a,h) anthracene	0.0227	0.00500	"	0.0333	68.1	30-120
Fluoranthene	0.0269	0.00500	"	0.0333	80.7	30-120
Fluorene	0.0284	0.00500	"	0.0333	85.2	30-120
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	42.9	30-120
Pyrene	0.0299	0.00500	"	0.0333	89.6	35-142
1-Methylnaphthalene	0.0211	0.00500	"	0.0333	63.2	35-142
2-Methylnaphthalene	0.0200	0.00500	"	0.0333	60.0	35-142

Surrogate: 2-Methylnaphthalene-d10	0.0207	"	0.0333	62.0	40-150
Surrogate: Fluoranthene-d10	0.0282	"	0.0333	84.7	40-150

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHG0203 - EPA 5030 Soil MS

Matrix Spike (BHG0203-MS1)

Source: 2407063-01

Prepared & Analyzed: 07/09/24

Acenaphthene	0.0150	0.00500	mg/kg	0.0333	ND	45.1	31-137		
Anthracene	0.0148	0.00500	"	0.0333	ND	44.5	30-120		
Benzo (a) anthracene	0.0168	0.00500	"	0.0333	ND	50.4	30-120		
Benzo (a) pyrene	0.0147	0.00500	"	0.0333	ND	44.2	30-120		
Benzo (b) fluoranthene	0.0148	0.00500	"	0.0333	ND	44.3	30-120		
Benzo (k) fluoranthene	0.0153	0.00500	"	0.0333	ND	46.0	30-120		
Chrysene	0.0164	0.00500	"	0.0333	ND	49.2	30-120		
Dibenz (a,h) anthracene	0.0156	0.00500	"	0.0333	ND	46.8	30-120		
Fluoranthene	0.0145	0.00500	"	0.0333	ND	43.6	30-120		
Fluorene	0.0153	0.00500	"	0.0333	ND	46.0	30-120		
Indeno (1,2,3-cd) pyrene	0.0176	0.00500	"	0.0333	ND	52.8	30-120		
Pyrene	0.0174	0.00500	"	0.0333	ND	52.2	35-142		
1-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.2	15-130		
2-Methylnaphthalene	0.0144	0.00500	"	0.0333	ND	43.1	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0134		"	0.0333		40.2	40-150		
Surrogate: Fluoranthene-d10	0.0155		"	0.0333		46.6	40-150		

Matrix Spike Dup (BHG0203-MSD1)

Source: 2407063-01

Prepared & Analyzed: 07/09/24

Acenaphthene	0.0163	0.00500	mg/kg	0.0333	ND	48.8	31-137	7.94	30
Anthracene	0.0159	0.00500	"	0.0333	ND	47.8	30-120	7.17	30
Benzo (a) anthracene	0.0189	0.00500	"	0.0333	ND	56.7	30-120	11.7	30
Benzo (a) pyrene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	11.6	30
Benzo (b) fluoranthene	0.0168	0.00500	"	0.0333	ND	50.3	30-120	12.6	30
Benzo (k) fluoranthene	0.0174	0.00500	"	0.0333	ND	52.2	30-120	12.7	30
Chrysene	0.0182	0.00500	"	0.0333	ND	54.6	30-120	10.4	30
Dibenz (a,h) anthracene	0.0143	0.00500	"	0.0333	ND	43.0	30-120	8.33	30
Fluoranthene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	5.97	30
Fluorene	0.0164	0.00500	"	0.0333	ND	49.1	30-120	6.65	30
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	ND	42.9	30-120	20.5	30
Pyrene	0.0190	0.00500	"	0.0333	ND	57.0	35-142	8.71	30
1-Methylnaphthalene	0.0146	0.00500	"	0.0333	ND	43.9	15-130	0.563	50
2-Methylnaphthalene	0.0141	0.00500	"	0.0333	ND	42.3	15-130	1.88	50
Surrogate: 2-Methylnaphthalene-d10	0.0166		"	0.0333		49.9	40-150		
Surrogate: Fluoranthene-d10	0.0162		"	0.0333		48.6	40-150		

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/02/24 14:35

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

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

Batch BHG0213 - EPA 3050B

Blank (BHG0213-BLK1)

Prepared: 07/09/24 Analyzed: 07/11/24

Boron ND 2.00 mg/L

LCS (BHG0213-BS1)

Prepared: 07/09/24 Analyzed: 07/11/24

Boron 4.92 2.00 mg/L 5.00 98.4 80-120

Duplicate (BHG0213-DUP1)

Source: 2407061-01

Prepared: 07/09/24 Analyzed: 07/11/24

Boron 0.259 2.00 mg/L 0.182 34.9 20 QR-02

Matrix Spike (BHG0213-MS1)

Source: 2407061-01

Prepared: 07/09/24 Analyzed: 07/11/24

Boron 5.22 2.00 mg/L 5.01 0.182 101 75-125

Matrix Spike Dup (BHG0213-MSD1)

Source: 2407061-01

Prepared: 07/09/24 Analyzed: 07/11/24

Boron 5.36 2.00 mg/L 5.01 0.182 103 75-125 2.70 25

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BHG0199 - EPA 3050B

Blank (BHG0199-BLK1)

Prepared: 07/09/24 Analyzed: 07/10/24

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 (BHG0199-BS1)

Prepared: 07/09/24 Analyzed: 07/11/24

Arsenic	36.6	0.200	mg/kg wet	40.0	91.5	80-120
Barium	37.9	0.400	"	40.0	94.8	80-120
Cadmium	1.90	0.200	"	2.00	95.1	80-120
Copper	40.8	0.400	"	40.0	102	80-120
Lead	19.3	0.200	"	20.0	96.6	80-120
Nickel	40.5	0.400	"	40.0	101	80-120
Silver	1.90	0.0200	"	2.00	94.8	80-120
Zinc	40.3	0.400	"	40.0	101	80-120
Selenium	4.13	0.260	"	4.00	103	80-120

Duplicate (BHG0199-DUP1)

Source: 2407074-01

Prepared: 07/09/24 Analyzed: 07/11/24

Arsenic	2.33	0.200	mg/kg dry	2.43	3.91	20
Barium	26.5	0.400	"	25.6	3.40	20
Cadmium	0.255	0.200	"	0.229	10.9	20
Copper	6.29	0.400	"	6.13	2.62	20
Lead	10.4	0.200	"	10.2	2.49	20
Nickel	5.75	0.400	"	5.75	0.00285	20
Silver	0.0265	0.0200	"	0.0236	11.5	20
Zinc	31.6	0.400	"	31.1	1.51	20
Selenium	ND	0.260	"	ND		20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

Total Metals by EPA 6020B - Quality Control

Summit Scientific

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

Batch BHG0199 - EPA 3050B

Matrix Spike (BHG0199-MS1)

Source: 2407074-01

Prepared: 07/09/24 Analyzed: 07/11/24

Arsenic	43.9	0.200	mg/kg dry	44.9	2.43	92.4	75-125			
Barium	75.3	0.400	"	44.9	25.6	111	75-125			
Cadmium	2.44	0.200	"	2.24	0.229	98.3	75-125			
Copper	27.3	0.400	"	44.9	6.13	47.2	75-125			QM-05
Lead	31.0	0.200	"	22.4	10.2	92.5	75-125			
Nickel	27.2	0.400	"	44.9	5.75	47.9	75-125			QM-05
Silver	2.17	0.0200	"	2.24	0.0236	95.4	75-125			
Zinc	51.4	0.400	"	44.9	31.1	45.2	75-125			QM-05
Selenium	4.14	0.260	"	4.49	ND	92.2	75-125			

Matrix Spike Dup (BHG0199-MSD1)

Source: 2407074-01

Prepared: 07/09/24 Analyzed: 07/11/24

Arsenic	42.6	0.200	mg/kg dry	45.2	2.43	88.8	75-125	3.00	25	
Barium	65.4	0.400	"	45.2	25.6	88.0	75-125	14.2	25	
Cadmium	2.45	0.200	"	2.26	0.229	98.2	75-125	0.644	25	
Copper	27.0	0.400	"	45.2	6.13	46.2	75-125	1.08	25	QM-05
Lead	30.7	0.200	"	22.6	10.2	90.6	75-125	0.880	25	
Nickel	26.8	0.400	"	45.2	5.75	46.5	75-125	1.70	25	QM-05
Silver	2.17	0.0200	"	2.26	0.0236	95.0	75-125	0.277	25	
Zinc	50.7	0.400	"	45.2	31.1	43.2	75-125	1.51	25	QM-05
Selenium	4.67	0.260	"	4.52	ND	103	75-125	12.1	25	

Batch BHG0875 - EPA 3050B

Blank (BHG0875-BLK1)

Prepared: 07/30/24 Analyzed: 08/02/24

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	"

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHG0875 - EPA 3050B

LCS (BHG0875-BS1)

Prepared: 07/30/24 Analyzed: 08/02/24

Arsenic	36.7	0.200	mg/kg wet	37.3		98.3	80-120			
Barium	35.3	0.400	"	37.3		94.5	80-120			
Cadmium	1.79	0.200	"	1.87		95.8	80-120			
Copper	37.2	0.400	"	37.3		99.7	80-120			
Lead	17.2	0.200	"	18.7		92.4	80-120			
Nickel	37.7	0.400	"	37.3		101	80-120			
Silver	1.79	0.0200	"	1.87		95.9	80-120			
Zinc	37.2	0.400	"	37.3		99.7	80-120			
Selenium	3.76	0.260	"	3.73		101	80-120			

Duplicate (BHG0875-DUP1)

Source: 2407031-01RE1

Prepared: 07/30/24 Analyzed: 08/02/24

Arsenic	2.94	0.200	mg/kg wet		3.08			4.67	20	
Barium	47.2	0.400	"		72.6			42.4	20	QR-02
Cadmium	0.158	0.200	"		0.165			4.32	20	
Copper	3.55	0.400	"		3.52			0.938	20	
Lead	7.00	0.200	"		7.11			1.60	20	
Nickel	4.17	0.400	"		4.15			0.461	20	
Silver	0.0109	0.0200	"		0.0103			5.63	20	
Zinc	16.6	0.400	"		16.5			0.526	20	
Selenium	ND	0.260	"		ND				20	

Matrix Spike (BHG0875-MS1)

Source: 2407031-01RE1

Prepared: 07/30/24 Analyzed: 08/02/24

Arsenic	37.2	0.200	mg/kg wet	36.8	3.08	92.8	75-125			
Barium	76.7	0.400	"	36.8	72.6	11.2	75-125			QM-07
Cadmium	1.69	0.200	"	1.84	0.165	82.7	75-125			
Copper	21.0	0.400	"	36.8	3.52	47.6	75-125			QM-05
Lead	23.8	0.200	"	18.4	7.11	91.0	75-125			
Nickel	21.9	0.400	"	36.8	4.15	48.2	75-125			QM-05
Silver	1.49	0.0200	"	1.84	0.0103	80.6	75-125			
Zinc	33.8	0.400	"	36.8	16.5	47.2	75-125			QM-05
Selenium	3.66	0.260	"	3.68	ND	99.5	75-125			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHG0875 - EPA 3050B

Matrix Spike Dup (BHG0875-MSD1)

Source: 2407031-01RE1

Prepared: 07/30/24 Analyzed: 08/02/24

Arsenic	36.2	0.180	mg/kg wet	36.0	3.08	92.0	75-125	2.76	25	
Barium	73.7	0.360	"	36.0	72.6	3.10	75-125	3.97	25	QM-07
Cadmium	1.63	0.180	"	1.80	0.165	81.4	75-125	3.41	25	
Copper	20.9	0.360	"	36.0	3.52	48.2	75-125	0.873	25	QM-05
Lead	22.8	0.180	"	18.0	7.11	87.1	75-125	4.57	25	
Nickel	21.7	0.360	"	36.0	4.15	48.7	75-125	0.881	25	QM-05
Silver	1.48	0.0180	"	1.80	0.0103	81.4	75-125	1.15	25	
Zinc	33.4	0.360	"	36.0	16.5	47.1	75-125	1.24	25	QM-05
Selenium	3.50	0.234	"	3.60	ND	97.4	75-125	4.29	25	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHG0219 - 3060A Mod

Blank (BHG0219-BLK1)

Prepared & Analyzed: 07/09/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHG0219-BS1)

Prepared & Analyzed: 07/09/24

Chromium, Hexavalent 25.3 0.30 mg/kg wet 25.0 101 80-120

Duplicate (BHG0219-DUP1)

Source: 2407068-01

Prepared & Analyzed: 07/09/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHG0219-MS1)

Source: 2407068-01

Prepared & Analyzed: 07/09/24

Chromium, Hexavalent 27.2 0.30 mg/kg dry 28.1 ND 97.0 75-125

Matrix Spike Dup (BHG0219-MSD1)

Source: 2407068-01

Prepared & Analyzed: 07/09/24

Chromium, Hexavalent 27.6 0.30 mg/kg dry 28.1 ND 98.4 75-125 1.43 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

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

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

Batch BHG0194 - General Preparation

Blank (BHG0194-BLK1)

Prepared: 07/08/24 Analyzed: 07/09/24

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

LCS (BHG0194-BS1)

Prepared: 07/08/24 Analyzed: 07/09/24

Calcium	5.15	0.0500	mg/L wet	5.00	103	70-130
Magnesium	4.89	0.0500	"	5.00	97.9	70-130
Sodium	5.01	0.0500	"	5.00	100	70-130

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - Farr T4N-R64W-S18 L01 Project Number: [none] Project Manager: Paul Henchan	Reported: 08/02/24 14:35
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Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

Summit Scientific

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

Batch BHG0212 - General Preparation

Duplicate (BHG0212-DUP2)		Source: 2406397-02			Prepared & Analyzed: 07/09/24						
% Solids	96.3		%		96.3			0.0690		20	

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

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

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

Batch BHG0195 - General Preparation

Blank (BHG0195-BLK1)

Prepared: 07/08/24 Analyzed: 07/09/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHG0195-BS1)

Prepared: 07/08/24 Analyzed: 07/09/24

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

Duplicate (BHG0195-DUP1)

Source: 2407074-01

Prepared: 07/08/24 Analyzed: 07/09/24

Specific Conductance (EC) 0.825 0.0100 mmhos/cm 0.848 2.79 20

Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/02/24 14:35

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

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

Batch BHG0196 - General Preparation

LCS (BHG0196-BS1)

Prepared: 07/08/24 Analyzed: 07/09/24

pH	9.19	pH Units	9.18	100	95-105
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Duplicate (BHG0196-DUP1)

Source: 2407074-01

Prepared: 07/08/24 Analyzed: 07/09/24

pH	8.17	pH Units	8.16	0.122	20
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Summit Scientific

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Farr T4N-R64W-S18 L01

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/02/24 14:35

Notes and Definitions

QR-02	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
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.
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