

FREMONT ENVIRONMENTAL INC.

April 25, 2023

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

Subject: **Flowline Closure Data Submittal**
Patriot B 16-20
API # 05-123-25729
NWSW Sec. 16, T5N, R64W
Weld County, Colorado
Fremont Project No. C023-036
Remediation # 25436

Dear Mr. Peterson:

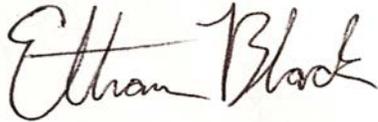
As you requested, Fremont Environmental Inc. (Fremont) personnel conducted flowline abandonment activities for the Noble Energy Inc. (Noble) Patriot B 16-20 location. Details of the Patriot B 16-20 flowline abandonment are documented in the attached Closure Report.

Petroleum impacted soil was encountered at multiple locations along the flowline. Additional site investigation is needed to determine the magnitude and extent of impacts. Groundwater was not encountered.

Please contact me at (603) 477-6907 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

FREMONT ENVIRONMENTAL INC.



Ethan D. Black, P.G.
Consultant

Attachments:

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

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PATRIOT B 16-20, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

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**		
FL01 3FT	02/10/2023	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
FL08 3FT	02/10/2023	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	0.16	<0.50	74	<50
FL09 3FT	02/10/2023	3	<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.
PATRIOT B 16-20, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

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
FL01 3FT	02/10/2023	3	<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
FL08 3FT	02/10/2023	3	1.4	1.67	2.02	1.02	1.81	0.795	1.79	<0.00500	5.37	1.15	0.708	3.55	0.109	0.235
FL09 3FT	02/10/2023	3	0.0202	0.0261	0.0825	0.0456	0.0869	0.0342	0.0781	<0.00500	0.161	0.0165	0.0265	0.124	<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.
PATRIOT B 16-20, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
COGCC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
FL01 3FT	02/10/2023	3	7.67	0.447	1.19	0.157
FL08 3FT	02/10/2023	3	7.88	0.322	0.285	0.1
FL09 3FT	02/10/2023	3	7.45	1.26	1.11	0.477

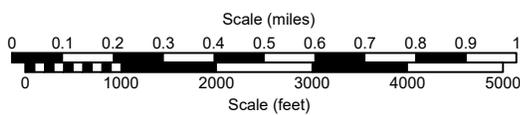
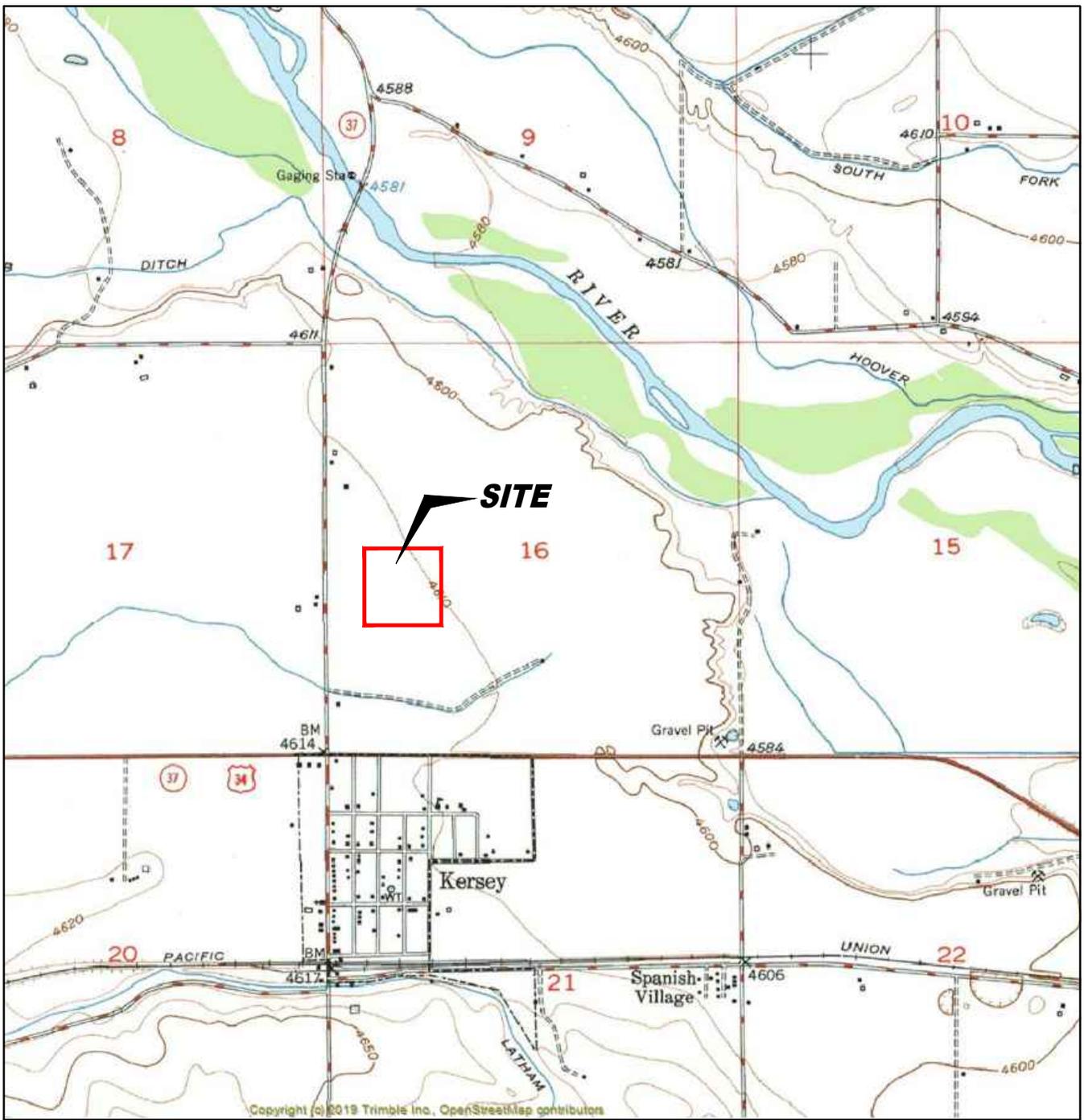
TABLE 4
SUMMARY OF POTHOLE FIELD OBSERVATIONS
NOBLE ENERGY INC.
PATRIOT B 16-20, WELD COUNTY, COLORADO
FREMONT PROJECT C023-036

Location	Latitude	Longitude	PID Reading	Field Observations
FL01 3 Ft	40.39923073	-104.5598142	0.0	No impacts
FL02 3 Ft	40.39914579	-104.55933	0.0	No impacts
FL03 3Ft	40.3985516	-104.5592592	0.0	No impacts
FL04 3Ft	40.39780708	-104.5592569	0.0	No impacts
FL05 3Ft	40.39678887	-104.559217	0.0	No impacts
FL06 3Ft	40.39662831	-104.5583242	0.0	No impacts
FL07 3 Ft	40.39663902	-104.5576247	0.0	No impacts
FL08 3 Ft	40.39664041	-104.5556056	0.0	No impacts
FL09 (SEP)	40.39696401	-104.5550233	0.0	No impacts

TABLE 5
SUMMARY OF FLOW LINE CONDITION
NOBLE ENERGY INC.
PATRIOT B 16-20, WELD COUNTY, COLORADO
FREMONT PROJECT C023-036

START	STOP	FOOTAGE	PIPE TYPE AND CONDITION
FL01 3 Ft	FL02 3 Ft	378	2" sch. 80 carbon steel, non-ACM TGF taped coating, good condition
FL02 3 Ft	FL03 3Ft	227.5	2" sch. 80 carbon steel, non-ACM TGF taped coating, good condition
FL03 3Ft	FL04 3Ft	259.06	2" sch. 80 carbon steel, non-ACM TGF taped coating, good condition
FL04 3Ft	FL05 3Ft	376.56	2" sch. 80 carbon steel, non-ACM TGF taped coating, good condition
FL05 3Ft	FL06 3Ft	254.91	2" sch. 80 carbon steel, non-ACM TGF taped coating, good condition
FL06 3Ft	FL07 3 Ft	394.63	2" sch. 80 carbon steel, non-ACM TGF taped coating, good condition
FL07 3 Ft	FL08 3 Ft	318.31	2" sch. 80 carbon steel, non-ACM TGF taped coating, good condition
FL08 3 Ft	FL09 (SEP)	243.68	2" sch. 80 carbon steel, non-ACM TGF taped coating, good condition

2452 **Total linear feet of flow line**



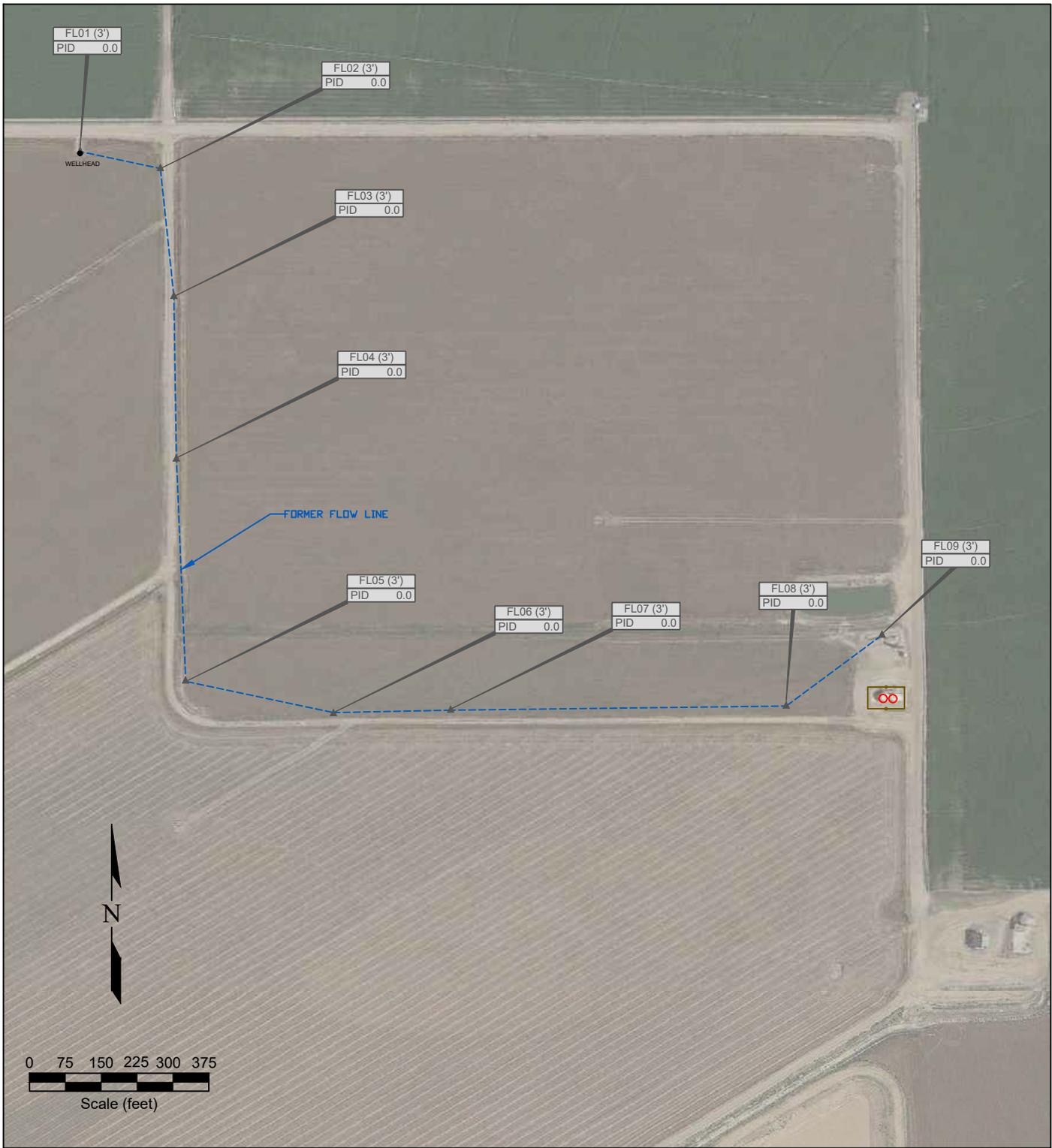
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Energy Inc - PATRIOT B 16-20
 NWSW Sec. 16, T5N, R64W, 6th PM
 Weld County, Colorado
 40.399252°, -104.559793°

Project # C023-036	API # 05-123-25729	Facility #
Date 8/2/23	Remediation # 25436	Filename 23036T





LEGEND

- WELLHEAD LOCATION
- ▲ PID READING LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- FLOW LINE
- FENCE LINE

FL01 PID READING LOCATION IDENTIFICATION
 PID 0.1 PHOTO IONIZATION DETECTION (ppm)

**Figure 2
 SITE MAP**

Noble Energy Inc - PATRIOT B 16-20
NWSW Sec. 16, T5N, R64W, 6th PM
 Weld County, Colorado
 40.399252°, -104.559793°

Project No. CO23-036	API # 05-123-25729	Facility #
Date 8/2/23	Remediation # 25436	Filename 23036Q



Photo Log



Description:

1 - Patriot B 16-20 FL01 bellhole, looking south

Photo Log



Description:

2 - Patriot B 16-20 flowline section following removal. good condition

Photo Log



Description:

3 - Patriot B 16-20 FL05 bellhole (sweep no fittings on directional change), looking southeast

Photo Log



Description:

4 - Patriot B 16-20 FL08 bellhole no staining or odor, looking east

Photo Log



Description:

5 - Patriot B 16-20 riser at FL09 location prior to digging bellhole, looking west

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

February 28, 2023

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549
RE: Noble - Patriot B16-20
Work Order #2302347

Enclosed are the results of analyses for samples received by Summit Scientific on 02/17/23 09:00. 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 - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
FL01 3FT	2302347-01	Soil	02/10/23 00:00	02/17/23 09:00
FL09 3FT	2302347-02	Soil	02/10/23 00:00	02/17/23 09:00
FL08 3FT	2302347-03	Soil	02/10/23 00:00	02/17/23 09:00
AST E SURF.	2302347-04	Soil	02/13/23 00:00	02/17/23 09:00
AST W SURF.	2302347-05	Soil	02/13/23 00:00	02/17/23 09:00
PWV E FLOOR 5FT	2302347-06	Soil	02/13/23 00:00	02/17/23 09:00
PWV W FLOOR 5FT	2302347-07	Soil	02/13/23 00:00	02/17/23 09:00
SEP E SURF.	2302347-08	Soil	02/13/23 00:00	02/17/23 09:00

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.

2302347

Summit Scientific

S₂

4653 Table Mountain Drive ♦ Golden, Colorado 80403
303-277-9310 ♦ 303-374-5933 (f)

Page 1 of 1

Client: Fremont Environmental

Project Manager: Paul Henehan

Address:

E-Mail: Fremont Distribution List: PaulH, EthanB, JeffG and ChrisL. @fremontenv.com

City/State/Zip:

Bill to: Dan

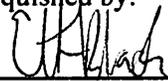
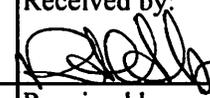
Phone:

Project Name: Noble - Patriot B16-20

Sampler Name: EB

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, TMBs, Naph.	TPH	PAH (915)	EC, SAR, pH, Boron	Metals (915)		TDS, Chloride, Sulfate	HOLD	
1	FLO1 3FT	2/10/23		2			X		X				X	X	X	X					
2	FLO8 3FT FLO9 ^{PS}																				
3	FLO9 3FT (SEP W)																				
4	AST E SURF. FLO8 ^{PS}	2/13/23																			
5	AST W SURF.																				
6	PWNE FLOOR SET																				
7	PWV W FLOOR SET																				
8	SEP E SURF.																				
9																					
10																					

Relinquished by: 	Date/Time: 2/16/23 1730	Received by: S ₂	Date/Time: 2/16/23 1730	Turn Around Time (Check) Same Day _____ 72 hours 24 hours _____ Standard <input checked="" type="checkbox"/> 48 hours _____ Sample Integrity: Temperature Upon Receipt: C ₂ Samples Intact: <input checked="" type="radio"/> Yes <input type="radio"/> No	Notes:
Relinquished by: S ₂	Date/Time: 2/17/23 0900	Received by: 	Date/Time: 2/17/23 0900		
Relinquished by:	Date/Time:	Received by:	Date/Time:		

S₂

Sample Receipt Checklist

S2 Work Order# 2302347

Client: Fremont Client Project ID: Noble - Patriot Blee-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"/>	<u>on ice</u>
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 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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>missing 1 sample received 1 extra</u>
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

2/17/23
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

FL01 3FT
2302347-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGB0577	02/20/23	02/21/23	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: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0313	78.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0375	93.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0394	98.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0580	02/20/23	02/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.1	97.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

FL01 3FT
2302347-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGB0602	02/20/23	02/22/23	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: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0261	78.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0174	52.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.157	0.0100	mg/L	1	BGB0665	02/21/23	02/23/23	EPA 6020B	

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

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

FL01 3FT
2302347-01 (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	30.6	0.0541	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	
Magnesium	12.4	0.0541	"	"	"	"	"	"	
Sodium	31.0	0.0541	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.19	0.00100	units	1	BGB0853	02/28/23	02/28/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.4		%	1	BGB0666	02/21/23	02/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.447	0.0100	mmhos/cm	1	BGB0785	02/24/23	02/24/23	EPA 120.1	

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

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.67		pH Units	1	BGB0786	02/24/23	02/24/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

FL09 3FT
2302347-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGB0577	02/20/23	02/21/23	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: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0381	95.3 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0377	94.3 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0404	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0580	02/20/23	02/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.5	83.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

FL09 3FT
2302347-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0202	0.00500	mg/kg	1	BGB0602	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	0.0261	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	0.0825	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0456	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0869	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0342	0.00500	"	"	"	"	"	"	
Chrysene	0.0781	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.161	0.00500	"	"	"	"	"	"	
Fluorene	0.0165	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0265	0.00500	"	"	"	"	"	"	
Pyrene	0.124	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0269	80.6 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0193	57.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.477	0.0100	mg/L	1	BGB0665	02/21/23	02/23/23	EPA 6020B	

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

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	135	0.0609	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

FL09 3FT
2302347-02 (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
Magnesium	50.8	0.0609	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	
Sodium	59.5	0.0609	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.11	0.00100	units	1	BGB0853	02/28/23	02/28/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	82.1		%	1	BGB0666	02/21/23	02/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.26	0.0100	mmhos/cm	1	BGB0785	02/24/23	02/24/23	EPA 120.1	

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

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.45		pH Units	1	BGB0786	02/24/23	02/24/23	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

FL08 3FT
2302347-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGB0577	02/20/23	02/21/23	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	0.16	0.0038	"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50	"	"	"	"	"	"	

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0329	82.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0385	96.2 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0383	95.8 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	74	50	mg/kg	1	BGB0580	02/20/23	02/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.6	84.8 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

FL08 3FT
2302347-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	1.40	0.100	mg/kg	20	BGB0602	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	1.67	0.100	"	"	"	"	"	"	
Benzo (a) anthracene	2.02	0.100	"	"	"	"	"	"	
Benzo (a) pyrene	1.02	0.100	"	"	"	"	"	"	
Benzo (b) fluoranthene	1.81	0.100	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.795	0.100	"	"	"	"	"	"	
Chrysene	1.79	0.100	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	1	"	"	"	"	
Fluoranthene	5.37	0.100	"	20	"	"	"	"	E
Fluorene	1.15	0.100	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.708	0.100	"	"	"	"	"	"	
Pyrene	3.55	0.100	"	"	"	"	"	"	
1-Methylnaphthalene	0.109	0.00500	"	1	"	"	02/22/23	"	
2-Methylnaphthalene	0.235	0.00500	"	"	"	"	02/22/23	"	E

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0226	67.8 %	40-150		"	"	02/22/23	"	
Surrogate: Fluoranthene-d10	0.0215	64.4 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.100	0.0100	mg/L	1	BGB0665	02/21/23	02/23/23	EPA 6020B	

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

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	29.8	0.0526	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

FL08 3FT
2302347-03 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Magnesium	11.2	0.0526	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	
Sodium	7.19	0.0526	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.285	0.00100	units	1	BGB0853	02/28/23	02/28/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	BGB0666	02/21/23	02/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.322	0.0100	mmhos/cm	1	BGB0785	02/24/23	02/24/23	EPA 120.1	

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

Date Sampled: **02/10/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88		pH Units	1	BGB0786	02/24/23	02/24/23	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

AST E SURE.
2302347-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGB0577	02/20/23	02/21/23	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: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0345	86.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0383	95.7 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0366	91.4 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0580	02/20/23	02/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.59	76.7 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

AST E SURE.
2302347-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGB0602	02/20/23	02/22/23	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: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0294	88.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0217	65.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.155	0.0100	mg/L	1	BGB0665	02/21/23	02/23/23	EPA 6020B	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

AST E SURE.
2302347-04 (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	86.4	0.0529	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	
Magnesium	22.6	0.0529	"	"	"	"	"	"	
Sodium	5.54	0.0529	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.137	0.00100	units	1	BGB0853	02/28/23	02/28/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.6		%	1	BGB0666	02/21/23	02/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.591	0.0100	mmhos/cm	1	BGB0785	02/24/23	02/24/23	EPA 120.1	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.74		pH Units	1	BGB0786	02/24/23	02/24/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

AST W SURF.
2302347-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGB0577	02/20/23	02/21/23	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: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0380	94.9 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0378	94.5 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0403	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0580	02/20/23	02/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.3	90.6 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

AST W SURF.
2302347-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGB0602	02/20/23	02/22/23	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: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0249	74.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0284	85.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.202	0.0100	mg/L	1	BGB0665	02/21/23	02/23/23	EPA 6020B	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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 PO Box 1289
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Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

AST W SURF.
2302347-05 (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	27.7	0.0555	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	
Magnesium	14.0	0.0555	"	"	"	"	"	"	
Sodium	11.2	0.0555	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.433	0.00100	units	1	BGB0853	02/28/23	02/28/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.2		%	1	BGB0666	02/21/23	02/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.262	0.0100	mmhos/cm	1	BGB0785	02/24/23	02/24/23	EPA 120.1	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.85		pH Units	1	BGB0786	02/24/23	02/24/23	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

PWV E FLOOR 5FT
2302347-06 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGB0577	02/20/23	02/21/23	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: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0330	82.6 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0386	96.4 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0382	95.6 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGB0580	02/20/23	02/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	11.6	93.1 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
 PO Box 1289
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Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

PWV E FLOOR 5FT
2302347-06 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGB0602	02/20/23	02/22/23	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: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0258	77.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0175	52.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.125	0.0100	mg/L	1	BGB0665	02/21/23	02/23/23	EPA 6020B	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

PWV E FLOOR 5FT
2302347-06 (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	44.4	0.0510	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	
Magnesium	9.17	0.0510	"	"	"	"	"	"	
Sodium	14.7	0.0510	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.521	0.00100	units	1	BGB0853	02/28/23	02/28/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.1		%	1	BGB0666	02/21/23	02/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.232	0.0100	mmhos/cm	1	BGB0785	02/24/23	02/24/23	EPA 120.1	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.37		pH Units	1	BGB0786	02/24/23	02/24/23	EPA 9045D	

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Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

PWV W FLOOR 5FT
2302347-07 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGB0577	02/20/23	02/21/23	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: **02/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0369	92.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0376	94.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0398	99.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0580	02/20/23	02/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	13.4	107 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

PWV W FLOOR 5FT

2302347-07 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGB0602	02/20/23	02/22/23	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: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0321	96.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0222	66.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.110	0.0100	mg/L	1	BGB0665	02/21/23	02/23/23	EPA 6020B	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
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PWV W FLOOR 5FT
2302347-07 (Soil)

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

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	83.1	0.0548	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	
Magnesium	37.9	0.0548	"	"	"	"	"	"	
Sodium	87.2	0.0548	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.99	0.00100	units	1	BGB0853	02/28/23	02/28/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.3		%	1	BGB0666	02/21/23	02/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.08	0.0100	mmhos/cm	1	BGB0785	02/24/23	02/24/23	EPA 120.1	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.74		pH Units	1	BGB0786	02/24/23	02/24/23	EPA 9045D	

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Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

SEPE SURE.
2302347-08 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGB0577	02/20/23	02/21/23	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	0.020	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	ND	0.50		"	"	"	"	"	"	

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0349	87.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0387	96.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0376	94.1 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGB0580	02/20/23	02/21/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.8	94.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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PO Box 1289
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Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

SEPE SURE.
2302347-08 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.149	0.00500	mg/kg	1	BGB0602	02/20/23	02/22/23	EPA 8270D SIM	
Anthracene	0.206	0.00500	"	"	"	"	"	"	E
Benzo (a) anthracene	0.380	0.00500	"	"	"	"	"	"	E
Benzo (a) pyrene	0.212	0.00500	"	"	"	"	"	"	E
Benzo (b) fluoranthene	0.374	0.00500	"	"	"	"	"	"	E
Benzo (k) fluoranthene	0.119	0.00500	"	"	"	"	"	"	
Chrysene	0.349	0.00500	"	"	"	"	"	"	E
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.515	0.00500	"	"	"	"	"	"	E
Fluorene	0.174	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.143	0.00500	"	"	"	"	"	"	
Pyrene	0.534	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	0.0248	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0549	0.00500	"	"	"	"	"	"	

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0220	66.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0192	57.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.383	0.0100	mg/L	1	BGB0665	02/21/23	02/23/23	EPA 6020B	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	81.0	0.0587	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	

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Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

SEPE SURE.
2302347-08 (Soil)

Summit Scientific

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

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Magnesium	17.0	0.0587	mg/L dry	1	BGB0755	02/23/23	02/27/23	EPA 6020B	
Sodium	14.7	0.0587	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.388	0.00100	units	1	BGB0853	02/28/23	02/28/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.2		%	1	BGB0666	02/21/23	02/22/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.578	0.0100	mmhos/cm	1	BGB0785	02/24/23	02/24/23	EPA 120.1	

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

Date Sampled: **02/13/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.66		pH Units	1	BGB0786	02/24/23	02/24/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

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 BGB0577 - EPA 5030 Soil MS

Blank (BGB0577-BLK1)

Prepared & Analyzed: 02/20/23

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	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0319		"	0.0400		79.7	50-150			
<i>Surrogate: Toluene-d8</i>	0.0365		"	0.0400		91.4	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0367		"	0.0400		91.8	50-150			

LCS (BGB0577-BS1)

Prepared & Analyzed: 02/20/23

Benzene	0.0920	0.0020	mg/kg	0.100		92.0	70-130			
Toluene	0.0842	0.0050	"	0.100		84.2	70-130			
Ethylbenzene	0.104	0.0050	"	0.100		104	70-130			
m,p-Xylene	0.207	0.010	"	0.200		104	70-130			
o-Xylene	0.0956	0.0050	"	0.100		95.6	70-130			
1,2,4-Trimethylbenzene	0.0965	0.0050	"	0.100		96.5	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100		102	70-130			
Naphthalene	0.105	0.0038	"	0.100		105	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0307		"	0.0400		76.7	50-150			
<i>Surrogate: Toluene-d8</i>	0.0364		"	0.0400		91.1	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0373		"	0.0400		93.2	50-150			

Matrix Spike (BGB0577-MS1)

Source: 2302346-07

Prepared & Analyzed: 02/20/23

Benzene	0.0922	0.0020	mg/kg	0.100	ND	92.2	70-130			
Toluene	0.0870	0.0050	"	0.100	ND	87.0	70-130			
Ethylbenzene	0.106	0.0050	"	0.100	ND	106	70-130			
m,p-Xylene	0.209	0.010	"	0.200	ND	104	70-130			
o-Xylene	0.0988	0.0050	"	0.100	ND	98.8	70-130			
1,2,4-Trimethylbenzene	0.0982	0.0050	"	0.100	ND	98.2	70-130			
1,3,5-Trimethylbenzene	0.105	0.0050	"	0.100	ND	105	70-130			
Naphthalene	0.0973	0.0038	"	0.100	ND	97.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0306		"	0.0400		76.5	50-150			
<i>Surrogate: Toluene-d8</i>	0.0362		"	0.0400		90.4	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0365		"	0.0400		91.3	50-150			

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Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGB0577 - EPA 5030 Soil MS

Matrix Spike Dup (BGB0577-MSD1)	Source: 2302346-07			Prepared & Analyzed: 02/20/23						
Benzene	0.0962	0.0020	mg/kg	0.100	ND	96.2	70-130	4.24	30	
Toluene	0.0904	0.0050	"	0.100	ND	90.4	70-130	3.75	30	
Ethylbenzene	0.111	0.0050	"	0.100	ND	111	70-130	4.38	30	
m,p-Xylene	0.222	0.010	"	0.200	ND	111	70-130	5.95	30	
o-Xylene	0.101	0.0050	"	0.100	ND	101	70-130	2.40	30	
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	3.16	30	
1,3,5-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130	3.19	30	
Naphthalene	0.0956	0.0038	"	0.100	ND	95.6	70-130	1.71	30	
Surrogate: 1,2-Dichloroethane-d4	0.0304		"	0.0400		76.1	50-150			
Surrogate: Toluene-d8	0.0379		"	0.0400		94.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0362		"	0.0400		90.5	50-150			

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Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

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 BGB0580 - EPA 3550A

Blank (BGB0580-BLK1)

Prepared & Analyzed: 02/20/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	12.4		"	12.5		99.4	30-150				

LCS (BGB0580-BS1)

Prepared & Analyzed: 02/20/23

C10-C28 (DRO)	416	50	mg/kg	500		83.2	70-130				
Surrogate: <i>o</i> -Terphenyl	12.1		"	12.5		96.8	30-150				

Matrix Spike (BGB0580-MS1)

Source: 2302346-07

Prepared & Analyzed: 02/20/23

C10-C28 (DRO)	392	50	mg/kg	500	15.8	75.3	70-130				
Surrogate: <i>o</i> -Terphenyl	13.6		"	12.5		109	30-150				

Matrix Spike Dup (BGB0580-MSD1)

Source: 2302346-07

Prepared & Analyzed: 02/20/23

C10-C28 (DRO)	428	50	mg/kg	500	15.8	82.4	70-130	8.72	20		
Surrogate: <i>o</i> -Terphenyl	13.3		"	12.5		106	30-150				

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PO Box 1289
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Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

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 BGB0602 - EPA 5030 Soil MS

Blank (BGB0602-BLK1)

Prepared: 02/20/23 Analyzed: 02/21/23

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	"							
Surrogate: 2-Methylnaphthalene-d10	0.0366		"	0.0333		110	40-150			
Surrogate: Fluoranthene-d10	0.0287		"	0.0333		86.1	40-150			

LCS (BGB0602-BS1)

Prepared: 02/20/23 Analyzed: 02/21/23

Acenaphthene	0.0375	0.00500	mg/kg	0.0333		112	31-137			
Anthracene	0.0368	0.00500	"	0.0333		110	30-120			
Benzo (a) anthracene	0.0325	0.00500	"	0.0333		97.5	30-120			
Benzo (a) pyrene	0.0359	0.00500	"	0.0333		108	30-120			
Benzo (b) fluoranthene	0.0252	0.00500	"	0.0333		75.5	30-120			
Benzo (k) fluoranthene	0.0365	0.00500	"	0.0333		109	30-120			
Chrysene	0.0327	0.00500	"	0.0333		98.2	30-120			
Dibenz (a,h) anthracene	0.0380	0.00500	"	0.0333		114	30-120			
Fluoranthene	0.0371	0.00500	"	0.0333		111	30-120			
Fluorene	0.0304	0.00500	"	0.0333		91.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0372	0.00500	"	0.0333		111	30-120			
Pyrene	0.0389	0.00500	"	0.0333		117	35-142			
1-Methylnaphthalene	0.0302	0.00500	"	0.0333		90.7	35-142			
2-Methylnaphthalene	0.0321	0.00500	"	0.0333		96.4	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0326		"	0.0333		97.8	40-150			
Surrogate: Fluoranthene-d10	0.0341		"	0.0333		102	40-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

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 BGB0602 - EPA 5030 Soil MS

Matrix Spike (BGB0602-MS1)	Source: 2302309-01			Prepared: 02/20/23 Analyzed: 02/21/23						
Acenaphthene	0.0238	0.00500	mg/kg	0.0333	ND	71.5	31-137			
Anthracene	0.0191	0.00500	"	0.0333	ND	57.3	30-120			
Benzo (a) anthracene	0.0169	0.00500	"	0.0333	ND	50.8	30-120			
Benzo (a) pyrene	0.0197	0.00500	"	0.0333	ND	59.2	30-120			
Benzo (b) fluoranthene	0.0166	0.00500	"	0.0333	ND	49.9	30-120			
Benzo (k) fluoranthene	0.0167	0.00500	"	0.0333	ND	50.2	30-120			
Chrysene	0.0202	0.00500	"	0.0333	ND	60.7	30-120			
Dibenz (a,h) anthracene	0.0167	0.00500	"	0.0333	ND	50.1	30-120			
Fluoranthene	0.0209	0.00500	"	0.0333	ND	62.6	30-120			
Fluorene	0.0156	0.00500	"	0.0333	ND	46.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0139	0.00500	"	0.0333	ND	41.7	30-120			
Pyrene	0.0223	0.00500	"	0.0333	ND	66.8	35-142			
1-Methylnaphthalene	0.0182	0.00500	"	0.0333	ND	54.7	15-130			
2-Methylnaphthalene	0.0213	0.00500	"	0.0333	ND	64.0	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0171</i>		<i>"</i>	<i>0.0333</i>		<i>51.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0184</i>		<i>"</i>	<i>0.0333</i>		<i>55.3</i>	<i>40-150</i>			

Matrix Spike Dup (BGB0602-MSD1)	Source: 2302309-01			Prepared: 02/20/23 Analyzed: 02/21/23						
Acenaphthene	0.0215	0.00500	mg/kg	0.0333	ND	64.5	31-137	10.3	30	
Anthracene	0.0193	0.00500	"	0.0333	ND	57.9	30-120	1.00	30	
Benzo (a) anthracene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	0.468	30	
Benzo (a) pyrene	0.0211	0.00500	"	0.0333	ND	63.3	30-120	6.69	30	
Benzo (b) fluoranthene	0.0165	0.00500	"	0.0333	ND	49.6	30-120	0.488	30	
Benzo (k) fluoranthene	0.0172	0.00500	"	0.0333	ND	51.5	30-120	2.64	30	
Chrysene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	6.76	30	
Dibenz (a,h) anthracene	0.0169	0.00500	"	0.0333	ND	50.6	30-120	0.911	30	
Fluoranthene	0.0229	0.00500	"	0.0333	ND	68.6	30-120	9.20	30	
Fluorene	0.0147	0.00500	"	0.0333	ND	44.0	30-120	5.94	30	
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	9.56	30	
Pyrene	0.0231	0.00500	"	0.0333	ND	69.2	35-142	3.45	30	
1-Methylnaphthalene	0.0165	0.00500	"	0.0333	ND	49.6	15-130	9.76	50	
2-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.3	15-130	12.9	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0160</i>		<i>"</i>	<i>0.0333</i>		<i>48.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0195</i>		<i>"</i>	<i>0.0333</i>		<i>58.4</i>	<i>40-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

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 BGB0665 - EPA 3050B

Blank (BGB0665-BLK1)

Prepared: 02/21/23 Analyzed: 02/23/23

Boron ND 0.0100 mg/L

LCS (BGB0665-BS1)

Prepared: 02/21/23 Analyzed: 02/23/23

Boron 5.12 0.0100 mg/L 5.00 102 80-120

Duplicate (BGB0665-DUP1)

Source: 2302346-01

Prepared: 02/21/23 Analyzed: 02/23/23

Boron 0.117 0.0100 mg/L 0.120 2.31 20

Matrix Spike (BGB0665-MS1)

Source: 2302346-01

Prepared: 02/21/23 Analyzed: 02/23/23

Boron 5.35 0.0100 mg/L 5.00 0.120 105 75-125

Matrix Spike Dup (BGB0665-MSD1)

Source: 2302346-01

Prepared: 02/21/23 Analyzed: 02/23/23

Boron 5.16 0.0100 mg/L 5.00 0.120 101 75-125 3.47 25

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

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 BGB0755 - General Preparation

Blank (BGB0755-BLK1)

Prepared: 02/23/23 Analyzed: 02/27/23

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

LCS (BGB0755-BS1)

Prepared: 02/23/23 Analyzed: 02/27/23

Calcium	6.22	0.0500	mg/L wet	5.00	124	70-130				
Magnesium	6.41	0.0500	"	5.00	128	70-130				
Sodium	6.34	0.0500	"	5.00	127	70-130				

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 PO Box 1289
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Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

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

Summit Scientific

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

Batch BGB0666 - General Preparation

Duplicate (BGB0666-DUP1)		Source: 2302346-01		Prepared: 02/21/23 Analyzed: 02/22/23	
% Solids	91.5	%		91.6	0.187 20

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Fremont Environmental
 PO Box 1289
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Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

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 BGB0785 - General Preparation

Blank (BGB0785-BLK1)

Prepared & Analyzed: 02/24/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGB0785-BS1)

Prepared & Analyzed: 02/24/23

Specific Conductance (EC) 0.147 0.0100 mmhos/cm 0.150 97.7 95-105

Duplicate (BGB0785-DUP1)

Source: 2302347-01

Prepared & Analyzed: 02/24/23

Specific Conductance (EC) 0.437 0.0100 mmhos/cm 0.447 2.20 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 02/28/23 15:47

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 BGB0786 - General Preparation

LCS (BGB0786-BS1)

Prepared & Analyzed: 02/24/23

pH	9.09	pH Units	9.18	99.0	95-105
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Duplicate (BGB0786-DUP1)

Source: 2302347-01

Prepared & Analyzed: 02/24/23

pH	7.70	pH Units	7.67	0.390	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20

Project Number: [none]
Project Manager: Paul Henchan

Reported:
02/28/23 15:47

Notes and Definitions

- E The concentration indicated for this analyte is an estimated value above the calibration range of the instrument.
- 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