

FREMONT ENVIRONMENTAL INC.

January 25, 2024

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

Subject: **Excavation Report**
 Patriot B16-20
 API # 05-123-25729
 NWSW Sec 16, T5N, R64W
 Weld County, Colorado
 Fremont Project No. C023-036
 Facility #483056, Remediation #25436

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Excavation Report for the Patriot B16-20 flowline 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 B16-20
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036
FACILITY # 483056, REMEDIATION # 25436

Prepared by:
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January 25, 2024

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EXCAVATION REPORT
NOBLE ENERGY INC.
PATRIOT B16-20
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036
FACILITY # 483056, REMEDIATION # 25436

1.0 INTRODUCTION

The purpose of this document is to present information collected during the multi-day excavation of soils at the Patriot B16-20 (Patriot) former separator and flowline locations 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 NW $\frac{1}{4}$ of the SW $\frac{1}{4}$ of Section 16, Township 5N, Range 64W.

2.2 Site History

The site consists of the Patriot B16-20 flowline which serviced the Patriot B16-20 natural gas well and the Patriot B65N64W Tank battery. The Patriot B16-20 well was drilled in 2009 to a depth of 6,635 feet.

A historical release was discovered at the separator and along the flowline during decommissioning activities on the Patriot in January 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 separator and flowline locations. Generally, the subsurface consists of sandy clay that extends to approximately four feet below ground surface (bgs). The excavations extents are illustrated on Figure 2.

The multi-day excavation was completed at the Patriot on July 31, 2023. Soil samples were collected as grab samples from the separator excavation sidewalls at three feet bgs and from the excavation floor at four feet bgs. Samples were collected as grab samples from the flowline excavation sidewalls at three feet bgs and from the excavation floor at four feet bgs. Groundwater was not encountered in the excavation and is measured at 43 feet bgs in a fire protection well 3,216 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 8. 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 residential soil screening levels RSSLs. However, arsenic exceeded the ECMC Table 915-1 RSSLs, and barium and selenium exceeded the ECMC Table 915-1 PGSSLs. A background sample collected at depths of three feet and four feet in native soil off site adjacent to the former Patriot facility and flowline also exceeded the ECMC Table 915-1 RSSLs for arsenic. Since elevated levels of arsenic, barium and selenium were observed in both the excavation samples and background sample, it is proposed that arsenic concentrations be attributed to native soil conditions.

A total of approximately 78 cubic yards of petroleum impacted soil was removed from the separator. Approximately 30 cubic yards of petroleum impacted soil was removed from the flowline 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 excavations were 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 78 cubic yards and 30 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 four 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 in consideration for a no further action (NFA) designation.

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:

Handwritten signature of Ethan Black for PVH in black ink.

1/25/24

Date_____

Ethan D. Black, PG
Consultant

TABLES

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PATRIOT B16-20 FL09-SEP, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
FLOOR01 4'	07/27/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
N01 Wall 3'	07/27/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
S01 Wall 3'	07/27/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
W Wall 3'	07/27/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
E Wall 3'	07/28/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
Floor 4'	07/28/2023	4'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
N02 Wall 3'	07/28/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<50	<0.50	<50
S02 Wall 3'	07/28/2023	3'	<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 B16-20 FLO9-SEP, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl - Naphthalene (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
FLOOR01 4'	07/27/2023	4'	<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
N01 Wall 3'	07/27/2023	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
S01 Wall 3'	07/27/2023	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
W Wall 3'	07/27/2023	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
E Wall 3'	07/28/2023	3'	<0.00500	<0.00500	0.00545	0.00615	<0.00500	<0.00500	0.00661	<0.00500	0.0122	<0.00500	0.00699	0.00898	<0.00500	<0.00500
Floor 4'	07/28/2023	4'	<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
N02 Wall 3'	07/28/2023	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
S02 Wall 3'	07/28/2023	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

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 B16-20 FLO9-SEP, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

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)			-	-	-	-
FLOOR01 4'	07/27/2023	4'	7.81	1.07	1.96	0.22
N01 Wall 3'	07/27/2023	3'	7.87	0.571	1.16	0.53
S01 Wall 3'	07/27/2023	3'	7.53	0.739	1.67	0.561
W Wall 3'	07/27/2023	3'	7.64	1.26	2.07	0.569
E Wall 3'	07/28/2023	3'	7.69	0.536	0.737	0.456
Floor 4'	07/28/2023	4'	8.02	0.537	2.08	0.144
N02 Wall 3'	07/28/2023	3'	7.56	0.215	0.104	0.422
S02 Wall 3'	07/28/2023	3'	7.49	0.259	0.451	0.574
BKG01@3'	08/14/2023	3'	6.77	0.660	0.540	0.451
BKG01@4'	08/14/2023	4'	7.56	0.722	1.27	0.308
BKG02@3'	08/14/2023	3'	7.85	1.00	2.74	0.276
BKG02@4'	08/14/2023	4'	8.06	0.660	2.04	0.422
BKG03@3'	08/14/2023	3'	8.21	0.381	1.39	0.232
BKG03@4'	08/14/2023	4'	7.71	0.384	0.938	0.190
BKG04@3'	08/14/2023	3'	7.84	0.316	0.466	0.231
BKG04@4'	08/14/2023	4'	7.77	0.372	0.753	0.309
BKG05@3'	08/14/2023	3'	8.03	0.230	0.169	0.245
BKG05@4'	08/14/2023	4'	7.96	0.241	0.162	0.260

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 B16-20 FLO9-SEP, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

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			1.3125	196.25	-	-	-	-	-	0.325	-	-
FLOOR01 4'	07/27/2023	4'	0.806	216	0.268	<0.30	0.838	13.2	1.62	<0.315	0.098	7.91
N01 Wall 3'	07/27/2023	3'	0.672	80.3	0.274	<0.30	1.75	9.99	2.72	<0.331	0.125	11.7
S01 Wall 3'	07/27/2023	3'	0.542	110	0.267	<0.30	1.67	10.7	2.33	<0.321	0.122	11.1
W Wall 3'	07/27/2023	3'	0.73	85.9	<0.252	<0.30	1.31	11.3	2.31	<0.328	0.13	11.3
E Wall 3'	07/28/2023	3'	0.753	75.7	0.283	<0.30	1.78	10.8	2.44	0.369	0.106	17.5
Floor 4'	07/28/2023	4'	0.915	71.3	<0.247	<0.30	<0.493	9.8	1.75	<0.321	0.0518	7.60
N02 Wall 3'	07/28/2023	3'	0.828	76.0	0.268	<0.30	1.35	12.4	2.12	<0.304	0.111	14.9
S02 Wall 3'	07/28/2023	3'	0.677	74.7	0.347	<0.30	1.17	10.5	2.81	0.240	0.117	14.6
BKG01@3'	08/14/2023	3'	1.05	77.3	0.355	<0.30	1.57	6.60	2.42	<0.260	0.0547	8.80
BKG01@4'	08/14/2023	4'	0.810	84.4	0.49	<0.30	1.19	7.53	2.13	<0.260	0.0828	7.68
BKG02@3'	08/14/2023	3'	0.733	157	0.398	<0.30	<0.400	8.92	0.946	<0.260	0.0763	6.09
BKG02@4'	08/14/2023	4'	0.607	43.8	<0.200	<0.30	<0.400	4.10	0.820	<0.260	0.0247	4.26
BKG03@3'	08/14/2023	3'	0.469	37.3	0.249	<0.30	<0.400	4.57	0.709	<0.260	0.0447	4.54
BKG03@4'	08/14/2023	4'	0.418	12.8	<0.200	<0.30	<0.400	2.47	0.508	<0.260	0.0240	2.76
BKG04@3'	08/14/2023	3'	0.747	95.6	0.429	<0.30	0.406	7.96	1.19	<0.260	0.0602	6.12
BKG04@4'	08/14/2023	4'	0.580	50.1	0.255	<0.30	<0.400	5.39	0.761	<0.260	0.0394	4.26
BKG05@3'	08/14/2023	3'	0.377	12.3	<0.200	<0.30	<0.400	2.16	0.499	<0.260	0.0240	2.20
BKG05@4'	08/14/2023	4'	0.334	12.9	<0.200	<0.30	<0.400	1.86	0.604	<0.260	<0.0200	2.63

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

TABLE 5
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PATRIOT B16-20 FL08, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

Sample ID	Sample Date	Depth (ft)	Benzene (mg/kg)	Toluene (mg/kg)	Ethyl-Benzene (mg/kg)	Xylenes (mg/kg)	1,2,4-Trimethyl-Benzene (mg/kg)	1,3,5-Trimethyl-Benzene (mg/kg)	Naphthalene (mg/kg)	TPH GRO (mg/kg)	TPH DRO (mg/kg)	TPH ORO (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
E Wall 3'	07/31/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
FLOOR 4'	07/31/2023	3	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
N Wall 3'	07/31/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
S Wall 3'	07/31/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
W Wall 3'	07/31/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
E02 Wall 3'	09/07/2023	3'	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50

Bold faced values exceed the COGCC Table 915-1 concentrations

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

* 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 6
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PATRIOT B16-20 FLO8, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (mg/kg)	Pyrene (mg/kg)	1-Methyl - Naphthalene (mg/kg)	2-Methyl - Naphthalene (mg/kg)
COGCC Table 915-1 Limits (Residential SSL)			360	1800	1.1	0.11	1.1	11	110	0.11	240	240	1.1	180	18	24
COGCC Table 915-1 Limits (Protection of Groundwater SSL)			0.55	5.8	0.011	0.24	0.3	2.9	9	0.096	8.9	0.54	0.98	1.3	0.006	0.019
E Wall 3'	07/31/2023	3'	0.0600	0.0904	0.199	0.105	0.160	0.0593	0.146	0.0174	0.468	0.0671	0.0668	0.292	<0.00500	0.0135
FLOOR 4'	07/31/2023	4'	<0.00500	0.00652	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0067	<0.00500	<0.00500	<0.00500	<0.00500
N Wall 3'	07/31/2023	3'	0.0180	0.0271	0.00686	0.0283	0.0388	0.0156	0.0381	<0.00500	0.119	0.0207	0.0165	0.0757	<0.00500	<0.00500
S Wall 3'	07/31/2023	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
W Wall 3'	07/31/2023	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
E02 Wall 3'	09/07/2023	3'	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

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 7
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
PATRIOT B16-20 FL08, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

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)			8.00	-	-	-
E Wall 3'	07/31/2023	3'	7.77	0.425	0.018	0.145
FLOOR 4'	07/31/2023	4'	7.78	0.410	0.0159	0.274
N Wall 3'	07/31/2023	3'	7.71	0.398	0.0176	0.215
S Wall 3'	07/31/2023	3'	7.60	0.276	0.0129	0.178
W Wall 3'	07/31/2023	3'	7.86	0.303	0.0115	0.166
E02 Wall 3'	09/07/2023	3'	8.39	0.319	0.153	0.0464
BKG01@3'	08/14/2023	3'	7.28	0.724	0.194	0.266
BKG01@4'	08/14/2023	4'	7.51	0.656	0.538	0.448
BKG02@3'	08/14/2023	3'	7.78	0.845	0.572	0.368
BKG02@4'	08/14/2023	4'	8.00	0.597	0.324	0.271
BKG03@3'	08/14/2023	3'	7.96	0.410	0.570	0.314
BKG03@4'	08/14/2023	4'	7.60	0.462	0.316	0.187
BKG04@3'	08/14/2023	3'	7.72	0.434	0.196	0.277
BKG04@4'	08/14/2023	4'	7.86	0.357	0.254	0.233
BKG05@3'	08/14/2023	3'	7.50	0.453	0.0586	0.284
BKG05@4'	08/14/2023	4'	7.85	0.250	0.0498	0.149

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 8
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PATRIOT B16-20 FL08, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C023-036

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			1.19	149	-	-	-	-	-	0.325	-	-
E Wall 3'	07/31/2023	3'	0.723	53.4	<0.229	<0.30	2.69	6.38	1.40	0.202	0.0583	11.2
FLOOR 4'	07/31/2023	4'	0.798	77.0	0.291	<0.30	3.23	8.44	1.84	0.241	0.0776	12.9
N Wall 3'	07/31/2023	3'	0.839	88.6	0.316	<0.30	3.23	11.0	1.79	0.294	0.096	13.5
S Wall 3'	07/31/2023	3'	0.786	81.2	0.254	<0.30	3.54	8.93	1.64	0.319	0.0873	14.4
W Wall 3'	07/31/2023	3'	0.726	100	<0.226	<0.30	2.04	4.52	1.58	0.281	0.0325	7.99
E02 Wall 3'	09/07/2023	3'	0.324	16.6	<0.200	<0.30	0.404	2.36	<0.400	<0.260	<0.0200	3.10
BKG01@3'	08/14/2023	3'	0.950	77.2	0.365	<0.30	1.75	6.88	2.30	<0.260	0.0503	8.24
BKG01@4'	08/14/2023	4'	0.875	102	0.532	<0.30	1.30	8.73	2.54	<0.260	0.0901	9.25
BKG02@3'	08/14/2023	3'	0.735	119	0.349	<0.30	<0.400	7.41	0.899	<0.260	0.0648	5.94
BKG02@4'	08/14/2023	4'	0.504	29.4	<0.200	<0.30	<0.400	3.12	0.578	<0.260	<0.0200	3.29
BKG03@3'	08/14/2023	3'	0.437	29.6	<0.200	<0.30	<0.400	4.17	0.671	<0.260	0.0376	4.11
BKG03@4'	08/14/2023	4'	0.494	21.2	0.215	<0.30	<0.400	3.61	0.658	<0.260	0.0319	3.46
BKG04@3'	08/14/2023	3'	0.770	88.8	0.434	<0.30	<0.400	7.65	1.16	<0.260	0.0567	5.71
BKG04@4'	08/14/2023	4'	0.492	49.0	0.331	<0.30	<0.400	5.14	0.717	<0.260	0.0422	4.60
BKG05@3'	08/14/2023	3'	0.251	11.6	<0.200	<0.30	<0.400	1.60	0.519	<0.260	<0.0200	2.22
BKG05@4'	08/14/2023	4'	0.334	17.1	<0.200	<0.30	<0.400	2.41	0.543	<0.260	<0.0200	3.18

Bold faced values exceed the ECMC Table 915-1 concentrations

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

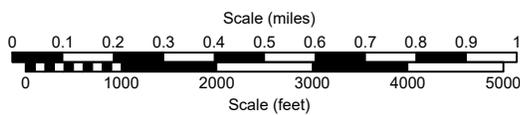
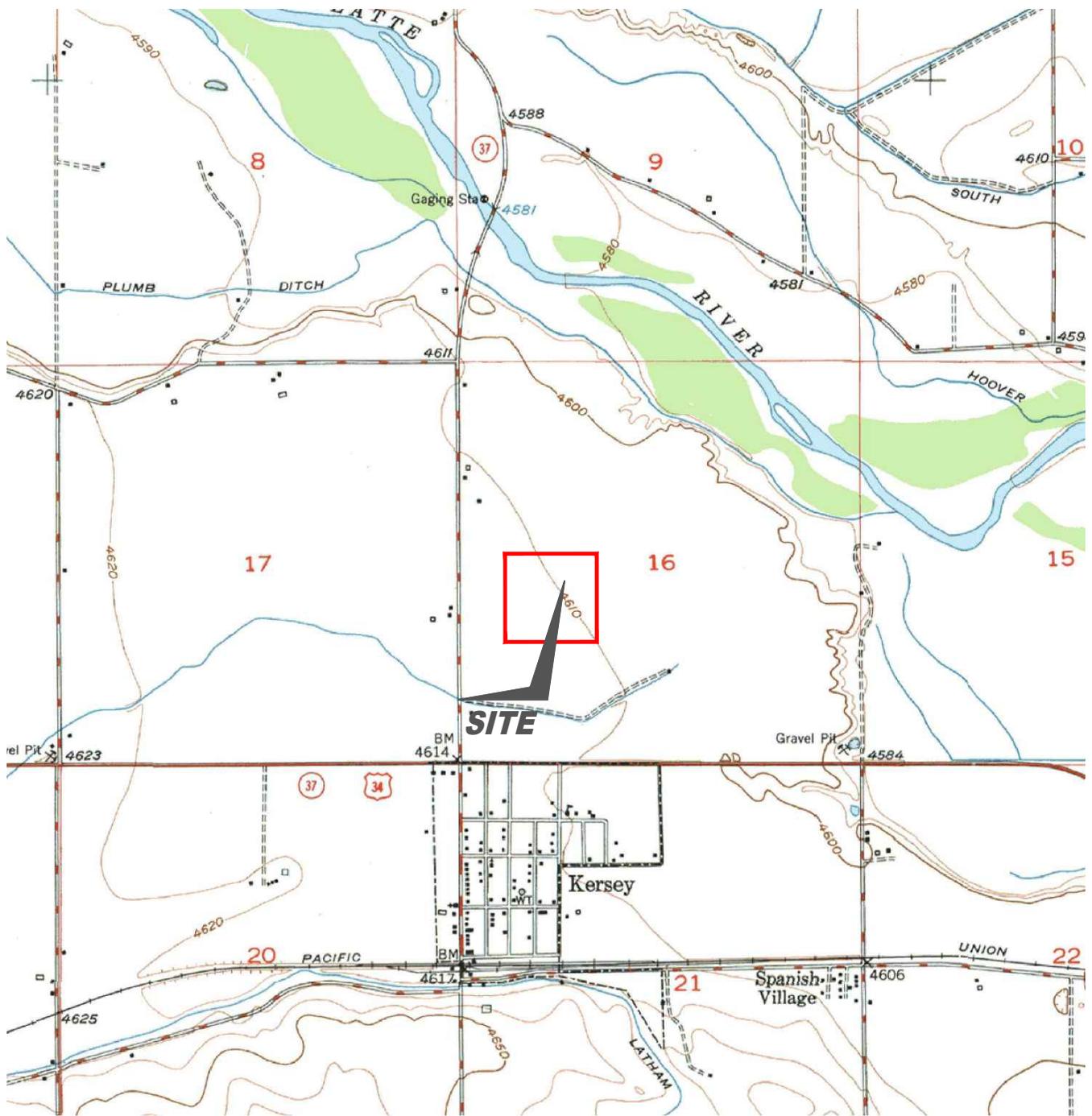
Orange highlighted cells exceed 125% of the maximum background concentration

* Indicates laboratory minimum detection limit in excess of SSL

Green highlighted cells indicate soil removed via excavation

NA - Not analyzed

FIGURES



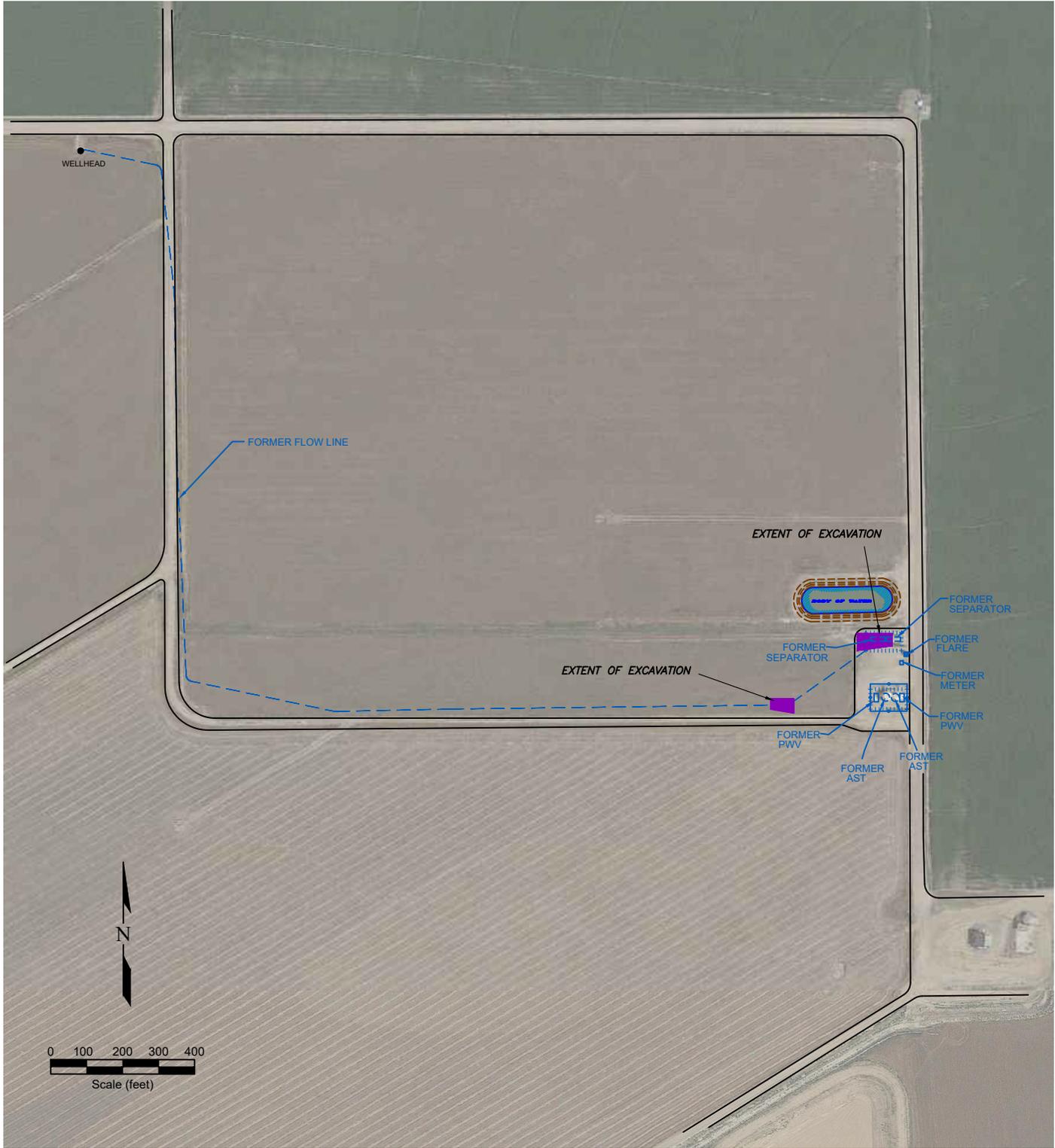
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

NOBLE ENERGY INC - Patriot B16-20 FL09-SEP
NWSW Sec. 16, T5N, R64W, 6th PM
 Weld County, Colorado
 40.399252°, -104.559793°

Project No. CO23-036	API # 05-123-25729	Facility #
Date 1/17/24	Remediation # 25436	Filename 23036T





LEGEND

● WELLHEAD LOCATION	○ ABOVE GROUND STORAGE TANK	FORMER FACILITY	FORMER FLOW LINE
		EXCAVATED AREAS	EXTENT OF EXCAVATION
			CONTAINMENT BERM
			CONTAINMENT BERM
			FENCE LINE

Figure 2
SITE MAP

NOBLE ENERGY INC - Patriot B16-20 FL09-SEP
NWSW Sec. 16, T5N, R64W, 6th PM
 Weld County, Colorado
 40.399252°, -104.559793°

Project No. CO23-036	API # 05-123-25729	Facility #
Date 1/17/24	Remediation # 25436	Filename 23036Q1



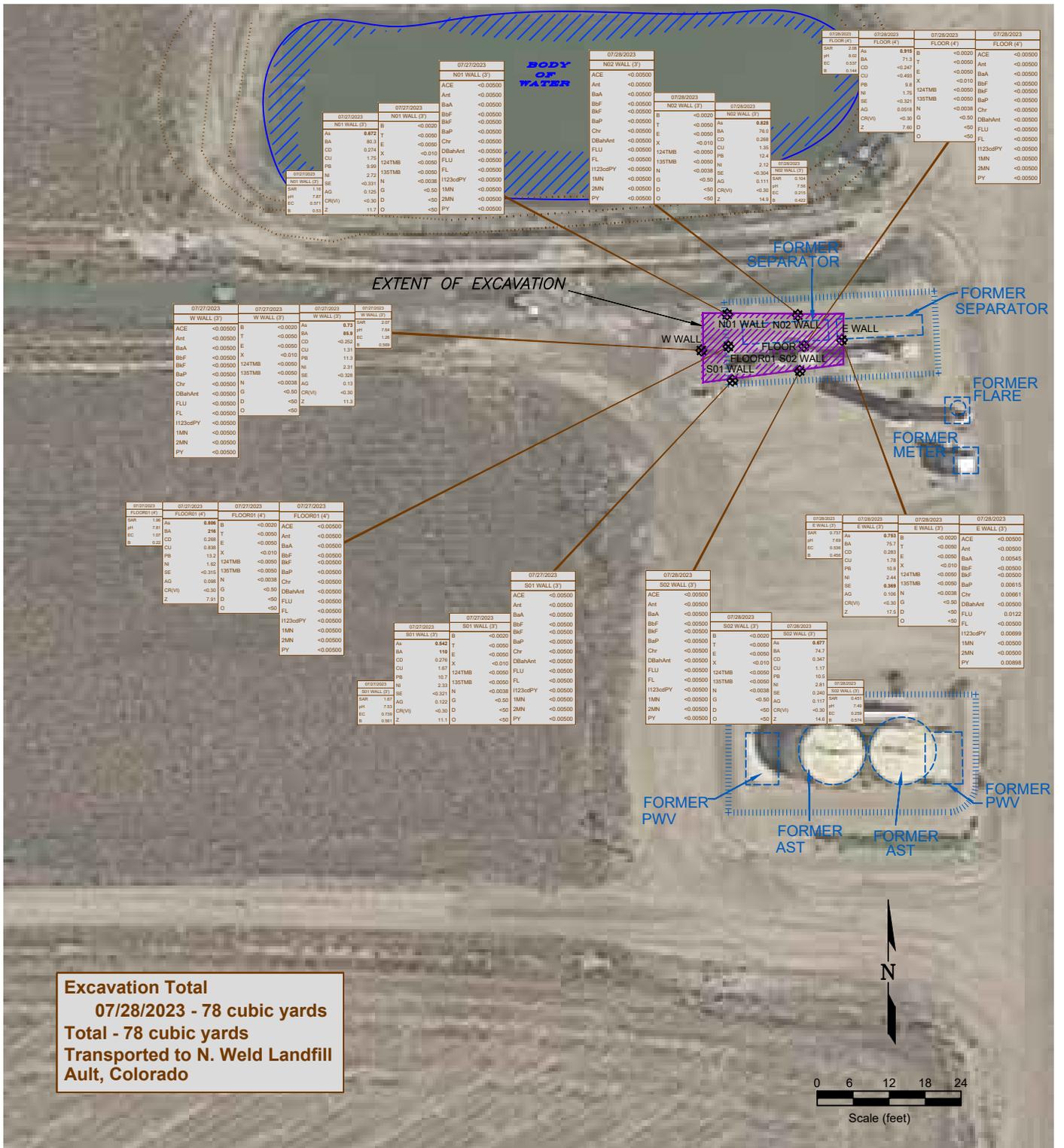


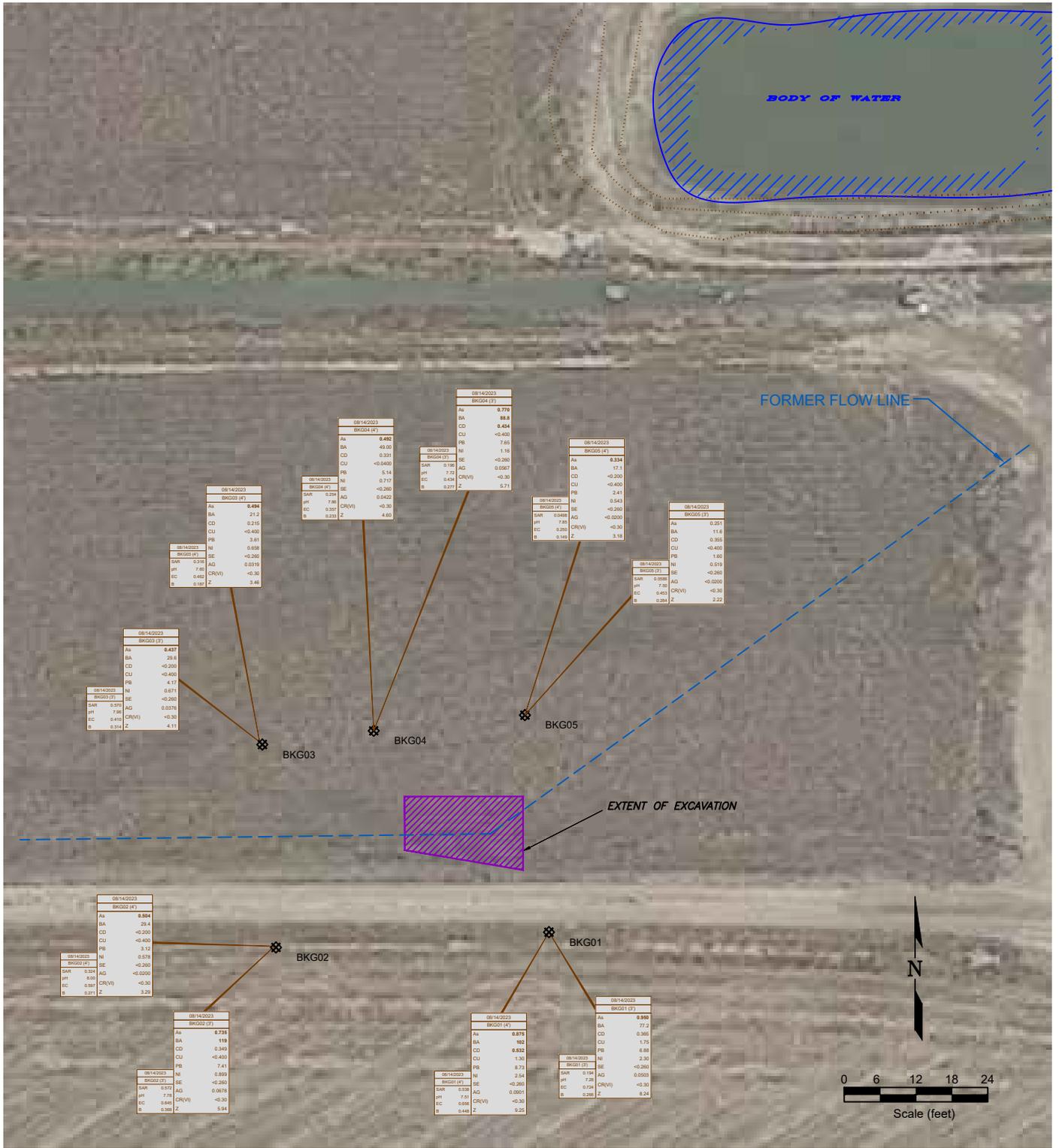
Figure 3
SEPARATOR EXCAVATION SOIL CHEMISTRY MAP

NOBLE ENERGY INC - Patriot B16-20 FL09-SEP
NWSW Sec. 16, T5N, R64W, 6th PM
Weld County, Colorado
40.399252°, -104.559793°

Project No. CO23-036	API # 05-123-25729	Facility #
Date 1/17/24	Remediation # 25436	Filename 23036QS



DATE SAMPLED	SAMPLE ID & DEPTH (ft)	DATE SAMPLED	SAMPLE ID & DEPTH (ft)
4/7/2023	FL01 (4')	4/7/2023	FL01 (4')
ACE	<0.0050	ACE	<0.0050
Ac	<0.0050	Ac	<0.0050
BaA	<0.0050	BaA	<0.0050
BaF	<0.0050	BaF	<0.0050
BaP	<0.0050	BaP	<0.0050
Chr	<0.0050	Chr	<0.0050
DBahAnt	<0.0050	DBahAnt	<0.0050
FLU	<0.0050	FLU	<0.0050
FL	<0.0050	FL	<0.0050
1123cSPY	<0.0050	1123cSPY	<0.0050
1MN	<0.0050	1MN	<0.0050
2MN	<0.0050	2MN	<0.0050
PY	<0.0050	PY	<0.0050



LEGEND

- WELLHEAD LOCATION
- ABOVE GROUND STORAGE TANK
- ⊗ SOIL SAMPLE LOCATION
- ▨ EXCAVATED AREA
- ▭ FORMER FACILITY
- FLOW LINE
- ▭ CONTAINMENT BERM
- ▭ EXTENT OF EXCAVATION

DATE SAMPLED	SAMPLE ID & DEPTH (ft)	DATE SAMPLED	SAMPLE ID & DEPTH (ft)	DATE SAMPLED	SAMPLE ID & DEPTH (ft)
4/7/2023	FL01 (4')	4/7/2023	FL01 (4')	4/7/2023	FL01 (4')
ACE	<0.0000	ACE	<0.0000	ACE	<0.0000
Ac	<0.0000	Ac	<0.0000	Ac	<0.0000
BaA	<0.0000	BaA	<0.0000	BaA	<0.0000
BaP	<0.0000	BaP	<0.0000	BaP	<0.0000
BbF	<0.0000	BbF	<0.0000	BbF	<0.0000
BaP	<0.0000	BaP	<0.0000	BaP	<0.0000
Ch	<0.0000	Ch	<0.0000	Ch	<0.0000
DBAH	<0.0000	DBAH	<0.0000	DBAH	<0.0000
FLU	<0.0000	FLU	<0.0000	FLU	<0.0000
FLU	<0.0000	FLU	<0.0000	FLU	<0.0000
1234567	<0.0000	1234567	<0.0000	1234567	<0.0000
MAN	<0.0000	MAN	<0.0000	MAN	<0.0000
MAN	<0.0000	MAN	<0.0000	MAN	<0.0000
PY	<0.0000	PY	<0.0000	PY	<0.0000

Figure 6
FLOW LINE EXCAVATION
BACKGROUND SAMPLE SOIL CHEMISTRY MAP
NOBLE ENERGY INC - Patriot B16-20 FL09-SEP
NWSW Sec. 16, T5N, R64W, 6th PM
Weld County, Colorado
40.399252°, -104.559793°

Project No. CO23-036	API # 05-123-25729	Facility #
Date 1/17/24	Remediation # 25436	Filename 23036QS1

APPENDIX A

PHOTO LOG

Photo Log



Description:

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Photo Log



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Photo Log



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APPENDIX B

LABORATORY DOCUMENTATION

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

August 03, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

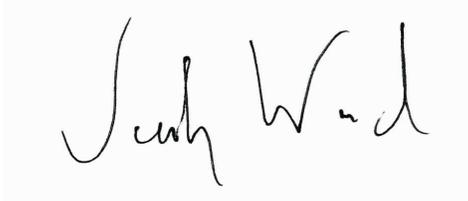
Wellington, CO 80549

RE: Noble - Patriot B16-20 FL09/SEP

Work Order # 2307509

Enclosed are the results of analyses for samples received by Summit Scientific on 07/27/23 17:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black 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 B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01 Wall 3'	2307509-01	Soil	07/27/23 12:55	07/27/23 17:15
W Wall 3'	2307509-02	Soil	07/27/23 13:00	07/27/23 17:15
S01 Wall 3'	2307509-03	Soil	07/27/23 13:05	07/27/23 17:15
FLOOR01 4'	2307509-04	Soil	07/27/23 13:10	07/27/23 17:15

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
2307509	

		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 B16-20 FLO9/SEP
City/State/Zip:			AFE#:
Phone: 303-261-6246		Project Name: Patriot B16-20 FLO9/SEP	PO/Billing Codes: UWRWE-A2795-ARV
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	N01 Wall 3'	7/27/23	12:55	2			X			X			X	X	X	X			
2	W Wall 3'	I	13:00	I			I			I			I	I	I	I			
3	S01 Wall 3'	I	13:05	I			I			I			I	I	I	I			
4	FLOOR02 4'	I	13:10	I			I			I			I	I	I	I			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>[Signature]</i>	Date/Time: 7/27/23 17:15	Received by: Summit North	Date/Time: 7/27/23 15:15	TAT Business Days	Field DO	Notes:
Relinquished by: <i>[Signature]</i>	Date/Time: 7/27/23 17:15	Received by: <i>[Signature]</i>	Date/Time: 7/27/23 15:15	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 99	Corrected Temperature: 6	IR gun #: 1	HNO3 lot #:	Standard <input checked="" type="checkbox"/>	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2307509

Client: Fremont Client Project ID: Patriot B16-20 Fl09/sep

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

-

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

Temp (°C) 9.9 Thermometer # 1

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>on ICE</u>
If custody seals are present, are they intact? ⁽¹⁾	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<u>Same day</u>
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 7/27/23
Custodian Printed Name Date/Time



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

N01 Wall 3'
2307509-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0940	07/27/23	07/27/23	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: **07/27/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		82.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		107 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		117 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/27/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0941	07/27/23	07/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/27/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		64.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

N01 Wall 3'
2307509-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/27/23 12:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0950	07/28/23	07/29/23	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: **07/27/23 12:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		69.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/27/23 12:55**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.530	0.0100		mg/L	1	BGG0955	07/28/23	07/29/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/27/23 12:55**

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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

N01 Wall 3'
2307509-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.672	0.255		mg/kg dry	1	BGG0944	07/28/23	07/29/23	EPA 6020B	
Barium	80.3	0.509		"	"	"	"	"	"	
Cadmium	0.274	0.255		"	"	"	"	"	"	
Copper	1.75	0.509		"	"	"	"	"	"	
Lead	9.99	0.255		"	"	"	"	"	"	
Nickel	2.72	0.509		"	"	"	"	"	"	
Selenium	ND	0.331	0.223	"	"	"	"	"	"	
Silver	0.125	0.0255		"	"	"	"	"	"	
Zinc	11.7	0.509		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/27/23 12:55

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0995	07/31/23	07/31/23	EPA 7196A	

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

Date Sampled: 07/27/23 12:55

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	23.3	0.0637		mg/L dry	1	BGG0964	07/28/23	07/31/23	EPA 6020B	
Magnesium	10.5	0.0637		"	"	"	"	"	"	
Sodium	26.8	0.0637		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/27/23 12:55

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.16	0.00100		units	1	BGH0023	08/01/23	08/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

N01 Wall 3'
2307509-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/27/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.5			%	1	BGG0943	07/28/23	07/28/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/27/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.571	0.0100		mmhos/cm	1	BGG1034	07/31/23	07/31/23	EPA 120.1	

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

Date Sampled: **07/27/23 12:55**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.87			pH Units	1	BGG1033	07/31/23	07/31/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

W Wall 3'
2307509-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0940	07/27/23	07/27/23	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: **07/27/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		90.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0941	07/27/23	07/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		80.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

W Wall 3'
2307509-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0950	07/28/23	07/29/23	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: **07/27/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		58.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.9 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.569	0.0100		mg/L	1	BGG0955	07/28/23	07/29/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/27/23 13:00**

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

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

W Wall 3'
2307509-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.730	0.252		mg/kg dry	1	BGG0944	07/28/23	07/29/23	EPA 6020B	
Barium	85.9	0.505		"	"	"	"	"	"	
Cadmium	ND	0.252		"	"	"	"	"	"	
Copper	1.31	0.505		"	"	"	"	"	"	
Lead	11.3	0.252		"	"	"	"	"	"	
Nickel	2.31	0.505		"	"	"	"	"	"	
Selenium	ND	0.328	0.221	"	"	"	"	"	"	
Silver	0.130	0.0252		"	"	"	"	"	"	
Zinc	11.3	0.505		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0995	07/31/23	07/31/23	EPA 7196A	

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

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	57.6	0.0631		mg/L dry	1	BGG0964	07/28/23	07/31/23	EPA 6020B	
Magnesium	29.4	0.0631		"	"	"	"	"	"	
Sodium	77.5	0.0631		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.07	0.00100		units	1	BGH0023	08/01/23	08/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

W Wall 3'
2307509-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	79.2			%	1	BGG0943	07/28/23	07/28/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/27/23 13:00**

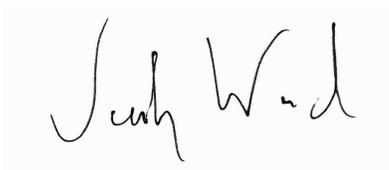
Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.26	0.0100		mmhos/cm	1	BGG1034	07/31/23	07/31/23	EPA 120.1	

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

Date Sampled: **07/27/23 13:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.64			pH Units	1	BGG1033	07/31/23	07/31/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

S01 Wall 3'
2307509-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0940	07/27/23	07/27/23	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: **07/27/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		82.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		109 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0941	07/27/23	07/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		86.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

S01 Wall 3'
2307509-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0950	07/28/23	07/29/23	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: **07/27/23 13:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		45.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.5 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.561	0.0100		mg/L	1	BGG0955	07/28/23	07/29/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/27/23 13:05**

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

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

S01 Wall 3'
2307509-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.542	0.247		mg/kg dry	1	BGG0944	07/28/23	07/29/23	EPA 6020B	
Barium	110	0.494		"	"	"	"	"	"	
Cadmium	0.267	0.247		"	"	"	"	"	"	
Copper	1.67	0.494		"	"	"	"	"	"	
Lead	10.7	0.247		"	"	"	"	"	"	
Nickel	2.33	0.494		"	"	"	"	"	"	
Selenium	ND	0.321	0.216	"	"	"	"	"	"	
Silver	0.122	0.0247		"	"	"	"	"	"	
Zinc	11.1	0.494		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0995	07/31/23	07/31/23	EPA 7196A	

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

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	20.0	0.0618		mg/L dry	1	BGG0964	07/28/23	07/31/23	EPA 6020B	
Magnesium	12.1	0.0618		"	"	"	"	"	"	
Sodium	38.3	0.0618		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.67	0.00100		units	1	BGH0023	08/01/23	08/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

S01 Wall 3'
2307509-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.9			%	1	BGG0943	07/28/23	07/28/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.739	0.0100		mmhos/cm	1	BGG1034	07/31/23	07/31/23	EPA 120.1	

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

Date Sampled: **07/27/23 13:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.53			pH Units	1	BGG1033	07/31/23	07/31/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

FLOOR01 4'
2307509-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0940	07/27/23	07/27/23	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: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		83.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		115 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0941	07/27/23	07/27/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		76.9 %		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 B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

FLOOR01 4'
2307509-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0950	07/28/23	07/29/23	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: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		72.5 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		70.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.220	0.0100		mg/L	1	BGG0955	07/28/23	07/29/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

FLOOR01 4'
2307509-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.806	0.243		mg/kg dry	1	BGG0944	07/28/23	07/29/23	EPA 6020B	
Barium	216	0.485		"	"	"	"	"	"	
Cadmium	0.268	0.243		"	"	"	"	"	"	
Copper	0.838	0.485		"	"	"	"	"	"	
Lead	13.2	0.243		"	"	"	"	"	"	
Nickel	1.62	0.485		"	"	"	"	"	"	
Selenium	ND	0.315	0.212	"	"	"	"	"	"	
Silver	0.0980	0.0243		"	"	"	"	"	"	
Zinc	7.91	0.485		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/27/23 13:10

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0995	07/31/23	07/31/23	EPA 7196A	

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

Date Sampled: 07/27/23 13:10

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	45.1	0.0606		mg/L dry	1	BGG0964	07/28/23	07/31/23	EPA 6020B	
Magnesium	20.2	0.0606		"	"	"	"	"	"	
Sodium	62.9	0.0606		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/27/23 13:10

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.96	0.00100		units	1	BGH0023	08/01/23	08/01/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

FLOOR01 4'
2307509-04 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.4			%	1	BGG0943	07/28/23	07/28/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.07	0.0100		mmhos/cm	1	BGG1034	07/31/23	07/31/23	EPA 120.1	

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

Date Sampled: **07/27/23 13:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.81			pH Units	1	BGG1033	07/31/23	07/31/23	EPA 9045D	

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Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

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 BGG0940 - EPA 5030 Soil MS

Blank (BGG0940-BLK1)

Prepared: 07/27/23 Analyzed: 07/28/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0321		"	0.0400		80.3	50-150			
Surrogate: Toluene-d8	0.0434		"	0.0400		109	50-150			
Surrogate: 4-Bromofluorobenzene	0.0451		"	0.0400		113	50-150			

LCS (BGG0940-BS1)

Prepared: 07/27/23 Analyzed: 07/28/23

Benzene	0.0957	0.0020	mg/kg	0.100		95.7	70-130			
Toluene	0.105	0.0050	"	0.100		105	70-130			
Ethylbenzene	0.111	0.0050	"	0.100		111	70-130			
m,p-Xylene	0.216	0.010	"	0.200		108	70-130			
o-Xylene	0.110	0.0050	"	0.100		110	70-130			
1,2,4-Trimethylbenzene	0.120	0.0050	"	0.100		120	70-130			
1,3,5-Trimethylbenzene	0.121	0.0050	"	0.100		121	70-130			
Naphthalene	0.128	0.0038	"	0.100		128	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0330		"	0.0400		82.5	50-150			
Surrogate: Toluene-d8	0.0439		"	0.0400		110	50-150			
Surrogate: 4-Bromofluorobenzene	0.0454		"	0.0400		113	50-150			

Matrix Spike (BGG0940-MS1)

Source: 2307509-01

Prepared: 07/27/23 Analyzed: 07/28/23

Benzene	0.0934	0.0020	mg/kg	0.100	ND	93.4	70-130			
Toluene	0.133	0.0050	"	0.100	ND	133	70-130			QM-07
Ethylbenzene	0.107	0.0050	"	0.100	ND	107	70-130			
m,p-Xylene	0.206	0.010	"	0.200	ND	103	70-130			
o-Xylene	0.106	0.0050	"	0.100	ND	106	70-130			
1,2,4-Trimethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130			
1,3,5-Trimethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130			
Naphthalene	0.140	0.0038	"	0.100	ND	140	70-130			QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0321		"	0.0400		80.3	50-150			
Surrogate: Toluene-d8	0.0430		"	0.0400		108	50-150			
Surrogate: 4-Bromofluorobenzene	0.0443		"	0.0400		111	50-150			

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Fremont Environmental
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Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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 BGG0940 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0940-MSD1)	Source: 2307509-01			Prepared: 07/27/23 Analyzed: 07/28/23						
Benzene	0.0967	0.0020	mg/kg	0.100	ND	96.7	70-130	3.44	30	
Toluene	0.141	0.0050	"	0.100	ND	141	70-130	5.66	30	QM-07
Ethylbenzene	0.113	0.0050	"	0.100	ND	113	70-130	5.31	30	
m,p-Xylene	0.218	0.010	"	0.200	ND	109	70-130	5.32	30	
o-Xylene	0.111	0.0050	"	0.100	ND	111	70-130	5.04	30	
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130	8.19	30	
1,3,5-Trimethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130	8.11	30	
Naphthalene	0.156	0.0038	"	0.100	ND	156	70-130	10.9	30	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0335</i>		<i>"</i>	<i>0.0400</i>		<i>83.7</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0439</i>		<i>"</i>	<i>0.0400</i>		<i>110</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0446</i>		<i>"</i>	<i>0.0400</i>		<i>112</i>	<i>50-150</i>			

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Fremont Environmental
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 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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 BGG0941 - EPA 3550A

Blank (BGG0941-BLK1)

Prepared: 07/27/23 Analyzed: 07/28/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5		85.7	30-150				

LCS (BGG0941-BS1)

Prepared: 07/27/23 Analyzed: 07/28/23

C10-C28 (DRO)	366	50	mg/kg	500		73.3	70-130				
Surrogate: <i>o</i> -Terphenyl	10.3		"	12.5		82.4	30-150				

Matrix Spike (BGG0941-MS1)

Source: 2307509-01

Prepared: 07/27/23 Analyzed: 07/28/23

C10-C28 (DRO)	494	50	mg/kg	500	12.9	96.3	70-130				
Surrogate: <i>o</i> -Terphenyl	7.14		"	12.5		57.1	30-150				

Matrix Spike Dup (BGG0941-MSD1)

Source: 2307509-01

Prepared: 07/27/23 Analyzed: 07/28/23

C10-C28 (DRO)	427	50	mg/kg	500	12.9	82.8	70-130	14.6	20		
Surrogate: <i>o</i> -Terphenyl	7.78		"	12.5		62.2	30-150				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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 BGG0950 - EPA 5030 Soil MS

Blank (BGG0950-BLK1)

Prepared & Analyzed: 07/28/23

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>0.0324</i>		"	<i>0.0333</i>		<i>97.3</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0308</i>		"	<i>0.0333</i>		<i>92.5</i>	<i>40-150</i>			

LCS (BGG0950-BS1)

Prepared & Analyzed: 07/28/23

Acenaphthene	0.0365	0.00500	mg/kg	0.0333	110	31-137
Anthracene	0.0376	0.00500	"	0.0333	113	30-120
Benzo (a) anthracene	0.0321	0.00500	"	0.0333	96.2	30-120
Benzo (a) pyrene	0.0346	0.00500	"	0.0333	104	30-120
Benzo (b) fluoranthene	0.0352	0.00500	"	0.0333	105	30-120
Benzo (k) fluoranthene	0.0366	0.00500	"	0.0333	110	30-120
Chrysene	0.0360	0.00500	"	0.0333	108	30-120
Dibenz (a,h) anthracene	0.0271	0.00500	"	0.0333	81.3	30-120
Fluoranthene	0.0380	0.00500	"	0.0333	114	30-120
Fluorene	0.0360	0.00500	"	0.0333	108	30-120
Indeno (1,2,3-cd) pyrene	0.0260	0.00500	"	0.0333	78.1	30-120
Pyrene	0.0371	0.00500	"	0.0333	111	35-142
1-Methylnaphthalene	0.0380	0.00500	"	0.0333	114	35-142
2-Methylnaphthalene	0.0414	0.00500	"	0.0333	124	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0312</i>		"	<i>0.0333</i>	<i>93.6</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0338</i>		"	<i>0.0333</i>	<i>101</i>	<i>40-150</i>

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Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

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 BGG0950 - EPA 5030 Soil MS

Matrix Spike (BGG0950-MS1)	Source: 2307509-01			Prepared & Analyzed: 07/28/23						
Acenaphthene	0.0188	0.00500	mg/kg	0.0333	ND	56.5	31-137			
Anthracene	0.0184	0.00500	"	0.0333	ND	55.3	30-120			
Benzo (a) anthracene	0.0159	0.00500	"	0.0333	ND	47.8	30-120			
Benzo (a) pyrene	0.0163	0.00500	"	0.0333	ND	48.8	30-120			
Benzo (b) fluoranthene	0.0150	0.00500	"	0.0333	ND	45.1	30-120			
Benzo (k) fluoranthene	0.0154	0.00500	"	0.0333	ND	46.3	30-120			
Chrysene	0.0173	0.00500	"	0.0333	ND	51.9	30-120			
Dibenz (a,h) anthracene	0.0144	0.00500	"	0.0333	ND	43.2	30-120			
Fluoranthene	0.0184	0.00500	"	0.0333	ND	55.2	30-120			
Fluorene	0.0183	0.00500	"	0.0333	ND	55.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0160	0.00500	"	0.0333	ND	47.9	30-120			
Pyrene	0.0178	0.00500	"	0.0333	ND	53.4	35-142			
1-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.6	15-130			
2-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.6	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0177		"	0.0333		53.2	40-150			
Surrogate: Fluoranthene-d10	0.0163		"	0.0333		49.0	40-150			

Matrix Spike Dup (BGG0950-MSD1)	Source: 2307509-01			Prepared: 07/28/23 Analyzed: 07/29/23						
Acenaphthene	0.0176	0.00500	mg/kg	0.0333	ND	52.8	31-137	6.68	30	
Anthracene	0.0173	0.00500	"	0.0333	ND	52.0	30-120	6.13	30	
Benzo (a) anthracene	0.0158	0.00500	"	0.0333	ND	47.4	30-120	0.775	30	
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	4.19	30	
Benzo (b) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	2.90	30	
Benzo (k) fluoranthene	0.0152	0.00500	"	0.0333	ND	45.6	30-120	1.67	30	
Chrysene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	7.68	30	
Dibenz (a,h) anthracene	0.0137	0.00500	"	0.0333	ND	41.0	30-120	5.33	30	
Fluoranthene	0.0169	0.00500	"	0.0333	ND	50.8	30-120	8.28	30	
Fluorene	0.0174	0.00500	"	0.0333	ND	52.2	30-120	5.12	30	
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	3.65	30	
Pyrene	0.0164	0.00500	"	0.0333	ND	49.3	35-142	7.89	30	
1-Methylnaphthalene	0.0212	0.00500	"	0.0333	ND	63.6	15-130	9.88	50	
2-Methylnaphthalene	0.0199	0.00500	"	0.0333	ND	59.6	15-130	8.09	50	
Surrogate: 2-Methylnaphthalene-d10	0.0158		"	0.0333		47.3	40-150			
Surrogate: Fluoranthene-d10	0.0153		"	0.0333		45.9	40-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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 BGG0955 - EPA 3050B

Blank (BGG0955-BLK1)

Prepared: 07/28/23 Analyzed: 07/29/23

Boron ND 0.0100 mg/L

LCS (BGG0955-BS1)

Prepared: 07/28/23 Analyzed: 07/29/23

Boron 4.09 0.0100 mg/L 5.00 81.7 80-120

Duplicate (BGG0955-DUP1)

Source: 2307509-01

Prepared: 07/28/23 Analyzed: 07/29/23

Boron 0.495 0.0100 mg/L 0.530 6.86 20

Matrix Spike (BGG0955-MS1)

Source: 2307509-01

Prepared: 07/28/23 Analyzed: 07/29/23

Boron 5.59 0.0100 mg/L 5.00 0.530 101 75-125

Matrix Spike Dup (BGG0955-MSD1)

Source: 2307509-01

Prepared: 07/28/23 Analyzed: 07/29/23

Boron 5.84 0.0100 mg/L 5.00 0.530 106 75-125 4.42 25

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 B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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 BGG0944 - EPA 3050B

Blank (BGG0944-BLK1)

Prepared: 07/28/23 Analyzed: 07/29/23

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 (BGG0944-BS1)

Prepared: 07/28/23 Analyzed: 07/29/23

Arsenic	39.9	0.200	mg/kg wet	40.0	99.7	80-120
Barium	38.8	0.400	"	40.0	97.0	80-120
Cadmium	1.94	0.200	"	2.00	97.1	80-120
Copper	40.1	0.400	"	40.0	100	80-120
Lead	23.8	0.200	"	20.0	119	80-120
Nickel	40.3	0.400	"	40.0	101	80-120
Selenium	4.12	0.260	"	4.00	103	80-120
Silver	1.62	0.0200	"	2.00	81.0	80-120
Zinc	39.6	0.400	"	40.0	99.1	80-120

Duplicate (BGG0944-DUP1)

Source: 2307509-01

Prepared: 07/28/23 Analyzed: 07/29/23

Arsenic	0.686	0.255	mg/kg dry	0.672	2.17	20	
Barium	117	0.509	"	80.3	37.0	20	QM-04
Cadmium	0.326	0.255	"	0.274	17.3	20	
Copper	1.76	0.509	"	1.75	0.696	20	
Lead	12.2	0.255	"	9.99	19.8	20	
Nickel	2.82	0.509	"	2.72	3.59	20	
Selenium	ND	0.331	"	ND		20	
Silver	0.129	0.0255	"	0.125	3.20	20	
Zinc	12.6	0.509	"	11.7	7.20	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 B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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 BGG0944 - EPA 3050B

Matrix Spike (BGG0944-MS1)

Source: 2307509-01

Prepared: 07/28/23 Analyzed: 07/29/23

Arsenic	8.60	0.255	mg/kg dry	50.9	0.672	15.6	75-125				QM-07
Barium	147	0.509	"	50.9	80.3	132	75-125				QM-07
Cadmium	2.34	0.255	"	2.55	0.274	81.2	75-125				
Copper	10.4	0.509	"	50.9	1.75	17.0	75-125				QM-07
Lead	29.8	0.255	"	25.5	9.99	77.7	75-125				
Nickel	11.1	0.509	"	50.9	2.72	16.4	75-125				QM-07
Selenium	4.32	0.331	"	5.09	ND	84.8	75-125				
Silver	2.22	0.0255	"	2.55	0.125	82.2	75-125				
Zinc	22.2	0.509	"	50.9	11.7	20.7	75-125				QM-07

Matrix Spike Dup (BGG0944-MSD1)

Source: 2307509-01

Prepared: 07/28/23 Analyzed: 07/29/23

Arsenic	8.55	0.255	mg/kg dry	50.9	0.672	15.5	75-125	0.618	25		QM-07
Barium	140	0.509	"	50.9	80.3	116	75-125	5.49	25		
Cadmium	2.28	0.255	"	2.55	0.274	78.6	75-125	2.78	25		
Copper	10.1	0.509	"	50.9	1.75	16.4	75-125	2.71	25		QM-07
Lead	28.5	0.255	"	25.5	9.99	72.9	75-125	4.20	25		QM-07
Nickel	10.8	0.509	"	50.9	2.72	15.9	75-125	2.32	25		QM-07
Selenium	3.91	0.331	"	5.09	ND	76.8	75-125	9.93	25		
Silver	2.16	0.0255	"	2.55	0.125	80.0	75-125	2.58	25		
Zinc	21.6	0.509	"	50.9	11.7	19.5	75-125	2.81	25		QM-07

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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 BGG0995 - 3060A Mod

Blank (BGG0995-BLK1)

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0995-BS1)

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent 21.6 0.30 mg/kg wet 25.0 86.2 80-120

Duplicate (BGG0995-DUP1)

Source: 2307509-01

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0995-MS1)

Source: 2307509-01

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent 30.0 0.30 mg/kg dry 31.8 ND 94.4 75-125

Matrix Spike Dup (BGG0995-MSD1)

Source: 2307509-01

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent 29.2 0.30 mg/kg dry 31.8 ND 91.6 75-125 3.01 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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 BGG0964 - General Preparation

Blank (BGG0964-BLK1)

Prepared: 07/28/23 Analyzed: 07/31/23

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

LCS (BGG0964-BS1)

Prepared: 07/28/23 Analyzed: 07/31/23

Calcium	3.87	0.0500	mg/L wet	5.00		77.3	70-130			
Magnesium	5.00	0.0500	"	5.00		100	70-130			
Sodium	5.01	0.0500	"	5.00		100	70-130			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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

Summit Scientific

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

Batch BGG0943 - General Preparation

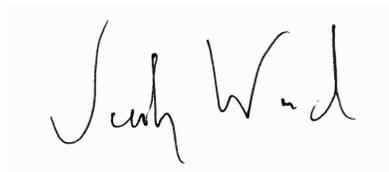
Duplicate (BGG0943-DUP1)

Source: 2307457-14

Prepared & Analyzed: 07/28/23

% Solids	82.5		%		82.2			0.346		20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch BGG1034 - General Preparation

Blank (BGG1034-BLK1)

Prepared & Analyzed: 07/31/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG1034-BS1)

Prepared & Analyzed: 07/31/23

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

Duplicate (BGG1034-DUP1)

Source: 2307509-01

Prepared & Analyzed: 07/31/23

Specific Conductance (EC) 0.562 0.0100 mmhos/cm 0.571 1.68 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/03/23 11:38

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 BGG1033 - General Preparation

LCS (BGG1033-BS1)

Prepared & Analyzed: 07/31/23

pH	9.02	pH Units	9.18	98.3	95-105
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Duplicate (BGG1033-DUP1)

Source: 2307457-14

Prepared & Analyzed: 07/31/23

pH	8.08	pH Units	8.01	0.870	20
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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 B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/03/23 11:38

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.
- 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 80401

303.277.9310

August 07, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

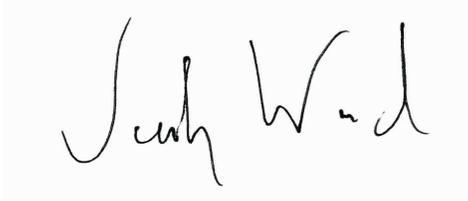
Wellington, CO 80549

RE: Noble - Patriot B16-20 FL09/SEP

Work Order # 2307556

Enclosed are the results of analyses for samples received by Summit Scientific on 07/28/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in black 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 B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N02 Wall 3'	2307556-01	Soil	07/28/23 08:52	07/28/23 16:30
E Wall 3'	2307556-02	Soil	07/28/23 08:57	07/28/23 16:30
S02 Wall 3'	2307556-03	Soil	07/28/23 08:59	07/28/23 16:30
Floor 4'	2307556-04	Soil	07/28/23 09:05	07/28/23 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
230755b	

		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 Blk-20 FLO9/SEP
City/State/Zip:			AFE#:
Phone: 303-261-6246		Project Name: Patriot Blk-20 FLO9/SEP	PO/Billing Codes: UWRWE-A2795-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)
1	NO2 Wall 3'	7/28/23	8:52	2			X			X			X	X	X	X		
2	E Wall 3'	I	8:57	I			I			I			I	I	I	I		
3	SO2 Wall 3'	I	8:59	I			I			I			I	I	I	I		
4	FLOOR 4'	I	9:05	I			I			I			I	I	I	I		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Relinquished by:	Date/Time: 7/28/23 14:20	Received by: Summit North	Date/Time: 7/28/23 14:20	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: 52	Date/Time: 7/28/23 16:30	Received by:	Date/Time: 7/28/23 16:30	1 Day <input type="checkbox"/>	Field ORP	
				2 Days <input type="checkbox"/>	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days <input type="checkbox"/>	Field Temp.	
				Standard <input type="checkbox"/>	Field Turb.	
Temperature Upon Receipt: 8.9	Corrected Temperature: 0	IR gun #:)	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2307556

Client: Freemont Client Project ID: Patriot B16-20 FL09/SEP

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

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

Temp (°C) 8.9 Thermometer # 1

	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
Custodian Printed Name

7/28/23
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

N02 Wall 3'
2307556-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0983	07/28/23	07/29/23	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: **07/28/23 08:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		68.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		85.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		90.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0982	07/28/23	07/29/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		89.0 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

N02 Wall 3'
2307556-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0997	07/31/23	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: **07/28/23 08:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		61.2 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		53.3 %		40-150		"	"	"	"	"

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.422	0.0100		mg/L	1	BGG1015	07/31/23	08/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/28/23 08:52**

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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

N02 Wall 3'
2307556-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.828	0.234		mg/kg dry	1	BGG0992	07/31/23	08/01/23	EPA 6020B	
Barium	76.0	0.468		"	"	"	"	"	"	
Cadmium	0.268	0.234		"	"	"	"	"	"	
Copper	1.35	0.468		"	"	"	"	"	"	
Lead	12.4	0.234		"	"	"	"	"	"	
Nickel	2.12	0.468		"	"	"	"	"	"	
Selenium	ND	0.304	0.205	"	"	"	"	"	"	
Silver	0.111	0.0234		"	"	"	"	"	"	
Zinc	14.9	0.468		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0996	07/31/23	07/31/23	EPA 7196A	

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

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	124	0.0585		mg/L dry	1	BGG1009	07/31/23	08/01/23	EPA 6020B	
Magnesium	56.9	0.0585		"	"	"	"	"	"	
Sodium	5.60	0.0585		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.104	0.00100		units	1	BGH0076	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

N02 Wall 3'
2307556-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	85.4			%	1	BGG0991	07/31/23	07/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.215	0.0100		mmhos/cm	1	BGH0037	08/01/23	08/01/23	EPA 120.1	

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

Date Sampled: **07/28/23 08:52**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.56			pH Units	1	BGH0038	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 B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

E Wall 3'
2307556-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/28/23 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0983	07/28/23	07/29/23	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: **07/28/23 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		65.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		87.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.3 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/28/23 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0982	07/28/23	07/29/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/28/23 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		90.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

E Wall 3'
2307556-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/28/23 08:57**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0997	07/31/23	08/01/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	"
Benzo (a) anthracene	0.00545	0.00500		"	"	"	"	"	"	"
Benzo (a) pyrene	0.00615	0.00500		"	"	"	"	"	"	"
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	"
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	"
Chrysene	0.00661	0.00500		"	"	"	"	"	"	"
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	"
Fluoranthene	0.0122	0.00500		"	"	"	"	"	"	"
Fluorene	ND	0.00500		"	"	"	"	"	"	"
Indeno (1,2,3-cd) pyrene	0.00699	0.00500		"	"	"	"	"	"	"
Pyrene	0.00898	0.00500		"	"	"	"	"	"	"
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	"
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	"

Date Sampled: **07/28/23 08:57**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.1 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		40.8 %		40-150		"	"	"	"	"

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/28/23 08:57**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.456	0.0100		mg/L	1	BGG1015	07/31/23	08/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/28/23 08:57**

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

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

E Wall 3'
2307556-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.753	0.240		mg/kg dry	1	BGG0992	07/31/23	08/01/23	EPA 6020B	
Barium	75.7	0.479		"	"	"	"	"	"	
Cadmium	0.283	0.240		"	"	"	"	"	"	
Copper	1.78	0.479		"	"	"	"	"	"	
Lead	10.8	0.240		"	"	"	"	"	"	
Nickel	2.44	0.479		"	"	"	"	"	"	
Selenium	0.369	0.312	0.210	"	"	"	"	"	"	
Silver	0.106	0.0240		"	"	"	"	"	"	
Zinc	17.5	0.479		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/28/23 08:57

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0996	07/31/23	07/31/23	EPA 7196A	

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

Date Sampled: 07/28/23 08:57

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	18.9	0.0599		mg/L dry	1	BGG1009	07/31/23	08/01/23	EPA 6020B	
Magnesium	10.5	0.0599		"	"	"	"	"	"	
Sodium	16.1	0.0599		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/28/23 08:57

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.737	0.00100		units	1	BGH0076	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

E Wall 3'
2307556-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/28/23 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.4			%	1	BGG0991	07/31/23	07/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/28/23 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.536	0.0100		mmhos/cm	1	BGH0037	08/01/23	08/01/23	EPA 120.1	

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

Date Sampled: **07/28/23 08:57**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.69			pH Units	1	BGH0038	08/01/23	08/01/23	EPA 9045D	

Summit Scientific

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

S02 Wall 3'
2307556-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0983	07/28/23	07/29/23	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: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		68.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		91.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0982	07/28/23	07/29/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		89.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

S02 Wall 3'
2307556-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0997	07/31/23	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: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		54.9 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		40.5 %		40-150		"	"	"	"	"

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.574	0.0100		mg/L	1	BGG1015	07/31/23	08/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

S02 Wall 3'
2307556-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.677	0.249		mg/kg dry	1	BGG0992	07/31/23	08/01/23	EPA 6020B	
Barium	74.7	0.498		"	"	"	"	"	"	
Cadmium	0.347	0.249		"	"	"	"	"	"	
Copper	1.17	0.498		"	"	"	"	"	"	
Lead	10.5	0.249		"	"	"	"	"	"	
Nickel	2.81	0.498		"	"	"	"	"	"	
Selenium	0.240	0.323	0.218	"	"	"	"	"	"	J
Silver	0.117	0.0249		"	"	"	"	"	"	
Zinc	14.6	0.498		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0996	07/31/23	07/31/23	EPA 7196A	

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

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	13.6	0.0622		mg/L dry	1	BGG1009	07/31/23	08/01/23	EPA 6020B	
Magnesium	9.00	0.0622		"	"	"	"	"	"	
Sodium	8.73	0.0622		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.451	0.00100		units	1	BGH0076	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

S02 Wall 3'
2307556-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	80.4			%	1	BGG0991	07/31/23	07/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.259	0.0100		mmhos/cm	1	BGH0037	08/01/23	08/01/23	EPA 120.1	

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

Date Sampled: **07/28/23 08:59**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.49			pH Units	1	BGH0038	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 B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

Floor 4'
2307556-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0983	07/28/23	07/29/23	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: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		72.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		93.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0982	07/28/23	07/29/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		75.5 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

Floor 4'
2307556-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0997	07/31/23	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: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		67.8 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		61.8 %		40-150		"	"	"	"	"

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.144	0.0100		mg/L	1	BGG1015	07/31/23	08/01/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

Floor 4'
2307556-04 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.915	0.247		mg/kg dry	1	BGG0992	07/31/23	08/01/23	EPA 6020B	
Barium	71.3	0.493		"	"	"	"	"	"	
Cadmium	ND	0.247		"	"	"	"	"	"	
Copper	ND	0.493		"	"	"	"	"	"	
Lead	9.80	0.247		"	"	"	"	"	"	
Nickel	1.75	0.493		"	"	"	"	"	"	
Selenium	ND	0.321	0.216	"	"	"	"	"	"	
Silver	0.0518	0.0247		"	"	"	"	"	"	
Zinc	7.60	0.493		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/28/23 09:05

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0996	07/31/23	07/31/23	EPA 7196A	

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

Date Sampled: 07/28/23 09:05

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	9.36	0.0617		mg/L dry	1	BGG1009	07/31/23	08/01/23	EPA 6020B	
Magnesium	6.36	0.0617		"	"	"	"	"	"	
Sodium	33.7	0.0617		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/28/23 09:05

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.08	0.00100		units	1	BGH0076	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

Floor 4'
2307556-04 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.1			%	1	BGG0991	07/31/23	07/31/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.537	0.0100		mmhos/cm	1	BGH0037	08/01/23	08/01/23	EPA 120.1	

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

Date Sampled: **07/28/23 09:05**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.02			pH Units	1	BGH0038	08/01/23	08/01/23	EPA 9045D	

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Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

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 BGG0983 - EPA 5030 Soil MS

Blank (BGG0983-BLK1)

Prepared: 07/28/23 Analyzed: 07/29/23

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>	0.0274		"	0.0400		68.5	50-150			
<i>Surrogate: Toluene-d8</i>	0.0359		"	0.0400		89.8	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0369		"	0.0400		92.3	50-150			

LCS (BGG0983-BS1)

Prepared: 07/28/23 Analyzed: 07/29/23

Benzene	0.0979	0.0020	mg/kg	0.100		97.9	70-130			
Toluene	0.101	0.0050	"	0.100		101	70-130			
Ethylbenzene	0.120	0.0050	"	0.100		120	70-130			
m,p-Xylene	0.238	0.010	"	0.200		119	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
1,2,4-Trimethylbenzene	0.0913	0.0050	"	0.100		91.3	70-130			
1,3,5-Trimethylbenzene	0.0971	0.0050	"	0.100		97.1	70-130			
Naphthalene	0.114	0.0038	"	0.100		114	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0285		"	0.0400		71.2	50-150			
<i>Surrogate: Toluene-d8</i>	0.0340		"	0.0400		85.0	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0372		"	0.0400		92.9	50-150			

Matrix Spike (BGG0983-MS1)

Source: 2307549-01

Prepared: 07/28/23 Analyzed: 07/29/23

Benzene	0.0962	0.0020	mg/kg	0.100	ND	96.2	70-130			
Toluene	0.101	0.0050	"	0.100	ND	101	70-130			
Ethylbenzene	0.123	0.0050	"	0.100	ND	123	70-130			
m,p-Xylene	0.245	0.010	"	0.200	ND	123	70-130			
o-Xylene	0.114	0.0050	"	0.100	ND	114	70-130			
1,2,4-Trimethylbenzene	0.0966	0.0050	"	0.100	ND	96.6	70-130			
1,3,5-Trimethylbenzene	0.103	0.0050	"	0.100	ND	103	70-130			
Naphthalene	0.0993	0.0038	"	0.100	ND	99.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0269		"	0.0400		67.4	50-150			
<i>Surrogate: Toluene-d8</i>	0.0333		"	0.0400		83.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0384		"	0.0400		96.0	50-150			

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Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGG0983 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0983-MSD1)	Source: 2307549-01			Prepared: 07/28/23 Analyzed: 07/29/23						
Benzene	0.0981	0.0020	mg/kg	0.100	ND	98.1	70-130	1.95	30	
Toluene	0.102	0.0050	"	0.100	ND	102	70-130	1.12	30	
Ethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130	3.29	30	
m,p-Xylene	0.241	0.010	"	0.200	ND	121	70-130	1.66	30	
o-Xylene	0.113	0.0050	"	0.100	ND	113	70-130	1.14	30	
1,2,4-Trimethylbenzene	0.0949	0.0050	"	0.100	ND	94.9	70-130	1.85	30	
1,3,5-Trimethylbenzene	0.101	0.0050	"	0.100	ND	101	70-130	1.89	30	
Naphthalene	0.102	0.0038	"	0.100	ND	102	70-130	3.07	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0272</i>		<i>"</i>	<i>0.0400</i>		<i>67.9</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0343</i>		<i>"</i>	<i>0.0400</i>		<i>85.7</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0369</i>		<i>"</i>	<i>0.0400</i>		<i>92.2</i>	<i>50-150</i>			

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Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGG0982 - EPA 3550A

Blank (BGG0982-BLK1)

Prepared: 07/28/23 Analyzed: 07/29/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5		86.8	30-150				

LCS (BGG0982-BS1)

Prepared: 07/28/23 Analyzed: 07/29/23

C10-C28 (DRO)	472	50	mg/kg	500		94.4	70-130				
Surrogate: <i>o</i> -Terphenyl	8.06		"	12.5		64.5	30-150				

Matrix Spike (BGG0982-MS1)

Source: 2307549-01

Prepared: 07/28/23 Analyzed: 07/29/23

C10-C28 (DRO)	472	50	mg/kg	500	14.5	91.6	70-130				
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5		86.6	30-150				

Matrix Spike Dup (BGG0982-MSD1)

Source: 2307549-01

Prepared: 07/28/23 Analyzed: 07/29/23

C10-C28 (DRO)	467	50	mg/kg	500	14.5	90.5	70-130	1.08	20		
Surrogate: <i>o</i> -Terphenyl	8.71		"	12.5		69.7	30-150				

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Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGG0997 - EPA 5030 Soil MS

Blank (BGG0997-BLK1)

Prepared & Analyzed: 07/31/23

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>0.0333</i>		"	<i>0.0333</i>		<i>99.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0305</i>		"	<i>0.0333</i>		<i>91.4</i>	<i>40-150</i>			

LCS (BGG0997-BS1)

Prepared & Analyzed: 07/31/23

Acenaphthene	0.0322	0.00500	mg/kg	0.0333		96.5	31-137			
Anthracene	0.0311	0.00500	"	0.0333		93.2	30-120			
Benzo (a) anthracene	0.0295	0.00500	"	0.0333		88.6	30-120			
Benzo (a) pyrene	0.0302	0.00500	"	0.0333		90.7	30-120			
Benzo (b) fluoranthene	0.0299	0.00500	"	0.0333		89.8	30-120			
Benzo (k) fluoranthene	0.0302	0.00500	"	0.0333		90.7	30-120			
Chrysene	0.0310	0.00500	"	0.0333		93.1	30-120			
Dibenz (a,h) anthracene	0.0277	0.00500	"	0.0333		83.2	30-120			
Fluoranthene	0.0311	0.00500	"	0.0333		93.2	30-120			
Fluorene	0.0321	0.00500	"	0.0333		96.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0233	0.00500	"	0.0333		69.9	30-120			
Pyrene	0.0304	0.00500	"	0.0333		91.2	35-142			
1-Methylnaphthalene	0.0365	0.00500	"	0.0333		110	35-142			
2-Methylnaphthalene	0.0380	0.00500	"	0.0333		114	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0330</i>		"	<i>0.0333</i>		<i>98.9</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0335</i>		"	<i>0.0333</i>		<i>100</i>	<i>40-150</i>			

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Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

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 BGG0997 - EPA 5030 Soil MS

Matrix Spike (BGG0997-MS1)	Source: 2307549-01			Prepared & Analyzed: 07/31/23						
Acenaphthene	0.0235	0.00500	mg/kg	0.0333	ND	70.6	31-137			
Anthracene	0.0228	0.00500	"	0.0333	ND	68.3	30-120			
Benzo (a) anthracene	0.0222	0.00500	"	0.0333	ND	66.7	30-120			
Benzo (a) pyrene	0.0220	0.00500	"	0.0333	ND	65.9	30-120			
Benzo (b) fluoranthene	0.0222	0.00500	"	0.0333	ND	66.5	30-120			
Benzo (k) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.2	30-120			
Chrysene	0.0229	0.00500	"	0.0333	ND	68.7	30-120			
Dibenz (a,h) anthracene	0.0199	0.00500	"	0.0333	ND	59.7	30-120			
Fluoranthene	0.0233	0.00500	"	0.0333	ND	70.0	30-120			
Fluorene	0.0238	0.00500	"	0.0333	ND	71.4	30-120			
Indeno (1,2,3-cd) pyrene	0.0175	0.00500	"	0.0333	ND	52.6	30-120			
Pyrene	0.0220	0.00500	"	0.0333	ND	66.1	35-142			
1-Methylnaphthalene	0.0258	0.00500	"	0.0333	ND	77.3	15-130			
2-Methylnaphthalene	0.0255	0.00500	"	0.0333	ND	76.5	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0233</i>		<i>"</i>	<i>0.0333</i>		<i>69.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0249</i>		<i>"</i>	<i>0.0333</i>		<i>74.8</i>	<i>40-150</i>			

Matrix Spike Dup (BGG0997-MSD1)	Source: 2307549-01			Prepared & Analyzed: 07/31/23						
Acenaphthene	0.0202	0.00500	mg/kg	0.0333	ND	60.6	31-137	15.3	30	
Anthracene	0.0195	0.00500	"	0.0333	ND	58.5	30-120	15.4	30	
Benzo (a) anthracene	0.0196	0.00500	"	0.0333	ND	58.8	30-120	12.6	30	
Benzo (a) pyrene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	14.2	30	
Benzo (b) fluoranthene	0.0187	0.00500	"	0.0333	ND	56.2	30-120	16.8	30	
Benzo (k) fluoranthene	0.0185	0.00500	"	0.0333	ND	55.6	30-120	16.0	30	
Chrysene	0.0197	0.00500	"	0.0333	ND	59.0	30-120	15.1	30	
Dibenz (a,h) anthracene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	14.0	30	
Fluoranthene	0.0203	0.00500	"	0.0333	ND	61.0	30-120	13.7	30	
Fluorene	0.0203	0.00500	"	0.0333	ND	60.8	30-120	15.9	30	
Indeno (1,2,3-cd) pyrene	0.0143	0.00500	"	0.0333	ND	43.0	30-120	20.1	30	
Pyrene	0.0189	0.00500	"	0.0333	ND	56.8	35-142	15.2	30	
1-Methylnaphthalene	0.0177	0.00500	"	0.0333	ND	53.0	15-130	37.2	50	
2-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.2	15-130	20.6	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0185</i>		<i>"</i>	<i>0.0333</i>		<i>55.4</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0214</i>		<i>"</i>	<i>0.0333</i>		<i>64.3</i>	<i>40-150</i>			

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Fremont Environmental
 PO Box 1289
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Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGG1015 - EPA 3050B

Blank (BGG1015-BLK1)

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

Boron ND 0.0100 mg/L

LCS (BGG1015-BS1)

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

Boron 5.87 0.0100 mg/L 5.00 117 80-120

Duplicate (BGG1015-DUP1)

Source: 2307501-01

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

Boron 0.0586 0.0100 mg/L 0.0908 43.1 20 QR-04

Matrix Spike (BGG1015-MS1)

Source: 2307501-01

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

Boron 6.15 0.0100 mg/L 5.00 0.0908 121 75-125

Matrix Spike Dup (BGG1015-MSD1)

Source: 2307501-01

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

Boron 6.15 0.0100 mg/L 5.00 0.0908 121 75-125 0.0734 25

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 B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGG0992 - EPA 3050B

Blank (BGG0992-BLK1)

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

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 (BGG0992-BS1)

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

Arsenic	40.8	0.200	mg/kg wet	40.0	102	80-120					
Barium	34.6	0.400	"	40.0	86.4	80-120					
Cadmium	1.79	0.200	"	2.00	89.4	80-120					
Copper	37.9	0.400	"	40.0	94.7	80-120					
Lead	16.9	0.200	"	20.0	84.3	80-120					
Nickel	38.7	0.400	"	40.0	96.6	80-120					
Selenium	4.57	0.260	"	4.00	114	80-120					
Silver	1.81	0.0200	"	2.00	90.4	80-120					
Zinc	39.7	0.400	"	40.0	99.3	80-120					

Duplicate (BGG0992-DUP1)

Source: 2307553-01

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

Arsenic	1.70	0.236	mg/kg dry	2.21	26.1	20				QR-01
Barium	33.4	0.473	"	32.1	3.72	20				
Cadmium	0.0591	0.236	"	0.0610	3.15	20				
Copper	0.691	0.473	"	0.987	35.3	20				QR-01
Lead	10.4	0.236	"	10.5	1.20	20				
Nickel	3.48	0.473	"	3.58	2.67	20				
Selenium	ND	0.307	"	ND		20				
Silver	0.0194	0.0236	"	0.0199	2.41	20				
Zinc	15.8	0.473	"	17.6	10.8	20				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGG0992 - EPA 3050B

Matrix Spike (BGG0992-MS1)

Source: 2307553-01

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

Arsenic	11.5	0.236	mg/kg dry	47.3	2.21	19.6	75-125				QM-01
Barium	65.1	0.473	"	47.3	32.1	69.7	75-125				QM-01
Cadmium	1.64	0.236	"	2.36	0.0610	67.0	75-125				QM-01
Copper	10.4	0.473	"	47.3	0.987	20.0	75-125				QM-01
Lead	24.7	0.236	"	23.6	10.5	60.0	75-125				QM-01
Nickel	13.1	0.473	"	47.3	3.58	20.1	75-125				QM-01
Selenium	4.65	0.307	"	4.73	ND	98.3	75-125				
Silver	1.66	0.0236	"	2.36	0.0199	69.5	75-125				QM-01
Zinc	25.7	0.473	"	47.3	17.6	17.0	75-125				QM-01

Matrix Spike Dup (BGG0992-MSD1)

Source: 2307553-01

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

Arsenic	11.5	0.236	mg/kg dry	47.3	2.21	19.8	75-125	0.476	25		QM-01
Barium	59.2	0.473	"	47.3	32.1	57.2	75-125	9.48	25		QM-01
Cadmium	1.49	0.236	"	2.36	0.0610	60.4	75-125	9.90	25		QM-01
Copper	10.5	0.473	"	47.3	0.987	20.1	75-125	0.705	25		QM-01
Lead	23.0	0.236	"	23.6	10.5	52.5	75-125	7.44	25		QM-01
Nickel	13.2	0.473	"	47.3	3.58	20.3	75-125	0.562	25		QM-01
Selenium	4.70	0.307	"	4.73	ND	99.5	75-125	1.20	25		
Silver	1.51	0.0236	"	2.36	0.0199	63.0	75-125	9.63	25		QM-01
Zinc	25.9	0.473	"	47.3	17.6	17.5	75-125	0.925	25		QM-01

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGG0996 - 3060A Mod

Blank (BGG0996-BLK1)

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0996-BS1)

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent 20.0 0.30 mg/kg wet 25.0 80.0 80-120

Duplicate (BGG0996-DUP1)

Source: 2307457-08

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0996-MS1)

Source: 2307457-08

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent 22.3 0.30 mg/kg dry 27.0 ND 82.8 75-125

Matrix Spike Dup (BGG0996-MSD1)

Source: 2307457-08

Prepared & Analyzed: 07/31/23

Chromium, Hexavalent 23.7 0.30 mg/kg dry 27.0 ND 87.8 75-125 5.86 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGG1009 - General Preparation

Blank (BGG1009-BLK1)

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

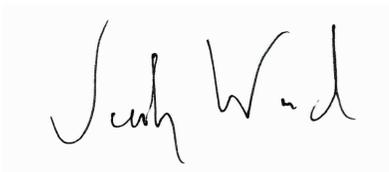
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BGG1009-BS1)

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

Calcium	4.74	0.0500	mg/L wet	5.00	94.8	70-130				
Magnesium	5.47	0.0500	"	5.00	109	70-130				
Sodium	5.40	0.0500	"	5.00	108	70-130				

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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

Summit Scientific

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

Batch BGG0991 - General Preparation

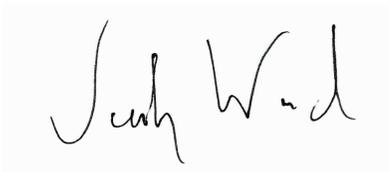
Duplicate (BGG0991-DUP1)

Source: 2307549-01

Prepared & Analyzed: 07/31/23

% Solids	94.9		%		94.8			0.0516	20	
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Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGH0037 - General Preparation

Blank (BGH0037-BLK1)

Prepared & Analyzed: 08/01/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGH0037-BS1)

Prepared & Analyzed: 08/01/23

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BGH0037-DUP1)

Source: 2307549-01

Prepared & Analyzed: 08/01/23

Specific Conductance (EC) 3.43 0.0100 mmhos/cm 3.47 1.30 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 08/07/23 09:36

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 BGH0038 - General Preparation

LCS (BGH0038-BS1)

Prepared & Analyzed: 08/01/23

pH	9.35	pH Units	9.18	102	95-105
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Duplicate (BGH0038-DUP1)

Source: 2307549-01

Prepared & Analyzed: 08/01/23

pH	7.88	pH Units	7.84	0.509	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: [none]
Project Manager: Paul Henehan

Reported:
08/07/23 09:36

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.
- J Detected but below the Reporting Limit; therefore, result is an estimated concentration
- 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 25, 2023

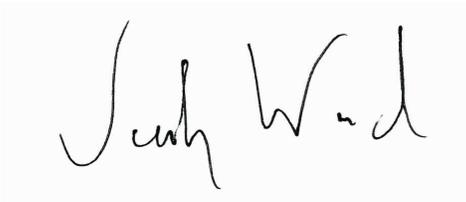
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Patriot B16-20 FL08

Work Order #2307572

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,

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 B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N Wall 3'	2307572-01	Soil	07/31/23 08:46	07/31/23 16:30
E Wall 3'	2307572-02	Soil	07/31/23 08:47	07/31/23 16:30
S Wall 3'	2307572-03	Soil	07/31/23 08:48	07/31/23 16:30
W Wall 3'	2307572-04	Soil	07/31/23 08:49	07/31/23 16:30
FLOOR 4'	2307572-05	Soil	07/31/23 08:50	07/31/23 16:30

Summit Scientific

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

Lab ID	Page 1 of 1
2307572	

		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 Blg-20 F108
City/State/Zip:			AFE#:
Phone: 303-261-6246		Project Name: Patriot Blg-20 F108	PO/Billing Codes: UWRWE-A2795-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					HOLD	Special Instructions
					HCl	HNO3	None	Other	Water	Soil			BTEX, TMBs, Naph.	TPH	PAH (915)	EC, SAR, Ph, Boron	Metals (915)		
1	N Wall 3'	7/31/23	8:46	2			X			X		X	X	X	X				
2	E Wall 3'	I	8:47	I			I			I		I	I	I	I				
3	S Wall 3'	I	8:48	I			I			I		I	I	I	I				
4	W Wall 3'	I	8:49	I			I			I		I	I	I	I				
5	FLOOR 4'	I	8:50	I			I			I		I	I	I	I				
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by:	Date/Time: 7/31/23 13:40	Received by: Summit North	Date/Time: 7/31/23 13:40	TAT Business Days	Field DO	Notes:
				Same Day	Field EC	
Relinquished by:	Date/Time: 7/31/23 16:30	Received by:	Date/Time: 7/31/23 16:30	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 8.1	Corrected Temperature:	IR gun #:		HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2307572

Client: Fremont Client Project ID: Patriot Blw-20 FLOS

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

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

Temp (°C) 8.1 Thermometer # 1

	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"/>	Same day
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 B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

N Wall 3'
2307572-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 08:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG1047	07/31/23	07/31/23	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 08:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0301	75.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0354	88.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0369	92.3 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 08:46**

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 08:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	10.6	84.4 %		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 B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

N Wall 3'
2307572-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0180	0.00500	mg/kg	1	BGH0008	08/01/23	08/01/23	EPA 8270D SIM	
Anthracene	0.0271	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.0283	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.0388	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0156	0.00500	"	"	"	"	"	"	
Chrysene	0.0381	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	0.119	0.00500	"	"	"	"	"	"	
Fluorene	0.0207	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0165	0.00500	"	"	"	"	"	"	
Pyrene	0.0757	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/31/23 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0175	52.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0188	56.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.215	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.839	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B	
Barium	88.6	0.400	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

N Wall 3'
2307572-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Cadmium	0.316	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B
Copper	3.23	0.400	"	"	"	"	"	"
Lead	11.0	0.200	"	"	"	"	"	"
Nickel	1.79	0.400	"	"	"	"	"	"
Selenium	0.294	0.303	"	"	"	"	"	"
Silver	0.0960	0.0200	"	"	"	"	"	"
Zinc	13.5	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/31/23 08:46

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 08:46

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	28.2	0.0582	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	22.0	0.0582	"	"	"	"	"	"	
Sodium	0.513	0.0582	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/31/23 08:46

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0176	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/31/23 08:46

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.9		%	1	BGH0002	08/01/23	08/01/23	Calculation	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

N Wall 3'
2307572-01 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/31/23 08:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.398	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 08:46**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.71			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 B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

N Wall 3'
2307572-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 08:46**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzo (a) anthracene	0.00686	0.00500	mg/kg	1	BGH0403	08/01/23	08/12/23	EPA 8270D SIM	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

E Wall 3'
2307572-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG1047	07/31/23	07/31/23	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 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0304	76.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0352	88.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0376	94.0 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 08:47**

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 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.7	93.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

E Wall 3'
2307572-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 08:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	0.0600	0.00500	mg/kg	1	BGH0008	08/01/23	08/01/23	EPA 8270D SIM	
Anthracene	0.0904	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	0.105	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	0.160	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	0.0593	0.00500	"	"	"	"	"	"	
Chrysene	0.146	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	0.0174	0.00500	"	"	"	"	"	"	
Fluoranthene	0.468	0.00500	"	"	"	"	"	"	E
Fluorene	0.0671	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	0.0668	0.00500	"	"	"	"	"	"	
Pyrene	0.292	0.00500	"	"	"	"	"	"	E
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	0.0135	0.00500	"	"	"	"	"	"	

Date Sampled: **07/31/23 08:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0150	45.1 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0151	45.3 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 08:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.145	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 08:47**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.723	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B	
Barium	53.4	0.400	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

E Wall 3'
2307572-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Cadmium	0.205	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B	
Copper	2.69	0.400	"	"	"	"	"	"	
Lead	6.38	0.200	"	"	"	"	"	"	
Nickel	1.40	0.400	"	"	"	"	"	"	
Selenium	0.202	0.298	"	"	"	"	"	"	
Silver	0.0583	0.0200	"	"	"	"	"	"	
Zinc	11.2	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/31/23 08:47

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 08:47

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	30.9	0.0573	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	16.6	0.0573	"	"	"	"	"	"	
Sodium	0.498	0.0573	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/31/23 08:47

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0180	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/31/23 08:47

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	87.2		%	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 B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

E Wall 3'
2307572-02 (Soil)

Summit Scientific

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/31/23 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Specific Conductance (EC)	0.425	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 08:47**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
pH	7.77			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 B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

E Wall 3'
2307572-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 08:47**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzo (a) anthracene	0.0291	0.00500	mg/kg	1	BGH0403	08/01/23	08/12/23	EPA 8270D SIM	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

S Wall 3'
2307572-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 08:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Benzene	ND	0.0020	mg/kg	1	BGG1047	07/31/23	07/31/23	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 08:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: 1,2-Dichloroethane-d4	0.0296	74.0 %	50-150	"	"	"	"	"	
Surrogate: Toluene-d8	0.0355	88.7 %	50-150	"	"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0373	93.3 %	50-150	"	"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 08:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
C10-C28 (DRO)	ND	50	mg/kg	1	BGG1044	07/31/23	08/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/31/23 08:48**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Surrogate: o-Terphenyl	11.0	87.6 %	30-150	"	"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

S Wall 3'
2307572-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 08:48**

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 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0186	55.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0189	56.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.178	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 08:48**

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 B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

S Wall 3'
2307572-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.786	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B
Barium	81.2	0.400	"	"	"	"	"	"
Cadmium	0.254	0.200	"	"	"	"	"	"
Copper	3.54	0.400	"	"	"	"	"	"
Lead	8.93	0.200	"	"	"	"	"	"
Nickel	1.64	0.400	"	"	"	"	"	"
Selenium	0.319	0.294	"	"	"	"	"	"
Silver	0.0873	0.0200	"	"	"	"	"	"
Zinc	14.4	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/31/23 08:48**

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 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	22.8	0.0565	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	17.4	0.0565	"	"	"	"	"	"	
Sodium	0.337	0.0565	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/31/23 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0129	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/31/23 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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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 B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

S Wall 3'
2307572-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	88.4	%	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 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.276	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 08:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.60		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 B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

W Wall 3'
2307572-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 08:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG1047	07/31/23	07/31/23	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 08:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0285	71.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0350	87.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0370	92.4 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 08:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG1044	07/31/23	08/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/31/23 08:49**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.2	89.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

W Wall 3'
2307572-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 08:49**

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 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0181	54.2 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0190	56.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.166	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 08:49**

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 B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

W Wall 3'
2307572-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	0.726	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B
Barium	100	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	2.04	0.400	"	"	"	"	"	"
Lead	4.52	0.200	"	"	"	"	"	"
Nickel	1.58	0.400	"	"	"	"	"	"
Selenium	0.281	0.293	"	"	"	"	"	"
Silver	0.0325	0.0200	"	"	"	"	"	"
Zinc	7.99	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/31/23 08:49

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 08:49

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	102	0.0564	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	24.5	0.0564	"	"	"	"	"	"	
Sodium	0.497	0.0564	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/31/23 08:49

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0115	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: 07/31/23 08:49

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 B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

W Wall 3'
2307572-04 (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 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.303	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 08:49**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.86		pH Units	1	BGH0040	08/01/23	08/01/23	EPA 9045D	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

FLOOR 4'
2307572-05 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/31/23 08:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG1047	07/31/23	07/31/23	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 08:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0291	72.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0351	87.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0374	93.5 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/31/23 08:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG1044	07/31/23	08/01/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/31/23 08:50**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.5	91.9 %		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 B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

FLOOR 4'
2307572-05 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/31/23 08:50**

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	0.00652	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	0.00670	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 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0191	57.4 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0219	65.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/31/23 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.274	0.0100	mg/L	1	BGH0029	08/01/23	08/02/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/31/23 08:50**

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 B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

FLOOR 4'
2307572-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.798	0.200	mg/kg dry	1	BGH0003	08/01/23	08/02/23	EPA 6020B	
Barium	77.0	0.400	"	"	"	"	"	"	
Cadmium	0.291	0.200	"	"	"	"	"	"	
Copper	3.23	0.400	"	"	"	"	"	"	
Lead	8.44	0.200	"	"	"	"	"	"	
Nickel	1.84	0.400	"	"	"	"	"	"	
Selenium	0.241	0.308	"	"	"	"	"	"	
Silver	0.0776	0.0200	"	"	"	"	"	"	
Zinc	12.9	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/31/23 08:50**

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 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.0	0.0591	mg/L dry	1	BGG1039	07/31/23	08/02/23	EPA 6020B	
Magnesium	21.1	0.0591	"	"	"	"	"	"	
Sodium	0.502	0.0591	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/31/23 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0159	0.00100	units	1	BGH0077	08/02/23	08/02/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/31/23 08:50**

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 B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

FLOOR 4'
2307572-05 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	84.5	%	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 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.410	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 08:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.78		pH Units	1	BGH0040	08/01/23	08/01/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch 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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Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

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

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

Batch 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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Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch 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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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch 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 B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch 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				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0195</i>		<i>"</i>	<i>0.0333</i>		<i>58.5</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0258</i>		<i>"</i>	<i>0.0333</i>		<i>77.3</i>	<i>40-150</i>				

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		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0211</i>		<i>"</i>	<i>0.0333</i>		<i>63.2</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0242</i>		<i>"</i>	<i>0.0333</i>		<i>72.6</i>	<i>40-150</i>				

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PO Box 1289
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Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGH0403 - EPA 5030 Soil MS

Blank (BGH0403-BLK1)

Prepared: 08/10/23 Analyzed: 08/12/23

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>0.0215</i>		<i>"</i>	<i>0.0333</i>		<i>64.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0347</i>		<i>"</i>	<i>0.0333</i>		<i>104</i>	<i>40-150</i>			

LCS (BGH0403-BS1)

Prepared: 08/10/23 Analyzed: 08/12/23

Acenaphthene	0.0269	0.00500	mg/kg	0.0333		80.7	31-137			
Anthracene	0.0279	0.00500	"	0.0333		83.6	30-120			
Benzo (a) anthracene	0.0221	0.00500	"	0.0333		66.2	30-120			
Benzo (a) pyrene	0.0259	0.00500	"	0.0333		77.8	30-120			
Benzo (b) fluoranthene	0.0269	0.00500	"	0.0333		80.7	30-120			
Benzo (k) fluoranthene	0.0255	0.00500	"	0.0333		76.4	30-120			
Chrysene	0.0277	0.00500	"	0.0333		83.1	30-120			
Dibenz (a,h) anthracene	0.0266	0.00500	"	0.0333		79.9	30-120			
Fluoranthene	0.0265	0.00500	"	0.0333		79.4	30-120			
Fluorene	0.0271	0.00500	"	0.0333		81.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0201	0.00500	"	0.0333		60.2	30-120			
Pyrene	0.0276	0.00500	"	0.0333		82.7	35-142			
1-Methylnaphthalene	0.0227	0.00500	"	0.0333		68.2	35-142			
2-Methylnaphthalene	0.0286	0.00500	"	0.0333		85.8	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0325</i>		<i>"</i>	<i>0.0333</i>		<i>97.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0313</i>		<i>"</i>	<i>0.0333</i>		<i>94.0</i>	<i>40-150</i>			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGH0403 - EPA 5030 Soil MS

Matrix Spike (BGH0403-MS1)

Source: 2308199-22

Prepared: 08/10/23 Analyzed: 08/12/23

Acenaphthene	0.0177	0.00500	mg/kg	0.0333	ND	53.1	31-137			
Anthracene	0.0176	0.00500	"	0.0333	ND	52.8	30-120			
Benzo (a) anthracene	0.0140	0.00500	"	0.0333	ND	42.1	30-120			
Benzo (a) pyrene	0.0153	0.00500	"	0.0333	ND	45.9	30-120			
Benzo (b) fluoranthene	0.0175	0.00500	"	0.0333	ND	52.5	30-120			
Benzo (k) fluoranthene	0.0161	0.00500	"	0.0333	ND	48.3	30-120			
Chrysene	0.0179	0.00500	"	0.0333	ND	53.7	30-120			
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333	ND	49.9	30-120			
Fluoranthene	0.0173	0.00500	"	0.0333	ND	51.9	30-120			
Fluorene	0.0179	0.00500	"	0.0333	ND	53.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0163	0.00500	"	0.0333	ND	49.0	30-120			
Pyrene	0.0183	0.00500	"	0.0333	ND	54.9	35-142			
1-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130			
2-Methylnaphthalene	0.0202	0.00500	"	0.0333	ND	60.7	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0216		"	0.0333		64.9	40-150			
Surrogate: Fluoranthene-d10	0.0415		"	0.0333		124	40-150			

Matrix Spike Dup (BGH0403-MSD1)

Source: 2308199-22

Prepared: 08/10/23 Analyzed: 08/12/23

Acenaphthene	0.0156	0.00500	mg/kg	0.0333	ND	46.8	31-137	12.5	30
Anthracene	0.0156	0.00500	"	0.0333	ND	46.8	30-120	12.0	30
Benzo (a) anthracene	0.0150	0.00500	"	0.0333	ND	45.0	30-120	6.53	30
Benzo (a) pyrene	0.0148	0.00500	"	0.0333	ND	44.3	30-120	3.47	30
Benzo (b) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.6	30-120	23.2	30
Benzo (k) fluoranthene	0.0134	0.00500	"	0.0333	ND	40.3	30-120	17.9	30
Chrysene	0.0147	0.00500	"	0.0333	ND	44.1	30-120	19.7	30
Dibenz (a,h) anthracene	0.0158	0.00500	"	0.0333	ND	47.3	30-120	5.34	30
Fluoranthene	0.0153	0.00500	"	0.0333	ND	46.0	30-120	12.0	30
Fluorene	0.0157	0.00500	"	0.0333	ND	47.0	30-120	13.5	30
Indeno (1,2,3-cd) pyrene	0.0147	0.00500	"	0.0333	ND	44.0	30-120	10.7	30
Pyrene	0.0150	0.00500	"	0.0333	ND	45.1	35-142	19.7	30
1-Methylnaphthalene	0.0152	0.00500	"	0.0333	ND	45.7	15-130	9.90	50
2-Methylnaphthalene	0.0143	0.00500	"	0.0333	ND	42.9	15-130	34.3	50
Surrogate: 2-Methylnaphthalene-d10	0.0224		"	0.0333		67.1	40-150		
Surrogate: Fluoranthene-d10	0.0399		"	0.0333		120	40-150		

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

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

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

Batch 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

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

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 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

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

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Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

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 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

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Fremont Environmental
 PO Box 1289
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Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

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

Summit Scientific

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

Batch 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 B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

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

Summit Scientific

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

Batch BGH0002 - General Preparation

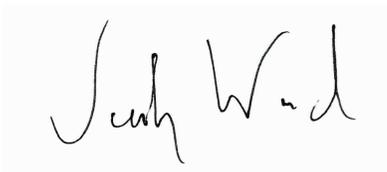
Duplicate (BGH0002-DUP1)

Source: 2307571-01

Prepared & Analyzed: 08/01/23

% Solids	84.5		%		85.3			0.899	20	
----------	------	--	---	--	------	--	--	-------	----	--

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction - Quality Control

Summit Scientific

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

Batch 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

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 08/25/23 12:17

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

Summit Scientific

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

Batch 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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: [none]
Project Manager: Paul Henchan

Reported:
08/25/23 12:17

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.
- 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

September 14, 2023

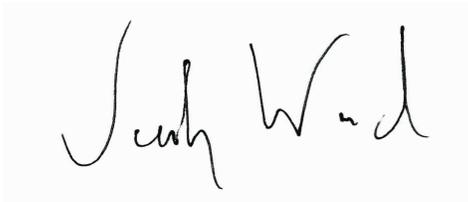
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Patriot B16-20 FL08

Work Order #2309088

Enclosed are the results of analyses for samples received by Summit Scientific on 09/07/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN

Project Manager: Paul Henchan

Reported:
09/14/23 09:31

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E02 Wall 3'	2309088-01	Soil	09/07/23 11:48	09/07/23 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
2309088	

		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 Bl6-20 FLO8
City/State/Zip:			AFE#:
Phone: 303-261-6246		Project Name: Patriot Bl6-20 FLO8	PO/Billing Codes: UWRWE-A2795-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	E02 Well 3'	9/7/23	11:48	2			X			X			X	X	X	X	X		
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: <i>Stanley Gilbert</i>	Date/Time: 9/7/23 14:46	Received by: Summit North	Date/Time: 9/7/23 14:46	TAT Business Days	Field DO	Notes:
				Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by: <i>S2</i>	Date/Time: 9/7/23 16:30	Received by: <i>[Signature]</i>	Date/Time: 9/7/23 16:30	1 Day	Field ORP	
				2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 10.4	Corrected Temperature: <i>9</i>	IR gun #: 1	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2309088

Client: Fremont Client Project ID: Patriot Bile-20 FLO8

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

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

Temp (°C) Thermometer #

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

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

AS

Custodian Printed Name

9/7/23

Date/Time

5555



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
09/14/23 09:31

E02 Wall 3'
2309088-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGI0180	09/07/23	09/07/23	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: **09/07/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0379	94.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0408	102 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0414	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGI0178	09/07/23	09/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.9	94.9 %		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 B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
09/14/23 09:31

E02 Wall 3'
2309088-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGI0189	09/08/23	09/09/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0226	67.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0190	57.0 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0464	0.0100	mg/L	1	BGI0193	09/08/23	09/09/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **09/07/23 11:48**

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

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
09/14/23 09:31

E02 Wall 3'
2309088-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.324	0.200	mg/kg dry	1	BGI0177	09/07/23	09/09/23	EPA 6020B	
Barium	16.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	0.404	0.400	"	"	"	"	"	"	
Lead	2.36	0.200	"	"	"	"	"	"	
Nickel	ND	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	3.10	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGI0205	09/08/23	09/08/23	EPA 7196A	

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

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	42.6	0.0553	mg/L dry	1	BGI0198	09/08/23	09/12/23	EPA 6020B	
Magnesium	11.2	0.0553	"	"	"	"	"	"	
Sodium	4.34	0.0553	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.153	0.00100	units	1	BGI0283	09/12/23	09/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08
 Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

E02 Wall 3'
2309088-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.5		%	1	BGI0187	09/08/23	09/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.319	0.0100	mmhos/cm	1	BGI0239	09/11/23	09/11/23	EPA 120.1	

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

Date Sampled: **09/07/23 11:48**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.39		pH Units	1	BGI0237	09/11/23	09/11/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
09/14/23 09:31

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 BGI0180 - EPA 5030 Soil MS

Blank (BGI0180-BLK1)

Prepared: 09/07/23 Analyzed: 09/08/23

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0387		"	0.0400		96.7	50-150			
<i>Surrogate: Toluene-d8</i>	0.0385		"	0.0400		96.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0410		"	0.0400		103	50-150			

LCS (BGI0180-BS1)

Prepared: 09/07/23 Analyzed: 09/08/23

Benzene	0.108	0.0020	mg/kg	0.100		108	70-130			
Toluene	0.105	0.0050	"	0.100		105	70-130			
Ethylbenzene	0.103	0.0050	"	0.100		103	70-130			
m,p-Xylene	0.206	0.010	"	0.200		103	70-130			
o-Xylene	0.0970	0.0050	"	0.100		97.0	70-130			
1,2,4-Trimethylbenzene	0.0959	0.0050	"	0.100		95.9	70-130			
1,3,5-Trimethylbenzene	0.0995	0.0050	"	0.100		99.5	70-130			
Naphthalene	0.0782	0.0038	"	0.100		78.2	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0376		"	0.0400		94.0	50-150			
<i>Surrogate: Toluene-d8</i>	0.0396		"	0.0400		99.1	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0380		"	0.0400		95.1	50-150			

Matrix Spike (BGI0180-MS1)

Source: 2309001-04

Prepared: 09/07/23 Analyzed: 09/08/23

QM-07

Benzene	0.0769	0.0020	mg/kg	0.100	ND	76.9	70-130			
Toluene	0.0638	0.0050	"	0.100	ND	63.8	70-130			
Ethylbenzene	0.0550	0.0050	"	0.100	ND	55.0	70-130			
m,p-Xylene	0.110	0.010	"	0.200	ND	54.8	70-130			
o-Xylene	0.0560	0.0050	"	0.100	ND	56.0	70-130			
1,2,4-Trimethylbenzene	0.0423	0.0050	"	0.100	ND	42.3	70-130			
1,3,5-Trimethylbenzene	0.0456	0.0050	"	0.100	ND	45.6	70-130			
Naphthalene	0.0332	0.0038	"	0.100	ND	33.2	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0391		"	0.0400		97.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0390		"	0.0400		97.5	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0381		"	0.0400		95.3	50-150			

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 B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

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 BGI0180 - EPA 5030 Soil MS

Matrix Spike Dup (BGI0180-MSD1)	Source: 2309001-04			Prepared: 09/07/23	Analyzed: 09/08/23	QM-07				
Benzene	0.0620	0.0020	mg/kg	0.100	ND	62.0	70-130	21.4	30	
Toluene	0.0454	0.0050	"	0.100	ND	45.4	70-130	33.7	30	
Ethylbenzene	0.0374	0.0050	"	0.100	ND	37.4	70-130	38.3	30	
m,p-Xylene	0.0728	0.010	"	0.200	ND	36.4	70-130	40.5	30	
o-Xylene	0.0367	0.0050	"	0.100	ND	36.7	70-130	41.6	30	
1,2,4-Trimethylbenzene	0.0248	0.0050	"	0.100	ND	24.8	70-130	52.0	30	
1,3,5-Trimethylbenzene	0.0281	0.0050	"	0.100	ND	28.1	70-130	47.5	30	
Naphthalene	0.0120	0.0038	"	0.100	ND	12.0	70-130	94.1	30	
Surrogate: 1,2-Dichloroethane-d4	0.0436		"	0.0400		109	50-150			
Surrogate: Toluene-d8	0.0394		"	0.0400		98.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0381		"	0.0400		95.2	50-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08
 Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

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 BGI0178 - EPA 3550A

Blank (BGI0178-BLK1)

Prepared: 09/07/23 Analyzed: 09/08/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.8		"	12.5		94.6	30-150				

LCS (BGI0178-BS1)

Prepared: 09/07/23 Analyzed: 09/08/23

C10-C28 (DRO)	405	50	mg/kg	500		81.1	70-130				
Surrogate: <i>o</i> -Terphenyl	12.5		"	12.5		99.7	30-150				

Matrix Spike (BGI0178-MS1)

Source: 2309085-01

Prepared: 09/07/23 Analyzed: 09/08/23

C10-C28 (DRO)	370	50	mg/kg	500	14.7	71.0	70-130				
Surrogate: <i>o</i> -Terphenyl	12.2		"	12.5		97.8	30-150				

Matrix Spike Dup (BGI0178-MSD1)

Source: 2309085-01

Prepared: 09/07/23 Analyzed: 09/08/23

C10-C28 (DRO)	388	50	mg/kg	500	14.7	74.7	70-130	4.82	20		
Surrogate: <i>o</i> -Terphenyl	13.0		"	12.5		104	30-150				

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Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
09/14/23 09:31

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 BGI0189 - EPA 5030 Soil MS

Blank (BGI0189-BLK1)

Prepared & Analyzed: 09/08/23

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>0.0286</i>		"	<i>0.0333</i>		<i>85.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0297</i>		"	<i>0.0333</i>		<i>89.2</i>	<i>40-150</i>			

LCS (BGI0189-BS1)

Prepared & Analyzed: 09/08/23

Acenaphthene	0.0446	0.00500	mg/kg	0.0333	134	31-137
Anthracene	0.0279	0.00500	"	0.0333	83.7	30-120
Benzo (a) anthracene	0.0289	0.00500	"	0.0333	86.7	30-120
Benzo (a) pyrene	0.0294	0.00500	"	0.0333	88.1	30-120
Benzo (b) fluoranthene	0.0302	0.00500	"	0.0333	90.6	30-120
Benzo (k) fluoranthene	0.0299	0.00500	"	0.0333	89.6	30-120
Chrysene	0.0302	0.00500	"	0.0333	90.6	30-120
Dibenz (a,h) anthracene	0.0298	0.00500	"	0.0333	89.5	30-120
Fluoranthene	0.0316	0.00500	"	0.0333	94.7	30-120
Fluorene	0.0370	0.00500	"	0.0333	111	30-120
Indeno (1,2,3-cd) pyrene	0.0218	0.00500	"	0.0333	65.4	30-120
Pyrene	0.0243	0.00500	"	0.0333	73.0	35-142
1-Methylnaphthalene	0.0293	0.00500	"	0.0333	87.9	35-142
2-Methylnaphthalene	0.0294	0.00500	"	0.0333	88.2	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0283</i>		"	<i>0.0333</i>	<i>85.0</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0310</i>		"	<i>0.0333</i>	<i>93.1</i>	<i>40-150</i>

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Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
09/14/23 09:31

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 BGI0189 - EPA 5030 Soil MS

Matrix Spike (BGI0189-MS1)	Source: 2309001-04			Prepared & Analyzed: 09/08/23							
Acenaphthene	0.00995	0.00500	mg/kg	0.0333	ND	29.8	31-137				QM-05
Anthracene	0.0165	0.00500	"	0.0333	ND	49.6	30-120				
Benzo (a) anthracene	0.0169	0.00500	"	0.0333	ND	50.8	30-120				
Benzo (a) pyrene	0.0155	0.00500	"	0.0333	ND	46.5	30-120				
Benzo (b) fluoranthene	0.0151	0.00500	"	0.0333	ND	45.2	30-120				
Benzo (k) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.7	30-120				
Chrysene	0.0178	0.00500	"	0.0333	ND	53.4	30-120				
Dibenz (a,h) anthracene	0.0118	0.00500	"	0.0333	ND	35.4	30-120				
Fluoranthene	0.0188	0.00500	"	0.0333	0.0149	11.7	30-120				QM-05
Fluorene	0.0135	0.00500	"	0.0333	ND	40.5	30-120				
Indeno (1,2,3-cd) pyrene	0.0106	0.00500	"	0.0333	ND	31.8	30-120				
Pyrene	0.0126	0.00500	"	0.0333	ND	37.7	35-142				
1-Methylnaphthalene	0.0344	0.00500	"	0.0333	0.0228	34.9	15-130				
2-Methylnaphthalene	0.0281	0.00500	"	0.0333	0.0227	16.2	15-130				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0382</i>		<i>"</i>	<i>0.0333</i>		<i>115</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0305</i>		<i>"</i>	<i>0.0333</i>		<i>91.5</i>	<i>40-150</i>				

Matrix Spike Dup (BGI0189-MSD1)	Source: 2309001-04			Prepared & Analyzed: 09/08/23							
Acenaphthene	0.0143	0.00500	mg/kg	0.0333	ND	42.8	31-137	35.6	30		QR-03
Anthracene	0.0141	0.00500	"	0.0333	ND	42.4	30-120	15.5	30		
Benzo (a) anthracene	0.0138	0.00500	"	0.0333	ND	41.3	30-120	20.6	30		
Benzo (a) pyrene	0.0122	0.00500	"	0.0333	ND	36.6	30-120	23.7	30		
Benzo (b) fluoranthene	0.0121	0.00500	"	0.0333	ND	36.4	30-120	21.6	30		
Benzo (k) fluoranthene	0.0110	0.00500	"	0.0333	ND	33.1	30-120	25.3	30		
Chrysene	0.0117	0.00500	"	0.0333	ND	35.2	30-120	41.1	30		QR-03
Dibenz (a,h) anthracene	0.0249	0.00500	"	0.0333	ND	74.7	30-120	71.3	30		QR-03
Fluoranthene	0.0152	0.00500	"	0.0333	0.0149	0.978	30-120	21.0	30		QR-03
Fluorene	0.0288	0.00500	"	0.0333	ND	86.4	30-120	72.4	30		QR-03
Indeno (1,2,3-cd) pyrene	0.0141	0.00500	"	0.0333	ND	42.4	30-120	28.5	30		
Pyrene	0.00921	0.00500	"	0.0333	ND	27.6	35-142	30.9	30		QR-03
1-Methylnaphthalene	0.0235	0.00500	"	0.0333	0.0228	2.19	15-130	37.6	50		QR-03
2-Methylnaphthalene	0.0138	0.00500	"	0.0333	0.0227	NR	15-130	68.5	50		QR-03
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0159</i>		<i>"</i>	<i>0.0333</i>		<i>47.8</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0138</i>		<i>"</i>	<i>0.0333</i>		<i>41.5</i>	<i>40-150</i>				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

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 BGI0193 - EPA 3050B

Blank (BGI0193-BLK1)

Prepared: 09/08/23 Analyzed: 09/09/23

Boron ND 0.0100 mg/L

LCS (BGI0193-BS1)

Prepared: 09/08/23 Analyzed: 09/09/23

Boron 4.86 0.0100 mg/L 5.00 97.3 80-120

Duplicate (BGI0193-DUP1)

Source: 2308661-02

Prepared: 09/08/23 Analyzed: 09/09/23

Boron 0.0324 0.0100 mg/L 0.0684 71.3 20 QR-01

Matrix Spike (BGI0193-MS1)

Source: 2308661-02

Prepared: 09/08/23 Analyzed: 09/09/23

Boron 5.30 0.0100 mg/L 5.00 0.0684 105 75-125

Matrix Spike Dup (BGI0193-MSD1)

Source: 2308661-02

Prepared: 09/08/23 Analyzed: 09/09/23

Boron 5.01 0.0100 mg/L 5.00 0.0684 98.9 75-125 5.50 25

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGI0177 - EPA 3050B

Blank (BGI0177-BLK1)

Prepared: 09/07/23 Analyzed: 09/09/23

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 (BGI0177-BS1)

Prepared: 09/07/23 Analyzed: 09/09/23

Arsenic	39.3	0.200	mg/kg wet	40.0	98.2	80-120
Barium	38.5	0.400	"	40.0	96.2	80-120
Cadmium	1.93	0.200	"	2.00	96.5	80-120
Copper	36.5	0.400	"	40.0	91.2	80-120
Lead	19.5	0.200	"	20.0	97.7	80-120
Nickel	39.6	0.400	"	40.0	99.0	80-120
Silver	1.96	0.0200	"	2.00	97.9	80-120
Zinc	40.1	0.400	"	40.0	100	80-120

LCS (BGI0177-BS2)

Prepared: 09/07/23 Analyzed: 09/09/23

Arsenic	41.8	0.200	mg/kg wet	40.0	104	80-120
Barium	39.9	0.400	"	40.0	99.9	80-120
Cadmium	2.02	0.200	"	2.00	101	80-120
Copper	38.6	0.400	"	40.0	96.5	80-120
Lead	20.4	0.200	"	20.0	102	80-120
Nickel	41.8	0.400	"	40.0	104	80-120
Silver	2.03	0.0200	"	2.00	102	80-120
Zinc	42.2	0.400	"	40.0	106	80-120

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Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
09/14/23 09:31

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 BGI0177 - EPA 3050B

LCS (BGI0177-BS3)

Prepared: 09/07/23 Analyzed: 09/09/23

Arsenic	39.5	0.200	mg/kg wet	40.0		98.8	80-120			
Barium	39.2	0.400	"	40.0		98.1	80-120			
Cadmium	1.98	0.200	"	2.00		98.8	80-120			
Copper	36.5	0.400	"	40.0		91.1	80-120			
Lead	19.9	0.200	"	20.0		99.6	80-120			
Nickel	40.0	0.400	"	40.0		100	80-120			
Silver	1.99	0.0200	"	2.00		99.4	80-120			
Zinc	40.2	0.400	"	40.0		100	80-120			

LCS (BGI0177-BS4)

Prepared: 09/07/23 Analyzed: 09/09/23

Arsenic	40.5	0.200	mg/kg wet	40.0		101	80-120			
Barium	39.6	0.400	"	40.0		99.1	80-120			
Cadmium	2.04	0.200	"	2.00		102	80-120			
Copper	37.1	0.400	"	40.0		92.9	80-120			
Lead	20.3	0.200	"	20.0		101	80-120			
Nickel	40.6	0.400	"	40.0		101	80-120			
Silver	2.01	0.0200	"	2.00		101	80-120			
Zinc	40.8	0.400	"	40.0		102	80-120			

Duplicate (BGI0177-DUP1)

Source: 2309076-01

Prepared: 09/07/23 Analyzed: 09/09/23

Arsenic	0.419	0.200	mg/kg dry		0.437		4.14	20		
Barium	38.4	0.400	"		40.9		6.19	20		
Cadmium	0.0373	0.200	"		0.0340		9.15	20		
Copper	0.826	0.400	"		0.923		11.1	20		
Lead	8.92	0.200	"		3.19		94.7	20		QR-04
Nickel	0.639	0.400	"		0.766		18.0	20		
Silver	0.0168	0.0200	"		0.0182		8.00	20		
Zinc	4.44	0.400	"		5.07		13.1	20		
Selenium	ND	0.260	"		ND			200		

Summit Scientific

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 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

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 BGI0177 - EPA 3050B

Matrix Spike (BGI0177-MS1)

Source: 2309076-01

Prepared: 09/07/23 Analyzed: 09/09/23

Arsenic	20.8	0.200	mg/kg dry	46.6	0.437	43.7	75-125				QM-07
Barium	80.0	0.400	"	46.6	40.9	83.9	75-125				
Cadmium	2.28	0.200	"	2.33	0.0340	96.2	75-125				
Copper	20.0	0.400	"	46.6	0.923	40.8	75-125				QM-07
Lead	24.7	0.200	"	23.3	3.19	92.1	75-125				
Nickel	21.4	0.400	"	46.6	0.766	44.3	75-125				QM-07
Silver	2.28	0.0200	"	2.33	0.0182	96.8	75-125				
Zinc	25.1	0.400	"	46.6	5.07	43.0	75-125				QM-07

Matrix Spike Dup (BGI0177-MSD1)

Source: 2309076-01

Prepared: 09/07/23 Analyzed: 09/09/23

Arsenic	21.3	0.200	mg/kg dry	46.6	0.437	44.6	75-125	2.16	25		QM-07
Barium	78.7	0.400	"	46.6	40.9	81.2	75-125	1.59	25		
Cadmium	2.29	0.200	"	2.33	0.0340	96.7	75-125	0.511	25		
Copper	20.2	0.400	"	46.6	0.923	41.3	75-125	1.20	25		QM-07
Lead	24.5	0.200	"	23.3	3.19	91.5	75-125	0.560	25		
Nickel	21.5	0.400	"	46.6	0.766	44.5	75-125	0.578	25		QM-07
Silver	2.27	0.0200	"	2.33	0.0182	96.5	75-125	0.328	25		
Zinc	25.3	0.400	"	46.6	5.07	43.3	75-125	0.628	25		QM-07

Summit Scientific

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Project: Noble - Patriot B16-20 FL08
 Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

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 BGI0205 - 3060A Mod

Blank (BGI0205-BLK1)

Prepared & Analyzed: 09/08/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGI0205-BS1)

Prepared & Analyzed: 09/08/23

Chromium, Hexavalent 26.6 0.30 mg/kg wet 25.0 106 80-120

Duplicate (BGI0205-DUP1)

Source: 2309085-01

Prepared & Analyzed: 09/08/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGI0205-MS1)

Source: 2309085-01

Prepared & Analyzed: 09/08/23

Chromium, Hexavalent 31.3 0.30 mg/kg dry 32.2 ND 97.2 75-125

Matrix Spike Dup (BGI0205-MSD1)

Source: 2309085-01

Prepared & Analyzed: 09/08/23

Chromium, Hexavalent 31.2 0.30 mg/kg dry 32.2 ND 97.0 75-125 0.206 20

Summit Scientific

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Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

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 BGI0198 - General Preparation

Blank (BGI0198-BLK1)

Prepared: 09/08/23 Analyzed: 09/12/23

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

LCS (BGI0198-BS1)

Prepared: 09/08/23 Analyzed: 09/12/23

Calcium	5.39	0.0500	mg/L wet	5.00	108	70-130				
Magnesium	5.11	0.0500	"	5.00	102	70-130				
Sodium	5.68	0.0500	"	5.00	114	70-130				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

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 BGI0187 - General Preparation

Duplicate (BGI0187-DUP1)

Source: 2309085-01

Prepared: 09/08/23 Analyzed: 09/11/23

% Solids	77.9		%		77.7			0.199	20	
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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 B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

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 BGI0239 - General Preparation

Blank (BGI0239-BLK1)

Prepared & Analyzed: 09/11/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGI0239-BS1)

Prepared & Analyzed: 09/11/23

Specific Conductance (EC) 0.153 0.0100 mmhos/cm 0.150 102 95-105

Duplicate (BGI0239-DUP1)

Source: 2309085-01

Prepared & Analyzed: 09/11/23

Specific Conductance (EC) 1.43 0.0100 mmhos/cm 1.41 1.90 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 09/14/23 09:31

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 BGI0237 - General Preparation

LCS (BGI0237-BS1)

Prepared & Analyzed: 09/11/23

pH	9.08	pH Units	9.18	98.9	95-105
----	------	----------	------	------	--------

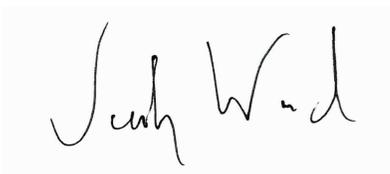
Duplicate (BGI0237-DUP1)

Source: 2309085-01

Prepared & Analyzed: 09/11/23

pH	7.76	pH Units	7.76	0.00	20
----	------	----------	------	------	----

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
09/14/23 09:31

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-03 The RPD value for the sample duplicate or MS/MSD was outside of QC acceptance limits due to matrix interference. 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-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-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The associated LCS and/or LCSD were within acceptance limits, therefore the data are considered valid.
- 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 24, 2023

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Patriot B16-20 FL08

Work Order #2308292

Enclosed are the results of analyses for samples received by Summit Scientific on 08/14/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

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

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08
Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG01@3'	2308292-01	Soil	08/14/23 14:00	08/14/23 16:30
BKG01@4'	2308292-02	Soil	08/14/23 14:05	08/14/23 16:30
BKG02@3'	2308292-03	Soil	08/14/23 14:10	08/14/23 16:30
BKG02@4'	2308292-04	Soil	08/14/23 14:15	08/14/23 16:30
BKG03@3'	2308292-05	Soil	08/14/23 14:20	08/14/23 16:30
BKG03@4'	2308292-06	Soil	08/14/23 14:25	08/14/23 16:30
BKG04@3'	2308292-07	Soil	08/14/23 14:30	08/14/23 16:30
BKG04@4'	2308292-08	Soil	08/14/23 14:35	08/14/23 16:30
BKG05@3'	2308292-09	Soil	08/14/23 14:40	08/14/23 16:30
BKG05@4'	2308292-10	Soil	08/14/23 14:45	08/14/23 16:30

Summit Scientific

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

Lab ID	Page 1 of 1
2308292	

		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 B16-20 FLO8
City/State/Zip:			AFE#:
Phone: 303-261-6246		Project Name: Patriot B16-20 FLO8	PO/Billing Codes: UWRWE-A2795-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)	
1	BK601 3'	8/14/23	14:00	2			X			X					X	X		
2	BK601 4'		14:05															
3	BK602 3'		14:10															
4	BK602 4'		14:15															
5	BK603 3'		14:20															
6	BK603 4'		14:25															
7	BK604 3'		14:30															
8	BK604 4'		14:35															
9	BK605 3'		14:40															
10	BK605 4'		14:45															
11																		
12																		
13																		
14																		
15																		

Relinquished by:	Date/Time: 8/14/23 16:00	Received by: Summit North	Date/Time: 8/14/23 16:00	TAT Business Days	Field DO	Notes:
Relinquished by: 52	Date/Time: 8/14/23 16:30	Received by:	Date/Time: 8/14/23 16:30	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 11.7	Corrected Temperature:	IR gun #:	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2308292

Client: Fremont Client Project ID: Patient Bill-20 FLO8

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

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

Temp (°C) 11.7 Thermometer # 1

	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.	-			on ICE
If custody seals are present, are they intact? (1)	-			
Are samples due within 48 hours present?	-			Same day
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		-		
Is a chain-of-custody (COC) form present and filled out completely? (1)	-			
Is the COC properly relinquished by the client w/ date and time recorded? (1)	-			
Were all samples received intact? (1)	✓			
Was adequate sample volume provided? (1)	✓			
Does the COC agree with the number and type of sample bottles received? (1)	✓			
Do the sample IDs on the bottle labels match the COC? (1)	✓			
For volatiles in water - is there headspace present? If yes, contact client and note in narrative.			✓	
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.			✓	
If samples are acid preserved for metals, is the pH ≤ 2? (1) Record the pH in Comments.			✓	
If dissolved metals are requested, were samples field filtered?			✓	
Additional Comments (if any):				

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

[Signature] Custodian Printed Name

08/14/23 Date/Time

44 43



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG01@3'
2308292-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	0.266	0.0100		mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.950	0.200		mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	77.2	0.400		"	"	"	"	"	"	
Cadmium	0.365	0.200		"	"	"	"	"	"	
Copper	1.75	0.400		"	"	"	"	"	"	
Lead	6.88	0.200		"	"	"	"	"	"	
Nickel	2.30	0.400		"	"	"	"	"	"	
Silver	0.0503	0.0200		"	"	"	"	"	"	
Zinc	8.24	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	16.6	0.0561		mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	6.82	0.0561		"	"	"	"	"	"	
Sodium	3.72	0.0561		"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

BKG01@3'
2308292-01 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.194	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	89.1		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.724	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.28		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG01@4'
2308292-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.448	0.0100	mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.875	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	102	0.400	"	"	"	"	"	"	
Cadmium	0.532	0.200	"	"	"	"	"	"	
Copper	1.30	0.400	"	"	"	"	"	"	
Lead	8.73	0.200	"	"	"	"	"	"	
Nickel	2.54	0.400	"	"	"	"	"	"	
Silver	0.0901	0.0200	"	"	"	"	"	"	
Zinc	9.25	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	19.8	0.0596	mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	5.84	0.0596	"	"	"	"	"	"	
Sodium	10.6	0.0596	"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

BKG01@4'
2308292-02 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.538	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.9		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.656	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:05**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.51		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG02@3'
2308292-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Boron	0.368	0.0100		mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Arsenic	0.735	0.200		mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	119	0.400		"	"	"	"	"	"	
Cadmium	0.349	0.200		"	"	"	"	"	"	
Copper	ND	0.400		"	"	"	"	"	"	
Lead	7.41	0.200		"	"	"	"	"	"	
Nickel	0.899	0.400		"	"	"	"	"	"	
Silver	0.0648	0.0200		"	"	"	"	"	"	
Zinc	5.94	0.400		"	"	"	"	"	"	
Selenium	ND	0.260		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:10**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Calcium	86.1	0.0600		mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	6.75	0.0600		"	"	"	"	"	"	
Sodium	20.5	0.0600		"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08
 Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

BKG02@3'
2308292-03 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.572	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.4		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.845	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.78		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG02@4'
2308292-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.271	0.0100	mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.504	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	29.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	3.12	0.200	"	"	"	"	"	"	
Nickel	0.578	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	3.29	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	56.6	0.0523	mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	6.09	0.0523	"	"	"	"	"	"	
Sodium	9.60	0.0523	"	"	"	"	"	"	

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 B16-20 FL08
 Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

BKG02@4'
2308292-04 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.324	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.6		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.597	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.00		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG03@3'
2308292-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.314	0.0100	mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.437	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	29.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	4.17	0.200	"	"	"	"	"	"	
Nickel	0.671	0.400	"	"	"	"	"	"	
Silver	0.0376	0.0200	"	"	"	"	"	"	
Zinc	4.11	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	12.3	0.0511	mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	3.31	0.0511	"	"	"	"	"	"	
Sodium	8.72	0.0511	"	"	"	"	"	"	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08
 Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

BKG03@3'
2308292-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.570	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.8		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.410	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.96		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG03@4'
2308292-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.187	0.0100	mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.494	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	21.2	0.400	"	"	"	"	"	"	
Cadmium	0.215	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	3.61	0.200	"	"	"	"	"	"	
Nickel	0.658	0.400	"	"	"	"	"	"	
Silver	0.0319	0.0200	"	"	"	"	"	"	
Zinc	3.46	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	16.4	0.0511	mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	3.75	0.0511	"	"	"	"	"	"	
Sodium	5.46	0.0511	"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG03@4'
2308292-06 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.316	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.9		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.462	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.60		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG04@3'
2308292-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.277	0.0100	mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.770	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	88.8	0.400	"	"	"	"	"	"	
Cadmium	0.434	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	7.65	0.200	"	"	"	"	"	"	
Nickel	1.16	0.400	"	"	"	"	"	"	
Silver	0.0567	0.0200	"	"	"	"	"	"	
Zinc	5.71	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	23.6	0.0549	mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	6.21	0.0549	"	"	"	"	"	"	
Sodium	4.15	0.0549	"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08
Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG04@3'
2308292-07 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.196	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	91.1		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.434	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.72		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG04@4'
2308292-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.233	0.0100	mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.492	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	49.0	0.400	"	"	"	"	"	"	
Cadmium	0.331	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	5.14	0.200	"	"	"	"	"	"	
Nickel	0.717	0.400	"	"	"	"	"	"	
Silver	0.0422	0.0200	"	"	"	"	"	"	
Zinc	4.60	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	21.3	0.0528	mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	5.78	0.0528	"	"	"	"	"	"	
Sodium	5.13	0.0528	"	"	"	"	"	"	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

BKG04@4'
2308292-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.254	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	94.7		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.357	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.86		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG05@3'
2308292-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.284	0.0100	mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.251	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	11.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	1.60	0.200	"	"	"	"	"	"	
Nickel	0.519	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	2.22	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	22.6	0.0507	mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	3.70	0.0507	"	"	"	"	"	"	
Sodium	1.14	0.0507	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08
Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG05@3'
2308292-09 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0586	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.6		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.453	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.50		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG05@4'
2308292-10 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.149	0.0100	mg/L	1	BGH0573	08/15/23	08/16/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.334	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	17.1	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	2.41	0.200	"	"	"	"	"	"	
Nickel	0.543	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	3.18	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 14:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	25.1	0.0511	mg/L dry	1	BGH0563	08/14/23	08/16/23	EPA 6020B	
Magnesium	3.31	0.0511	"	"	"	"	"	"	
Sodium	1.00	0.0511	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08
Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

BKG05@4'
2308292-10 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.0498	0.00100	units	1	BGH0647	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	97.9		%	1	BGH0567	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.250	0.0100	mmhos/cm	1	BGH0600	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 14:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.85		pH Units	1	BGH0599	08/15/23	08/15/23	EPA 9045D	

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 B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

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

Summit Scientific

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

Batch BGH0573 - EPA 3050B

Blank (BGH0573-BLK1)

Prepared: 08/15/23 Analyzed: 08/16/23

Boron ND 0.0100 mg/L

LCS (BGH0573-BS1)

Prepared: 08/15/23 Analyzed: 08/16/23

Boron 5.70 0.0100 mg/L 5.00 114 80-120

Duplicate (BGH0573-DUP1)

Source: 2308291-03

Prepared: 08/15/23 Analyzed: 08/16/23

Boron 0.173 0.0100 mg/L 0.195 11.8 20

Matrix Spike (BGH0573-MS1)

Source: 2308291-03

Prepared: 08/15/23 Analyzed: 08/16/23

Boron 6.57 0.0100 mg/L 5.00 0.195 128 75-125 QM-07

Matrix Spike Dup (BGH0573-MSD1)

Source: 2308291-03

Prepared: 08/15/23 Analyzed: 08/16/23

Boron 7.16 0.0100 mg/L 5.00 0.195 139 75-125 8.61 25 QM-07

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

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 BGH0568 - EPA 3050B

Blank (BGH0568-BLK1)

Prepared: 08/15/23 Analyzed: 08/16/23

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 (BGH0568-BS1)

Prepared: 08/15/23 Analyzed: 08/16/23

Arsenic	37.0	0.200	mg/kg wet	40.0	92.4	80-120
Barium	34.5	0.400	"	40.0	86.1	80-120
Cadmium	1.71	0.200	"	2.00	85.6	80-120
Copper	35.8	0.400	"	40.0	89.4	80-120
Lead	18.0	0.200	"	20.0	89.8	80-120
Nickel	34.7	0.400	"	40.0	86.8	80-120
Silver	1.62	0.0200	"	2.00	81.2	80-120
Zinc	36.2	0.400	"	40.0	90.5	80-120

Duplicate (BGH0568-DUP1)

Source: 2308292-01

Prepared: 08/15/23 Analyzed: 08/16/23

Arsenic	1.02	0.200	mg/kg dry	0.950	6.98	20
Barium	86.8	0.400	"	77.2	11.7	20
Cadmium	0.383	0.200	"	0.365	4.80	20
Copper	1.80	0.400	"	1.75	3.06	20
Lead	7.49	0.200	"	6.88	8.59	20
Nickel	2.55	0.400	"	2.30	10.2	20
Silver	0.0556	0.0200	"	0.0503	10.2	20
Zinc	8.85	0.400	"	8.24	7.16	20
Selenium	ND	0.260	"	ND		200

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

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 BGH0568 - EPA 3050B

Matrix Spike (BGH0568-MS1)

Source: 2308292-01

Prepared: 08/15/23 Analyzed: 08/16/23

Arsenic	12.9	0.200	mg/kg dry	44.9	0.950	26.5	75-125				QM-01
Barium	125	0.400	"	44.9	77.2	106	75-125				
Cadmium	2.45	0.200	"	2.24	0.365	92.9	75-125				
Copper	13.7	0.400	"	44.9	1.75	26.7	75-125				QM-01
Lead	26.6	0.200	"	22.4	6.88	87.8	75-125				
Nickel	13.8	0.400	"	44.9	2.30	25.6	75-125				QM-01
Silver	2.06	0.0200	"	2.24	0.0503	89.4	75-125				
Zinc	21.4	0.400	"	44.9	8.24	29.4	75-125				QM-01

Matrix Spike Dup (BGH0568-MSD1)

Source: 2308292-01

Prepared: 08/15/23 Analyzed: 08/16/23

Arsenic	12.8	0.200	mg/kg dry	44.9	0.950	26.3	75-125	0.693	25		QM-01
Barium	122	0.400	"	44.9	77.2	101	75-125	1.99	25		
Cadmium	2.51	0.200	"	2.24	0.365	95.6	75-125	2.39	25		
Copper	13.9	0.400	"	44.9	1.75	27.1	75-125	1.31	25		QM-01
Lead	26.3	0.200	"	22.4	6.88	86.5	75-125	1.09	25		
Nickel	13.8	0.400	"	44.9	2.30	25.7	75-125	0.0227	25		QM-01
Silver	2.00	0.0200	"	2.24	0.0503	87.0	75-125	2.72	25		
Zinc	22.0	0.400	"	44.9	8.24	30.5	75-125	2.40	25		QM-01

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08
 Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

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 BGH0571 - 3060A Mod

Blank (BGH0571-BLK1)

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGH0571-BS1)

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent 23.2 0.30 mg/kg wet 25.0 92.6 80-120

Duplicate (BGH0571-DUP1)

Source: 2308292-01

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGH0571-MS1)

Source: 2308292-01

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent 25.6 0.30 mg/kg dry 28.0 ND 91.2 75-125

Matrix Spike Dup (BGH0571-MSD1)

Source: 2308292-01

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent 25.9 0.30 mg/kg dry 28.0 ND 92.4 75-125 1.31 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

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 BGH0563 - General Preparation

Blank (BGH0563-BLK1)

Prepared: 08/14/23 Analyzed: 08/15/23

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

LCS (BGH0563-BS1)

Prepared: 08/14/23 Analyzed: 08/15/23

Calcium	4.64	0.0500	mg/L wet	5.00	92.7	70-130				
Magnesium	5.27	0.0500	"	5.00	105	70-130				
Sodium	5.42	0.0500	"	5.00	108	70-130				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

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

Summit Scientific

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

Batch BGH0567 - General Preparation

Duplicate (BGH0567-DUP1)

Source: 2308283-01

Prepared & Analyzed: 08/15/23

% Solids	79.1		%		78.4			0.937	20	
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Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

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 BGH0600 - General Preparation

Blank (BGH0600-BLK1)

Prepared & Analyzed: 08/15/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGH0600-BS1)

Prepared & Analyzed: 08/15/23

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BGH0600-DUP1)

Source: 2308291-03

Prepared & Analyzed: 08/15/23

Specific Conductance (EC) 0.798 0.0100 mmhos/cm 0.811 1.53 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/24/23 14:06

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 BGH0599 - General Preparation

LCS (BGH0599-BS1)

Prepared & Analyzed: 08/15/23

pH 9.08 pH Units 9.18 98.9 95-105

Duplicate (BGH0599-DUP1)

Source: 2308291-03

Prepared & Analyzed: 08/15/23

pH 8.12 pH Units 8.12 0.00 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL08

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/24/23 14:06

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-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

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80403

303.277.9310

August 22, 2023

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - Patriot B16-20 FL09/SEP

Work Order #2308293

Enclosed are the results of analyses for samples received by Summit Scientific on 08/14/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

A handwritten signature in blue ink that reads "Jacob Wood". The signature is written in a cursive style with a small flourish at the end of the word "Wood".

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
BKG01@3'	2308293-01	Soil	08/14/23 13:10	08/14/23 16:30
BKG01@4'	2308293-02	Soil	08/14/23 13:15	08/14/23 16:30
BKG02@3'	2308293-03	Soil	08/14/23 13:20	08/14/23 16:30
BKG02@4'	2308293-04	Soil	08/14/23 13:25	08/14/23 16:30
BKG03@3'	2308293-05	Soil	08/14/23 13:30	08/14/23 16:30
BKG03@4'	2308293-06	Soil	08/14/23 13:35	08/14/23 16:30
BKG04@3'	2308293-07	Soil	08/14/23 13:40	08/14/23 16:30
BKG04@4'	2308293-08	Soil	08/14/23 13:45	08/14/23 16:30
BKG05@3'	2308293-09	Soil	08/14/23 13:50	08/14/23 16:30
BKG05@4'	2308293-10	Soil	08/14/23 13:55	08/14/23 16:30

Summit Scientific

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

Lab ID	Page 1 of 1
2308293	

Send Data To:		Send Invoice To:
Client: Fremont Environmental	Project Manager: Paul Henchan	Company: Noble
Address:	E-Mail: Fremont Distribution List	Project Name/Location: Patriot B16-20 FLO9-SEP
City/State/Zip:		AFE#:
Phone: 303-261-6246	Project Name: Patriot B16-20 FLO9-SEP	PO/Billing Codes: UWRWE-A2795-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, Pl, Boron	Metals (915)		TDS, Chloride, Sulfate
1	BK602 3'	8/14/23	13:10	2			X			X						X	X		
2	BK602 4'		13:15																
3	BK602 3'		13:20																
4	BK602 4'		13:25																
5	BK603 3'		13:30																
6	BK603 4'		13:35																
7	BK604 3'		13:40																
8	BK604 4'		13:45																
9	BK605 3'		13:50																
10	BK605 4'		13:55																
11																			
12																			
13																			
14																			
15																			

Relinquished by:	Date/Time: 8/14/23 16:00	Received by: Summit North	Date/Time: 8/14/23 16:00	TAT Business Days	Field DO	Notes:
Relinquished by: 52	Date/Time: 8/14/23 16:30	Received by:	Date/Time: 8/14/23 16:30	Same Day <input checked="" type="checkbox"/>	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
				Standard	Field Turb.	
Temperature Upon Receipt: 11.7	Corrected Temperature: 8	IR gun #: 1	HNO3 lot #:			



Sample Receipt Checklist

Client: Fremont Environmental Client Project ID: Patriot B16-20 FL09-SEPShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____

<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	-------------------------------------	--------------------------	--------------------------	--------------------------

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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	48 Hours
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.				

CH

Custodian Printed Name

8/14/23 16:30

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG01@3'
2308293-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.451	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.05	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	77.3	0.400	"	"	"	"	"	"	
Cadmium	0.355	0.200	"	"	"	"	"	"	
Copper	1.57	0.400	"	"	"	"	"	"	
Lead	6.60	0.200	"	"	"	"	"	"	
Nickel	2.42	0.400	"	"	"	"	"	"	
Silver	0.0547	0.0200	"	"	"	"	"	"	
Zinc	8.80	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	31.9	0.0565	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	16.1	0.0565	"	"	"	"	"	"	
Sodium	15.0	0.0565	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG01@3'
2308293-01 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.540	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	88.5		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.660	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:10**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	6.77		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG01@4'
2308293-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.308	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.810	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	84.4	0.400	"	"	"	"	"	"	
Cadmium	0.490	0.200	"	"	"	"	"	"	
Copper	1.19	0.400	"	"	"	"	"	"	
Lead	7.53	0.200	"	"	"	"	"	"	
Nickel	2.13	0.400	"	"	"	"	"	"	
Silver	0.0828	0.0200	"	"	"	"	"	"	
Zinc	7.68	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:15**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	42.1	0.0602	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	16.9	0.0602	"	"	"	"	"	"	
Sodium	38.6	0.0602	"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

BKG01@4'
2308293-02 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.27	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.1		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.722	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:15**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.56		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG02@3'
2308293-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.276	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.733	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	157	0.400	"	"	"	"	"	"	
Cadmium	0.398	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	8.92	0.200	"	"	"	"	"	"	
Nickel	0.946	0.400	"	"	"	"	"	"	
Silver	0.0763	0.0200	"	"	"	"	"	"	
Zinc	6.09	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:20**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	27.3	0.0623	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	13.7	0.0623	"	"	"	"	"	"	
Sodium	70.3	0.0623	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG02@3'
2308293-03 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.74	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.2		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.00	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:20**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.85		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG02@4'
2308293-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.422	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.607	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	43.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	4.10	0.200	"	"	"	"	"	"	
Nickel	0.820	0.400	"	"	"	"	"	"	
Silver	0.0247	0.0200	"	"	"	"	"	"	
Zinc	4.26	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:25**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	35.1	0.0542	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	12.5	0.0542	"	"	"	"	"	"	
Sodium	55.2	0.0542	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP
Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG02@4'
2308293-04 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.04	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	92.2		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.660	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:25**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.06		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG03@3'
2308293-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.232	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.469	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	37.3	0.400	"	"	"	"	"	"	
Cadmium	0.249	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	4.57	0.200	"	"	"	"	"	"	
Nickel	0.709	0.400	"	"	"	"	"	"	
Silver	0.0447	0.0200	"	"	"	"	"	"	
Zinc	4.54	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:30**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	14.1	0.0517	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	8.92	0.0517	"	"	"	"	"	"	
Sodium	27.1	0.0517	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

BKG03@3'
2308293-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.39	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	96.8		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.381	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:30**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.21		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG03@4'
2308293-06 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.190	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.418	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	12.8	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	2.47	0.200	"	"	"	"	"	"	
Nickel	0.508	0.400	"	"	"	"	"	"	
Silver	0.0240	0.0200	"	"	"	"	"	"	
Zinc	2.76	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:35**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	18.8	0.0509	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	8.88	0.0509	"	"	"	"	"	"	
Sodium	19.7	0.0509	"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

BKG03@4'
2308293-06 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.938	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.2		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.384	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:35**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.71		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG04@3'
2308293-07 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.231	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.747	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	95.6	0.400	"	"	"	"	"	"	
Cadmium	0.429	0.200	"	"	"	"	"	"	
Copper	0.406	0.400	"	"	"	"	"	"	
Lead	7.96	0.200	"	"	"	"	"	"	
Nickel	1.19	0.400	"	"	"	"	"	"	
Silver	0.0602	0.0200	"	"	"	"	"	"	
Zinc	6.12	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:40**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	24.7	0.0553	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	13.0	0.0553	"	"	"	"	"	"	
Sodium	11.5	0.0553	"	"	"	"	"	"	

Calculated Analysis

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

BKG04@3'
2308293-07 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.466	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	90.4		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.316	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:40**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.84		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG04@4'
2308293-08 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.309	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.580	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	50.1	0.400	"	"	"	"	"	"	
Cadmium	0.255	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	5.39	0.200	"	"	"	"	"	"	
Nickel	0.761	0.400	"	"	"	"	"	"	
Silver	0.0394	0.0200	"	"	"	"	"	"	
Zinc	4.26	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:45**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	15.7	0.0524	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	10.7	0.0524	"	"	"	"	"	"	
Sodium	15.8	0.0524	"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP
Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG04@4'
2308293-08 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.753	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	95.5		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.372	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:45**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.77		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG05@3'
2308293-09 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.245	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.377	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	12.3	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	2.16	0.200	"	"	"	"	"	"	
Nickel	0.499	0.400	"	"	"	"	"	"	
Silver	0.0240	0.0200	"	"	"	"	"	"	
Zinc	2.20	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:50**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	19.9	0.0508	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	9.17	0.0508	"	"	"	"	"	"	
Sodium	3.63	0.0508	"	"	"	"	"	"	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP
Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG05@3'
2308293-09 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.169	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.4		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.230	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:50**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	8.03		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

BKG05@4'
2308293-10 (Soil)

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Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **08/14/23 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Boron	0.260	0.0100	mg/L	1	BGH0574	08/15/23	08/17/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **08/14/23 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Arsenic	0.334	0.200	mg/kg dry	1	BGH0568	08/15/23	08/16/23	EPA 6020B	
Barium	12.9	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	ND	0.400	"	"	"	"	"	"	
Lead	1.86	0.200	"	"	"	"	"	"	
Nickel	0.604	0.400	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	2.63	0.400	"	"	"	"	"	"	
Selenium	ND	0.260	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **08/14/23 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGH0571	08/15/23	08/15/23	EPA 7196A	

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

Date Sampled: **08/14/23 13:55**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Calcium	30.5	0.0510	mg/L dry	1	BGH0564	08/14/23	08/15/23	EPA 6020B	
Magnesium	13.0	0.0510	"	"	"	"	"	"	
Sodium	4.24	0.0510	"	"	"	"	"	"	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

BKG05@4'
2308293-10 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **08/14/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.162	0.00100	units	1	BGH0663	08/16/23	08/16/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **08/14/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	98.0		%	1	BGH0572	08/15/23	08/15/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **08/14/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.241	0.0100	mmhos/cm	1	BGH0590	08/15/23	08/15/23	EPA 120.1	

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

Date Sampled: **08/14/23 13:55**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.96		pH Units	1	BGH0591	08/15/23	08/15/23	EPA 9045D	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

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

Summit Scientific

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

Batch BGH0574 - EPA 3050B

Blank (BGH0574-BLK1)

Prepared: 08/15/23 Analyzed: 08/17/23

Boron ND 0.0100 mg/L

LCS (BGH0574-BS1)

Prepared: 08/15/23 Analyzed: 08/17/23

Boron 5.53 0.0100 mg/L 5.00 111 80-120

Duplicate (BGH0574-DUP1)

Source: 2308283-01

Prepared: 08/15/23 Analyzed: 08/17/23

Boron 0.507 0.0100 mg/L 0.515 1.53 20

Matrix Spike (BGH0574-MS1)

Source: 2308283-01

Prepared: 08/15/23 Analyzed: 08/17/23

Boron 6.60 0.0100 mg/L 5.00 0.515 122 75-125

Matrix Spike Dup (BGH0574-MSD1)

Source: 2308283-01

Prepared: 08/15/23 Analyzed: 08/17/23

Boron 6.20 0.0100 mg/L 5.00 0.515 114 75-125 6.32 25

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

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 BGH0568 - EPA 3050B

Blank (BGH0568-BLK1)

Prepared: 08/15/23 Analyzed: 08/16/23

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 (BGH0568-BS1)

Prepared: 08/15/23 Analyzed: 08/16/23

Arsenic	37.0	0.200	mg/kg wet	40.0	92.4	80-120
Barium	34.5	0.400	"	40.0	86.1	80-120
Cadmium	1.71	0.200	"	2.00	85.6	80-120
Copper	35.8	0.400	"	40.0	89.4	80-120
Lead	18.0	0.200	"	20.0	89.8	80-120
Nickel	34.7	0.400	"	40.0	86.8	80-120
Silver	1.62	0.0200	"	2.00	81.2	80-120
Zinc	36.2	0.400	"	40.0	90.5	80-120

Duplicate (BGH0568-DUP1)

Source: 2308292-01

Prepared: 08/15/23 Analyzed: 08/16/23

Arsenic	1.02	0.200	mg/kg dry	0.950	6.98	20
Barium	86.8	0.400	"	77.2	11.7	20
Cadmium	0.383	0.200	"	0.365	4.80	20
Copper	1.80	0.400	"	1.75	3.06	20
Lead	7.49	0.200	"	6.88	8.59	20
Nickel	2.55	0.400	"	2.30	10.2	20
Silver	0.0556	0.0200	"	0.0503	10.2	20
Zinc	8.85	0.400	"	8.24	7.16	20
Selenium	ND	0.260	"	ND		200

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 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

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 BGH0568 - EPA 3050B

Matrix Spike (BGH0568-MS1)

Source: 2308292-01

Prepared: 08/15/23 Analyzed: 08/16/23

Arsenic	12.9	0.200	mg/kg dry	44.9	0.950	26.5	75-125				QM-01
Barium	125	0.400	"	44.9	77.2	106	75-125				
Cadmium	2.45	0.200	"	2.24	0.365	92.9	75-125				
Copper	13.7	0.400	"	44.9	1.75	26.7	75-125				QM-01
Lead	26.6	0.200	"	22.4	6.88	87.8	75-125				
Nickel	13.8	0.400	"	44.9	2.30	25.6	75-125				QM-01
Silver	2.06	0.0200	"	2.24	0.0503	89.4	75-125				
Zinc	21.4	0.400	"	44.9	8.24	29.4	75-125				QM-01

Matrix Spike Dup (BGH0568-MSD1)

Source: 2308292-01

Prepared: 08/15/23 Analyzed: 08/16/23

Arsenic	12.8	0.200	mg/kg dry	44.9	0.950	26.3	75-125	0.693	25		QM-01
Barium	122	0.400	"	44.9	77.2	101	75-125	1.99	25		
Cadmium	2.51	0.200	"	2.24	0.365	95.6	75-125	2.39	25		
Copper	13.9	0.400	"	44.9	1.75	27.1	75-125	1.31	25		QM-01
Lead	26.3	0.200	"	22.4	6.88	86.5	75-125	1.09	25		
Nickel	13.8	0.400	"	44.9	2.30	25.7	75-125	0.0227	25		QM-01
Silver	2.00	0.0200	"	2.24	0.0503	87.0	75-125	2.72	25		
Zinc	22.0	0.400	"	44.9	8.24	30.5	75-125	2.40	25		QM-01

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 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

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 BGH0571 - 3060A Mod

Blank (BGH0571-BLK1)

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGH0571-BS1)

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent 23.2 0.30 mg/kg wet 25.0 92.6 80-120

Duplicate (BGH0571-DUP1)

Source: 2308292-01

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGH0571-MS1)

Source: 2308292-01

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent 25.6 0.30 mg/kg dry 28.0 ND 91.2 75-125

Matrix Spike Dup (BGH0571-MSD1)

Source: 2308292-01

Prepared & Analyzed: 08/15/23

Chromium, Hexavalent 25.9 0.30 mg/kg dry 28.0 ND 92.4 75-125 1.31 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

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 BGH0564 - General Preparation

Blank (BGH0564-BLK1)

Prepared: 08/14/23 Analyzed: 08/15/23

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

LCS (BGH0564-BS1)

Prepared: 08/14/23 Analyzed: 08/15/23

Calcium	5.41	0.0500	mg/L wet	5.00	108	70-130				
Magnesium	4.94	0.0500	"	5.00	98.8	70-130				
Sodium	5.62	0.0500	"	5.00	112	70-130				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

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

Summit Scientific

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

Batch BGH0572 - General Preparation

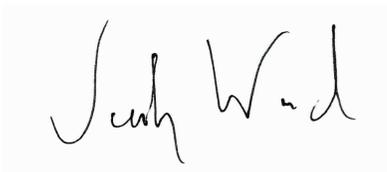
Duplicate (BGH0572-DUP1)

Source: 2308291-03

Prepared & Analyzed: 08/15/23

% Solids	76.4		%		86.3			12.2	20	
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Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

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 BGH0590 - General Preparation

Blank (BGH0590-BLK1)

Prepared & Analyzed: 08/15/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGH0590-BS1)

Prepared & Analyzed: 08/15/23

Specific Conductance (EC) 0.156 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BGH0590-DUP1)

Source: 2308293-01

Prepared & Analyzed: 08/15/23

Specific Conductance (EC) 0.651 0.0100 mmhos/cm 0.660 1.39 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - Patriot B16-20 FL09/SEP

Project Number: UWRWE-A2795-ABN
 Project Manager: Paul Henchan

Reported:
 08/22/23 16:30

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 BGH0591 - General Preparation

LCS (BGH0591-BS1)

Prepared & Analyzed: 08/15/23

pH	9.08	pH Units	9.18	98.9	95-105
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Duplicate (BGH0591-DUP1)

Source: 2308293-01

Prepared & Analyzed: 08/15/23

pH	6.76	pH Units	6.77	0.148	20
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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 B16-20 FL09/SEP
Project Number: UWRWE-A2795-ABN
Project Manager: Paul Henchan

Reported:
08/22/23 16:30

Notes and Definitions

- 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

