

# Summit Scientific

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4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

May 06, 2024

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Achziger 11-33

Work Order #2403482

Enclosed are the results of analyses for samples received by Summit Scientific on 03/29/24 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 "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 - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01 3'	2403482-01	Soil	03/29/24 11:25	03/29/24 16:30
FL03 3'	2403482-02	Soil	03/29/24 11:30	03/29/24 16:30

Summit Scientific

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

Lab ID	Page 1 of 1
2403482	

Send Data To:		Send Invoice To:	
Client: Fremont Environmental	Project Manager: Paul Henehan	Company: Noble	
Address:	E-Mail: Fremont Distribution List	Project Name/Location:	
City/State/Zip:		AFE#:	
Phone: 303-261-6246	Project Name: Achziger 11-33	PO/Billing Codes: UWRWE - A1687-ABN	
Sampler Name: Stanley Gilbert	Project Number:	Contact: Mike Montoya	

					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, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron	Metals (915)	TDS, Chloride, Sulfate	HOLD	
1	FLO 3'	3/29/24	11:25	2			X			X			X	X	X	X	X			
2	FLO 3'	3/29/24	11:30	2			X			X			X	X	X	X	X			
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by:	Date/Time: 3/29/24 14:40	Received by: Summit North	Date/Time: 3/29/24 14:40	TAT Business Days	Field DO	Notes:
Relinquished by:	Date/Time: 3/29/24 16:30	Received by:	Date/Time: 3/29/24 16:50	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 11.1	Corrected Temperature 0	IR gun #: 1	HNO3 lot #:			

S<sub>2</sub>

## Sample Receipt Checklist

S2 Work Order# 2403482Client: FarmontClient Project ID: Achziger 11-33Shipped Via: H.D./P.U./FedEx/UPS/USPS/Other ☐

Airbill #:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Matrix (Check all that apply)

Air ☐Soil/Solid ☒Water ☐Other ☐

Temp (°C)

11.1

Thermometer #

1

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

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

Custodian Printed Name

Date/Time

AS

3/29/24

Bios



Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**FL01 3'**  
**2403482-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BHD0085	04/03/24	04/04/24	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: **03/29/24 11:25**

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	0.0415	104 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0400	100 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0086	04/03/24	04/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	7.54	60.3 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**FL01 3'**  
**2403482-01 (Soil)**

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**PAH by EPA Method 8270D SIM**

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHD0043	04/02/24	04/03/24	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: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0336	101 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0171	51.3 %	40-150		"	"	"	"	

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

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHD0366	04/11/24	05/05/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Achziger 11-33  
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**Reported:**  
05/06/24 15:51

**FL01 3'**  
**2403482-01 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	4.45	0.200	mg/kg dry	1	BHD0664	04/19/24	04/26/24	EPA 6020B
Barium	70.2	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.86	0.400	"	"	"	"	"	"
Lead	5.38	0.200	"	"	"	"	"	"
Nickel	3.86	0.400	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	21.9	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0298	04/10/24	04/11/24	EPA 7196A	

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

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29.6	0.0500	mg/L dry	1	BHD0498	04/16/24	04/20/24	EPA 6020B	
Magnesium	12.3	0.0500	"	"	"	"	"	"	
Sodium	7.71	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.301	0.00100	units	1	BHD0716	04/22/24	04/22/24	Calculation	

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

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**FL01 3'**  
**2403482-01 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.6		%	1	BHD0262	04/09/24	04/09/24	Calculation	

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

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.317	0.0100	mmhos/cm	1	BHD0500	04/16/24	04/18/24	EPA 120.1	

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

Date Sampled: **03/29/24 11:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.34		pH Units	1	BHD0499	04/16/24	04/18/24	EPA 9045D	

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**Reported:**  
05/06/24 15:51

**FL03 3'**  
**2403482-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Benzene	ND	0.0020	mg/kg	1	BHD0085	04/03/24	04/04/24	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: **03/29/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 1,2-Dichloroethane-d4	0.0396	99.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0420	105 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0409	102 %	50-150		"	"	"	"	

**Extractable Petroleum Hydrocarbons by 8015**

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
C10-C28 (DRO)	ND	50	mg/kg	1	BHD0086	04/03/24	04/03/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: o-Terphenyl	8.58	68.6 %	30-150		"	"	"	"	

**PAH by EPA Method 8270D SIM**

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**Reported:**  
05/06/24 15:51

**FL03 3'**  
**2403482-02 (Soil)**

**Summit Scientific**

**PAH by EPA Method 8270D SIM**

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Acenaphthene	ND	0.00500	mg/kg	1	BHD0043	04/02/24	04/03/24	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: **03/29/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Surrogate: 2-Methylnaphthalene-d10	0.0341	102 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.6 %	40-150		"	"	"	"	

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

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							
Boron	ND	2.00	mg/L	1	BHD0366	04/11/24	05/05/24	EPA 6020B	

**Total Metals by EPA 6020B**

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit							

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Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
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**Reported:**  
05/06/24 15:51

**FL03 3'**  
**2403482-02 (Soil)**

**Summit Scientific**

**Total Metals by EPA 6020B**

Arsenic	3.71	0.200	mg/kg dry	1	BHD0664	04/19/24	04/26/24	EPA 6020B
Barium	66.7	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	3.70	0.400	"	"	"	"	"	"
Lead	7.19	0.200	"	"	"	"	"	"
Nickel	4.38	0.400	"	"	"	"	"	"
Silver	0.0209	0.0200	"	"	"	"	"	"
Zinc	20.7	0.400	"	"	"	"	"	"
Selenium	ND	0.260	"	"	"	"	"	"

**Hexavalent Chromium by EPA Method 7196**

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHD0298	04/10/24	04/11/24	EPA 7196A	

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

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	1020	0.0500	mg/L dry	1	BHD0498	04/16/24	04/20/24	EPA 6020B	
Magnesium	60.6	0.0500	"	"	"	"	"	"	
Sodium	159	0.0500	"	"	"	"	"	"	

**Calculated Analysis**

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.31	0.00100	units	1	BHD0716	04/22/24	04/22/24	Calculation	

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

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Project Manager: Paul Henchan

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05/06/24 15:51

**FL03 3'**  
**2403482-02 (Soil)**

**Summit Scientific**

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

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.0		%	1	BHD0262	04/09/24	04/09/24	Calculation	

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

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.399	0.0100	mmhos/cm	1	BHD0500	04/16/24	04/18/24	EPA 120.1	

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

Date Sampled: **03/29/24 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	9.51		pH Units	1	BHD0499	04/16/24	04/18/24	EPA 9045D	

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Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

## 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 BHD0085 - EPA 5030 Soil MS

##### Blank (BHD0085-BLK1)

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

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	0.0297		"	0.0400		74.3	50-150			
Surrogate: Toluene-d8	0.0424		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.7	50-150			

##### LCS (BHD0085-BS1)

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

Benzene	0.0865	0.0020	mg/kg	0.100		86.5	70-130			
Toluene	0.108	0.0050	"	0.100		108	70-130			
Ethylbenzene	0.101	0.0050	"	0.100		101	70-130			
m,p-Xylene	0.200	0.010	"	0.200		100	70-130			
o-Xylene	0.101	0.0050	"	0.100		101	70-130			
1,2,4-Trimethylbenzene	0.0878	0.0050	"	0.100		87.8	70-130			
1,3,5-Trimethylbenzene	0.0914	0.0050	"	0.100		91.4	70-130			
Naphthalene	0.0713	0.0038	"	0.100		71.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0316		"	0.0400		79.0	50-150			
Surrogate: Toluene-d8	0.0448		"	0.0400		112	50-150			
Surrogate: 4-Bromofluorobenzene	0.0403		"	0.0400		101	50-150			

##### Matrix Spike (BHD0085-MS1)

Source: 2403482-01

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

Benzene	0.0757	0.0020	mg/kg	0.100	ND	75.7	70-130			
Toluene	0.0914	0.0050	"	0.100	ND	91.4	70-130			
Ethylbenzene	0.0914	0.0050	"	0.100	ND	91.4	70-130			
m,p-Xylene	0.181	0.010	"	0.200	ND	90.6	70-130			
o-Xylene	0.0893	0.0050	"	0.100	ND	89.3	70-130			
1,2,4-Trimethylbenzene	0.0751	0.0050	"	0.100	ND	75.1	70-130			
1,3,5-Trimethylbenzene	0.0789	0.0050	"	0.100	ND	78.9	70-130			
Naphthalene	0.0589	0.0038	"	0.100	ND	58.9	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0287		"	0.0400		71.7	50-150			
Surrogate: Toluene-d8	0.0436		"	0.0400		109	50-150			
Surrogate: 4-Bromofluorobenzene	0.0404		"	0.0400		101	50-150			

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0085 - EPA 5030 Soil MS**

Matrix Spike Dup (BHD0085-MSD1)		Source: 2403482-01			Prepared: 04/03/24 Analyzed: 04/04/24					
Benzene	0.0785	0.0020	mg/kg	0.100	ND	78.5	70-130	3.70	30	
Toluene	0.0970	0.0050	"	0.100	ND	97.0	70-130	5.86	30	
Ethylbenzene	0.0909	0.0050	"	0.100	ND	90.9	70-130	0.526	30	
m,p-Xylene	0.182	0.010	"	0.200	ND	91.0	70-130	0.462	30	
o-Xylene	0.0888	0.0050	"	0.100	ND	88.8	70-130	0.606	30	
1,2,4-Trimethylbenzene	0.0779	0.0050	"	0.100	ND	77.9	70-130	3.69	30	
1,3,5-Trimethylbenzene	0.0821	0.0050	"	0.100	ND	82.1	70-130	3.99	30	
Naphthalene	0.0658	0.0038	"	0.100	ND	65.8	70-130	11.2	30	QM-07
Surrogate: 1,2-Dichloroethane-d4		0.0338	"	0.0400		84.6	50-150			
Surrogate: Toluene-d8		0.0431	"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene		0.0399	"	0.0400		99.7	50-150			

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Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0086 - EPA 3550A**

**Blank (BHD0086-BLK1)**

Prepared & Analyzed: 04/03/24

C10-C28 (DRO)	ND	50	mg/kg							
C28-C36 (ORO)	ND	50	"							
Surrogate: o-Terphenyl	13.8		"	12.5		111	30-150			

**LCS (BHD0086-BS1)**

Prepared & Analyzed: 04/03/24

C10-C28 (DRO)	625	50	mg/kg	500		125	70-130			
Surrogate: o-Terphenyl	12.8		"	12.5		102	30-150			

**Matrix Spike (BHD0086-MS1)**

Source: 2403482-01

Prepared & Analyzed: 04/03/24

C10-C28 (DRO)	429	50	mg/kg	500	32.1	79.4	70-130			
Surrogate: o-Terphenyl	8.90		"	12.5		71.2	30-150			

**Matrix Spike Dup (BHD0086-MSD1)**

Source: 2403482-01

Prepared & Analyzed: 04/03/24

C10-C28 (DRO)	385	50	mg/kg	500	32.1	70.5	70-130	11.0	20	
Surrogate: o-Terphenyl	7.26		"	12.5		58.1	30-150			

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Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0043 - EPA 5030 Soil MS**

**Blank (BHD0043-BLK1)**

Prepared & Analyzed: 04/02/24

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	0.0267		"	0.0333		80.0	40-150			
Surrogate: Fluoranthene-d10	0.0254		"	0.0333		76.3	40-150			

**LCS (BHD0043-BS1)**

Prepared & Analyzed: 04/02/24

Acenaphthene	0.0312	0.00500	mg/kg	0.0333		93.6	31-137			
Anthracene	0.0319	0.00500	"	0.0333		95.6	30-120			
Benzo (a) anthracene	0.0291	0.00500	"	0.0333		87.3	30-120			
Benzo (a) pyrene	0.0265	0.00500	"	0.0333		79.5	30-120			
Benzo (b) fluoranthene	0.0261	0.00500	"	0.0333		78.4	30-120			
Benzo (k) fluoranthene	0.0302	0.00500	"	0.0333		90.7	30-120			
Chrysene	0.0329	0.00500	"	0.0333		98.6	30-120			
Dibenz (a,h) anthracene	0.0324	0.00500	"	0.0333		97.3	30-120			
Fluoranthene	0.0278	0.00500	"	0.0333		83.4	30-120			
Fluorene	0.0304	0.00500	"	0.0333		91.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0318	0.00500	"	0.0333		95.5	30-120			
Pyrene	0.0434	0.00500	"	0.0333		130	35-142			
1-Methylnaphthalene	0.0213	0.00500	"	0.0333		63.8	35-142			
2-Methylnaphthalene	0.0201	0.00500	"	0.0333		60.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0209		"	0.0333		62.7	40-150			
Surrogate: Fluoranthene-d10	0.0286		"	0.0333		85.8	40-150			

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Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

## 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 BHD0043 - EPA 5030 Soil MS

##### Matrix Spike (BHD0043-MS1)

Source: 2403430-21

Prepared: 04/02/24 Analyzed: 04/03/24

Acenaphthene	0.0223	0.00500	mg/kg	0.0333	ND	66.8	31-137				
Anthracene	0.0231	0.00500	"	0.0333	ND	69.3	30-120				
Benzo (a) anthracene	0.0219	0.00500	"	0.0333	ND	65.8	30-120				
Benzo (a) pyrene	0.0194	0.00500	"	0.0333	ND	58.3	30-120				
Benzo (b) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.2	30-120				
Benzo (k) fluoranthene	0.0198	0.00500	"	0.0333	ND	59.3	30-120				
Chrysene	0.0229	0.00500	"	0.0333	ND	68.6	30-120				
Dibenz (a,h) anthracene	0.0235	0.00500	"	0.0333	ND	70.5	30-120				
Fluoranthene	0.0202	0.00500	"	0.0333	ND	60.6	30-120				
Fluorene	0.0224	0.00500	"	0.0333	ND	67.3	30-120				
Indeno (1,2,3-cd) pyrene	0.0224	0.00500	"	0.0333	ND	67.3	30-120				
Pyrene	0.0296	0.00500	"	0.0333	ND	88.8	35-142				
1-Methylnaphthalene	0.0198	0.00500	"	0.0333	ND	59.5	15-130				
2-Methylnaphthalene	0.0228	0.00500	"	0.0333	ND	68.3	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0468		"	0.0333		140	40-150				
Surrogate: Fluoranthene-d10	0.0209		"	0.0333		62.8	40-150				

##### Matrix Spike Dup (BHD0043-MSD1)

Source: 2403430-21

Prepared: 04/02/24 Analyzed: 04/03/24

Acenaphthene	0.0194	0.00500	mg/kg	0.0333	ND	58.1	31-137	13.8	30
Anthracene	0.0210	0.00500	"	0.0333	ND	62.9	30-120	9.72	30
Benzo (a) anthracene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	14.1	30
Benzo (a) pyrene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	8.58	30
Benzo (b) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.4	30-120	12.6	30
Benzo (k) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	17.8	30
Chrysene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	14.1	30
Dibenz (a,h) anthracene	0.0203	0.00500	"	0.0333	ND	61.0	30-120	14.5	30
Fluoranthene	0.0184	0.00500	"	0.0333	ND	55.1	30-120	9.60	30
Fluorene	0.0200	0.00500	"	0.0333	ND	60.1	30-120	11.4	30
Indeno (1,2,3-cd) pyrene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	9.88	30
Pyrene	0.0254	0.00500	"	0.0333	ND	76.2	35-142	15.3	30
1-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.7	15-130	2.96	50
2-Methylnaphthalene	0.0189	0.00500	"	0.0333	ND	56.6	15-130	18.8	50
Surrogate: 2-Methylnaphthalene-d10	0.0343		"	0.0333		103	40-150		
Surrogate: Fluoranthene-d10	0.0190		"	0.0333		57.0	40-150		

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0366 - EPA 3050B**

**Blank (BHD0366-BLK1)**

Prepared: 04/11/24 Analyzed: 05/05/24

Boron ND 2.00 mg/L

**LCS (BHD0366-BS1)**

Prepared: 04/11/24 Analyzed: 05/05/24

Boron 5.00 2.00 mg/L 5.00 100 80-120

**Duplicate (BHD0366-DUP1)**

**Source: 2403477-01**

Prepared: 04/11/24 Analyzed: 05/05/24

Boron 0.470 2.00 mg/L 0.408 14.1 20

**Matrix Spike (BHD0366-MS1)**

**Source: 2403477-01**

Prepared: 04/11/24 Analyzed: 05/05/24

Boron 5.17 2.00 mg/L 5.01 0.408 95.1 75-125

**Matrix Spike Dup (BHD0366-MSD1)**

**Source: 2403477-01**

Prepared: 04/11/24 Analyzed: 05/05/24

Boron 5.51 2.00 mg/L 5.01 0.408 102 75-125 6.39 25

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Wellington CO, 80549

Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0664 - EPA 3050B**

**Blank (BHD0664-BLK1)**

Prepared: 04/19/24 Analyzed: 04/26/24

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 (BHD0664-BS1)**

Prepared: 04/19/24 Analyzed: 04/26/24

Arsenic	35.7	0.200	mg/kg wet	40.0	89.3	80-120
Barium	38.6	0.400	"	40.0	96.4	80-120
Cadmium	1.92	0.200	"	2.00	95.9	80-120
Copper	43.3	0.400	"	40.0	108	80-120
Lead	19.2	0.200	"	20.0	96.1	80-120
Nickel	42.4	0.400	"	40.0	106	80-120
Silver	1.90	0.0200	"	2.00	95.2	80-120
Zinc	35.9	0.400	"	40.0	89.9	80-120
Selenium	3.69	0.260	"	4.00	92.2	80-120

**Duplicate (BHD0664-DUP1)**

Source: 2403477-01

Prepared: 04/19/24 Analyzed: 04/26/24

Arsenic	2.33	0.200	mg/kg dry	1.98	15.9	20	
Barium	71.9	0.400	"	63.0	13.3	20	
Cadmium	0.236	0.200	"	0.177	28.9	20	QR-04
Copper	5.56	0.400	"	4.28	26.0	20	QR-04
Lead	7.74	0.200	"	5.66	31.1	20	QR-04
Nickel	4.01	0.400	"	3.47	14.3	20	
Silver	0.0471	0.0200	"	0.0288	48.3	20	QR-01
Zinc	28.1	0.400	"	21.2	28.2	20	QR-04
Selenium	ND	0.260	"	ND		20	

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Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0664 - EPA 3050B**

Matrix Spike (BHD0664-MS1)		Source: 2403477-01			Prepared: 04/19/24 Analyzed: 04/26/24					
Arsenic	42.6	0.200	mg/kg dry	43.6	1.98	93.2	75-125			
Barium	117	0.400	"	43.6	63.0	124	75-125			
Cadmium	2.33	0.200	"	2.18	0.177	98.9	75-125			
Copper	33.9	0.400	"	43.6	4.28	68.0	75-125			QM-05
Lead	27.5	0.200	"	21.8	5.66	100	75-125			
Nickel	32.6	0.400	"	43.6	3.47	66.8	75-125			QM-05
Silver	2.12	0.0200	"	2.18	0.0288	96.0	75-125			
Zinc	68.1	0.400	"	43.6	21.2	107	75-125			
Selenium	3.60	0.260	"	4.36	ND	82.6	75-125			

Matrix Spike Dup (BHD0664-MSD1)		Source: 2403477-01			Prepared: 04/19/24 Analyzed: 04/26/24					
Arsenic	42.1	0.200	mg/kg dry	43.6	1.98	91.9	75-125	1.33	25	
Barium	118	0.400	"	43.6	63.0	125	75-125	0.515	25	
Cadmium	2.33	0.200	"	2.18	0.177	98.6	75-125	0.281	25	
Copper	35.3	0.400	"	43.6	4.28	71.2	75-125	3.97	25	QM-05
Lead	27.6	0.200	"	21.8	5.66	101	75-125	0.138	25	
Nickel	33.9	0.400	"	43.6	3.47	69.7	75-125	3.80	25	QM-05
Silver	2.13	0.0200	"	2.18	0.0288	96.3	75-125	0.287	25	
Zinc	66.8	0.400	"	43.6	21.2	105	75-125	1.85	25	
Selenium	3.68	0.260	"	4.36	ND	84.4	75-125	2.13	25	

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Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0298 - 3060A Mod**

**Blank (BHD0298-BLK1)**

Prepared: 04/10/24 Analyzed: 04/11/24

Chromium, Hexavalent ND 0.30 mg/kg wet

**LCS (BHD0298-BS1)**

Prepared: 04/10/24 Analyzed: 04/11/24

Chromium, Hexavalent 23.8 0.30 mg/kg wet 25.0 95.0 80-120

**Duplicate (BHD0298-DUP1)**

**Source: 2403457-01**

Prepared: 04/10/24 Analyzed: 04/11/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

**Matrix Spike (BHD0298-MS1)**

**Source: 2403457-01**

Prepared: 04/10/24 Analyzed: 04/11/24

Chromium, Hexavalent 28.5 0.30 mg/kg dry 29.6 ND 96.4 75-125

**Matrix Spike Dup (BHD0298-MSD1)**

**Source: 2403457-01**

Prepared: 04/10/24 Analyzed: 04/11/24

Chromium, Hexavalent 28.5 0.30 mg/kg dry 29.6 ND 96.4 75-125 0.00 20

Summit Scientific

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Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0498 - General Preparation**

**Blank (BHD0498-BLK1)**

Prepared: 04/16/24 Analyzed: 04/20/24

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

**LCS (BHD0498-BS1)**

Prepared: 04/16/24 Analyzed: 04/20/24

Calcium	5.86	0.0500	mg/L wet	5.00	117	70-130
Magnesium	5.13	0.0500	"	5.00	103	70-130
Sodium	5.07	0.0500	"	5.00	101	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	Project: Noble - Achziger 11-33	
PO Box 1289	Project Number: UWRWE-A1687-ABN	<b>Reported:</b>
Wellington CO, 80549	Project Manager: Paul Henchan	05/06/24 15:51

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

Summit Scientific

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

Batch BHD0262 - General Preparation

Duplicate (BHD0262-DUP1)		Source: 2403467-41			Prepared & Analyzed: 04/09/24					
% Solids	79.5		%		86.4			8.32	20	

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0500 - General Preparation**

**Blank (BHD0500-BLK1)**

Prepared: 04/16/24 Analyzed: 04/18/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

**LCS (BHD0500-BS1)**

Prepared: 04/16/24 Analyzed: 04/18/24

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

**Duplicate (BHD0500-DUP1)**

**Source: 2403464-01**

Prepared: 04/16/24 Analyzed: 04/18/24

Specific Conductance (EC) 1.43 0.0100 mmhos/cm 1.46 1.87 20

Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Achziger 11-33  
Project Number: UWRWE-A1687-ABN  
Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

**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 BHD0499 - General Preparation**

**LCS (BHD0499-BS1)**

Prepared: 04/16/24 Analyzed: 04/18/24

pH	9.22	pH Units	9.18	100	95-105
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**Duplicate (BHD0499-DUP1)**

**Source: 2403464-01**

Prepared: 04/16/24 Analyzed: 04/18/24

pH	7.59	pH Units	7.57	0.264	20
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Summit Scientific

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Fremont Environmental  
PO Box 1289  
Wellington CO, 80549

Project: Noble - Achziger 11-33

Project Number: UWRWE-A1687-ABN

Project Manager: Paul Henchan

**Reported:**  
05/06/24 15:51

### 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.
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