

FREMONT ENVIRONMENTAL INC.

January 3, 2023

Mr. Daniel Peterson
Noble Energy Inc.
2115 117th Avenue
Greeley, CO 80634

Subject: **Flowline Closure Data Submittal**
 MAGGIE B13-12
 API # 05-123-17924
 NWSW Sec. 13, T5N, R64W
 Weld County, Colorado
 Fremont Project No. C022-182
 Facility # 250121, Remediation #13719

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted Flowline Closure activities for the Noble Energy Inc. (Noble) Maggie B13-12. Impacted soil was not encountered during abandonment activities. Details of the Maggie B13-12 flowline closure activities are documented in the attached Closure Report. Groundwater was not encountered during flowline abandonment activities.

Please contact me at (303) 956-8714 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

FREMONT ENVIRONMENTAL INC.



Paul V. Henehan, P.E.
Senior Consultant

Attachments:

- Facility Closure Checklist
- Tables
- Figures
- Photos
- Laboratory Reports

1759 REDWING LANE, BROOMFIELD, CO 80020
(303) 956-8714 (DIRECT)

Flowline Closure Checklist

COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

<i>Additional Attachments:</i>		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
<i>Site Name & COGCC Facility Number:</i> Maggie B13-12 Facility ID: 467489		<i>Date:</i> 11/14/2022			<i>Remediation Project #:</i> 13719			
<i>Associated Wells:</i> Maggie B13-12 API: 05-123-17924 Facility ID: 250121 Maggie B13-13 API: 05-123-18469 Facility ID: 250666		<i>Age of Site:</i> 1994			<i>Number of Photos Attached:</i> 1 Photo			
<i>Starting point: (GPS coordinates and descriptions)</i> 40.397592, -104.506320								
<i>End point: (GPS coordinates and descriptions)</i> 40.397927, -104.507679								
<i>USCS Soil Type:</i> SP					<i>Estimated Depth to Groundwater:</i> N/A			
<i>Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)</i> None observed								
<i>Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)</i> None observed								
Flowlines								
<i>Flowline type</i>	2" Steel							
<i>Depth</i>	3 Ft							
<i>Age</i>	1994							
<i>Length</i>	400ft							
<i>Construction Material</i>	Non ACM / 2" Steel							
<i>Were flowlines pulled?</i>	No							
<i>Visual Integrity of lines</i>	No Damage							
<i>Visual impacts if trenched</i>	N/A							
<i>PID Readings if trenched</i>	High @ 0.0ppm							
<i>Sample taken? Location/Sample ID#</i>	2FL01@3.0'							
<i>Photo Number(s)</i>	Photos 1A							
<i>Other observations regarding on location flowlines:</i> Flowline was fully abandoned-in-place. An exceedance in ph (8.71) was discovered at the separator tie-in (2FL01@3.0'). Refer to the inorganic soil chemistry table for reference (Table 3).								
Summary								
<i>Was impacted soil identified?</i> No Yes - less than 10 cubic yards Yes - more than 10 cubic yards								
<i>Total number of samples field screened:</i> 0 Samples					<i>Total number of samples collected:</i> 1 Samples			
<i>Highest PID Reading:</i> High @ 0.0ppm (2FL01@3.0')					<i>Total number of samples submitted to lab for analysis:</i> 1 Samples			
<i>If more than 10 cubic yards of impacted soil were observed:</i>								
<i>Vertical extent:</i> N/A					<i>Estimated spill volume:</i> N/A			
<i>Lateral extent:</i> N/A					<i>Volume of soil removed:</i> N/A			
<i>Is additional investigation required?</i> N/A								
<i>Was groundwater encountered during the investigation?</i> No Yes - not impacted or in contact with impacted soils Yes - groundwater impacted and/or in contact with impacted soils								
<i>Measured depth to groundwater:</i> N/A					<i>Was remedial groundwater removal conducted?</i> Yes No			
<i>Date Groundwater was encountered:</i> N/A					<i>Commencement date of removal:</i> N/A			
<i>Sheen on groundwater?</i> Yes No					<i>Volume of groundwater removed prior to sampling:</i> N/A			
<i>Free product observed?</i> Yes No					<i>Volume of groundwater removed post sampling:</i> N/A			
<i>Total number of samples collected:</i> N/A					<i>Total Volume of groundwater removed:</i> N/A			
<i>Total number of samples submitted to lab for analysis:</i> N/A								

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
MAGGIE B13-12, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-182

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500		
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500		
2FL01@3.0'	11/14/2022	3.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50

Bold faced values exceed the COGCC Table 915-1 concentrations

Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

* Summation of GRO+DRO+ORO must be less than 500 mg/kg

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
MAGGIE B13-12, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-182

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3- cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl- Naphthalene (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
2FL01@3.0'	11/14/2022	3.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Bold faced values exceed the COGCC Table 915-1 concentrations

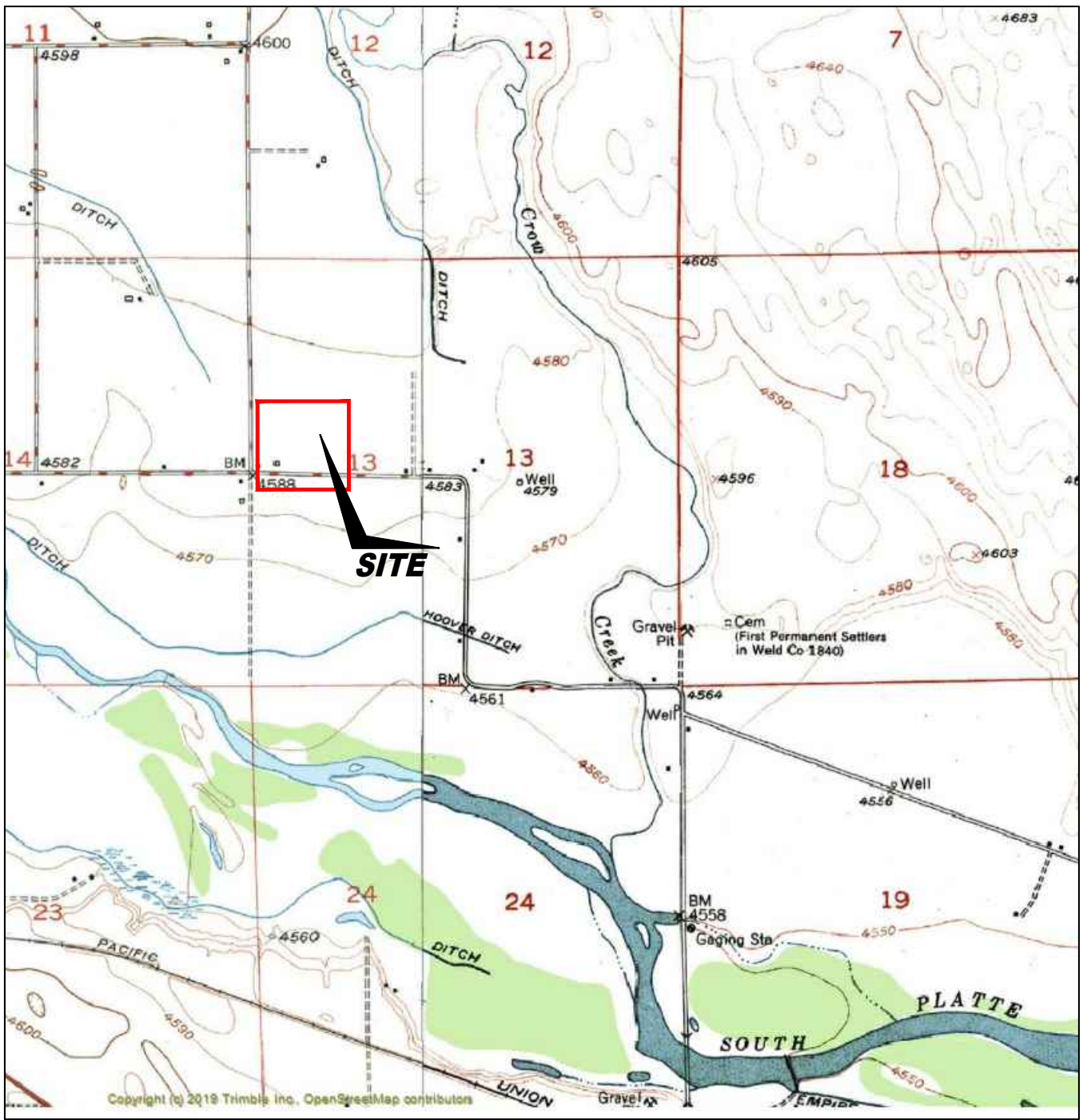
Red & blue highlighted 915-1 Limits indicate the referenced soil screening level (SSL)

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
MAGGIE B13-12, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-182

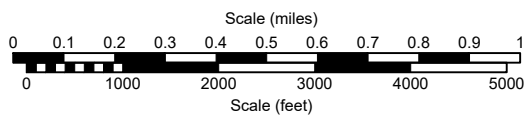
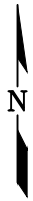
Sample ID	Sample Date	Depth (ft)	EC (mmhos/cm)	pH	SAR	Boron (mg/L)
COGCC Table 915-1 Soil Suitability Limits			<4	6 - 8.3	<6	2
Site Specific Background Concentration/Value						
2FL01@3.0'	11/14/2022	3.0 Ft	0.154	8.71	0.0825	0.0380

Bold faced values exceed the COGCC Table 915-1 concentrations

Yellow highlighted 915-1 Limits indicate the referenced soil screening level (SSL)



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USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

NOBLE ENERGY, INC. ~ MAGGIE B 13-12
 NWSW Sec. 13, T5N, R64W, 6th PM
 Weld County, Colorado
 40.397587°, -104.506306°

Project # C022-182	API # 05-123-17924	Facility # 250121
Date 01/03/23	Remediation # 13719	Filename 22182T





LEGEND

- WELL HEAD LOCATION
- ▲ PID READING LOCATION
- ABOVE GROUND STORAGE TANK
- [Solid Box] BUILDING
- [Dashed Box] FORMER FACILITY
- [Red Dashed Line] FLOW LINE
- [Blue Dashed Line] FENCE LINE
- [Yellow Dashed Line] CONTAINMENT BERM

PID READING LOCATION IDENTIFICATION
 PHOTO IONIZATION DETECTION (ppm)

**Figure 2
SITE MAP**

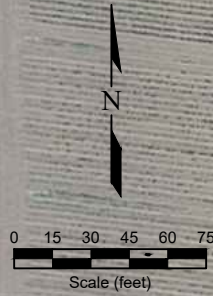
NOBLE ENERGY, INC. ~ MAGGIE B 13-12
 NWSW Sec. 13, T5N, R64W, 6th PM
 Weld County, Colorado
 40.397587°, -104.506306°

Project No. C022-182	API # 05-123-17924	Facility # 250121
Date 01/03/23	Remediation # 13719	Filename 22182Q





11/14/2022		2FL01 @ 3'	
ACE	<0.00500		
Ant	<0.00500		
BaA	<0.00500	11/14/2022	
BaF	<0.00500	2FL01 @ 3'	
BaP	<0.00500	B	<0.0020
Ch	<0.00500	T	<0.0050
DBahAnt	<0.00500	E	<0.0050
FLU	<0.00500	X	<0.010
FL	<0.00500	1,2,4-TB	<0.0050
1,1,2,3ocPY	<0.00500	1,3,5-TB	<0.0050
1-MN	<0.00500	N	<0.038
2-MN	<0.00500	G	<0.50
PY	<0.00500	D	<50
		O	<50
		EC	0.154
		BORON	0.0888



LEGEND

- WELL HEAD LOCATION
- ABOVE GROUND STORAGE TANK
- BUILDING
- FORMER FACILITY
- FLOW LINE
- FENCE LINE
- CONTAINMENT BERM

11/14/2022		DATE SAMPLED	
2FL01 @ 3'		SAMPLE ID and DEPTH (ft)	
ACE	<0.005	ACENAPHTHENE (mg/kg)	
Ant	<0.005	ANTHRACENE (mg/kg)	
BaA	<0.005	BENZO (A) ANTHRACENE (mg/kg)	
BaF	<0.005	BENZO (B) FLUORANTHENE (mg/kg)	
BaP	<0.005	BENZO (K) FLUORANTHENE (mg/kg)	
Ch	<0.005	BENZO (A) PYRENE (mg/kg)	
DBahAnt	<0.005	CHRYSENE (mg/kg)	
FLU	<0.005	DIBENZ (A,H) ANTHRACENE (mg/kg)	
FL	<0.005	FLUORANTHENE (mg/kg)	
1,1,2,3ocPY	<0.005	FLUORENE (mg/kg)	
1-MN	<0.005	INDENO (1,2,3-CD) PYRENE (mg/kg)	
2-MN	<0.005	1-METHYLNAPHTHALENE (mg/kg)	
PY	<0.005	2-METHYLNAPHTHALENE (mg/kg)	
		PYRENE (mg/kg)	

11/14/2022		DATE SAMPLED	
2FL01 @ 3'		SAMPLE ID and DEPTH (ft)	
B	<0.0020	BENZENE (mg/kg)	
T	<0.0050	TOLUENE (mg/kg)	
E	<0.0050	ETHYLBENZENE (mg/kg)	
X	<0.010	TOTAL XYLENES (mg/kg)	
1,2,4-TB	<0.0050	1,2,4-TRIMETHYLBENZENE (mg/kg)	
1,3,5-TB	<0.0050	1,3,5-TRIMETHYLBENZENE (mg/kg)	
N	<0.010	NAPHTHALENE (mg/kg)	
G	<0.50	TPH-ORO (mg/kg)	
D	<50	TPH-ORO (mg/kg)	
O	<50	TPH-ORO (mg/kg)	

11/14/2022		DATE SAMPLED	
2FL01 @ 3'		SAMPLE ID & DEPTH (ft)	
SAR	83.74	SAR (units)	
pH	9.4	pH (pH units)	
EC	3.34	EC (mmhos/cm)	
BORON	8.4	BORON (mg/L)	

Figure 3
SOIL CHEMISTRY MAP

NOBLE ENERGY, INC. ~ MAGGIE B 13-12
 NWSW Sec. 13, T5N, R64W, 6th PM
 Weld County, Colorado
 40.397587°, -104.506306°

Project No. C022-182	API # 05-123-17924	Facility # 250121	
Date 01/03/23	Remediation # 13719	Filename 22182Q	



Description:

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

November 22, 2022

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549
RE: Noble - Maggie B13-12
Work Order #2211250

Enclosed are the results of analyses for samples received by Summit Scientific on 11/14/22 16:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/22/22 15:15

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
2FL01@3.0'	2211250-01	Soil	11/14/22 00:00	11/14/22 16:00

Summit Scientific

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

Summit Scientific

2211250

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310

Page 1 of 1

Client: Fremont Env

Project Manager: Paul Henchan

Address:

E-Mail: Paulh@fremontenv.com jeffg@fremontenv.com

City/State/Zip:

Ethanb@fremontenv.com

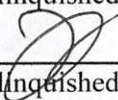
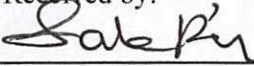
Phone:

Project Name: Maggie B13-12

Sampler Name: JG

Project Number:

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	TMBs (915)	DRO,ORO,GRO	PAHs (915)		EC,PM, SAR Boren
1	2FLO1@3.0'	11/14/22		2			X			X			X	X	X	X	X	
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Relinquished by: 	Date/Time: 11/14/22	Received by: 	Date/Time: 11/14 16:00pm	Turn Around Time (Check) Same Day _____ 72 hours _____ 24 hours _____ Standard X 48 hours _____ Sample Integrity: Samples Intact: Yes No	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:		
Temperature Upon Receipt: 145	Corrected Temperature: _____	HNO3 lot # _____	IR gun #: 2		

S₂

2211250

Sample Receipt Checklist

S2 Work Order#

Client: Fremont Env Client Project ID: Maggie B13-12

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

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

Temp (°C) 14.5 Thermometer # 2

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? (1) NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? (1)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input checked="" 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.

Gabe Risk
Custodian Printed Name

11/14 16:12
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/22/22 15:15

2FL01@3.0'
2211250-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **11/14/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BFK0385	11/15/22	11/16/22	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: **11/14/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4		75.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		106 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **11/14/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BFK0387	11/15/22	11/16/22	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **11/14/22 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl		90.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/22/22 15:15

2FL01@3.0'
2211250-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **11/14/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BFK0482	11/18/22	11/19/22	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: **11/14/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		57.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **11/14/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0380	0.0100	mg/L	1	BFK0497	11/18/22	11/18/22	EPA 6020B	

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

Date Sampled: **11/14/22 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 - Maggie B13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/22/22 15:15

2FL01@3.0'
2211250-01 (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	90.0	0.0508	mg/L dry	1	BFK0471	11/17/22	11/19/22	EPA 6020B	
Magnesium	9.17	0.0508	"	"	"	"	"	"	
Sodium	3.07	0.0508	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **11/14/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0825	0.00100	units	1	BFK0546	11/21/22	11/21/22	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **11/14/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.4		%	1	BFK0399	11/15/22	11/15/22	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **11/14/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.154	0.0100	mmhos/cm	1	BFK0504	11/18/22	11/18/22	EPA 120.1	

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

Date Sampled: **11/14/22 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.71		pH Units	1	BFK0506	11/18/22	11/18/22	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/22/22 15:15

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 BFK0385 - EPA 5030 Soil MS

Blank (BFK0385-BLK1)

Prepared: 11/15/22 Analyzed: 11/16/22

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	0.0303		"	0.0400		75.8	50-150			
Surrogate: Toluene-d8	0.0417		"	0.0400		104	50-150			
Surrogate: 4-Bromofluorobenzene	0.0397		"	0.0400		99.2	50-150			

LCS (BFK0385-BS1)

Prepared: 11/15/22 Analyzed: 11/16/22

Benzene	0.0642	0.0020	mg/kg	0.0750		85.6	70-130			
Toluene	0.0639	0.0050	"	0.0750		85.2	70-130			
Ethylbenzene	0.0706	0.0050	"	0.0750		94.1	70-130			
m,p-Xylene	0.148	0.010	"	0.150		98.7	70-130			
o-Xylene	0.0752	0.0050	"	0.0750		100	70-130			
1,2,4-Trimethylbenzene	0.0820	0.0050	"	0.0750		109	70-130			
1,3,5-Trimethylbenzene	0.0821	0.0050	"	0.0750		109	70-130			
Naphthalene	0.0948	0.0038	"	0.0750		126	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0272		"	0.0400		68.0	50-150			
Surrogate: Toluene-d8	0.0426		"	0.0400		106	50-150			
Surrogate: 4-Bromofluorobenzene	0.0382		"	0.0400		95.4	50-150			

Matrix Spike (BFK0385-MS1)

Source: 2211244-01

Prepared: 11/15/22 Analyzed: 11/16/22

Benzene	0.0686	0.0020	mg/kg	0.0750	ND	91.5	70-130			
Toluene	0.0688	0.0050	"	0.0750	ND	91.8	70-130			
Ethylbenzene	0.0723	0.0050	"	0.0750	ND	96.4	70-130			
m,p-Xylene	0.153	0.010	"	0.150	ND	102	70-130			
o-Xylene	0.0792	0.0050	"	0.0750	ND	106	70-130			
1,2,4-Trimethylbenzene	0.0864	0.0050	"	0.0750	ND	115	70-130			
1,3,5-Trimethylbenzene	0.0848	0.0050	"	0.0750	ND	113	70-130			
Naphthalene	0.0860	0.0038	"	0.0750	ND	115	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0274		"	0.0400		68.4	50-150			
Surrogate: Toluene-d8	0.0429		"	0.0400		107	50-150			
Surrogate: 4-Bromofluorobenzene	0.0391		"	0.0400		97.6	50-150			

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Project: Noble - Maggie B13-12

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/22/22 15:15

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

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

Batch BFK0385 - EPA 5030 Soil MS

Matrix Spike Dup (BFK0385-MSD1)	Source: 2211244-01			Prepared: 11/15/22 Analyzed: 11/16/22						
Benzene	0.0694	0.0020	mg/kg	0.0750	ND	92.5	70-130	1.13	30	
Toluene	0.0700	0.0050	"	0.0750	ND	93.3	70-130	1.64	30	
Ethylbenzene	0.0718	0.0050	"	0.0750	ND	95.7	70-130	0.791	30	
m,p-Xylene	0.154	0.010	"	0.150	ND	103	70-130	0.683	30	
o-Xylene	0.0784	0.0050	"	0.0750	ND	104	70-130	1.07	30	
1,2,4-Trimethylbenzene	0.0854	0.0050	"	0.0750	ND	114	70-130	1.26	30	
1,3,5-Trimethylbenzene	0.0835	0.0050	"	0.0750	ND	111	70-130	1.46	30	
Naphthalene	0.0925	0.0038	"	0.0750	ND	123	70-130	7.19	30	
Surrogate: 1,2-Dichloroethane-d4	0.0297		"	0.0400		74.2	50-150			
Surrogate: Toluene-d8	0.0430		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0390		"	0.0400		97.6	50-150			

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Project: Noble - Maggie B13-12

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/22/22 15:15

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 BFK0387 - EPA 3550A

Blank (BFK0387-BLK1)

Prepared & Analyzed: 11/15/22

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.9		"	12.5		95.6	30-150				

LCS (BFK0387-BS1)

Prepared & Analyzed: 11/15/22

C10-C28 (DRO)	396	50	mg/kg	500		79.1	70-130				
Surrogate: <i>o</i> -Terphenyl	12.0		"	12.5		96.0	30-150				

Matrix Spike (BFK0387-MS1)

Source: 2211244-01

Prepared & Analyzed: 11/15/22

C10-C28 (DRO)	394	50	mg/kg	500	29.7	72.9	70-130				
Surrogate: <i>o</i> -Terphenyl	11.1		"	12.5		88.7	30-150				

Matrix Spike Dup (BFK0387-MSD1)

Source: 2211244-01

Prepared & Analyzed: 11/15/22

C10-C28 (DRO)	470	50	mg/kg	500	29.7	88.0	70-130	17.5	20		
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5		86.6	30-150				

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PO Box 1289
Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/22/22 15:15

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 BFK0482 - EPA 5030 Soil MS

Blank (BFK0482-BLK1)

Prepared & Analyzed: 11/18/22

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>0.0236</i>		"	<i>0.0333</i>		<i>70.9</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0294</i>		"	<i>0.0333</i>		<i>88.1</i>		<i>40-150</i>		

LCS (BFK0482-BS1)

Prepared & Analyzed: 11/18/22

Acenaphthene	0.0320	0.00500	mg/kg	0.0333		95.9		31-137		
Anthracene	0.0328	0.00500	"	0.0333		98.5		30-120		
Benzo (a) anthracene	0.0305	0.00500	"	0.0333		91.6		30-120		
Benzo (a) pyrene	0.0300	0.00500	"	0.0333		90.0		30-120		
Benzo (b) fluoranthene	0.0308	0.00500	"	0.0333		92.5		30-120		
Benzo (k) fluoranthene	0.0327	0.00500	"	0.0333		98.0		30-120		
Chrysene	0.0333	0.00500	"	0.0333		99.8		30-120		
Dibenz (a,h) anthracene	0.0282	0.00500	"	0.0333		84.7		30-120		
Fluoranthene	0.0329	0.00500	"	0.0333		98.7		30-120		
Fluorene	0.0318	0.00500	"	0.0333		95.4		30-120		
Indeno (1,2,3-cd) pyrene	0.0281	0.00500	"	0.0333		84.4		30-120		
Pyrene	0.0334	0.00500	"	0.0333		100		35-142		
1-Methylnaphthalene	0.0242	0.00500	"	0.0333		72.5		35-142		
2-Methylnaphthalene	0.0248	0.00500	"	0.0333		74.5		35-142		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0276</i>		"	<i>0.0333</i>		<i>82.8</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0323</i>		"	<i>0.0333</i>		<i>97.0</i>		<i>40-150</i>		

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Fremont Environmental
PO Box 1289
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Project: Noble - Maggie B13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/22/22 15:15

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 BFK0482 - EPA 5030 Soil MS

Matrix Spike (BFK0482-MS1)	Source: 2211235-01			Prepared & Analyzed: 11/18/22								
Acenaphthene	0.0171	0.00500	mg/kg	0.0333	ND	51.4	31-137					
Anthracene	0.0166	0.00500	"	0.0333	ND	49.8	30-120					
Benzo (a) anthracene	0.0170	0.00500	"	0.0333	ND	50.9	30-120					
Benzo (a) pyrene	0.0146	0.00500	"	0.0333	ND	43.9	30-120					
Benzo (b) fluoranthene	0.0147	0.00500	"	0.0333	ND	44.0	30-120					
Benzo (k) fluoranthene	0.0148	0.00500	"	0.0333	ND	44.5	30-120					
Chrysene	0.0164	0.00500	"	0.0333	ND	49.3	30-120					
Dibenz (a,h) anthracene	0.0159	0.00500	"	0.0333	ND	47.6	30-120					
Fluoranthene	0.0169	0.00500	"	0.0333	ND	50.7	30-120					
Fluorene	0.0168	0.00500	"	0.0333	ND	50.3	30-120					
Indeno (1,2,3-cd) pyrene	0.0150	0.00500	"	0.0333	ND	45.0	30-120					
Pyrene	0.0176	0.00500	"	0.0333	ND	52.7	35-142					
1-Methylnaphthalene	0.0159	0.00500	"	0.0333	ND	47.7	15-130					
2-Methylnaphthalene	0.0277	0.00500	"	0.0333	ND	83.2	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0172</i>		<i>"</i>	<i>0.0333</i>		<i>51.6</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0177</i>		<i>"</i>	<i>0.0333</i>		<i>53.0</i>	<i>40-150</i>					

Matrix Spike Dup (BFK0482-MSD1)	Source: 2211235-01			Prepared & Analyzed: 11/18/22								
Acenaphthene	0.0182	0.00500	mg/kg	0.0333	ND	54.7	31-137	6.38	30			
Anthracene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	7.46	30			
Benzo (a) anthracene	0.0174	0.00500	"	0.0333	ND	52.0	30-120	2.18	30			
Benzo (a) pyrene	0.0143	0.00500	"	0.0333	ND	43.0	30-120	1.97	30			
Benzo (b) fluoranthene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	0.652	30			
Benzo (k) fluoranthene	0.0147	0.00500	"	0.0333	ND	44.0	30-120	1.27	30			
Chrysene	0.0167	0.00500	"	0.0333	ND	50.1	30-120	1.60	30			
Dibenz (a,h) anthracene	0.0147	0.00500	"	0.0333	ND	44.1	30-120	7.62	30			
Fluoranthene	0.0185	0.00500	"	0.0333	ND	55.4	30-120	8.99	30			
Fluorene	0.0178	0.00500	"	0.0333	ND	53.5	30-120	6.18	30			
Indeno (1,2,3-cd) pyrene	0.0140	0.00500	"	0.0333	ND	42.1	30-120	6.66	30			
Pyrene	0.0181	0.00500	"	0.0333	ND	54.4	35-142	3.27	30			
1-Methylnaphthalene	0.0162	0.00500	"	0.0333	ND	48.5	15-130	1.63	50			
2-Methylnaphthalene	0.0286	0.00500	"	0.0333	ND	85.8	15-130	3.13	50			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0182</i>		<i>"</i>	<i>0.0333</i>		<i>54.6</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0193</i>		<i>"</i>	<i>0.0333</i>		<i>57.8</i>	<i>40-150</i>					

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/22/22 15:15

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 BFK0497 - EPA 3050B

Blank (BFK0497-BLK1)

Prepared & Analyzed: 11/18/22

Boron ND 0.0100 mg/L

LCS (BFK0497-BS1)

Prepared & Analyzed: 11/18/22

Boron 4.38 0.0100 mg/L 5.00 87.5 80-120

Duplicate (BFK0497-DUP1)

Source: 2211250-01

Prepared & Analyzed: 11/18/22

Boron 0.0400 0.0100 mg/L 0.0380 5.05 20

Matrix Spike (BFK0497-MS1)

Source: 2211250-01

Prepared & Analyzed: 11/18/22

Boron 6.26 0.0100 mg/L 5.00 0.0380 124 75-125

Matrix Spike Dup (BFK0497-MSD1)

Source: 2211250-01

Prepared & Analyzed: 11/18/22

Boron 5.67 0.0100 mg/L 5.00 0.0380 113 75-125 9.88 25

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/22/22 15:15

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 BFK0471 - General Preparation

Blank (BFK0471-BLK1)

Prepared: 11/17/22 Analyzed: 11/19/22

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

LCS (BFK0471-BS1)

Prepared: 11/17/22 Analyzed: 11/19/22

Calcium	3.71	0.0500	mg/L wet	5.00	74.2	70-130
Magnesium	4.99	0.0500	"	5.00	99.8	70-130
Sodium	5.06	0.0500	"	5.00	101	70-130

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/22/22 15:15

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 BFK0399 - General Preparation

Duplicate (BFK0399-DUP1)

Source: 2211244-01

Prepared & Analyzed: 11/15/22

% Solids	83.2		%		82.3			1.10		20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/22/22 15:15

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 BFK0504 - General Preparation

Blank (BFK0504-BLK1)

Prepared & Analyzed: 11/18/22

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BFK0504-BS1)

Prepared & Analyzed: 11/18/22

Specific Conductance (EC) 0.144 0.0100 mmhos/cm 0.150 95.7 95-105

Duplicate (BFK0504-DUP1)

Source: 2211249-01

Prepared & Analyzed: 11/18/22

Specific Conductance (EC) 0.890 0.0100 mmhos/cm 0.905 1.73 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
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Project: Noble - Maggie B13-12

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 11/22/22 15:15

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 BFK0506 - General Preparation

LCS (BFK0506-BS1)

Prepared & Analyzed: 11/18/22

pH 9.21 pH Units 9.18 100 95-105

Duplicate (BFK0506-DUP1)

Source: 2211249-01

Prepared & Analyzed: 11/18/22

pH 7.85 pH Units 7.85 0.00 20

Summit Scientific

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



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Maggie B13-12

Project Number: [none]
Project Manager: Paul Henchan

Reported:
11/22/22 15:15

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