

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

March 18, 2024

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Wells Ranch AA 35-62-1AHNC

Work Order #2402394

Enclosed are the results of analyses for samples received by Summit Scientific on 02/22/24 17:38. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a large initial "J" and "W".

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN

Project Manager: Paul Henchan

Reported:
03/18/24 11:05

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01@6.0'	2402394-01	Soil	02/21/24 00:00	02/22/24 17:38
GL01@7.0'	2402394-02	Soil	02/21/24 00:00	02/22/24 17:38
FL02@6.0'	2402394-03	Soil	02/22/24 00:00	02/22/24 17:38
GL02@7.0'	2402394-04	Soil	02/21/24 00:00	02/22/24 17:38

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

Lab ID	Page <u>1</u> of <u>1</u>
2402394	

Send Data To:		Send Invoice To:	
Client: <u>Fremont Env</u>	Project Manager:	Company: <u>Noble</u>	
Address:	E-Mail: <u>Paulh@fremontenv.com</u>	Project Name/Location:	
City/State/Zip:	<u>jeffg@fremontenv.com Ethanb@fremontenv.com</u>	AFE#:	
Phone:	Project Name: <u>Wells Ranch AA 35-62-1AHC</u>	PO/Billing Codes: <u>UWRWR-A3006-ARJ</u>	
Sampler Name: <u>J6</u>	Project Number:	Contact:	

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+N	TMS (915)	DR,ORO,680	PAHs (915)	EC-IPH, SAs, BOD, etc	Metals (915)			
1	FLO1C6.0'	2/21/24		2			X			X				X	X	X	X	X	X		
2	GLO1C7.0'	2/21/24		↓			↓			↓				↓	↓	↓	↓	↓	↓		
3	FLO2C6.0'	2/22/24		↓			↓			↓				↓	↓	↓	↓	↓	↓		
4	GLO2C7.0'	2/21/24		↓			↓			↓				↓	↓	↓	↓	↓	↓		
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <u>J</u> Date/Time: <u>2/22/24</u>	Received by: <u>Paul H. Smith</u> Date/Time: <u>2/22/24 11:38</u>	TAT Business Days	Field DO	Notes:
		Same Day	Field EC	
Relinquished by:	Received by:	1 Day	Field ORP	
		2 Days	Field pH	
Relinquished by:	Received by:	3 Days	Field Temp.	
Temperature Upon Receipt: <u>14.0</u>	Corrected Temperature	Standard	<input checked="" type="checkbox"/> Field Turb.	
		IR gun #:	HNO3 lot #:	

S₂

Sample Receipt Checklist

S2 Work Order# 2402394

Client: Freemont

Client Project ID: Noble-wells Ranch AA 35-62-1AHNC

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

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

Temp (°C) 14.0 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"/>	
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 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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>no sample times</u>
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>no time</u>
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"/>	
<u>Additional Comments (if any):</u>				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

AS
Custodian Printed Name

2/22/24
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC
Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

FL01@6.0'
2402394-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHB0772	02/23/24	02/24/24	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: **02/21/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0400	100 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0378	94.6 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0396	99.1 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHB0778	02/23/24	02/23/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	12.3	98.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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2402394-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHB0791	02/26/24	02/26/24	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: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0260	78.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0176	52.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0208	03/08/24	03/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

FL01@6.0'
2402394-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.68	0.200	mg/kg dry	1	BHC0140	03/06/24	03/07/24	EPA 6020B	
Barium	80.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.50	0.400	"	"	"	"	"	"	
Lead	6.82	0.200	"	"	"	"	"	"	
Nickel	3.99	0.400	"	"	"	"	"	"	
Silver	0.0535	0.0200	"	"	"	"	"	"	
Zinc	14.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0459	03/15/24	03/15/24	EPA 7196A	

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

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.9	0.0500	mg/L dry	1	BHC0067	03/04/24	03/09/24	EPA 6020B	
Magnesium	5.84	0.0500	"	"	"	"	"	"	
Sodium	10.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.485	0.00100	units	1	BHC0274	03/11/24	03/11/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

FL01@6.0'
2402394-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	86.0		%	1	BHC0090	03/05/24	03/06/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.270	0.0100	mmhos/cm	1	BHC0069	03/04/24	03/06/24	EPA 120.1	

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

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.35		pH Units	1	BHC0068	03/04/24	03/06/24	EPA 9045D	

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Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

GL01@7.0'
2402394-02 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHB0772	02/23/24	02/24/24	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: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0409	102 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0374	93.6 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0390	97.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHB0778	02/23/24	02/23/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	13.7	109 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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GL01@7.0'
2402394-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHB0791	02/26/24	02/26/24	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: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0231	69.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0151	45.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0208	03/08/24	03/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 03/18/24 11:05

GL01@7.0'
2402394-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.05	0.200	mg/kg dry	1	BHC0140	03/06/24	03/07/24	EPA 6020B	
Barium	78.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	1.67	0.400	"	"	"	"	"	"	
Lead	4.42	0.200	"	"	"	"	"	"	
Nickel	2.04	0.400	"	"	"	"	"	"	
Silver	0.0360	0.0200	"	"	"	"	"	"	
Zinc	9.98	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0459	03/15/24	03/15/24	EPA 7196A	

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

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.4	0.0500	mg/L dry	1	BHC0067	03/04/24	03/09/24	EPA 6020B	
Magnesium	4.71	0.0500	"	"	"	"	"	"	
Sodium	6.08	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.282	0.00100	units	1	BHC0274	03/11/24	03/11/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
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GL01@7.0'
2402394-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.2		%	1	BHC0090	03/05/24	03/06/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/21/24 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.207	0.0100	mmhos/cm	1	BHC0069	03/04/24	03/06/24	EPA 120.1	

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

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.51		pH Units	1	BHC0068	03/04/24	03/06/24	EPA 9045D	

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Project Number: UWRWR-A3006-ABN
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Reported:
03/18/24 11:05

FL02@6.0'
2402394-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHB0772	02/23/24	02/24/24	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: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0401	100 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0372	92.9 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0385	96.3 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHB0778	02/23/24	02/23/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.8	94.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

FL02@6.0'
2402394-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHB0791	02/26/24	02/26/24	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: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0242	72.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0174	52.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0208	03/08/24	03/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/22/24 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 - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

FL02@6.0'
2402394-03 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.23	0.200	mg/kg dry	1	BHC0140	03/06/24	03/07/24	EPA 6020B	
Barium	73.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.54	0.400	"	"	"	"	"	"	
Lead	5.79	0.200	"	"	"	"	"	"	
Nickel	3.25	0.400	"	"	"	"	"	"	
Silver	0.0465	0.0200	"	"	"	"	"	"	
Zinc	12.8	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0459	03/15/24	03/15/24	EPA 7196A	

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

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	34.3	0.0500	mg/L dry	1	BHC0067	03/04/24	03/09/24	EPA 6020B	
Magnesium	7.88	0.0500	"	"	"	"	"	"	
Sodium	12.6	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.505	0.00100	units	1	BHC0274	03/11/24	03/11/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

FL02@6.0'
2402394-03 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.3		%	1	BHC0090	03/05/24	03/06/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/22/24 00:00**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.344	0.0100	mmhos/cm	1	BHC0069	03/04/24	03/06/24	EPA 120.1	

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

Date Sampled: **02/22/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.28		pH Units	1	BHC0068	03/04/24	03/06/24	EPA 9045D	

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Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

GL02@7.0'
2402394-04 (Soil)

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Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHB0772	02/23/24	02/24/24	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: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0413	103 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0396	99.1 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHB0778	02/23/24	02/23/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	14.7	118 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Wells Ranch AA 35-62-1AHNC
Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

GL02@7.0'
2402394-04 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHB0791	02/26/24	02/26/24	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: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0264	79.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0187	56.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0208	03/08/24	03/13/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

GL02@7.0'
2402394-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.31	0.200	mg/kg dry	1	BHC0140	03/06/24	03/07/24	EPA 6020B	
Barium	35.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	2.99	0.400	"	"	"	"	"	"	
Lead	7.27	0.200	"	"	"	"	"	"	
Nickel	2.31	0.400	"	"	"	"	"	"	
Silver	0.0571	0.0200	"	"	"	"	"	"	
Zinc	14.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0459	03/15/24	03/15/24	EPA 7196A	

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

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	19.2	0.0500	mg/L dry	1	BHC0067	03/04/24	03/09/24	EPA 6020B	
Magnesium	4.78	0.0500	"	"	"	"	"	"	
Sodium	30.2	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.60	0.00100	units	1	BHC0274	03/11/24	03/11/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC
 Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

GL02@7.0'
2402394-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.8		%	1	BHC0090	03/05/24	03/06/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/21/24 00:00**

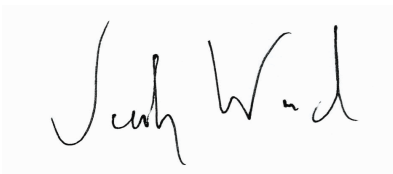
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.356	0.0100	mmhos/cm	1	BHC0069	03/04/24	03/06/24	EPA 120.1	

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

Date Sampled: **02/21/24 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.56		pH Units	1	BHC0068	03/04/24	03/06/24	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC
Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

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 BHB0772 - EPA 5030 Soil MS

Blank (BHB0772-BLK1)

Prepared: 02/23/24 Analyzed: 02/24/24

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0388		"	0.0400		97.1	50-150			
<i>Surrogate: Toluene-d8</i>	0.0345		"	0.0400		86.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0394		"	0.0400		98.4	50-150			

LCS (BHB0772-BS1)

Prepared: 02/23/24 Analyzed: 02/24/24

Benzene	0.0872	0.0020	mg/kg	0.100		87.2	70-130			
Toluene	0.0907	0.0050	"	0.100		90.7	70-130			
Ethylbenzene	0.0942	0.0050	"	0.100		94.2	70-130			
m,p-Xylene	0.192	0.010	"	0.200		95.9	70-130			
o-Xylene	0.0960	0.0050	"	0.100		96.0	70-130			
1,2,4-Trimethylbenzene	0.0892	0.0050	"	0.100		89.2	70-130			
1,3,5-Trimethylbenzene	0.0877	0.0050	"	0.100		87.7	70-130			
Naphthalene	0.0931	0.0038	"	0.100		93.1	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0378		"	0.0400		94.6	50-150			
<i>Surrogate: Toluene-d8</i>	0.0363		"	0.0400		90.8	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0382		"	0.0400		95.5	50-150			

Matrix Spike (BHB0772-MS1)

Source: 2402394-01

Prepared: 02/23/24 Analyzed: 02/24/24

Benzene	0.0947	0.0020	mg/kg	0.100	ND	94.7	70-130			
Toluene	0.103	0.0050	"	0.100	ND	103	70-130			
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130			
m,p-Xylene	0.218	0.010	"	0.200	ND	109	70-130			
o-Xylene	0.107	0.0050	"	0.100	ND	107	70-130			
1,2,4-Trimethylbenzene	0.0982	0.0050	"	0.100	ND	98.2	70-130			
1,3,5-Trimethylbenzene	0.0998	0.0050	"	0.100	ND	99.8	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0358		"	0.0400		89.4	50-150			
<i>Surrogate: Toluene-d8</i>	0.0370		"	0.0400		92.6	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0386		"	0.0400		96.5	50-150			

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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC
 Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

Volatile Organic Compounds by EPA Method 8260B - Quality Control
Summit Scientific

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

Batch BHB0772 - EPA 5030 Soil MS

Matrix Spike Dup (BHB0772-MSD1)	Source: 2402394-01			Prepared: 02/23/24 Analyzed: 02/24/24						
Benzene	0.0860	0.0020	mg/kg	0.100	ND	86.0	70-130	9.73	30	
Toluene	0.0933	0.0050	"	0.100	ND	93.3	70-130	10.3	30	
Ethylbenzene	0.0927	0.0050	"	0.100	ND	92.7	70-130	16.9	30	
m,p-Xylene	0.185	0.010	"	0.200	ND	92.4	70-130	16.3	30	
o-Xylene	0.0925	0.0050	"	0.100	ND	92.5	70-130	14.3	30	
1,2,4-Trimethylbenzene	0.0847	0.0050	"	0.100	ND	84.7	70-130	14.8	30	
1,3,5-Trimethylbenzene	0.0855	0.0050	"	0.100	ND	85.5	70-130	15.4	30	
Naphthalene	0.0928	0.0038	"	0.100	ND	92.8	70-130	8.89	30	
Surrogate: 1,2-Dichloroethane-d4	0.0390		"	0.0400		97.6	50-150			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.3	50-150			

Summit Scientific

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Project: Noble - Wells Ranch AA 35-62-1AHNC
 Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

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 BHB0778 - EPA 3550A

Blank (BHB0778-BLK1)

Prepared & Analyzed: 02/23/24

C10-C28 (DRO)	ND	50	mg/kg								
Surrogate: <i>o</i> -Terphenyl	14.3		"	12.5		114		30-150			

LCS (BHB0778-BS1)

Prepared & Analyzed: 02/23/24

C10-C28 (DRO)	471	50	mg/kg	500		94.2		70-130			
Surrogate: <i>o</i> -Terphenyl	18.4		"	12.5		147		30-150			

Matrix Spike (BHB0778-MS1)

Source: 2402394-01

Prepared & Analyzed: 02/23/24

C10-C28 (DRO)	404	50	mg/kg	500	11.8	78.4		70-130			
Surrogate: <i>o</i> -Terphenyl	13.9		"	12.5		111		30-150			

Matrix Spike Dup (BHB0778-MSD1)

Source: 2402394-01

Prepared & Analyzed: 02/23/24

C10-C28 (DRO)	421	50	mg/kg	500	11.8	81.8		70-130	4.15	20	
Surrogate: <i>o</i> -Terphenyl	12.7		"	12.5		101		30-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC
Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

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 BHB0791 - EPA 5030 Soil MS

Blank (BHB0791-BLK1)

Prepared & Analyzed: 02/26/24

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>0.0441</i>		"	<i>0.0333</i>		<i>132</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0281</i>		"	<i>0.0333</i>		<i>84.3</i>		<i>40-150</i>		

LCS (BHB0791-BS1)

Prepared & Analyzed: 02/26/24

Acenaphthene	0.0377	0.00500	mg/kg	0.0333		113		31-137		
Anthracene	0.0338	0.00500	"	0.0333		101		30-120		
Benzo (a) anthracene	0.0326	0.00500	"	0.0333		97.9		30-120		
Benzo (a) pyrene	0.0324	0.00500	"	0.0333		97.2		30-120		
Benzo (b) fluoranthene	0.0381	0.00500	"	0.0333		114		30-120		
Benzo (k) fluoranthene	0.0377	0.00500	"	0.0333		113		30-120		
Chrysene	0.0369	0.00500	"	0.0333		111		30-120		
Dibenz (a,h) anthracene	0.0273	0.00500	"	0.0333		81.8		30-120		
Fluoranthene	0.0379	0.00500	"	0.0333		114		30-120		
Fluorene	0.0372	0.00500	"	0.0333		112		30-120		
Indeno (1,2,3-cd) pyrene	0.0394	0.00500	"	0.0333		118		30-120		
Pyrene	0.0382	0.00500	"	0.0333		115		35-142		
1-Methylnaphthalene	0.0378	0.00500	"	0.0333		114		35-142		
2-Methylnaphthalene	0.0397	0.00500	"	0.0333		119		35-142		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0318</i>		"	<i>0.0333</i>		<i>95.3</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0363</i>		"	<i>0.0333</i>		<i>109</i>		<i>40-150</i>		

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Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

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 BHB0791 - EPA 5030 Soil MS

Matrix Spike (BHB0791-MS1)	Source: 2402394-01			Prepared & Analyzed: 02/26/24						
Acenaphthene	0.0167	0.00500	mg/kg	0.0333	ND	50.1	31-137			
Anthracene	0.0135	0.00500	"	0.0333	ND	40.4	30-120			
Benzo (a) anthracene	0.0173	0.00500	"	0.0333	ND	51.9	30-120			
Benzo (a) pyrene	0.0135	0.00500	"	0.0333	ND	40.5	30-120			
Benzo (b) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.8	30-120			
Benzo (k) fluoranthene	0.0166	0.00500	"	0.0333	ND	49.9	30-120			
Chrysene	0.0164	0.00500	"	0.0333	ND	49.3	30-120			
Dibenz (a,h) anthracene	0.0162	0.00500	"	0.0333	ND	48.7	30-120			
Fluoranthene	0.0142	0.00500	"	0.0333	ND	42.7	30-120			
Fluorene	0.0160	0.00500	"	0.0333	ND	48.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	ND	42.8	30-120			
Pyrene	0.0161	0.00500	"	0.0333	ND	48.2	35-142			
1-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.2	15-130			
2-Methylnaphthalene	0.0151	0.00500	"	0.0333	ND	45.2	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0209</i>		<i>"</i>	<i>0.0333</i>		<i>62.7</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0160</i>		<i>"</i>	<i>0.0333</i>		<i>48.1</i>	<i>40-150</i>			

Matrix Spike Dup (BHB0791-MSD1)	Source: 2402394-01			Prepared & Analyzed: 02/26/24						
Acenaphthene	0.0158	0.00500	mg/kg	0.0333	ND	47.4	31-137	5.68	30	
Anthracene	0.0198	0.00500	"	0.0333	ND	59.3	30-120	38.0	30	QR-02
Benzo (a) anthracene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	4.39	30	
Benzo (a) pyrene	0.0154	0.00500	"	0.0333	ND	46.1	30-120	12.9	30	
Benzo (b) fluoranthene	0.0158	0.00500	"	0.0333	ND	47.3	30-120	9.22	30	
Benzo (k) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.4	30-120	0.924	30	
Chrysene	0.0161	0.00500	"	0.0333	ND	48.4	30-120	1.87	30	
Dibenz (a,h) anthracene	0.0150	0.00500	"	0.0333	ND	45.1	30-120	7.70	30	
Fluoranthene	0.0163	0.00500	"	0.0333	ND	48.8	30-120	13.2	30	
Fluorene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	2.55	30	
Indeno (1,2,3-cd) pyrene	0.0139	0.00500	"	0.0333	ND	41.6	30-120	2.96	30	
Pyrene	0.0176	0.00500	"	0.0333	ND	52.9	35-142	9.28	30	
1-Methylnaphthalene	0.0184	0.00500	"	0.0333	ND	55.1	15-130	22.0	50	
2-Methylnaphthalene	0.0148	0.00500	"	0.0333	ND	44.5	15-130	1.58	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0138</i>		<i>"</i>	<i>0.0333</i>		<i>41.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0161</i>		<i>"</i>	<i>0.0333</i>		<i>48.4</i>	<i>40-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC
 Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

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

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

Batch BHC0208 - EPA 3050B

Blank (BHC0208-BLK1)

Prepared: 03/08/24 Analyzed: 03/13/24

Boron ND 2.00 mg/L

LCS (BHC0208-BS1)

Prepared: 03/08/24 Analyzed: 03/13/24

Boron 4.88 2.00 mg/L 5.00 97.6 80-120

Duplicate (BHC0208-DUP1)

Source: 2402027-18RE1

Prepared: 03/08/24 Analyzed: 03/13/24

Boron 0.841 2.00 mg/L 0.798 5.22 20

Matrix Spike (BHC0208-MS1)

Source: 2402027-18RE1

Prepared: 03/08/24 Analyzed: 03/13/24

Boron 5.65 2.00 mg/L 5.00 0.798 97.1 75-125

Matrix Spike Dup (BHC0208-MSD1)

Source: 2402027-18RE1

Prepared: 03/08/24 Analyzed: 03/13/24

Boron 5.58 2.00 mg/L 5.00 0.798 95.6 75-125 1.37 25

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PO Box 1289
Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHC0140 - EPA 3050B

Blank (BHC0140-BLK1)

Prepared: 03/06/24 Analyzed: 03/07/24

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 (BHC0140-BS1)

Prepared: 03/06/24 Analyzed: 03/07/24

Arsenic	44.2	0.200	mg/kg wet	40.0	110	80-120
Barium	43.7	0.400	"	40.0	109	80-120
Cadmium	1.99	0.200	"	2.00	99.6	80-120
Copper	38.6	0.400	"	40.0	96.4	80-120
Lead	20.5	0.200	"	20.0	102	80-120
Nickel	38.4	0.400	"	40.0	96.0	80-120
Silver	2.03	0.0200	"	2.00	102	80-120
Zinc	39.2	0.400	"	40.0	98.0	80-120
Selenium	3.72	0.260	"	4.00	93.1	80-120

Duplicate (BHC0140-DUP1)

Source: 2402394-01

Prepared: 03/06/24 Analyzed: 03/07/24

Arsenic	4.10	0.200	mg/kg dry	3.68	10.9	20
Barium	96.3	0.400	"	80.6	17.8	20
Cadmium	0.197	0.200	"	0.184	6.59	20
Copper	3.53	0.400	"	3.50	0.596	20
Lead	7.40	0.200	"	6.82	8.18	20
Nickel	4.19	0.400	"	3.99	5.05	20
Silver	0.0544	0.0200	"	0.0535	1.72	20
Zinc	14.0	0.400	"	14.0	0.512	20
Selenium	ND	0.260	"	ND		20

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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

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 BHC0140 - EPA 3050B

Matrix Spike (BHC0140-MS1)

Source: 2402394-01

Prepared: 03/06/24 Analyzed: 03/07/24

Arsenic	61.9	0.200	mg/kg dry	46.5	3.68	125	75-125				
Barium	143	0.400	"	46.5	80.6	134	75-125				QM-05
Cadmium	2.77	0.200	"	2.33	0.184	111	75-125				
Copper	31.7	0.400	"	46.5	3.50	60.5	75-125				QM-05
Lead	30.7	0.200	"	23.3	6.82	103	75-125				
Nickel	33.0	0.400	"	46.5	3.99	62.4	75-125				QM-05
Silver	2.37	0.0200	"	2.33	0.0535	99.4	75-125				
Zinc	42.2	0.400	"	46.5	14.0	60.6	75-125				QM-05
Selenium	3.61	0.260	"	4.65	ND	77.6	75-125				

Matrix Spike Dup (BHC0140-MSD1)

Source: 2402394-01

Prepared: 03/06/24 Analyzed: 03/07/24

Arsenic	60.5	0.200	mg/kg dry	46.5	3.68	122	75-125	2.27	25		
Barium	143	0.400	"	46.5	80.6	135	75-125	0.285	25		QM-05
Cadmium	2.84	0.200	"	2.33	0.184	114	75-125	2.59	25		
Copper	32.9	0.400	"	46.5	3.50	63.1	75-125	3.74	25		QM-05
Lead	31.2	0.200	"	23.3	6.82	105	75-125	1.34	25		
Nickel	34.0	0.400	"	46.5	3.99	64.6	75-125	3.07	25		QM-05
Silver	2.40	0.0200	"	2.33	0.0535	101	75-125	1.50	25		
Zinc	43.6	0.400	"	46.5	14.0	63.7	75-125	3.37	25		QM-05
Selenium	4.06	0.260	"	4.65	ND	87.2	75-125	11.6	25		

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Fremont Environmental
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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

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 BHC0067 - General Preparation

Blank (BHC0067-BLK1)

Prepared: 03/04/24 Analyzed: 03/09/24


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

LCS (BHC0067-BS1)

Prepared: 03/04/24 Analyzed: 03/09/24

Calcium	5.10	0.0500	mg/L wet	5.00		102	70-130			
Magnesium	5.08	0.0500	"	5.00		102	70-130			
Sodium	5.17	0.0500	"	5.00		103	70-130			

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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

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


Summit Scientific

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

Batch BHC0090 - General Preparation

Duplicate (BHC0090-DUP1)	Source: 2402385-01		Prepared: 03/05/24 Analyzed: 03/06/24		
% Solids	89.3	%	88.7	0.656	20

Summit Scientific



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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

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 BHC0069 - General Preparation

Blank (BHC0069-BLK1)

Prepared: 03/04/24 Analyzed: 03/06/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHC0069-BS1)

Prepared: 03/04/24 Analyzed: 03/06/24

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 102 95-105

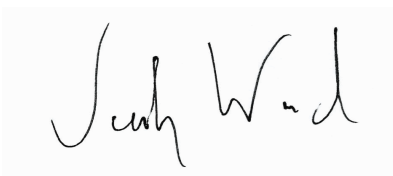
Duplicate (BHC0069-DUP1)

Source: 2402384-01

Prepared: 03/04/24 Analyzed: 03/06/24

Specific Conductance (EC) 0.424 0.0100 mmhos/cm 0.439 3.29 20

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 Wellington CO, 80549

Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
 Project Manager: Paul Henchan

Reported:
 03/18/24 11:05

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 BHC0068 - General Preparation

LCS (BHC0068-BS1)

Prepared: 03/04/24 Analyzed: 03/06/24

pH	9.07		pH Units	9.18		98.8	95-105			
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Duplicate (BHC0068-DUP1)

Source: 2402384-01

Prepared: 03/04/24 Analyzed: 03/06/24

pH	9.77		pH Units	9.91			1.42	20		
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Project: Noble - Wells Ranch AA 35-62-1AHNC

Project Number: UWRWR-A3006-ABN
Project Manager: Paul Henchan

Reported:
03/18/24 11:05

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-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