

FREMONT ENVIRONMENTAL INC.

January 25, 2024

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

Subject: **Excavation Report**
 Patriot B16-24
 API # 05-123-25730
 SESW Sec 16, T5N, R64W
 Weld County, Colorado
 Fremont Project No. C023-037
 Facility #483056, Remediation #25430

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Excavation Report for the Patriot B16-24 wellhead location in Weld County, Colorado. The enclosed report describes excavation and sampling efforts to remediate impacted soil at the site.

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.



Stanley Gilbert
Environmental Scientist

Enclosure

EXCAVATION REPORT
NOBLE ENERGY INC.
PATRIOT B16-24
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-037
FACILITY # 483056, REMEDIATION # 25430

Prepared by:
Fremont Environmental Inc.
1759 Redwing Lane
Broomfield, CO 80020
(303) 956-8714

January 25, 2024

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EXCAVATION REPORT
NOBLE ENERGY INC.
PATRIOT B16-24
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-037
FACILITY # 483056, REMEDIATION # 25430

1.0 INTRODUCTION

The purpose of this document is to present information collected during the multi-day excavation of soils at the Patriot B16-24 (Patriot) former wellhead location in Weld County, Colorado. This excavation project was completed on July 31, 2023.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The Patriot flowline is located approximately 1.3 miles north of Kersey, Colorado in Weld County as shown on Figure 1. The site is located in a rural and agricultural area approximately 0.5 miles east of the intersection of Highway 34 and County Road 53. The location is further described as the SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 16, Township 5N, Range 64W.

2.2 Site History

The site consists of the Patriot B16-24 wellhead which serviced the Patriot B65N64W Tank battery. The Patriot B16-24 well was drilled in 2008 to a depth of 6,6943 feet.

A historical release was discovered within flowline excavation during decommissioning activities on the Patriot wellhead in February 2023.

3.0 FIELD ACTIVITIES

3.1 Soil Excavation and Sampling

Soil remediation efforts consisted of the excavation and removal of petroleum-impacted soil at and adjacent to the former wellhead location. Generally, the subsurface consists of sandy clay that extends to approximately two feet below ground surface (bgs). The excavation extent is illustrated on Figure 2.

The single-day excavation was completed at the Patriot on July 31, 2023. Soil samples were collected as grab samples from the 8'x7'x2' deep excavation in the sidewalls at one foot bgs and from the excavation floor at two feet bgs. Groundwater was not encountered in the excavation and is measured at 43 feet bgs in a fire protection well 2,266 feet west of the Patriot location (DWR Permit No. 287536).

The soil samples were analyzed by Summit Scientific, Inc. in Golden, Colorado for benzene, toluene, ethylbenzene and total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene (TMB), Total Petroleum Hydrocarbons - Gasoline Range Organics (TPH-GRO) by EPA method 8260B, TPH - Diesel Range Organics (TPH-DRO), Extended Range Organics (TPH-ORO) by EPA method 8015, Polycyclic Aromatic Hydrocarbons (PAH): Acenaphthene, Anthracene, Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Chrysene, Dibenz (a,h) anthracene, Fluoranthene, Fluorene, Indeno (1,2,3-cd) pyrene, Pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene by EPA method 8270D, Total Metals by EPA method 6020B, and Hexavalent Chromium by EPA method 7196, sodium absorption ratio (SAR) by EPA 6020/USDA60 6(2) saturated paste extraction method, specific conductance by EPA Method 120.1 saturated paste extraction and pH by APHA/ASTM/EPA Methods, Saturated Paste Extraction. The laboratory reports and chain-of-custody documentation are included in Appendix B.

A summary of the laboratory data for the soil samples is included in Tables 1 through 4. The laboratory analyses indicate that organic petroleum constituents in soil samples collected from the sidewalls and floor of the excavation achieved the Colorado Energy & Carbon Management Commission (ECMC) Table 915-1 protection of groundwater soil screening levels (PGSSLs) and Colorado Energy & Carbon Management Commission (ECMC) Table 915-1 residential soil screening levels (RSSLs). However, arsenic, barium, and selenium exceeded the ECMC Table 915-1 residential soil screening levels (RSSLs) and Table 915-1 protection of groundwater soil screening levels (PGSSLs). Background samples collected at depths of one foot and two feet in native soil off-site adjacent to the former Patriot flowline also exceeded the ECMC Table 915-1 PGSSLs for arsenic. Since the excavation confirmation samples analyzed “non-detect” for organic petroleum constituents and inorganic petroleum constituents complied with the ECMC soil suitability for reclamation standards it is unlikely that elevated arsenic concentrations observed in both the background and confirmation samples are related to the historical release.

A total of approximately four cubic yards of petroleum-impacted soil were removed via excavation by Tasman Geosciences Inc. from the location. Impacted soil was disposed of at Waste Management Buffalo Ridge Landfill in Keenesburg, CO as non-hazardous waste. The excavation was backfilled with clean imported fill.

4.0 DISCUSSION

As demonstrated by the soil sampling, petroleum impacted soil was removed from the Patriot location by excavation. This was confirmed by analysis of soil samples collected from the exterior sidewalls and the floor, which were below the ECMC Table 915-1 PGSSLs for organic petroleum constituents upon completion of the excavation.

Approximately four cubic yards of impacted soil were removed and transported to the landfill. The soil data are illustrated and summarized in the attached tables and figures.

Based on a greater than 30 feet separation between the excavation's maximum depth of two feet bgs and a depth to water of 43 feet bgs demonstrating the improbability for communication between groundwater and historical hydrocarbon impacts at the Patriot location the operator proposes to use the ECMC Table 915-1 RSSLs. Further, the operator is requesting an NFA designation since the suspected release was below Rule 912.a.(5) reporting thresholds as demonstrated by the excavation confirmation samples.

5.0 REMARKS

The discussion and conclusions contained in this report represent our professional opinions. These opinions are based on currently available information and are arrived at in accordance with currently accepted hydrogeologic and engineering practices at this time and location. Other than this, no warranty is implied or intended.

This report was prepared by **FREMONT ENVIRONMENTAL INC.**



1/25/24

Date _____

Stanley Gilbert

Environmental Scientist

Reviewed by:



Ethan Black
for PVH

1/25/24

Date _____

Paul V. Henehan, P.E.

Senior Consultant

TABLES

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PATRIOT B 16-24, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-037

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**		
E Wall 1'	07/31/2023	1'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
FLOOR 2'	07/31/2023	2'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
N Wall 1'	07/31/2023	1'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
S Wall 1'	07/31/2023	1'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
W Wall 1'	07/31/2023	1'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50

Bold faced values exceed the COGCC Table 915-1 concentrations

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

* Indicates laboratory minimum detection limit in excess of SSL

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

NA - Not analyzed

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PATRIOT B 16-24, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-037

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
E Wall 1'	07/31/2023	1'	<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
FLOOR 2'	07/31/2023	2'	<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
N Wall 1'	07/31/2023	1'	<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
S Wall 1'	07/31/2023	1'	<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
W Wall 1'	07/31/2023	1'	0.0205	0.0335	<0.00500	0.0398	0.0594	0.0232	0.0586	0.00753	0.183	0.0224	0.0262	0.108	<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)

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
PATRIOT B 16-24, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-037

Sample ID	Sample Date	Depth (ft)	pH	EC (mmhos/cm)	SAR	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
Max. Background Concentration (or Concentration Range)			8.56	-	-	-
E Wall 1'	07/31/2023	1'	7.48	0.21	0.0163	0.238
FLOOR 2'	07/31/2023	2'	7.67	0.278	0.0158	0.198
N Wall 1'	07/31/2023	1'	7.23	0.321	0.019	0.225
S Wall 1'	07/31/2023	1'	7.79	0.359	0.0201	0.221
W Wall 1'	07/31/2023	1'	7.62	0.133	0.0105	0.0785
BKG01 1FT	08/15/2023	1'	7.28	0.233	0.631	0.285
BKG01 2FT	08/15/2023	2'	8.56	0.308	1.87	0.100
BKG02 1FT	08/15/2023	1'	6.95	0.977	1.20	0.208
BKG02 2FT	08/15/2023	2'	7.16	0.620	3.14	0.391
BKG03 1FT	08/15/2023	1'	7.21	<0.0100	2.64	0.208
BKG03 2FT	08/15/2023	2'	7.12	0.823	3.12	0.179
BKG04 1FT	08/15/2023	1'	6.99	0.764	1.52	0.308
BKG04 2FT	08/15/2023	2'	7.87	0.255	0.982	0.151
BKG05 1FT	08/15/2023	1'	8.09	0.257	1.48	0.232
BKG05 2FT	08/15/2023	2'	8.36	0.241	0.993	0.0928

Bold faced, yellow highlighted values exceed the ECMC Table 915-1 concentrations

Green highlighted cells indicate soil removed via excavation

Orange highlighted cells exceed of the maximum background concentration, or concentration range

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

NA - Not analyzed

TABLE 4
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PATRIOT B 16-24, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-037

Sample ID	Sample Date	Depth (ft)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (VI) (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Zinc (mg/kg)
ECMC Table 915-1 Limits (Residential SSL)			0.68	15000	71	0.3	3100	400	1500	390	390	23000
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.29	82	0.38	0.00067	46	14	26	0.26	0.8	370
125% Max. Background Concentration			0.720	286	-	-	-	-	-	0.395	-	-
E Wall 1'	07/31/2023	1'	0.686	83.5	<0.221	<0.30	1.94	5.08	1.40	1.36	0.0318	6.94
FLOOR 2'	07/31/2023	2'	0.751	102	0.262	<0.30	2.49	7.20	1.49	0.201	0.0618	9.55
N Wall 1'	07/31/2023	1'	0.849	137	0.254	<0.30	1.78	6.85	1.54	0.212	0.0488	6.86
S Wall 1'	07/31/2023	1'	0.827	115	0.251	<0.30	2.01	6.34	1.48	0.308	0.0788	6.86
W Wall 1'	07/31/2023	1'	0.473	21.1	<0.206	<0.30	1.53	1.72	0.86	<0.268	<0.0206	4.22
BKG01 1FT	08/15/2023	1'	0.509	140	0.518	<0.30	2.37	22.2	1.20	0.316	0.275	15.3
BKG01 2FT	08/15/2023	2'	0.376	117	<0.200	<0.30	<0.400	6.60	0.656	<0.260	0.0707	4.33
BKG02 1FT	08/15/2023	1'	0.550	147	0.355	<0.30	1.36	15.2	1.37	<0.260	0.128	9.77
BKG02 2FT	08/15/2023	2'	0.369	161	0.203	<0.30	0.425	8.90	1.10	<0.260	0.0596	6.59
BKG03 1FT	08/15/2023	1'	0.483	140	0.285	<0.30	0.753	11.5	1.28	<0.260	0.0813	7.45
BKG03 2FT	08/15/2023	2'	0.393	124	<0.200	<0.30	0.535	7.92	1.00	<0.260	0.052	5.59
BKG04 1FT	08/15/2023	1'	0.576	152	0.567	<0.30	2.06	24.5	1.33	<0.260	0.227	14.0
BKG04 2FT	08/15/2023	2'	0.362	45.5	<0.200	<0.30	<0.400	4.36	0.597	<0.260	0.037	4.03
BKG05 1FT	08/15/2023	1'	0.385	229	<0.200	<0.30	<0.400	10.8	0.935	<0.260	0.104	5.55
BKG05 2FT	08/15/2023	2'	0.260	35.3	<0.200	<0.30	<0.400	2.55	0.577	<0.260	<0.0200	3.62

Bold faced values exceed the ECMC Table 915-1 concentrations

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

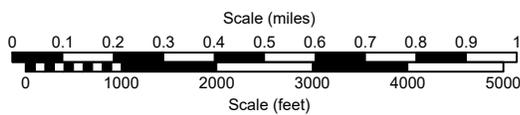
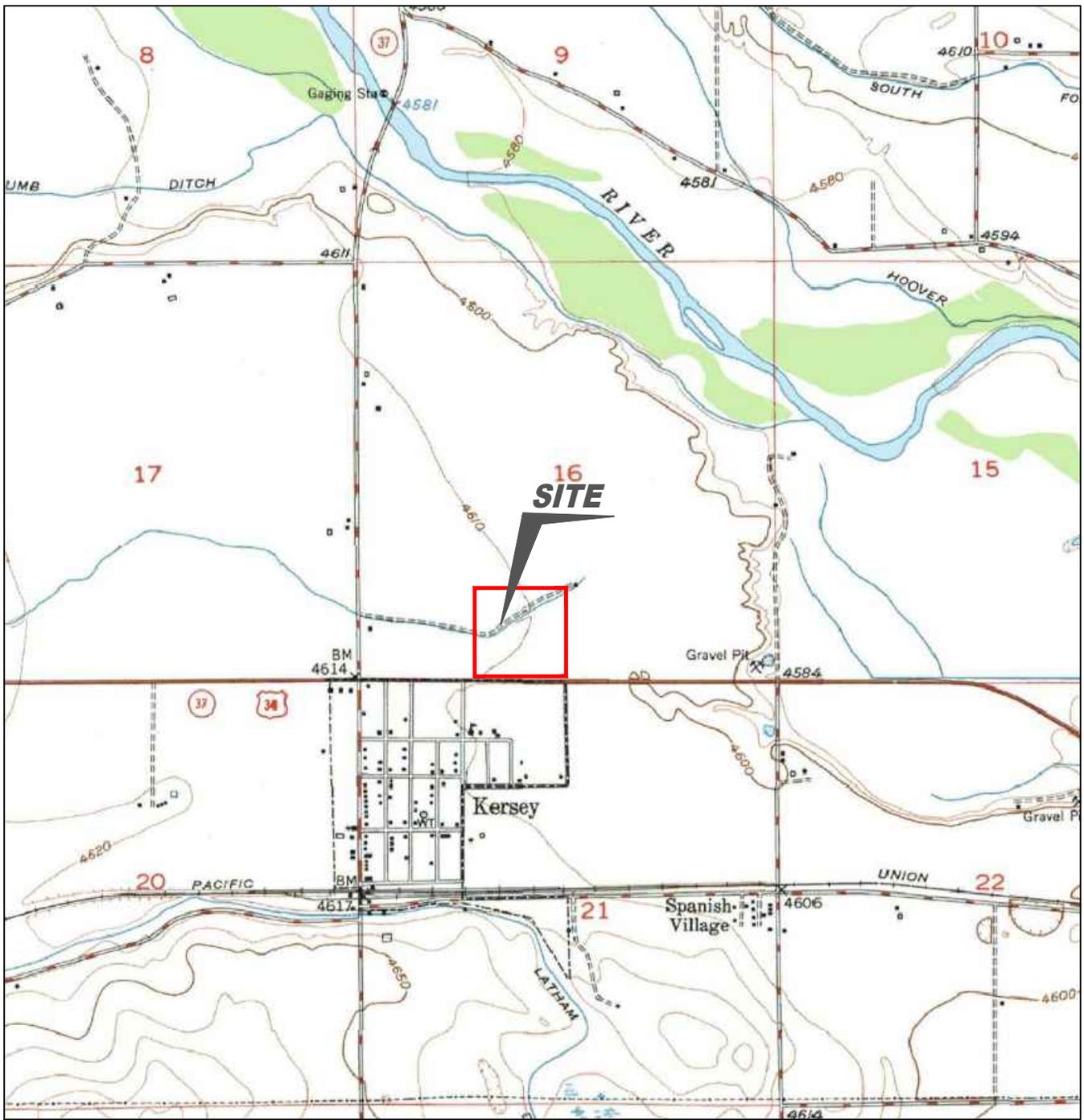
Orange highlighted cells exceed 125% of the maximum background concentration

* Indicates laboratory minimum detection limit in excess of SSL

Green highlighted cells indicate soil removed via excavation

NA - Not analyzed

FIGURES



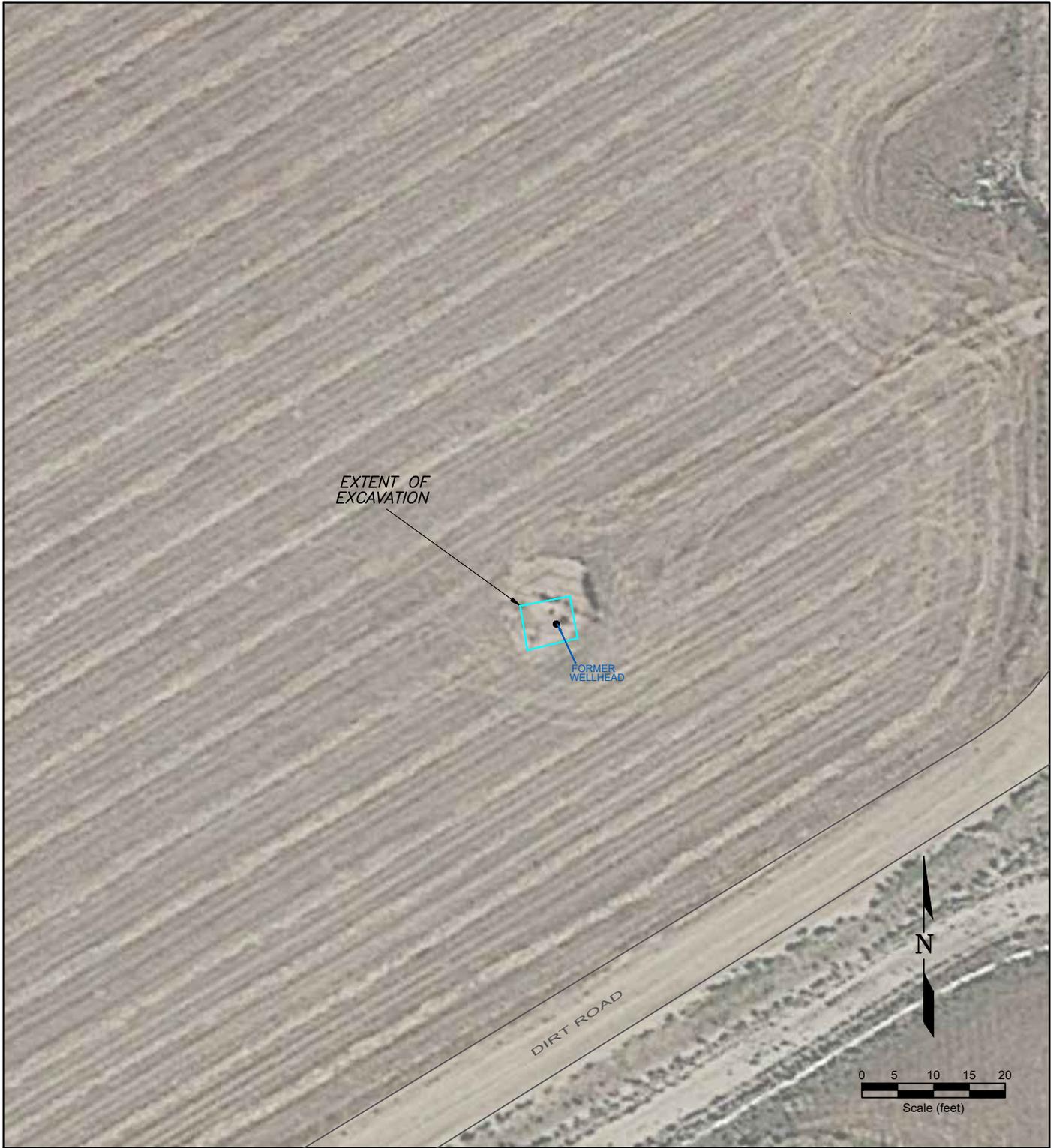
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

NOBLE ENERGY INC - PATRIOT B16-24
 SESW Sec. 16, T5N, R64W, 6th PM
 Weld County, Colorado
 40.395440°, -104.555204°

Project # CO23-037	API # 05-123-25730	Facility #
Date 10/03/2023	Remediation # 25430	Filename 23037T





LEGEND

- WELLHEAD LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FORMER FACILITY
- FLOW LINE
- ||||| CONTAINMENT BERM
- FENCE LINE

**Figure 2
SITE MAP**

NOBLE ENERGY INC - PATRIOT B16-24
 SESW Sec. 16, T5N, R64W, 6th PM
 Weld County, Colorado
 40.395440°, -104.555204°

Project # CO23-037	API # 05-123-25730	Facility #
Date 10/03/2023	Remediation # 25430	Filename 23037Q



APPENDIX A

PHOTO LOG

Photo Log



Description:

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Photo Log



Description:

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Photo Log



Description:

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Photo Log



Description:

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Photo Log



Description:

APPENDIX B

LABORATORY DOCUMENTATION

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

October 19, 2023

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549
RE: Noble - Patriot B16-24
Work Order #2307571

Enclosed are the results of analyses for samples received by Summit Scientific on 07/31/23 16:30. 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 B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N Wall 1'	2307571-01	Soil	07/31/23 11:32	07/31/23 16:30
E Wall 1'	2307571-02	Soil	07/31/23 11:33	07/31/23 16:30
S Wall 1'	2307571-03	Soil	07/31/23 11:34	07/31/23 16:30
W Wall 1'	2307571-04	Soil	07/31/23 11:35	07/31/23 16:30
FLOOR 2'	2307571-05	Soil	07/31/23 11:36	07/31/23 16:30

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.



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

Lab ID	Page 1 of 1
2307571	

		Send Data To:	Send Invoice To:
Client: Fremont Environmental		Project Manager: Paul Henehan	Company: Noble
Address:		E-Mail: Fremont Distribution List	Project Name/Location: Patriot B16-24
City/State/Zip:			AFE#:
Phone: 303-261-6246		Project Name: Patriot B16-24	PO/Billing Codes: UWRWE-42813-ABN
Sampler Name: Stanley Gilbert		Project Number:	Contact: Dan Peterson

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
1	N Wall 1'	7/31/23	11:32	2			X			X			X	X	X	X			
2	E Wall 1'		11:33				X			X			X	X	X	X			
3	S Wall 1'		11:34				X			X			X	X	X	X			
4	W Wall 1'		11:35				X			X			X	X	X	X			
5	FLOOR 2'		11:36				X			X			X	X	X	X			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by:	Date/Time: 7/31/23 13:35	Received by: Summit North	Date/Time: 7/31/23 13:35	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
1 Day	Field ORP					
2 Days	Field pH					
3 Days	Field Temp.					
Standard	Field Turb.					
Relinquished by:	Date/Time: 7/31/23 16:30	Received by:	Date/Time: 7/31/23 16:30			
Relinquished by:	Date/Time:	Received by:	Date/Time:			
Temperature Upon Receipt: 8.1	Corrected Temperature: 8	IR gun #:		HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2307571

Client: Fremont Client Project ID: Patriot B16-24

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

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

Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ICE
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Sameday
Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe ²⁺), Hexavalent Chromium (Cr ⁶⁺ , Cr VI), COD/BOD, Total Coliform, E. Coli, Total Residual Chlorine (TRC), Dissolved Oxygen	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Is the COC properly relinquished by the client w/ date and time recorded? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples received intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was adequate sample volume provided? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Does the COC agree with the number and type of sample bottles received? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Do the sample IDs on the bottle labels match the COC? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples preserved that require preservation (excluding cooling)? ⁽¹⁾ Note the type of preservative in the comments column – HCl, H ₂ SO ₄ , NaOH, HNO ₃ , etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If samples are acid preserved for metals, is the pH ≤ 2? ⁽¹⁾ Record the pH in Comments.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
If dissolved metals are requested, were samples field filtered?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

Additional Comments (if any):

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

AS 7/31/23
Custodian Printed Name Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

N Wall 1'
2307571-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG1047	07/31/23	08/01/23	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: **07/31/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0412	103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0404	101 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0411	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG1044	07/31/23	07/31/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/31/23 11:32**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.93	63.4 %		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 B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

N Wall 1'
2307571-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGH0008	08/01/23	08/01/23	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: **07/31/23 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0136	40.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0135	40.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.225	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 11:32**

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 B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

N Wall 1'
2307571-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.849	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B
Barium	137	0.400	"	"	"	"	"	"
Cadmium	0.254	0.200	"	"	"	"	"	"
Copper	1.78	0.400	"	"	"	"	"	"
Lead	6.85	0.200	"	"	"	"	"	"
Nickel	1.54	0.400	"	"	"	"	"	"
Selenium	0.212	0.305	"	"	"	"	"	"
Silver	0.0488	0.0200	"	"	"	"	"	"
Zinc	6.86	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/31/23 11:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0005	08/01/23	08/01/23	EPA 7196A	

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

Date Sampled: 07/31/23 11:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	26.9	0.0500	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	22.6	0.0500	"	"	"	"	"	"	
Sodium	0.553	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/31/23 11:32

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0190	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/31/23 11:32

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 B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

N Wall 1'
2307571-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	85.3	%	1	BGH0002	08/01/23	08/01/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/31/23 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.321	0.0100	mmhos/cm	1	BGH0041	08/01/23	08/01/23	EPA 120.1	

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

Date Sampled: **07/31/23 11:32**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.23		pH Units	1	BGH0040	08/01/23	08/01/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

E Wall 1'
2307571-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG1047	07/31/23	08/01/23	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: **07/31/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0413	103 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0397	99.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0424	106 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG1044	07/31/23	07/31/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.8	94.4 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
 PO Box 1289
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Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

E Wall 1'
2307571-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGH0008	08/01/23	08/01/23	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: **07/31/23 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0175	52.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0184	55.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.238	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 11:33**

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 - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

E Wall 1'
2307571-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.686	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B
Barium	83.5	0.400	"	"	"	"	"	"
Cadmium	0.204	0.200	"	"	"	"	"	"
Copper	1.94	0.400	"	"	"	"	"	"
Lead	5.08	0.200	"	"	"	"	"	"
Nickel	1.40	0.400	"	"	"	"	"	"
Silver	0.0318	0.0200	"	"	"	"	"	"
Zinc	6.94	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0005	08/01/23	08/01/23	EPA 7196A	

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

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	19.3	0.0500	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	15.3	0.0500	"	"	"	"	"	"	
Sodium	0.394	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0163	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.5		%	1	BGH0002	08/01/23	08/01/23	Calculation	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

E Wall 1'
2307571-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.210	0.0100	mmhos/cm	1	BGH0041	08/01/23	08/01/23	EPA 120.1	

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

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.48		pH Units	1	BGH0040	08/01/23	08/01/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

E Wall 1'
2307571-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **07/31/23 11:33**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Selenium	ND	0.260	mg/kg dry	1	BGJ0609	08/01/23	10/17/23	EPA 6020B	

Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

S Wall 1'
2307571-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG1047	07/31/23	08/01/23	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: **07/31/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0356	89.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0401	100 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0407	102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG1044	07/31/23	07/31/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/31/23 11:34**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.1	80.9 %		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 B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

S Wall 1'
2307571-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGH0008	08/01/23	08/01/23	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: **07/31/23 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0170	51.0 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0162	48.7 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.221	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 11:34**

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 B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

S Wall 1'
2307571-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.827	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B
Barium	115	0.400	"	"	"	"	"	"
Cadmium	0.251	0.200	"	"	"	"	"	"
Copper	2.01	0.400	"	"	"	"	"	"
Lead	6.34	0.200	"	"	"	"	"	"
Nickel	1.48	0.400	"	"	"	"	"	"
Selenium	0.308	0.307	"	"	"	"	"	"
Silver	0.0788	0.0200	"	"	"	"	"	"
Zinc	6.86	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/31/23 11:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0005	08/01/23	08/01/23	EPA 7196A	

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

Date Sampled: 07/31/23 11:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	86.8	0.0500	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	27.3	0.0500	"	"	"	"	"	"	
Sodium	0.836	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/31/23 11:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0201	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/31/23 11:34

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Fremont Environmental
 PO Box 1289
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Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

S Wall 1'
2307571-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.8	%	1	BGH0002	08/01/23	08/01/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/31/23 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.359	0.0100	mmhos/cm	1	BGH0041	08/01/23	08/01/23	EPA 120.1	

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

Date Sampled: **07/31/23 11:34**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.79		pH Units	1	BGH0040	08/01/23	08/01/23	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

W Wall 1'
2307571-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGG1047	07/31/23	08/01/23	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: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0389	97.4 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0405	101 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0446	111 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGG1044	07/31/23	07/31/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	10.5	84.0 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

W Wall 1'
2307571-04 (Soil)

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PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0205	0.00500	mg/kg	1	BGH0008	08/01/23	08/01/23	EPA 8270D SIM	
Anthracene	0.0335	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0398	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0594	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0232	0.00500	"	"	"	"	"	"	
Chrysene	0.0586	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.00753	0.00500	"	"	"	"	"	"	
Fluoranthene	0.183	0.00500	"	"	"	"	"	"	E
Fluorene	0.0224	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0262	0.00500	"	"	"	"	"	"	
Pyrene	0.108	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0149	44.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0171	51.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0785	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.473	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B	
Barium	21.1	0.400	"	"	"	"	"	"	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

W Wall 1'
2307571-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cadmium	ND	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B	
Copper	1.53	0.400	"	"	"	"	"	"	
Lead	1.72	0.200	"	"	"	"	"	"	
Nickel	0.860	0.400	"	"	"	"	"	"	
Selenium	ND	0.268	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	4.22	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0005	08/01/23	08/01/23	EPA 7196A	

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

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	9.67	0.0500	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	4.13	0.0500	"	"	"	"	"	"	
Sodium	0.156	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0105	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.1		%	1	BGH0002	08/01/23	08/01/23	Calculation	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

W Wall 1'
2307571-04 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.133	0.0100	mmhos/cm	1	BGH0041	08/01/23	08/01/23	EPA 120.1	

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

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.62		pH Units	1	BGH0040	08/01/23	08/01/23	EPA 9045D	

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Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

W Wall 1'
2307571-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 11:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzo (a) anthracene	ND	0.00500	mg/kg	1	BGH0277	08/01/23	08/08/23	EPA 8270D SIM	I-04

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

FLOOR 2'
2307571-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGG1047	07/31/23	08/01/23	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: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0332	83.0 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0402	100 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGG1044	07/31/23	07/31/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	12.2	97.3 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

FLOOR 2'
2307571-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGH0008	08/01/23	08/01/23	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: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0149	44.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0144	43.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.198	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

FLOOR 2'
2307571-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.751	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B
Barium	102	0.400	"	"	"	"	"	"
Cadmium	0.262	0.200	"	"	"	"	"	"
Copper	2.49	0.400	"	"	"	"	"	"
Lead	7.20	0.200	"	"	"	"	"	"
Nickel	1.49	0.400	"	"	"	"	"	"
Selenium	0.201	0.293	"	"	"	"	"	"
Silver	0.0618	0.0200	"	"	"	"	"	"
Zinc	9.55	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/31/23 11:36

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0005	08/01/23	08/01/23	EPA 7196A	

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

Date Sampled: 07/31/23 11:36

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.6	0.0500	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	18.6	0.0500	"	"	"	"	"	"	
Sodium	0.422	0.0500	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/31/23 11:36

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0158	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/31/23 11:36

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 - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

FLOOR 2'
2307571-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.6	%	1	BGH0002	08/01/23	08/01/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.278	0.0100	mmhos/cm	1	BGH0041	08/01/23	08/01/23	EPA 120.1	

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

Date Sampled: **07/31/23 11:36**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.67		pH Units	1	BGH0040	08/01/23	08/01/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

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 BGG1047 - EPA 5030 Soil MS

Blank (BGG1047-BLK1)

Prepared: 07/31/23 Analyzed: 08/01/23

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>	0.0297		"	0.0400		74.2	50-150			
<i>Surrogate: Toluene-d8</i>	0.0335		"	0.0400		83.8	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0384		"	0.0400		96.1	50-150			

LCS (BGG1047-BS1)

Prepared: 07/31/23 Analyzed: 08/01/23

Benzene	0.103	0.0020	mg/kg	0.100		103	70-130			
Toluene	0.105	0.0050	"	0.100		105	70-130			
Ethylbenzene	0.124	0.0050	"	0.100		124	70-130			
m,p-Xylene	0.248	0.010	"	0.200		124	70-130			
o-Xylene	0.116	0.0050	"	0.100		116	70-130			
1,2,4-Trimethylbenzene	0.101	0.0050	"	0.100		101	70-130			
1,3,5-Trimethylbenzene	0.104	0.0050	"	0.100		104	70-130			
Naphthalene	0.115	0.0038	"	0.100		115	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0313		"	0.0400		78.3	50-150			
<i>Surrogate: Toluene-d8</i>	0.0339		"	0.0400		84.8	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0391		"	0.0400		97.6	50-150			

Matrix Spike (BGG1047-MS1)

Source: 2307571-01

Prepared: 07/31/23 Analyzed: 08/01/23

Benzene	0.104	0.0020	mg/kg	0.100	ND	104	70-130			
Toluene	0.103	0.0050	"	0.100	ND	103	70-130			
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130			
m,p-Xylene	0.239	0.010	"	0.200	ND	120	70-130			
o-Xylene	0.112	0.0050	"	0.100	ND	112	70-130			
1,2,4-Trimethylbenzene	0.0993	0.0050	"	0.100	ND	99.3	70-130			
1,3,5-Trimethylbenzene	0.102	0.0050	"	0.100	ND	102	70-130			
Naphthalene	0.109	0.0038	"	0.100	ND	109	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0326		"	0.0400		81.5	50-150			
<i>Surrogate: Toluene-d8</i>	0.0335		"	0.0400		83.8	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0393		"	0.0400		98.3	50-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

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 BGG1047 - EPA 5030 Soil MS

Matrix Spike Dup (BGG1047-MSD1)	Source: 2307571-01			Prepared: 07/31/23 Analyzed: 08/01/23						
Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130	2.67	30	
Toluene	0.0997	0.0050	"	0.100	ND	99.7	70-130	3.46	30	
Ethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130	2.14	30	
m,p-Xylene	0.232	0.010	"	0.200	ND	116	70-130	3.23	30	
o-Xylene	0.110	0.0050	"	0.100	ND	110	70-130	1.71	30	
1,2,4-Trimethylbenzene	0.0945	0.0050	"	0.100	ND	94.5	70-130	4.99	30	
1,3,5-Trimethylbenzene	0.0964	0.0050	"	0.100	ND	96.4	70-130	5.68	30	
Naphthalene	0.113	0.0038	"	0.100	ND	113	70-130	4.20	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0325</i>		<i>"</i>	<i>0.0400</i>		<i>81.2</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0334</i>		<i>"</i>	<i>0.0400</i>		<i>83.6</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0377</i>		<i>"</i>	<i>0.0400</i>		<i>94.2</i>	<i>50-150</i>			

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 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

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 BGG1044 - EPA 3550A

Blank (BGG1044-BLK1)

Prepared: 07/31/23 Analyzed: 08/01/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.8		"	12.5		94.1	30-150				

LCS (BGG1044-BS1)

Prepared: 07/31/23 Analyzed: 08/01/23

C10-C28 (DRO)	446	50	mg/kg	500		89.1	70-130				
Surrogate: <i>o</i> -Terphenyl	11.6		"	12.5		93.1	30-150				

Matrix Spike (BGG1044-MS1)

Source: 2307571-01

Prepared: 07/31/23 Analyzed: 08/01/23

C10-C28 (DRO)	462	50	mg/kg	500	14.0	89.7	70-130				
Surrogate: <i>o</i> -Terphenyl	11.4		"	12.5		91.4	30-150				

Matrix Spike Dup (BGG1044-MSD1)

Source: 2307571-01

Prepared: 07/31/23 Analyzed: 08/01/23

C10-C28 (DRO)	486	50	mg/kg	500	14.0	94.5	70-130	5.08	20		
Surrogate: <i>o</i> -Terphenyl	8.79		"	12.5		70.4	30-150				

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

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 BGH0008 - EPA 5030 Soil MS

Blank (BGH0008-BLK1)

Prepared & Analyzed: 08/01/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0381</i>		"	<i>0.0333</i>		<i>114</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0245</i>		"	<i>0.0333</i>		<i>73.4</i>	<i>40-150</i>			

LCS (BGH0008-BS1)

Prepared & Analyzed: 08/01/23

Acenaphthene	0.0248	0.00500	mg/kg	0.0333		74.5	31-137			
Anthracene	0.0247	0.00500	"	0.0333		74.2	30-120			
Benzo (a) anthracene	0.0277	0.00500	"	0.0333		83.0	30-120			
Benzo (a) pyrene	0.0272	0.00500	"	0.0333		81.7	30-120			
Benzo (b) fluoranthene	0.0253	0.00500	"	0.0333		76.0	30-120			
Benzo (k) fluoranthene	0.0257	0.00500	"	0.0333		77.0	30-120			
Chrysene	0.0264	0.00500	"	0.0333		79.3	30-120			
Dibenz (a,h) anthracene	0.0240	0.00500	"	0.0333		71.9	30-120			
Fluoranthene	0.0290	0.00500	"	0.0333		87.1	30-120			
Fluorene	0.0238	0.00500	"	0.0333		71.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333		55.5	30-120			
Pyrene	0.0246	0.00500	"	0.0333		73.8	35-142			
1-Methylnaphthalene	0.0149	0.00500	"	0.0333		44.6	35-142			
2-Methylnaphthalene	0.0326	0.00500	"	0.0333		97.7	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0282</i>		"	<i>0.0333</i>		<i>84.7</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0293</i>		"	<i>0.0333</i>		<i>87.8</i>	<i>40-150</i>			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

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 BGH0008 - EPA 5030 Soil MS

Matrix Spike (BGH0008-MS1)

Source: 2307564-01

Prepared & Analyzed: 08/01/23

Acenaphthene	0.0224	0.00500	mg/kg	0.0333	ND	67.1	31-137		
Anthracene	0.0213	0.00500	"	0.0333	ND	63.8	30-120		
Benzo (a) anthracene	0.0217	0.00500	"	0.0333	ND	65.2	30-120		
Benzo (a) pyrene	0.0236	0.00500	"	0.0333	ND	70.9	30-120		
Benzo (b) fluoranthene	0.0226	0.00500	"	0.0333	ND	67.7	30-120		
Benzo (k) fluoranthene	0.0223	0.00500	"	0.0333	ND	66.9	30-120		
Chrysene	0.0219	0.00500	"	0.0333	ND	65.6	30-120		
Dibenz (a,h) anthracene	0.0188	0.00500	"	0.0333	ND	56.3	30-120		
Fluoranthene	0.0250	0.00500	"	0.0333	ND	74.9	30-120		
Fluorene	0.0217	0.00500	"	0.0333	ND	65.2	30-120		
Indeno (1,2,3-cd) pyrene	0.0156	0.00500	"	0.0333	ND	46.8	30-120		
Pyrene	0.0204	0.00500	"	0.0333	ND	61.3	35-142		
1-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.0	15-130		
2-Methylnaphthalene	0.0171	0.00500	"	0.0333	ND	51.2	15-130		
Surrogate: 2-Methylnaphthalene-d10	0.0195		"	0.0333		58.5	40-150		
Surrogate: Fluoranthene-d10	0.0258		"	0.0333		77.3	40-150		

Matrix Spike Dup (BGH0008-MSD1)

Source: 2307564-01

Prepared & Analyzed: 08/01/23

Acenaphthene	0.0210	0.00500	mg/kg	0.0333	ND	63.0	31-137	6.37	30
Anthracene	0.0212	0.00500	"	0.0333	ND	63.5	30-120	0.509	30
Benzo (a) anthracene	0.0213	0.00500	"	0.0333	ND	63.9	30-120	1.93	30
Benzo (a) pyrene	0.0225	0.00500	"	0.0333	ND	67.6	30-120	4.75	30
Benzo (b) fluoranthene	0.0216	0.00500	"	0.0333	ND	64.9	30-120	4.31	30
Benzo (k) fluoranthene	0.0212	0.00500	"	0.0333	ND	63.8	30-120	4.82	30
Chrysene	0.0210	0.00500	"	0.0333	ND	62.9	30-120	4.06	30
Dibenz (a,h) anthracene	0.0182	0.00500	"	0.0333	ND	54.6	30-120	3.09	30
Fluoranthene	0.0235	0.00500	"	0.0333	ND	70.4	30-120	6.13	30
Fluorene	0.0208	0.00500	"	0.0333	ND	62.3	30-120	4.59	30
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.5	30-120	9.58	30
Pyrene	0.0201	0.00500	"	0.0333	ND	60.3	35-142	1.56	30
1-Methylnaphthalene	0.0161	0.00500	"	0.0333	ND	48.3	15-130	9.41	50
2-Methylnaphthalene	0.0208	0.00500	"	0.0333	ND	62.3	15-130	19.5	50
Surrogate: 2-Methylnaphthalene-d10	0.0211		"	0.0333		63.2	40-150		
Surrogate: Fluoranthene-d10	0.0242		"	0.0333		72.6	40-150		

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

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 BGH0277 - EPA 5030 Soil MS

Blank (BGH0277-BLK1)

Prepared & Analyzed: 08/08/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0353</i>		"	<i>0.0333</i>		<i>106</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0253</i>		"	<i>0.0333</i>		<i>76.0</i>		<i>40-150</i>		

LCS (BGH0277-BS1)

Prepared & Analyzed: 08/08/23

Acenaphthene	0.0256	0.00500	mg/kg	0.0333		76.8		31-137		
Anthracene	0.0254	0.00500	"	0.0333		76.3		30-120		
Benzo (a) anthracene	0.0179	0.00500	"	0.0333		53.6		30-120		
Benzo (a) pyrene	0.0228	0.00500	"	0.0333		68.5		30-120		
Benzo (b) fluoranthene	0.0250	0.00500	"	0.0333		75.1		30-120		
Benzo (k) fluoranthene	0.0244	0.00500	"	0.0333		73.1		30-120		
Chrysene	0.0260	0.00500	"	0.0333		78.0		30-120		
Dibenz (a,h) anthracene	0.0210	0.00500	"	0.0333		63.0		30-120		
Fluoranthene	0.0267	0.00500	"	0.0333		80.2		30-120		
Fluorene	0.0261	0.00500	"	0.0333		78.2		30-120		
Indeno (1,2,3-cd) pyrene	0.0161	0.00500	"	0.0333		48.3		30-120		
Pyrene	0.0263	0.00500	"	0.0333		78.9		35-142		
1-Methylnaphthalene	0.0235	0.00500	"	0.0333		70.5		35-142		
2-Methylnaphthalene	0.0292	0.00500	"	0.0333		87.6		35-142		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0322</i>		"	<i>0.0333</i>		<i>96.7</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0277</i>		"	<i>0.0333</i>		<i>83.2</i>		<i>40-150</i>		

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

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 BGH0277 - EPA 5030 Soil MS

Matrix Spike (BGH0277-MS1)	Source: 2307534-01			Prepared & Analyzed: 08/08/23						
Acenaphthene	0.0168	0.00500	mg/kg	0.0333	ND	50.5	31-137			
Anthracene	0.0168	0.00500	"	0.0333	ND	50.3	30-120			
Benzo (a) anthracene	0.0122	0.00500	"	0.0333	ND	36.5	30-120			
Benzo (a) pyrene	0.0141	0.00500	"	0.0333	ND	42.2	30-120			
Benzo (b) fluoranthene	0.0155	0.00500	"	0.0333	ND	46.5	30-120			
Benzo (k) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.0	30-120			
Chrysene	0.0170	0.00500	"	0.0333	ND	51.0	30-120			
Dibenz (a,h) anthracene	0.0146	0.00500	"	0.0333	ND	43.8	30-120			
Fluoranthene	0.0171	0.00500	"	0.0333	ND	51.3	30-120			
Fluorene	0.0164	0.00500	"	0.0333	ND	49.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0102	0.00500	"	0.0333	ND	30.6	30-120			
Pyrene	0.0167	0.00500	"	0.0333	ND	50.1	35-142			
1-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	46.0	15-130			
2-Methylnaphthalene	0.0152	0.00500	"	0.0333	ND	45.6	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0207</i>		<i>"</i>	<i>0.0333</i>		<i>62.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0176</i>		<i>"</i>	<i>0.0333</i>		<i>52.7</i>	<i>40-150</i>			

Matrix Spike Dup (BGH0277-MSD1)	Source: 2307534-01			Prepared & Analyzed: 08/08/23						
Acenaphthene	0.0130	0.00500	mg/kg	0.0333	ND	38.9	31-137	26.0	30	
Anthracene	0.0129	0.00500	"	0.0333	ND	38.7	30-120	26.1	30	
Benzo (a) anthracene	0.0110	0.00500	"	0.0333	ND	33.1	30-120	9.90	30	
Benzo (a) pyrene	0.0115	0.00500	"	0.0333	ND	34.6	30-120	19.8	30	
Benzo (b) fluoranthene	0.0131	0.00500	"	0.0333	ND	39.4	30-120	16.5	30	
Benzo (k) fluoranthene	0.0125	0.00500	"	0.0333	ND	37.5	30-120	18.0	30	
Chrysene	0.0143	0.00500	"	0.0333	ND	42.8	30-120	17.4	30	
Dibenz (a,h) anthracene	0.0116	0.00500	"	0.0333	ND	34.7	30-120	23.2	30	
Fluoranthene	0.0127	0.00500	"	0.0333	ND	38.1	30-120	29.5	30	
Fluorene	0.0125	0.00500	"	0.0333	ND	37.5	30-120	27.2	30	
Indeno (1,2,3-cd) pyrene	0.0136	0.00500	"	0.0333	ND	40.7	30-120	28.2	30	
Pyrene	0.0150	0.00500	"	0.0333	ND	45.0	35-142	10.6	30	
1-Methylnaphthalene	0.0149	0.00500	"	0.0333	ND	44.6	15-130	2.90	50	
2-Methylnaphthalene	0.0127	0.00500	"	0.0333	ND	38.0	15-130	18.3	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0156</i>		<i>"</i>	<i>0.0333</i>		<i>46.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0166</i>		<i>"</i>	<i>0.0333</i>		<i>49.9</i>	<i>40-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

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 BGH0029 - EPA 3050B

Blank (BGH0029-BLK1)

Prepared: 08/01/23 Analyzed: 08/02/23

Boron ND 0.0100 mg/L

LCS (BGH0029-BS1)

Prepared: 08/01/23 Analyzed: 08/02/23

Boron 5.42 0.0100 mg/L 5.00 108 80-120

Duplicate (BGH0029-DUP1)

Source: 2307571-01

Prepared: 08/01/23 Analyzed: 08/02/23

Boron 0.210 0.0100 mg/L 0.225 7.03 20

Matrix Spike (BGH0029-MS1)

Source: 2307571-01

Prepared: 08/01/23 Analyzed: 08/02/23

Boron 5.71 0.0100 mg/L 5.00 0.225 110 75-125

Matrix Spike Dup (BGH0029-MSD1)

Source: 2307571-01

Prepared: 08/01/23 Analyzed: 08/02/23

Boron 5.89 0.0100 mg/L 5.00 0.225 113 75-125 3.07 25

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0003 - EPA 3050B

Blank (BGH0003-BLK1)

Prepared: 08/01/23 Analyzed: 08/02/23

Arsenic	ND	0.200	mg/kg wet								
Barium	ND	0.400	"								
Cadmium	ND	0.200	"								
Copper	ND	0.400	"								
Lead	ND	0.200	"								
Nickel	ND	0.400	"								
Selenium	ND	0.260	"								
Silver	ND	0.0200	"								
Zinc	ND	0.400	"								

LCS (BGH0003-BS1)

Prepared: 08/01/23 Analyzed: 08/02/23

Arsenic	41.6	0.200	mg/kg wet	40.0	104	80-120					
Barium	33.6	0.400	"	40.0	84.1	80-120					
Cadmium	1.66	0.200	"	2.00	82.8	80-120					
Copper	38.2	0.400	"	40.0	95.5	80-120					
Lead	22.2	0.200	"	20.0	111	80-120					
Nickel	38.3	0.400	"	40.0	95.6	80-120					
Selenium	4.13	0.260	"	4.00	103	80-120					
Silver	1.61	0.0200	"	2.00	80.5	80-120					
Zinc	39.8	0.400	"	40.0	99.5	80-120					

Duplicate (BGH0003-DUP1)

Source: 2307571-01

Prepared: 08/01/23 Analyzed: 08/02/23

Arsenic	0.897	0.200	mg/kg dry	0.849	5.43	20					
Barium	164	0.400	"	137	17.7	20					
Cadmium	0.331	0.200	"	0.254	26.3	20					QM-04
Copper	2.15	0.400	"	1.78	18.7	20					
Lead	10.3	0.200	"	6.85	40.6	20					QM-04
Nickel	1.58	0.400	"	1.54	2.49	20					
Selenium	0.244	0.305	"	0.212	14.2	20					
Silver	0.0680	0.0200	"	0.0488	32.9	20					QM-04
Zinc	7.47	0.400	"	6.86	8.54	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 - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0003 - EPA 3050B

Matrix Spike (BGH0003-MS1)

Source: 2307571-01

Prepared: 08/01/23 Analyzed: 08/02/23

Arsenic	8.27	0.200	mg/kg dry	46.9	0.849	15.8	75-125				QM-07
Barium	197	0.400	"	46.9	137	127	75-125				QM-07
Cadmium	2.36	0.200	"	2.35	0.254	89.8	75-125				
Copper	9.03	0.400	"	46.9	1.78	15.5	75-125				QM-07
Lead	24.5	0.200	"	23.5	6.85	75.3	75-125				
Nickel	9.04	0.400	"	46.9	1.54	16.0	75-125				QM-07
Selenium	5.25	0.305	"	4.69	0.212	107	75-125				
Silver	2.03	0.0200	"	2.35	0.0488	84.4	75-125				
Zinc	15.5	0.400	"	46.9	6.86	18.3	75-125				QM-07

Matrix Spike Dup (BGH0003-MSD1)

Source: 2307571-01

Prepared: 08/01/23 Analyzed: 08/02/23

Arsenic	8.28	0.200	mg/kg dry	46.9	0.849	15.8	75-125	0.108	25		QM-07
Barium	174	0.400	"	46.9	137	78.2	75-125	12.3	25		
Cadmium	2.07	0.200	"	2.35	0.254	77.6	75-125	12.9	25		
Copper	8.98	0.400	"	46.9	1.78	15.4	75-125	0.526	25		QM-07
Lead	21.8	0.200	"	23.5	6.85	63.8	75-125	11.7	25		QM-07
Nickel	8.97	0.400	"	46.9	1.54	15.8	75-125	0.719	25		QM-07
Selenium	5.34	0.305	"	4.69	0.212	109	75-125	1.73	25		
Silver	1.80	0.0200	"	2.35	0.0488	74.6	75-125	11.9	25		QM-07
Zinc	15.3	0.400	"	46.9	6.86	18.0	75-125	0.951	25		QM-07

Batch BGI0449 - EPA 3050B

Blank (BGI0449-BLK1)

Prepared: 09/15/23 Analyzed: 09/19/23

Selenium	ND	0.260	mg/kg wet								
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LCS (BGI0449-BS1)

Prepared: 09/15/23 Analyzed: 09/19/23

Selenium	4.19	0.260	mg/kg wet	4.00		105	80-120				
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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 - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGI0449 - EPA 3050B

Duplicate (BGI0449-DUP1)		Source: 2309239-01			Prepared: 09/15/23 Analyzed: 09/19/23						
Selenium	ND	0.299	mg/kg dry		ND					20	
Matrix Spike (BGI0449-MS1)		Source: 2309239-01			Prepared: 09/15/23 Analyzed: 09/19/23						
Selenium	2.15	0.299	mg/kg dry	4.60	ND	46.7	75-125				QM-01
Matrix Spike Dup (BGI0449-MSD1)		Source: 2309239-01			Prepared: 09/15/23 Analyzed: 09/19/23						
Selenium	2.10	0.299	mg/kg dry	4.60	ND	45.6	75-125	2.51	25		QM-01

Batch BGJ0609 - EPA 3050B

Blank (BGJ0609-BLK1)					Prepared: 10/16/23 Analyzed: 10/17/23						
Selenium	ND	0.260	mg/kg wet								
LCS (BGJ0609-BS1)					Prepared: 10/16/23 Analyzed: 10/17/23						
Selenium	4.41	0.260	mg/kg wet	4.00		110	80-120				
Duplicate (BGJ0609-DUP1)		Source: 2310158-01			Prepared: 10/16/23 Analyzed: 10/17/23						
Selenium	ND	0.314	mg/kg dry		ND					20	
Matrix Spike (BGJ0609-MS1)		Source: 2310158-01			Prepared: 10/16/23 Analyzed: 10/17/23						
Selenium	7.92	0.314	mg/kg dry	4.84	ND	164	75-125				QM-07
Matrix Spike Dup (BGJ0609-MSD1)		Source: 2310158-01			Prepared: 10/16/23 Analyzed: 10/17/23						
Selenium	7.61	0.314	mg/kg dry	4.84	ND	157	75-125	4.05	25		QM-07
Post Spike (BGJ0609-PS1)		Source: 2310158-01			Prepared: 10/16/23 Analyzed: 10/17/23						
Selenium	18.1		ug/l	10.0	0.253	178	75-125				QM-01

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGH0005 - 3060A Mod

Blank (BGH0005-BLK1)

Prepared & Analyzed: 08/01/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGH0005-BS1)

Prepared & Analyzed: 08/01/23

Chromium, Hexavalent 21.2 0.30 mg/kg wet 25.0 84.6 80-120

Duplicate (BGH0005-DUP1)

Source: 2307571-01

Prepared & Analyzed: 08/01/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGH0005-MS1)

Source: 2307571-01

Prepared & Analyzed: 08/01/23

Chromium, Hexavalent 26.4 0.30 mg/kg dry 29.3 ND 90.2 75-125

Matrix Spike Dup (BGH0005-MSD1)

Source: 2307571-01

Prepared & Analyzed: 08/01/23

Chromium, Hexavalent 25.2 0.30 mg/kg dry 29.3 ND 86.0 75-125 4.77 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

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

Summit Scientific

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

Batch BGG1039 - General Preparation

Blank (BGG1039-BLK1)

Prepared: 07/31/23 Analyzed: 08/01/23

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

LCS (BGG1039-BS1)

Prepared: 07/31/23 Analyzed: 08/01/23

Calcium	5.84	0.0500	mg/L wet	5.00		117	70-130			
Magnesium	5.79	0.0500	"	5.00		116	70-130			
Sodium	5.98	0.0500	"	5.00		120	70-130			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

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 BGH0002 - General Preparation

Duplicate (BGH0002-DUP1)

Source: 2307571-01

Prepared & Analyzed: 08/01/23

% Solids	84.5		%		85.3			0.899		20	
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Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

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 BGH0041 - General Preparation

Blank (BGH0041-BLK1)

Prepared & Analyzed: 08/01/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGH0041-BS1)

Prepared & Analyzed: 08/01/23

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

Duplicate (BGH0041-DUP1)

Source: 2306659-04

Prepared & Analyzed: 08/01/23

Specific Conductance (EC) 3.10 0.0100 mmhos/cm 3.12 0.579 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 10/19/23 14:35

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 BGH0040 - General Preparation

LCS (BGH0040-BS1)

Prepared & Analyzed: 08/01/23

pH 9.23 pH Units 9.18 101 95-105

Duplicate (BGH0040-DUP1)

Source: 2306659-04

Prepared & Analyzed: 08/01/23

pH 8.11 pH Units 8.10 0.123 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: [none]
Project Manager: Paul Henchan

Reported:
10/19/23 14:35

Notes and Definitions

- QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- QM-04 Visual evaluation of the sample indicates the RPD is above the control limit due to a non-homogeneous sample matrix.
- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- I-04 Sample was analyzed out of recommended holding time per clients request.
- 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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 23, 2023

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549
RE: Noble - Patriot B16-24
Work Order #2308374

Enclosed are the results of analyses for samples received by Summit Scientific on 08/16/23 14:00. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG01 1FT	2308374-01	Soil	08/15/23 00:00	08/16/23 14:00
BKG01 2FT	2308374-02	Soil	08/15/23 00:00	08/16/23 14:00
BKG02 1FT	2308374-03	Soil	08/15/23 00:00	08/16/23 14:00
BKG02 2FT	2308374-04	Soil	08/15/23 00:00	08/16/23 14:00
BKG03 1FT	2308374-05	Soil	08/15/23 00:00	08/16/23 14:00
BKG03 2FT	2308374-06	Soil	08/15/23 00:00	08/16/23 14:00
BKG04 1FT	2308374-07	Soil	08/15/23 00:00	08/16/23 14:00
BKG04 2FT	2308374-08	Soil	08/15/23 00:00	08/16/23 14:00
BKG05 1FT	2308374-09	Soil	08/15/23 00:00	08/16/23 14:00
BKG05 2FT	2308374-10	Soil	08/15/23 00:00	08/16/23 14:00

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

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

Lab ID	Page 1 of 1
2308374	

Send Data To:		Send Invoice To:
Client: Fremont Environmental, Inc.	Project Manager:	Company: Chevron
Address: 8305 6th St.	E-Mail: Fremont Distribution List	Project Name/Location:
City/State/Zip: Wellington, CO, 80549		AFE#:
Phone: 603-477-6907	Project Name: Noble - Patriot B 16-24	PO/Billing Codes: UWRWE-A2813-ABN
Sampler Name: Stanley Gilbert	Project Number:	Contact: Dan Peterson

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Air-Canister #	Other	Analysis Requested						Special Instructions
					HCl	HNO3	None	Other	Water	Soil			BTEX, Naphthalene, TMBs	TPH (C6-C36)	PAH	SAR, EC, pH, Boron	TDS, Chloride, Sulfate	Metals (915-1)	
1	BKG01 1 Ft	8/15/23		2			X			X					X		X		
2	BKG01 2 Ft	8/15/23		2			X			X					X		X		
3	BKG02 1 Ft	8/15/23		2															
4	BKG02 2 Ft	8/15/23		2															
5	BKG03 1 Ft	8/15/23		2															
6	BKG03 2 Ft	8/15/23		2															
7	BKG04 1 Ft	8/15/23		2															
8	BKG 04 2 Ft	8/15/23		2															
9	BKG 05 1 Ft	8/15/23		2															
10	BKG 05 2 Ft	8/15/23		2															
11																			
12																			
13																			
14																			
15																			

Relinquished by: Stanley Gilbert	Date/Time: 8/15/23 1400	Received by: 	Date/Time: 8/15/23 1400	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	X Field Turb.	
Temperature Upon Receipt: 10.1	Corrected Temperature:	IR gun #: 21	HNO3 lot #:			

S₂

S2 Work Order# 2308374

Sample Receipt Checklist

Client: Fremont Client Project ID: Noble - Patriot B 16-24

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

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

Temp (°C) Thermometer #

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

[Signature]

Custodian Printed Name

8/15/23 14:00

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG01 1FT
2308374-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.285	0.0100	mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.509	0.200	mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	140	0.400	"	"	"	"	"	"	
Cadmium	0.518	0.200	"	"	"	"	"	"	
Copper	2.37	0.400	"	"	"	"	"	"	
Lead	22.2	0.200	"	"	"	"	"	"	
Nickel	1.20	0.400	"	"	"	"	"	"	
Silver	0.275	0.0200	"	"	"	"	"	"	
Zinc	15.3	0.400	"	"	"	"	"	"	
Selenium	0.316	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	36.7	0.0536	mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	14.3	0.0536	"	"	"	"	"	"	
Sodium	17.8	0.0536	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

BKG01 1FT
2308374-01 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.631	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.3		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.233	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.28		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG01 2FT
2308374-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.100	0.0100	mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.376	0.200	mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	117	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	6.60	0.200	"	"	"	"	"	"	
Nickel	0.656	0.400	"	"	"	"	"	"	
Silver	0.0707	0.0200	"	"	"	"	"	"	
Zinc	4.33	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	19.9	0.0526	mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	8.92	0.0526	"	"	"	"	"	"	
Sodium	40.0	0.0526	"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG01 2FT
2308374-02 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.87	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.1		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.308	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.56		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

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Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG02 1FT
2308374-03 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	0.208	0.0100		mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.550	0.200		mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	147	0.400		"	"	"	"	"	"	
Cadmium	0.355	0.200		"	"	"	"	"	"	
Copper	1.36	0.400		"	"	"	"	"	"	
Lead	15.2	0.200		"	"	"	"	"	"	
Nickel	1.37	0.400		"	"	"	"	"	"	
Silver	0.128	0.0200		"	"	"	"	"	"	
Zinc	9.77	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	58.0	0.0533		mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	25.1	0.0533		"	"	"	"	"	"	
Sodium	43.3	0.0533		"	"	"	"	"	"	

Calculated Analysis

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 PO Box 1289
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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

BKG02 1FT
2308374-03 (Soil)

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Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.20	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.7		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.977	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.95		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

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Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG02 2FT
2308374-04 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.391	0.0100	mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.369	0.200	mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	161	0.400	"	"	"	"	"	"	
Cadmium	0.203	0.200	"	"	"	"	"	"	
Copper	0.425	0.400	"	"	"	"	"	"	
Lead	8.90	0.200	"	"	"	"	"	"	
Nickel	1.10	0.400	"	"	"	"	"	"	
Silver	0.0596	0.0200	"	"	"	"	"	"	
Zinc	6.59	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	18.4	0.0536	mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	8.71	0.0536	"	"	"	"	"	"	
Sodium	65.3	0.0536	"	"	"	"	"	"	

Calculated Analysis

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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

BKG02 2FT
2308374-04 (Soil)

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Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.14	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.3		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.620	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.16		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

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Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG03 1FT
2308374-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.208	0.0100	mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.483	0.200	mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	140	0.400	"	"	"	"	"	"	
Cadmium	0.285	0.200	"	"	"	"	"	"	
Copper	0.753	0.400	"	"	"	"	"	"	
Lead	11.5	0.200	"	"	"	"	"	"	
Nickel	1.28	0.400	"	"	"	"	"	"	
Silver	0.0813	0.0200	"	"	"	"	"	"	
Zinc	7.45	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	31.3	0.0526	mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	13.9	0.0526	"	"	"	"	"	"	
Sodium	70.6	0.0526	"	"	"	"	"	"	

Calculated Analysis

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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

BKG03 1FT
2308374-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.64	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.0		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	ND	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.21		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

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Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG03 2FT
2308374-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.179	0.0100	mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.393	0.200	mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	124	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	0.535	0.400	"	"	"	"	"	"	
Lead	7.92	0.200	"	"	"	"	"	"	
Nickel	1.00	0.400	"	"	"	"	"	"	
Silver	0.0520	0.0200	"	"	"	"	"	"	
Zinc	5.59	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	28.2	0.0520	mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	12.9	0.0520	"	"	"	"	"	"	
Sodium	79.7	0.0520	"	"	"	"	"	"	

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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

BKG03 2FT
2308374-06 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	3.12	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.1		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.823	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.12		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

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Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG04 1FT
2308374-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.308	0.0100	mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.576	0.200	mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	152	0.400	"	"	"	"	"	"	
Cadmium	0.567	0.200	"	"	"	"	"	"	
Copper	2.06	0.400	"	"	"	"	"	"	
Lead	24.5	0.200	"	"	"	"	"	"	
Nickel	1.33	0.400	"	"	"	"	"	"	
Silver	0.227	0.0200	"	"	"	"	"	"	
Zinc	14.0	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	38.7	0.0537	mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	16.8	0.0537	"	"	"	"	"	"	
Sodium	45.0	0.0537	"	"	"	"	"	"	

Calculated Analysis

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Fremont Environmental
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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

BKG04 1FT
2308374-07 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.52	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	93.2		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.764	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.99		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

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Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG04 2FT
2308374-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.151	0.0100	mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.362	0.200	mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	45.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	4.36	0.200	"	"	"	"	"	"	
Nickel	0.597	0.400	"	"	"	"	"	"	
Silver	0.0370	0.0200	"	"	"	"	"	"	
Zinc	4.03	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	62.2	0.0513	mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	19.4	0.0513	"	"	"	"	"	"	
Sodium	34.6	0.0513	"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG04 2FT
2308374-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.982	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.4		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.255	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.87		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

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Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG05 1FT
2308374-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.232	0.0100	mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.385	0.200	mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	229	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	10.8	0.200	"	"	"	"	"	"	
Nickel	0.935	0.400	"	"	"	"	"	"	
Silver	0.104	0.0200	"	"	"	"	"	"	
Zinc	5.55	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	15.4	0.0510	mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	7.71	0.0510	"	"	"	"	"	"	
Sodium	28.5	0.0510	"	"	"	"	"	"	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG05 1FT
2308374-09 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.48	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.1		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.257	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.09		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG05 2FT
2308374-10 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0928	0.0100	mg/L	1	BGH0755	08/18/23	08/19/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.260	0.200	mg/kg dry	1	BGH0793	08/19/23	08/22/23	EPA 6020B	
Barium	35.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	2.55	0.200	"	"	"	"	"	"	
Nickel	0.577	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	3.62	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0740	08/18/23	08/18/23	EPA 7196A	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	45.7	0.0558	mg/L dry	1	BGH0754	08/18/23	08/23/23	EPA 6020B	
Magnesium	12.9	0.0558	"	"	"	"	"	"	
Sodium	29.5	0.0558	"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
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Project: Noble - Patriot B16-24
Project Number: UWRWE-A2813-ABN
Project Manager: Paul Henchan

Reported:
08/23/23 14:11

BKG05 2FT
2308374-10 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.993	0.00100	units	1	BGH0916	08/23/23	08/23/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.6		%	1	BGH0744	08/18/23	08/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.241	0.0100	mmhos/cm	1	BGH0822	08/21/23	08/21/23	EPA 120.1	

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

Date Sampled: **08/15/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.36		pH Units	1	BGH0819	08/21/23	08/21/23	EPA 9045D	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

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 BGH0755 - EPA 3050B

Blank (BGH0755-BLK1)

Prepared: 08/18/23 Analyzed: 08/19/23

Boron ND 0.0100 mg/L

LCS (BGH0755-BS1)

Prepared: 08/18/23 Analyzed: 08/19/23

Boron 5.62 0.0100 mg/L 5.00 112 80-120

Duplicate (BGH0755-DUP1)

Source: 2308348-01

Prepared: 08/18/23 Analyzed: 08/19/23

Boron 0.624 0.0100 mg/L 0.593 5.04 20

Matrix Spike (BGH0755-MS1)

Source: 2308348-01

Prepared: 08/18/23 Analyzed: 08/19/23

Boron 6.05 0.0100 mg/L 5.00 0.593 109 75-125

Matrix Spike Dup (BGH0755-MSD1)

Source: 2308348-01

Prepared: 08/18/23 Analyzed: 08/19/23

Boron 6.20 0.0100 mg/L 5.00 0.593 112 75-125 2.45 25

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Fremont Environmental
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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0793 - EPA 3050B

Blank (BGH0793-BLK1)

Prepared: 08/19/23 Analyzed: 08/22/23

Arsenic	ND	0.200	mg/kg wet							
Barium	ND	0.400	"							
Cadmium	ND	0.200	"							
Copper	ND	0.400	"							
Lead	ND	0.200	"							
Nickel	ND	0.400	"							
Silver	ND	0.0200	"							
Zinc	ND	0.400	"							
Selenium	ND	0.260	"							

LCS (BGH0793-BS1)

Prepared: 08/19/23 Analyzed: 08/22/23

Arsenic	43.1	0.200	mg/kg wet	40.0	108	80-120				
Barium	38.9	0.400	"	40.0	97.2	80-120				
Cadmium	1.89	0.200	"	2.00	94.6	80-120				
Copper	41.3	0.400	"	40.0	103	80-120				
Lead	19.5	0.200	"	20.0	97.4	80-120				
Nickel	41.7	0.400	"	40.0	104	80-120				
Silver	1.88	0.0200	"	2.00	94.1	80-120				
Zinc	42.6	0.400	"	40.0	106	80-120				

Duplicate (BGH0793-DUP1)

Source: 2308374-01

Prepared: 08/19/23 Analyzed: 08/22/23

Arsenic	0.473	0.200	mg/kg dry	0.509	7.34	20				
Barium	47.9	0.400	"	140	98.0	20				QR-04
Cadmium	0.181	0.200	"	0.518	96.5	20				QR-01
Copper	1.91	0.400	"	2.37	21.7	20				QR-01
Lead	8.94	0.200	"	22.2	85.1	20				QR-04
Nickel	1.06	0.400	"	1.20	12.5	20				
Silver	0.116	0.0200	"	0.275	81.3	20				QR-01
Zinc	13.3	0.400	"	15.3	13.9	20				
Selenium	ND	0.260	"	0.316	200	200				

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Fremont Environmental
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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGH0793 - EPA 3050B

Matrix Spike (BGH0793-MS1)

Source: 2308374-01

Prepared: 08/19/23 Analyzed: 08/22/23

Arsenic	7.94	0.200	mg/kg dry	42.9	0.509	17.3	75-125				QM-01
Barium	177	0.400	"	42.9	140	86.8	75-125				
Cadmium	2.45	0.200	"	2.14	0.518	90.0	75-125				
Copper	10.5	0.400	"	42.9	2.37	19.0	75-125				QM-01
Lead	39.5	0.200	"	21.4	22.2	80.8	75-125				
Nickel	9.11	0.400	"	42.9	1.20	18.5	75-125				QM-01
Silver	2.04	0.0200	"	2.14	0.275	82.4	75-125				
Zinc	25.5	0.400	"	42.9	15.3	23.9	75-125				QM-01

Matrix Spike Dup (BGH0793-MSD1)

Source: 2308374-01

Prepared: 08/19/23 Analyzed: 08/22/23

Arsenic	7.91	0.200	mg/kg dry	42.9	0.509	17.3	75-125	0.368	25		QM-01
Barium	200	0.400	"	42.9	140	140	75-125	12.2	25		QM-01
Cadmium	2.70	0.200	"	2.14	0.518	102	75-125	9.86	25		
Copper	10.6	0.400	"	42.9	2.37	19.1	75-125	0.403	25		QM-01
Lead	44.1	0.200	"	21.4	22.2	102	75-125	11.1	25		
Nickel	9.21	0.400	"	42.9	1.20	18.7	75-125	1.12	25		QM-01
Silver	2.25	0.0200	"	2.14	0.275	92.2	75-125	9.81	25		
Zinc	25.2	0.400	"	42.9	15.3	23.1	75-125	1.37	25		QM-01

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Fremont Environmental
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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGH0740 - 3060A Mod

Blank (BGH0740-BLK1)

Prepared & Analyzed: 08/18/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGH0740-BS1)

Prepared & Analyzed: 08/18/23

Chromium, Hexavalent 24.3 0.30 mg/kg wet 25.0 97.2 80-120

Duplicate (BGH0740-DUP1)

Source: 2308340-01

Prepared & Analyzed: 08/18/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGH0740-MS1)

Source: 2308340-01

Prepared & Analyzed: 08/18/23

Chromium, Hexavalent 30.1 0.30 mg/kg dry 32.4 ND 92.8 75-125

Matrix Spike Dup (BGH0740-MSD1)

Source: 2308340-01

Prepared & Analyzed: 08/18/23

Chromium, Hexavalent 31.0 0.30 mg/kg dry 32.4 ND 95.6 75-125 2.97 20

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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

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 BGH0754 - General Preparation

Blank (BGH0754-BLK1)

Prepared: 08/18/23 Analyzed: 08/23/23

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

LCS (BGH0754-BS1)

Prepared: 08/18/23 Analyzed: 08/23/23

Calcium	5.66	0.0500	mg/L wet	5.00		113	70-130			
Magnesium	5.27	0.0500	"	5.00		105	70-130			
Sodium	5.30	0.0500	"	5.00		106	70-130			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

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 BGH0744 - General Preparation

Duplicate (BGH0744-DUP1)

Source: 2308349-01

Prepared: 08/18/23 Analyzed: 08/21/23

% Solids	81.0		%		95.8			16.7	20	
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Project: Noble - Patriot B16-24
 Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

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 BGH0822 - General Preparation

Blank (BGH0822-BLK1)

Prepared & Analyzed: 08/21/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGH0822-BS1)

Prepared & Analyzed: 08/21/23

Specific Conductance (EC) 0.154 0.0100 mmhos/cm 0.150 103 95-105

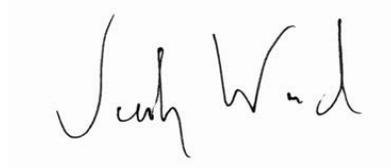
Duplicate (BGH0822-DUP1)

Source: 2308348-01

Prepared & Analyzed: 08/21/23

Specific Conductance (EC) 3.25 0.0100 mmhos/cm 3.25 0.00 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: UWRWE-A2813-ABN
 Project Manager: Paul Henchan

Reported:
 08/23/23 14:11

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 BGH0819 - General Preparation

LCS (BGH0819-BS1)

Prepared & Analyzed: 08/21/23

pH	8.93	pH Units	9.18	97.3	95-105
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Duplicate (BGH0819-DUP1)

Source: 2308348-01

Prepared & Analyzed: 08/21/23

pH	7.44	pH Units	7.44	0.00	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-24

Project Number: UWRWE-A2813-ABN

Project Manager: Paul Henchan

Reported:
08/23/23 14:11

Notes and Definitions

- QR-04 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance. QC batch accepted based on LCS and/or LCSD recovery and/or RPD values.
- QR-01 Analyses are not controlled on RPD values from sample concentrations less than 10 times the reporting limit. QC batch accepted based on LCS and/or LCSD QC results.
- QM-01 The spike recovery for this QC sample is outside of established control limits due to sample matrix interference.
- 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

