

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

June 19, 2023

Paul Henchan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - Spike State GWS CC30-02

Work Order #2306078

Enclosed are the results of analyses for samples received by Summit Scientific on 06/05/23 16:50. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Scott Sheely For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
Project Manager: Paul Henchan

Reported:
06/19/23 15:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01 3 feet	2306078-01	Soil	06/05/23 12:55	06/05/23 16:50
FL06 4 feet	2306078-02	Soil	06/05/23 11:30	06/05/23 16:50

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

Lab ID	Page 1 of 1
2306078	

Send Data To:		Send Invoice To:	
Client: Fremont Environmental	Project Manager: Paul Henehan	Company: Noble	
Address:	E-Mail: Fremont Distribution List	Project Name/Location: Spike State GWS CC30-02	
City/State/Zip:		AFE#:	
Phone: 303-261-6246	Project Name: Spike State GWS CC30-02	PO/Billing Codes: UWRWE-A3043-ABM	
Sampler Name: Stanley Gilbert	Project Number:	Contact: Mike Montoya	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested						Special Instructions			
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron		Metals (915)	TDS, Chloride, Sulfate	HOLD
1	FLO2 3 feet	6/5/23	12:55	2			X			X			X	X	X	X				
2	FLO6 4 feet	6/5/23	11:30	2			X			X			X	X	X	X				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by:	Date/Time: 6/5/23 16:50	Received by: Summit North	Date/Time: 6/5/23 16:50	TAT Business Days	Field DO	Notes:
Relinquished by: 92	Date/Time: 6/5/23 16:50	Received by:	Date/Time: 6/5/23 16:50	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	<input checked="" type="checkbox"/> Field Turb.	
Temperature Upon Receipt: 16.4	Corrected Temperature:	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2306078

Client: Fremont Client Project ID: Spike State GWS CC30-02

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"/>	on ice
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 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Additional Comments (if any):				

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

AS
Custodian Printed Name

4/5/23
Date/Time



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 06/19/23 15:17

FL01 3 feet
2306078-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGF0302	06/08/23	06/08/23	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: **06/05/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0404	101 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0392	98.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0397	99.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGF0308	06/08/23	06/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	14.8	118 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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 06/19/23 15:17

FL01 3 feet
2306078-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0272	06/08/23	06/09/23	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: **06/05/23 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0232	69.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0196	58.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0863	0.0100	mg/L	1	BGF0406	06/12/23	06/16/23	EPA 6020B	

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

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 06/19/23 15:17

FL01 3 feet
2306078-01 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	205	0.0536	mg/L dry	1	BGF0402	06/11/23	06/18/23	EPA 6020B	
Magnesium	53.2	0.0536	"	"	"	"	"	"	
Sodium	6.54	0.0536	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.105	0.00100	units	1	BGF0655	06/19/23	06/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BGF0404	06/12/23	06/12/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.244	0.0100	mmhos/cm	1	BGF0410	06/12/23	06/12/23	EPA 120.1	

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

Date Sampled: **06/05/23 12:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.45		pH Units	1	BGF0409	06/12/23	06/12/23	EPA 9045D	

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Project Number: [none]
Project Manager: Paul Henchan

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06/19/23 15:17

FL06 4 feet
2306078-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGF0302	06/08/23	06/08/23	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: **06/05/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0389	97.4 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0414	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGF0308	06/08/23	06/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	15.1	121 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: [none]
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06/19/23 15:17

FL06 4 feet
2306078-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGF0272	06/08/23	06/09/23	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: **06/05/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0235	70.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0258	77.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0498	0.0100	mg/L	1	BGF0406	06/12/23	06/16/23	EPA 6020B	

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

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Spike State GWS CC30-02

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 06/19/23 15:17

FL06 4 feet
2306078-02 (Soil)

Summit Scientific

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	260	0.0526	mg/L dry	1	BGF0402	06/11/23	06/18/23	EPA 6020B	
Magnesium	64.4	0.0526	"	"	"	"	"	"	
Sodium	4.42	0.0526	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0636	0.00100	units	1	BGF0655	06/19/23	06/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.0		%	1	BGF0404	06/12/23	06/12/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.194	0.0100	mmhos/cm	1	BGF0410	06/12/23	06/12/23	EPA 120.1	

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

Date Sampled: **06/05/23 11:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.87		pH Units	1	BGF0409	06/12/23	06/12/23	EPA 9045D	

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Project: Noble - Spike State GWS CC30-02

Project Number: [none]
Project Manager: Paul Henchan

Reported:
06/19/23 15:17

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 BGF0302 - EPA 5030 Soil MS

Blank (BGF0302-BLK1)

Prepared & Analyzed: 06/08/23

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	0.0386		"	0.0400		96.5	50-150				
Surrogate: Toluene-d8	0.0397		"	0.0400		99.3	50-150				
Surrogate: 4-Bromofluorobenzene	0.0406		"	0.0400		101	50-150				

LCS (BGF0302-BS1)

Prepared & Analyzed: 06/08/23

Benzene	0.0683	0.0020	mg/kg	0.0750		91.1	70-130				
Toluene	0.0784	0.0050	"	0.0750		105	70-130				
Ethylbenzene	0.0881	0.0050	"	0.0750		117	70-130				
m,p-Xylene	0.173	0.010	"	0.150		115	70-130				
o-Xylene	0.0787	0.0050	"	0.0750		105	70-130				
1,2,4-Trimethylbenzene	0.0816	0.0050	"	0.0750		109	70-130				
1,3,5-Trimethylbenzene	0.0859	0.0050	"	0.0750		115	70-130				
Naphthalene	0.0696	0.0038	"	0.0750		92.8	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.5	50-150				
Surrogate: Toluene-d8	0.0397		"	0.0400		99.2	50-150				
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.0	50-150				

Matrix Spike (BGF0302-MS1)

Source: 2306078-01

Prepared & Analyzed: 06/08/23

Benzene	0.0674	0.0020	mg/kg	0.0750	ND	89.8	70-130				
Toluene	0.0757	0.0050	"	0.0750	ND	101	70-130				
Ethylbenzene	0.0848	0.0050	"	0.0750	ND	113	70-130				
m,p-Xylene	0.169	0.010	"	0.150	ND	113	70-130				
o-Xylene	0.0758	0.0050	"	0.0750	ND	101	70-130				
1,2,4-Trimethylbenzene	0.0776	0.0050	"	0.0750	ND	103	70-130				
1,3,5-Trimethylbenzene	0.0802	0.0050	"	0.0750	ND	107	70-130				
Naphthalene	0.0686	0.0038	"	0.0750	ND	91.4	70-130				
Surrogate: 1,2-Dichloroethane-d4	0.0371		"	0.0400		92.8	50-150				
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	50-150				
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	50-150				

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Project Number: [none]
 Project Manager: Paul Henchan

Reported:
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Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGF0302 - EPA 5030 Soil MS

Matrix Spike Dup (BGF0302-MSD1)	Source: 2306078-01			Prepared & Analyzed: 06/08/23						
Benzene	0.0686	0.0020	mg/kg	0.0750	ND	91.5	70-130	1.85	30	
Toluene	0.0798	0.0050	"	0.0750	ND	106	70-130	5.29	30	
Ethylbenzene	0.0884	0.0050	"	0.0750	ND	118	70-130	4.12	30	
m,p-Xylene	0.174	0.010	"	0.150	ND	116	70-130	2.77	30	
o-Xylene	0.0792	0.0050	"	0.0750	ND	106	70-130	4.41	30	
1,2,4-Trimethylbenzene	0.0789	0.0050	"	0.0750	ND	105	70-130	1.69	30	
1,3,5-Trimethylbenzene	0.0829	0.0050	"	0.0750	ND	111	70-130	3.35	30	
Naphthalene	0.0709	0.0038	"	0.0750	ND	94.5	70-130	3.31	30	
Surrogate: 1,2-Dichloroethane-d4	0.0378		"	0.0400		94.4	50-150			
Surrogate: Toluene-d8	0.0405		"	0.0400		101	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.5	50-150			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 06/19/23 15:17

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 BGF0308 - EPA 3550A

Blank (BGF0308-BLK1)

Prepared & Analyzed: 06/08/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	14.8		"	12.5		118		30-150			

LCS (BGF0308-BS1)

Prepared & Analyzed: 06/08/23

C10-C28 (DRO)	490	50	mg/kg	500		98.0		70-130			
Surrogate: <i>o</i> -Terphenyl	14.3		"	12.5		115		30-150			

Matrix Spike (BGF0308-MS1)

Source: 2306078-01

Prepared & Analyzed: 06/08/23

C10-C28 (DRO)	451	50	mg/kg	500	ND	90.1		70-130			
Surrogate: <i>o</i> -Terphenyl	14.6		"	12.5		117		30-150			

Matrix Spike Dup (BGF0308-MSD1)

Source: 2306078-01

Prepared & Analyzed: 06/08/23

C10-C28 (DRO)	501	50	mg/kg	500	ND	100		70-130	10.5	20	
Surrogate: <i>o</i> -Terphenyl	14.8		"	12.5		119		30-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
Project Manager: Paul Henchan

Reported:
06/19/23 15:17

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 BGF0272 - EPA 5030 Soil MS

Blank (BGF0272-BLK1)

Prepared & Analyzed: 06/08/23

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>0.0385</i>		"	<i>0.0333</i>		<i>115</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0361</i>		"	<i>0.0333</i>		<i>108</i>	<i>40-150</i>			

LCS (BGF0272-BS1)

Prepared & Analyzed: 06/08/23

Acenaphthene	0.0292	0.00500	mg/kg	0.0333		87.5	31-137			
Anthracene	0.0287	0.00500	"	0.0333		86.1	30-120			
Benzo (a) anthracene	0.0141	0.00500	"	0.0333		42.2	30-120			
Benzo (a) pyrene	0.0286	0.00500	"	0.0333		85.9	30-120			
Benzo (b) fluoranthene	0.0321	0.00500	"	0.0333		96.2	30-120			
Benzo (k) fluoranthene	0.0286	0.00500	"	0.0333		85.7	30-120			
Chrysene	0.0232	0.00500	"	0.0333		69.5	30-120			
Dibenz (a,h) anthracene	0.0301	0.00500	"	0.0333		90.3	30-120			
Fluoranthene	0.0280	0.00500	"	0.0333		84.1	30-120			
Fluorene	0.0278	0.00500	"	0.0333		83.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0309	0.00500	"	0.0333		92.7	30-120			
Pyrene	0.0329	0.00500	"	0.0333		98.6	35-142			
1-Methylnaphthalene	0.0164	0.00500	"	0.0333		49.2	35-142			
2-Methylnaphthalene	0.0237	0.00500	"	0.0333		71.2	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0252</i>		"	<i>0.0333</i>		<i>75.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0285</i>		"	<i>0.0333</i>		<i>85.5</i>	<i>40-150</i>			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
Project Manager: Paul Henchan

Reported:
06/19/23 15:17

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 BGF0272 - EPA 5030 Soil MS

Matrix Spike (BGF0272-MS1)	Source: 2305676-03			Prepared & Analyzed: 06/08/23						
Acenaphthene	0.0217	0.00500	mg/kg	0.0333	ND	65.1	31-137			
Anthracene	0.0227	0.00500	"	0.0333	ND	68.1	30-120			
Benzo (a) anthracene	0.0206	0.00500	"	0.0333	ND	61.8	30-120			
Benzo (a) pyrene	0.0180	0.00500	"	0.0333	ND	53.9	30-120			
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.4	30-120			
Benzo (k) fluoranthene	0.0182	0.00500	"	0.0333	ND	54.5	30-120			
Chrysene	0.0180	0.00500	"	0.0333	ND	54.1	30-120			
Dibenz (a,h) anthracene	0.0154	0.00500	"	0.0333	ND	46.3	30-120			
Fluoranthene	0.0228	0.00500	"	0.0333	ND	68.3	30-120			
Fluorene	0.0219	0.00500	"	0.0333	ND	65.6	30-120			
Indeno (1,2,3-cd) pyrene	0.0148	0.00500	"	0.0333	ND	44.3	30-120			
Pyrene	0.0234	0.00500	"	0.0333	ND	70.3	35-142			
1-Methylnaphthalene	0.0143	0.00500	"	0.0333	ND	43.0	15-130			
2-Methylnaphthalene	0.0223	0.00500	"	0.0333	ND	66.8	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0230</i>		<i>"</i>	<i>0.0333</i>		<i>69.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0259</i>		<i>"</i>	<i>0.0333</i>		<i>77.7</i>	<i>40-150</i>			

Matrix Spike Dup (BGF0272-MSD1)	Source: 2305676-03			Prepared & Analyzed: 06/08/23						
Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.5	31-137	10.6	30	
Anthracene	0.0202	0.00500	"	0.0333	ND	60.7	30-120	11.5	30	
Benzo (a) anthracene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	3.64	30	
Benzo (a) pyrene	0.0185	0.00500	"	0.0333	ND	55.6	30-120	3.18	30	
Benzo (b) fluoranthene	0.0157	0.00500	"	0.0333	ND	47.2	30-120	4.57	30	
Benzo (k) fluoranthene	0.0164	0.00500	"	0.0333	ND	49.3	30-120	10.1	30	
Chrysene	0.0163	0.00500	"	0.0333	ND	49.0	30-120	9.81	30	
Dibenz (a,h) anthracene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	13.4	30	
Fluoranthene	0.0200	0.00500	"	0.0333	ND	59.9	30-120	13.2	30	
Fluorene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	10.4	30	
Indeno (1,2,3-cd) pyrene	0.0161	0.00500	"	0.0333	ND	48.4	30-120	8.86	30	
Pyrene	0.0211	0.00500	"	0.0333	ND	63.2	35-142	10.7	30	
1-Methylnaphthalene	0.0166	0.00500	"	0.0333	ND	49.7	15-130	14.4	50	
2-Methylnaphthalene	0.0203	0.00500	"	0.0333	ND	60.9	15-130	9.38	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0214</i>		<i>"</i>	<i>0.0333</i>		<i>64.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0230</i>		<i>"</i>	<i>0.0333</i>		<i>69.1</i>	<i>40-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 06/19/23 15:17

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 BGF0406 - EPA 3050B

Blank (BGF0406-BLK1)

Prepared: 06/12/23 Analyzed: 06/16/23

Boron ND 0.0100 mg/L

LCS (BGF0406-BS1)

Prepared: 06/12/23 Analyzed: 06/16/23

Boron 5.05 0.0100 mg/L 5.00 101 80-120

Duplicate (BGF0406-DUP1)

Source: 2306074-01

Prepared: 06/12/23 Analyzed: 06/16/23

Boron 0.115 0.0100 mg/L 0.125 8.48 20

Matrix Spike (BGF0406-MS1)

Source: 2306074-01

Prepared: 06/12/23 Analyzed: 06/16/23

Boron 4.89 0.0100 mg/L 5.00 0.125 95.3 75-125

Matrix Spike Dup (BGF0406-MSD1)

Source: 2306074-01

Prepared: 06/12/23 Analyzed: 06/16/23

Boron 4.98 0.0100 mg/L 5.00 0.125 97.2 75-125 1.89 25

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 06/19/23 15:17

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 BGF0402 - General Preparation

Blank (BGF0402-BLK1)

Prepared: 06/11/23 Analyzed: 06/18/23

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

LCS (BGF0402-BS1)

Prepared: 06/11/23 Analyzed: 06/18/23

Calcium	5.65	0.0500	mg/L wet	5.00		113	70-130			
Magnesium	5.60	0.0500	"	5.00		112	70-130			
Sodium	5.52	0.0500	"	5.00		110	70-130			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 06/19/23 15:17

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

Summit Scientific

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

Batch BGF0404 - General Preparation

Duplicate (BGF0404-DUP1)

Source: 2306070-05

Prepared & Analyzed: 06/12/23

% Solids	81.0		%		81.3			0.387	20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 06/19/23 15:17

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 BGF0410 - General Preparation

Blank (BGF0410-BLK1)

Prepared & Analyzed: 06/12/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGF0410-BS1)

Prepared & Analyzed: 06/12/23

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BGF0410-DUP1)

Source: 2306070-05

Prepared & Analyzed: 06/12/23

Specific Conductance (EC) 2.00 0.0100 mmhos/cm 2.04 1.68 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 06/19/23 15:17

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 BGF0409 - General Preparation

LCS (BGF0409-BS1)

Prepared & Analyzed: 06/12/23

pH	9.01	pH Units	9.18	98.1	95-105
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Duplicate (BGF0409-DUP1)

Source: 2306070-05

Prepared & Analyzed: 06/12/23

pH	7.88	pH Units	7.84	0.509	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Spike State GWS CC30-02

Project Number: [none]
Project Manager: Paul Henchan

Reported:
06/19/23 15:17

Notes and Definitions

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