

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

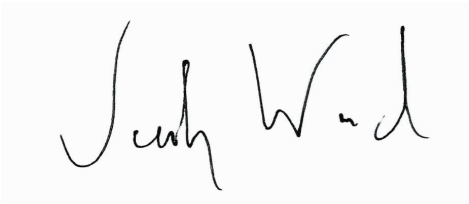
303.277.9310

March 26, 2024

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549
RE: Noble - Lucci B01-20
Work Order #2403047

Enclosed are the results of analyses for samples received by Summit Scientific on 03/04/24 16:30. 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 small "w" at the end of the last name.

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Lucci B01-20
Project Number: UWRWE-A2067-ABN
Project Manager: Paul Henchan

Reported:
03/26/24 11:07

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01 5'	2403047-01	Soil	03/04/24 12:50	03/04/24 16:30
FL02 3'	2403047-02	Soil	03/04/24 12:55	03/04/24 16:30

Summit Scientific

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

Lab ID	Page 1 of 1
2403047	

Client: Fremont Environmental		Send Data To: Project Manager: Paul Henehan	Send Invoice To: Company: Noble
Address:		E-Mail: Fremont Distribution List	Project Name/Location:
City/State/Zip:			AFE#:
Phone: 303-261-6246	Project Name: Lucci 801-20		PO/Billing Codes: UWRWE-A2067-ABN
Sampler Name: Stanley Gilbert		Project Number:	Contact: Mike Montoya

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Analysis Requested							Special Instructions
					HCl	HNO3	None	Other	Water	Soil		Other	BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron	Metals (915)	TDS, Chloride, Sulfate	
1	FLO 15'	3/4/24	12:50	2			X			X		X	X	X	X	X			
2	FLO 2 3'	3/4/24	12:55	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: 3/4/24 14:50	Received by: Summit West	Date/Time: 3/4/24 14:50	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by:	Date/Time: 3/4/24 14:50	Received by:	Date/Time: 3/4/24 14:50	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	<input checked="" type="checkbox"/> Field Turb.	
Temperature Upon Receipt: 12.7	Corrected Temperature: 8	IR gun #:)	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2403047

Client: Fremont Client Project ID: Lucci B01-20

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

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

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on 2/15
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	no time stamps
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	"
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

AS
Custodian Printed Name
3/4/24
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Lucci B01-20
Project Number: UWRWE-A2067-ABN
Project Manager: Paul Henchan

Reported:
03/26/24 11:07

FL01 5'
2403047-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BHC0082	03/05/24	03/06/24	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: **03/04/24 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0458	114 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	96.9 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0393	98.3 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BHC0084	03/05/24	03/07/24	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.96	63.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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FL01 5'
2403047-01 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0080	03/05/24	03/07/24	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: **03/04/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0270	80.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0186	55.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0446	03/15/24	03/21/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Manager: Paul Henchan

Reported:
03/26/24 11:07

FL01 5'
2403047-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.70	0.200	mg/kg dry	1	BHC0573	03/16/24	03/22/24	EPA 6020B	
Barium	54.8	0.400	"	"	"	"	"	"	
Cadmium	0.207	0.200	"	"	"	"	"	"	
Copper	4.81	0.400	"	"	"	"	"	"	
Lead	7.22	0.200	"	"	"	"	"	"	
Nickel	4.51	0.400	"	"	"	"	"	"	
Silver	0.0217	0.0200	"	"	"	"	"	"	
Zinc	20.7	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0559	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	51.4	0.0500	mg/L dry	1	BHC0644	03/18/24	03/22/24	EPA 6020B	
Magnesium	6.67	0.0500	"	"	"	"	"	"	
Sodium	11.1	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.387	0.00100	units	1	BHC0930	03/25/24	03/25/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

FL01 5'
2403047-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	70.1	%	1	BHC0416	03/14/24	03/16/24	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/04/24 12:50**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.236	0.0100	mmhos/cm	1	BHC0646	03/18/24	03/24/24	EPA 120.1	

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

Date Sampled: **03/04/24 12:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.58		pH Units	1	BHC0645	03/18/24	03/24/24	EPA 9045D	

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Project: Noble - Lucci B01-20
Project Number: UWRWE-A2067-ABN
Project Manager: Paul Henchan

Reported:
03/26/24 11:07

FL02 3'
2403047-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BHC0082	03/05/24	03/06/24	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: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0500	125 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0378	94.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BHC0084	03/05/24	03/08/24	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	8.76	70.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Reported:
 03/26/24 11:07

FL02 3'
2403047-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BHC0080	03/05/24	03/07/24	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: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0333	100 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0241	72.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	ND	2.00	mg/L	1	BHC0446	03/15/24	03/21/24	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Reported:
03/26/24 11:07

FL02 3'
2403047-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.16	0.200	mg/kg dry	1	BHC0573	03/16/24	03/22/24	EPA 6020B	
Barium	70.2	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.89	0.400	"	"	"	"	"	"	
Lead	7.78	0.200	"	"	"	"	"	"	
Nickel	3.40	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	16.9	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BHC0559	03/16/24	03/19/24	EPA 7196A	

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

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	520	0.0500	mg/L dry	1	BHC0644	03/18/24	03/22/24	EPA 6020B	
Magnesium	43.2	0.0500	"	"	"	"	"	"	
Sodium	0.984	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0111	0.00100	units	1	BHC0930	03/25/24	03/25/24	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
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Reported:
 03/26/24 11:07

FL02 3'
2403047-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.3		%	1	BHC0416	03/14/24	03/16/24	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **03/04/24 12:55**


Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.162	0.0100	mmhos/cm	1	BHC0646	03/18/24	03/24/24	EPA 120.1	

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

Date Sampled: **03/04/24 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.94		pH Units	1	BHC0645	03/18/24	03/24/24	EPA 9045D	

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Project Number: UWRWE-A2067-ABN
Project Manager: Paul Henchan

Reported:
03/26/24 11:07

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BHC0082 - EPA 5030 Soil MS

Blank (BHC0082-BLK1)

Prepared & Analyzed: 03/05/24

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>	0.0480		"	0.0400		120	50-150			
<i>Surrogate: Toluene-d8</i>	0.0365		"	0.0400		91.4	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0402		"	0.0400		101	50-150			

LCS (BHC0082-BS1)

Prepared & Analyzed: 03/05/24

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130			
Toluene	0.122	0.0050	"	0.100		122	70-130			
Ethylbenzene	0.118	0.0050	"	0.100		118	70-130			
m,p-Xylene	0.233	0.010	"	0.200		116	70-130			
o-Xylene	0.113	0.0050	"	0.100		113	70-130			
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130			
1,3,5-Trimethylbenzene	0.111	0.0050	"	0.100		111	70-130			
Naphthalene	0.110	0.0038	"	0.100		110	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0479		"	0.0400		120	50-150			
<i>Surrogate: Toluene-d8</i>	0.0372		"	0.0400		92.9	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0385		"	0.0400		96.3	50-150			

Matrix Spike (BHC0082-MS1)

Source: 2403036-01

Prepared & Analyzed: 03/05/24

Benzene	0.0978	0.0020	mg/kg	0.100	ND	97.8	70-130			
Toluene	0.109	0.0050	"	0.100	ND	109	70-130			
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130			
m,p-Xylene	0.213	0.010	"	0.200	ND	107	70-130			
o-Xylene	0.102	0.0050	"	0.100	ND	102	70-130			
1,2,4-Trimethylbenzene	0.0983	0.0050	"	0.100	ND	98.3	70-130			
1,3,5-Trimethylbenzene	0.0994	0.0050	"	0.100	ND	99.4	70-130			
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0424		"	0.0400		106	50-150			
<i>Surrogate: Toluene-d8</i>	0.0385		"	0.0400		96.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0396		"	0.0400		99.0	50-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

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

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

Batch BHC0082 - EPA 5030 Soil MS

Matrix Spike Dup (BHC0082-MSD1)	Source: 2403036-01			Prepared & Analyzed: 03/05/24						
Benzene	0.0982	0.0020	mg/kg	0.100	ND	98.2	70-130	0.398	30	
Toluene	0.109	0.0050	"	0.100	ND	109	70-130	0.275	30	
Ethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	2.79	30	
m,p-Xylene	0.220	0.010	"	0.200	ND	110	70-130	2.83	30	
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130	3.58	30	
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100	ND	100	70-130	2.14	30	
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	1.26	30	
Naphthalene	0.105	0.0038	"	0.100	ND	105	70-130	3.38	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0465</i>		<i>"</i>	<i>0.0400</i>		<i>116</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0369</i>		<i>"</i>	<i>0.0400</i>		<i>92.3</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0400</i>		<i>"</i>	<i>0.0400</i>		<i>100</i>	<i>50-150</i>			

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Fremont Environmental
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 Wellington CO, 80549

Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

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 BHC0084 - EPA 3550A

Blank (BHC0084-BLK1)

Prepared: 03/05/24 Analyzed: 03/06/24

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	13.1		"	12.5	105	30-150					

LCS (BHC0084-BS1)

Prepared: 03/05/24 Analyzed: 03/06/24

C10-C28 (DRO)	419	50	mg/kg	500	83.9	70-130					
Surrogate: <i>o</i> -Terphenyl	9.96		"	12.5	79.7	30-150					

Matrix Spike (BHC0084-MS1)

Source: 2403036-01

Prepared: 03/05/24 Analyzed: 03/06/24

C10-C28 (DRO)	341	50	mg/kg	500	14.2	65.3	70-130				QM-07
Surrogate: <i>o</i> -Terphenyl	7.90		"	12.5	63.2	30-150					

Matrix Spike Dup (BHC0084-MSD1)

Source: 2403036-01

Prepared: 03/05/24 Analyzed: 03/06/24

C10-C28 (DRO)	358	50	mg/kg	500	14.2	68.8	70-130	4.99	20		QM-07
Surrogate: <i>o</i> -Terphenyl	9.06		"	12.5	72.5	30-150					

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Lucci B01-20
Project Number: UWRWE-A2067-ABN
Project Manager: Paul Henchan

Reported:
03/26/24 11:07

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BHC0080 - EPA 5030 Soil MS

Blank (BHC0080-BLK1)

Prepared: 03/05/24 Analyzed: 03/07/24

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>0.0286</i>		"	<i>0.0333</i>		<i>85.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0313</i>		"	<i>0.0333</i>		<i>93.8</i>	<i>40-150</i>			

LCS (BHC0080-BS1)

Prepared: 03/05/24 Analyzed: 03/07/24

Acenaphthene	0.0375	0.00500	mg/kg	0.0333	112	31-137
Anthracene	0.0315	0.00500	"	0.0333	94.6	30-120
Benzo (a) anthracene	0.0303	0.00500	"	0.0333	90.9	30-120
Benzo (a) pyrene	0.0331	0.00500	"	0.0333	99.4	30-120
Benzo (b) fluoranthene	0.0325	0.00500	"	0.0333	97.5	30-120
Benzo (k) fluoranthene	0.0380	0.00500	"	0.0333	114	30-120
Chrysene	0.0380	0.00500	"	0.0333	114	30-120
Dibenz (a,h) anthracene	0.0273	0.00500	"	0.0333	81.8	30-120
Fluoranthene	0.0358	0.00500	"	0.0333	107	30-120
Fluorene	0.0367	0.00500	"	0.0333	110	30-120
Indeno (1,2,3-cd) pyrene	0.0329	0.00500	"	0.0333	98.6	30-120
Pyrene	0.0380	0.00500	"	0.0333	114	35-142
1-Methylnaphthalene	0.0394	0.00500	"	0.0333	118	35-142
2-Methylnaphthalene	0.0347	0.00500	"	0.0333	104	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0297</i>		"	<i>0.0333</i>	<i>89.0</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0369</i>		"	<i>0.0333</i>	<i>111</i>	<i>40-150</i>

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Wellington CO, 80549

Project: Noble - Lucci B01-20
Project Number: UWRWE-A2067-ABN
Project Manager: Paul Henchan

Reported:
03/26/24 11:07

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BHC0080 - EPA 5030 Soil MS

Matrix Spike (BHC0080-MS1)

Source: 2403045-01

Prepared: 03/05/24 Analyzed: 03/07/24

Acenaphthene	0.0137	0.00500	mg/kg	0.0333	ND	41.1	31-137			
Anthracene	0.0110	0.00500	"	0.0333	ND	33.1	30-120			
Benzo (a) anthracene	0.0128	0.00500	"	0.0333	ND	38.5	30-120			
Benzo (a) pyrene	0.0123	0.00500	"	0.0333	ND	36.8	30-120			
Benzo (b) fluoranthene	0.0163	0.00500	"	0.0333	ND	49.0	30-120			
Benzo (k) fluoranthene	0.0167	0.00500	"	0.0333	ND	50.1	30-120			
Chrysene	0.0176	0.00500	"	0.0333	ND	52.8	30-120			
Dibenz (a,h) anthracene	0.0107	0.00500	"	0.0333	ND	32.2	30-120			
Fluoranthene	0.0155	0.00500	"	0.0333	ND	46.5	30-120			
Fluorene	0.0133	0.00500	"	0.0333	ND	40.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0110	0.00500	"	0.0333	ND	32.9	30-120			
Pyrene	0.0177	0.00500	"	0.0333	ND	53.0	35-142			
1-Methylnaphthalene	0.0124	0.00500	"	0.0333	ND	37.2	15-130			
2-Methylnaphthalene	0.0154	0.00500	"	0.0333	ND	46.2	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0160		"	0.0333		48.0	40-150			
Surrogate: Fluoranthene-d10	0.0155		"	0.0333		46.5	40-150			

Matrix Spike Dup (BHC0080-MSD1)

Source: 2403045-01

Prepared: 03/05/24 Analyzed: 03/07/24

Acenaphthene	0.0213	0.00500	mg/kg	0.0333	ND	64.0	31-137	43.6	30	QR-02
Anthracene	0.0162	0.00500	"	0.0333	ND	48.6	30-120	37.8	30	QR-02
Benzo (a) anthracene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	35.8	30	QR-02
Benzo (a) pyrene	0.0187	0.00500	"	0.0333	ND	56.2	30-120	41.7	30	QR-02
Benzo (b) fluoranthene	0.0196	0.00500	"	0.0333	ND	58.8	30-120	18.1	30	
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.5	30-120	36.5	30	QR-02
Chrysene	0.0233	0.00500	"	0.0333	ND	69.8	30-120	27.8	30	
Dibenz (a,h) anthracene	0.0157	0.00500	"	0.0333	ND	47.0	30-120	37.5	30	QR-02
Fluoranthene	0.0231	0.00500	"	0.0333	ND	69.4	30-120	39.6	30	QR-02
Fluorene	0.0203	0.00500	"	0.0333	ND	61.0	30-120	41.6	30	QR-02
Indeno (1,2,3-cd) pyrene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	47.8	30	QR-02
Pyrene	0.0232	0.00500	"	0.0333	ND	69.5	35-142	27.0	30	
1-Methylnaphthalene	0.0216	0.00500	"	0.0333	ND	64.7	15-130	54.0	50	QR-02
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.3	15-130	19.8	50	
Surrogate: 2-Methylnaphthalene-d10	0.0220		"	0.0333		66.1	40-150			
Surrogate: Fluoranthene-d10	0.0232		"	0.0333		69.5	40-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

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

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

Batch BHC0446 - EPA 3050B

Blank (BHC0446-BLK1)

Prepared: 03/15/24 Analyzed: 03/21/24

Boron ND 2.00 mg/L

LCS (BHC0446-BS1)

Prepared: 03/15/24 Analyzed: 03/21/24

Boron 4.70 2.00 mg/L 5.00 94.0 80-120

Duplicate (BHC0446-DUP1)

Source: 2403033-01

Prepared: 03/15/24 Analyzed: 03/21/24

Boron 0.175 2.00 mg/L 0.195 10.5 20

Matrix Spike (BHC0446-MS1)

Source: 2403033-01

Prepared: 03/15/24 Analyzed: 03/21/24

Boron 4.37 2.00 mg/L 5.00 0.195 83.5 75-125

Matrix Spike Dup (BHC0446-MSD1)

Source: 2403033-01

Prepared: 03/15/24 Analyzed: 03/21/24

Boron 4.57 2.00 mg/L 5.00 0.195 87.5 75-125 4.53 25

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 PO Box 1289
 Wellington CO, 80549

Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

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 BHC0573 - EPA 3050B

Blank (BHC0573-BLK1)

Prepared: 03/16/24 Analyzed: 03/22/24

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 (BHC0573-BS1)

Prepared: 03/16/24 Analyzed: 03/22/24

Arsenic	37.5	0.200	mg/kg wet	40.0		93.6	80-120
Barium	37.8	0.400	"	40.0		94.5	80-120
Cadmium	2.00	0.200	"	2.00		100	80-120
Copper	45.3	0.400	"	40.0		113	80-120
Lead	19.7	0.200	"	20.0		98.4	80-120
Nickel	44.6	0.400	"	40.0		111	80-120
Silver	2.00	0.0200	"	2.00		100	80-120
Zinc	45.2	0.400	"	40.0		113	80-120
Selenium	3.87	0.260	"	4.00		96.7	80-120

Duplicate (BHC0573-DUP1)

Source: 2403028-01

Prepared: 03/16/24 Analyzed: 03/22/24

Arsenic	1.39	0.200	mg/kg dry	1.47		5.14	20
Barium	45.8	0.400	"	44.1		3.72	20
Cadmium	0.0915	0.200	"	0.0842		8.27	20
Copper	3.09	0.400	"	2.87		7.60	20
Lead	4.60	0.200	"	4.04		12.9	20
Nickel	3.10	0.400	"	3.06		1.28	20
Silver	0.0111	0.0200	"	0.00983		12.2	20
Zinc	13.4	0.400	"	13.0		2.73	20
Selenium	ND	0.260	"	ND			20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BHC0573 - EPA 3050B

Matrix Spike (BHC0573-MS1)

Source: 2403028-01

Prepared: 03/16/24 Analyzed: 03/22/24

Arsenic	40.7	0.200	mg/kg dry	42.7	1.47	91.7	75-125			
Barium	80.4	0.400	"	42.7	44.1	84.8	75-125			
Cadmium	2.24	0.200	"	2.14	0.0842	101	75-125			
Copper	38.5	0.400	"	42.7	2.87	83.5	75-125			
Lead	23.6	0.200	"	21.4	4.04	91.3	75-125			
Nickel	38.3	0.400	"	42.7	3.06	82.5	75-125			
Silver	2.09	0.0200	"	2.14	0.00983	97.2	75-125			
Zinc	49.0	0.400	"	42.7	13.0	84.3	75-125			
Selenium	4.27	0.260	"	4.27	ND	99.9	75-125			

Matrix Spike Dup (BHC0573-MSD1)

Source: 2403028-01

Prepared: 03/16/24 Analyzed: 03/22/24

Arsenic	39.7	0.200	mg/kg dry	42.7	1.47	89.4	75-125	2.49	25
Barium	80.2	0.400	"	42.7	44.1	84.5	75-125	0.159	25
Cadmium	2.24	0.200	"	2.14	0.0842	101	75-125	0.324	25
Copper	37.8	0.400	"	42.7	2.87	81.8	75-125	1.91	25
Lead	23.6	0.200	"	21.4	4.04	91.6	75-125	0.286	25
Nickel	37.2	0.400	"	42.7	3.06	79.8	75-125	3.04	25
Silver	2.07	0.0200	"	2.14	0.00983	96.3	75-125	0.946	25
Zinc	47.9	0.400	"	42.7	13.0	81.6	75-125	2.34	25
Selenium	3.79	0.260	"	4.27	ND	88.7	75-125	12.0	25

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BHC0559 - 3060A Mod

Blank (BHC0559-BLK1)

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BHC0559-BS1)

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent 25.6 0.30 mg/kg wet 25.0 102 80-120

Duplicate (BHC0559-DUP1)

Source: 2403046-01

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BHC0559-MS1)

Source: 2403046-01

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent 31.1 0.30 mg/kg dry 30.0 ND 104 75-125

Matrix Spike Dup (BHC0559-MSD1)

Source: 2403046-01

Prepared: 03/16/24 Analyzed: 03/19/24

Chromium, Hexavalent 31.1 0.30 mg/kg dry 30.0 ND 104 75-125 0.00 20

Summit Scientific

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 Wellington CO, 80549

Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

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

Summit Scientific

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

Batch BHC0644 - General Preparation

Blank (BHC0644-BLK1)

Prepared: 03/18/24 Analyzed: 03/22/24

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

LCS (BHC0644-BS1)

Prepared: 03/18/24 Analyzed: 03/22/24

Calcium	5.65	0.0500	mg/L wet	5.00		113	70-130			
Magnesium	5.14	0.0500	"	5.00		103	70-130			
Sodium	5.11	0.0500	"	5.00		102	70-130			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

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 BHC0416 - General Preparation

Duplicate (BHC0416-DUP1)

Source: 2403046-01

Prepared: 03/14/24 Analyzed: 03/16/24

% Solids	83.0		%		83.4			0.476	20	
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Summit Scientific

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Project: Noble - Lucci B01-20
 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

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 BHC0646 - General Preparation

Blank (BHC0646-BLK1)

Prepared: 03/18/24 Analyzed: 03/24/24

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BHC0646-BS1)

Prepared: 03/18/24 Analyzed: 03/24/24

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

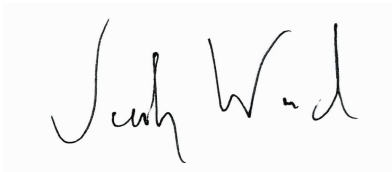
Duplicate (BHC0646-DUP1)

Source: 2403046-01

Prepared: 03/18/24 Analyzed: 03/24/24

Specific Conductance (EC) 0.133 0.0100 mmhos/cm 0.132 0.377 20

Summit Scientific



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 Project Number: UWRWE-A2067-ABN
 Project Manager: Paul Henchan

Reported:
 03/26/24 11:07

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

Summit Scientific

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

Batch BHC0645 - General Preparation

LCS (BHC0645-BS1)

Prepared: 03/18/24 Analyzed: 03/24/24

pH	9.03		pH Units	9.18		98.4	95-105			
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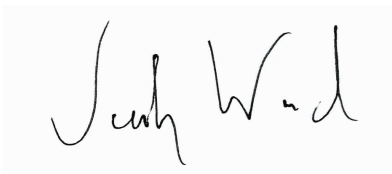
Duplicate (BHC0645-DUP1)

Source: 2403046-01

Prepared: 03/18/24 Analyzed: 03/24/24

pH	8.77		pH Units	8.79		0.228	20			
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Summit Scientific



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Project Number: UWRWE-A2067-ABN
Project Manager: Paul Henchan

Reported:
03/26/24 11:07

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.
- 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