

FREMONT ENVIRONMENTAL INC.

October 6, 2023

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

Subject: **Excavation Report**
 PTF-64N64W 32SENE
 SENE Sec. 32, T4N, R64W
 Weld County, Colorado
 Fremont Project No. C022-089
 Facility #327571, Remediation #23226

Dear Mr. Peterson:

Enclosed please find a copy of the above referenced Excavation Report for the PTF-64N64W 32SENE release site in Weld County, Colorado. The enclosed report describes excavation and sampling efforts to remediate impacted soil at the site.

Since excavation has confirmed the removal of subsurface petroleum impacts, Noble Energy Inc. should request that a No Further Action (NFA) determination be provided by the Energy and Carbon Management Commission (ECMC) for this site.

Please contact me at (603) 477-9517 if you require any additional information.

Fremont appreciates the opportunity to provide this service.

Sincerely,
FREMONT ENVIRONMENTAL INC.



Ethan D. Black, PG
Consultant

Enclosure

EXCAVATION REPORT

NOBLE ENERGY INC.

PTF-64N64W 32SENE

WELD COUNTY, COLORADO

FREMONT PROJECT NO. C022-089

FACILITY #327571, REMEDIATION #23226

**Prepared by:
Fremont Environmental Inc.
1759 Redwing Lane
Broomfield, CO 80020
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October 6, 2023

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 BACKGROUND INFORMATION.....	1
2.1 Site Location	1
2.2 Site History	1
3.0 FIELD ACTIVITIES	2
4.0 DISCUSSION.....	4
5.0 REMARKS.....	4

Tables

Table 1:	Summary of Volatile Organic Soil Chemistry Data
Table 2:	Summary of Polycyclic Aromatic Hydrocarbon Soil Chemistry Data
Table 3:	Summary of Inorganics in Soil Chemistry Data
Table 4:	Summary of Metals on Soil Chemistry Data
Table 5:	Summary of Organic Groundwater Chemistry Data

Figures

Figure 1:	Site Location Map
Figure 2:	Site Map
Figure 3:	Organic Soil Chemistry Map
Figure 4:	Polycyclic Aromatic Hydrocarbon Soil Chemistry Map
Figure 5:	Metals in Soil Chemistry Map
Figure 6:	Inorganic Soil Chemistry Map
Figure 7:	Organic Groundwater Chemistry Map

Appendices

Appendix A:	Photo Log
Appendix B:	Laboratory Documentation

EXCAVATION REPORT
NOBLE ENERGY INC.
PTF-64N64W 32SENE
WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089
FACILITY #327571, REMEDIATION #23226

1.0 INTRODUCTION

The purpose of this document is to present information collected during the excavation of petroleum-impacted soil at the PTF-64N64W 32SENE (PTF) tank battery located in Weld County, Colorado. This excavation project was completed on July 25, 2023.

2.0 BACKGROUND INFORMATION

2.1 Site Location

The PTF facility is located approximately eight miles south of Kersley, Colorado in Weld County as shown on Figure 1. The site is located in a rural and agricultural area approximately 0.31 miles south of the intersection of County Road 40 and County Road 53. The location is further described as the SE $\frac{1}{4}$ of the NE $\frac{1}{4}$ of Section 32, Township 4N, Range 64W.

2.2 Site History

The site consisted of the PTF tank battery which serviced the PTF C 32-8 and PTF C 32-1 natural gas wells. The PTF C 32-8 well was drilled in 1991 to a measured depth of 7,118 feet and the PTF C 32-1 well was drilled in 1991 to a measured depth of 7,130 feet.

A historical release was discovered within the produced water vault (PWV) excavation during decommissioning activities at the PTF facility in June of 2022. A site investigation

to determine the extent of soil impacts was undertaken on October 6, 2022. Groundwater was not encountered at that time.

3.0 FIELD ACTIVITIES

Remediation efforts consisted of the excavation of petroleum impacted soil directly beneath, and adjacent to the areas of the former PWV removed from the PTF facility. The soil consisted of poorly graded sand to the excavation's maximum depth of approximately nine feet below ground surface. Groundwater was encountered in the excavation at depth of nine feet bgs. The excavation extent is illustrated on Figures 2 through 7.

The excavation of impacts located at the former PWV was completed on July 25, 2023. Soil samples were collected, as grab samples, from the excavation's sidewalls between seven-and-eight feet bgs, and from the floor of the excavation in the saturated zone at nine feet bgs. Additionally, five groundwater samples were collected from the floor of the excavation at nine feet bgs.

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, 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, specific conductance (EC) by EPA Method 120.1 saturated paste extraction, saturated paste extraction of soluble nutrients by EPA method 6020/USDA60 6(2) for calculated analysis of sodium absorption ratio (SAR), pH by saturated paste

extraction APHA/ASTM/EPA methods, Total Metals by EPA method 6020B, and Hexavalent Chromium by EPA method 7196. The laboratory reports and chain-of-custody documentation are included in Appendix B.

A summary of the soil laboratory data is included in Tables 1 through 4. The laboratory analyses indicate that organic petroleum constituents in soil samples collected from the sidewalls and floor of the excavation achieved the ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (PGSSLs). However, two samples (E01@8.0' and S03@8.0') exceeded ECMC Table 915-1 PGSSLs for barium. A local background sample (BKG02@10.0) collected at similar depth in native soil, also exceeded the ECMC Table 915-1 PGSSLs for barium. Additionally, all samples exceeded ECMC Table 915-1 residential soil screening levels (RSSLs) for arsenic. Five local background samples collected adjacent to the excavation, in native soil at similar depths, also exceeded the ECMC Table 915-1 RSSLs for arsenic. Thus, it is proposed that these exceedances be attributed to native soil conditions.

Five groundwater samples (GW01, GW02, GW03, GW04, GW05), collected from the floor of the excavation at nine feet bgs, were submitted to Summit Scientific, Inc. for the analyses of organic petroleum constituents benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene and naphthalene by EPA Method 8260B.

The laboratory analysis indicate that all groundwater collected achieved the ECMC Table 915-1 standards for all organic petroleum constituents analyzed. The groundwater chemistry is shown on Figure 7 and the analytical data are summarized in Table 5. A copy of the laboratory's report is presented in Appendix B.

A total of approximately 2,352 tons (~ 1,680 cubic yards) of petroleum impacted soil was removed from the location via excavation by Tasman Geosciences Inc. during remediation efforts. Impacted soil was disposed of at Buffalo Ridge Landfill in Keenesburg, Colorado as non-hazardous waste, and the excavation was backfilled using clean imported fill.

4.0 DISCUSSION

As demonstrated by the soil sampling, petroleum impacted soil was removed from the PTF facility via excavation. This was confirmed by analysis of soil and groundwater samples collected from the exterior sidewalls and floor of the performed excavation. Furthermore, exceedances for barium and arsenic are proposed to be attributed to native soil conditions based on concentrations observed in five local background samples collected adjacent to the PWV excavation. Approximately 1,680 cubic yards of impacted soil were removed and transported to the landfill. The soil data for the excavation is illustrated and summarized in the attached tables and figures.

A no further action designation is being requested using the ECMC Table 915-1 RSSLs for the PTF-64N64W 32SENE site based on the results of groundwater samples collected in excavation observed to be unimpacted.

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.**

Prepared By:



10/06/23

Date _____

Jeff T. Griggs

Geologist

Reviewed by:



10/06/23

Date _____

Ethan D. Black, PG

Consultant

TABLES

TABLE 1
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

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)
ECMC Table 915-1 Limits (Residential SSL)			1.2	490	5.8	58	30	27	2	500**		
ECMC Table 915-1 Limits (Protection of Groundwater SSL)			0.0026	0.69	0.78	9.9	0.0081	0.0087	0.0038	500**		
WCS01@5.0'	7/6/2023	5.0 Ft	<0.0020	<0.0050	0.15	<0.010	1.5	<0.0050	0.32	460	400	<50
B01@9.0'	7/7/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
S01@8.0'	7/7/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
W01@7.0'	7/7/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
Imported Fill	7/7/2023	N/A	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
N01@8.0'	7/10/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
W02@8.0'	7/10/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
W03@8.0'	7/10/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B02@9.0'	7/11/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
S02@7.0'	7/11/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	0.021	0.0064	<0.0050	<0.0038	7.9	<50	<50
B03@9.0'	7/13/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
N02@8.0'	7/14/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B04@9.0'	7/17/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B05@9.0'	7/17/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B06@9.0'	7/18/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
E01@8.0'	7/19/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B07@9.0'	7/20/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
N03@8.0'	7/20/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
E03@8.0'	7/20/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
B08@9.0'	7/24/2023	9.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
S03@8.0'	7/24/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50
E02@8.0'	7/24/2023	8.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<0.50	<50	<50

Bold faced values exceed the COGCC Table 915-1 concentrations

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

* Indicates laboratory minimum detection limit in excess of SSL

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

TABLE 2
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

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)
ECMC 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
ECMC 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
WCS01@5.0'	7/6/2023	5.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0365	<0.00500	<0.00500	0.161	0.218
B01@9.0'	7/7/2023	9.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
S01@8.0'	7/7/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
W01@7.0'	7/7/2023	7.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
Imported Fill	7/7/2023	N/A	<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@8.0'	7/10/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
W02@8.0'	7/10/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
W03@8.0'	7/10/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
B02@9.0'	7/11/2023	9.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
S02@7.0'	7/11/2023	7.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
B03@9.0'	7/13/2023	9.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
N02@8.0'	7/14/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
B04@9.0'	7/17/2023	9.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
B05@9.0'	7/17/2023	9.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
B06@9.0'	7/18/2023	9.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
E01@8.0'	7/19/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
B07@9.0'	7/20/2023	9.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
N03@8.0'	7/20/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
E03@8.0'	7/20/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
B08@9.0'	7/24/2023	9.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
S03@8.0'	7/24/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
E02@8.0'	7/24/2023	8.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

Bold faced values exceed the COGCC Table 915-1 concentrations

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

* Indicates laboratory minimum detection limit in excess of SSL

TABLE 3
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

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
WCS01@5.0'	7/6/2023	5.0 Ft	8.23	1.66	1.61	0.110
BKG01@10.0'	7/6/2002	10.0 Ft	7.83	1.23	1.65	0.246
BKG02@10.0'	7/6/2023	10.0 Ft	7.84	1.04	1.35	0.0760
BKG03@10.0'	7/6/2023	10.0 Ft	7.78	1.70	1.78	0.0515
BKG04@10.0'	7/6/2023	10.0 Ft	7.93	0.884	1.97	0.125
B01@9.0'	7/7/2023	9.0 Ft	7.94	0.900	1.56	0.0876
S01@8.0'	7/7/2023	8.0 Ft	7.92	0.952	1.28	0.153
W01@7.0'	7/7/2023	7.0 Ft	7.56	0.352	0.138	0.199
Imported Fill	7/7/2023	N/A	8.35	0.583	4.35	0.193
BKG05@10.0'	7/7/2023	10.0 Ft	7.88	1.44	2.42	0.292
N01@8.0'	7/10/2023	8.0 Ft	7.63	1.11	0.864	0.261
W02@8.0'	7/10/2023	8.0 Ft	7.53	1.08	1.14	0.296
W03@8.0'	7/10/2023	8.0 Ft	7.45	1.12	1.55	0.178
B02@9.0'	7/11/2023	9.0 Ft	7.51	1.20	2.04	0.0155
S02@7.0'	7/11/2023	7.0 Ft	7.83	0.855	1.26	0.0282
B03@9.0'	7/13/2023	9.0 Ft	7.43	1.17	1.39	0.123
N02@8.0'	7/14/2023	8.0 Ft	7.91	0.849	1.27	0.137
B04@9.0'	7/17/2023	9.0 Ft	7.60	1.10	1.70	0.145
B05@9.0'	7/17/2023	9.0 Ft	7.67	1.06	1.66	0.117
B06@9.0'	7/18/2023	9.0 Ft	7.60	1.27	1.85	<0.0100
E01@8.0'	7/19/2023	8.0 Ft	7.69	1.31	0.821	0.285

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
B07@9.0'	7/20/2023	9.0 Ft	7.58	1.28	1.94	0.127
N03@8.0'	7/20/2023	8.0 Ft	7.30	1.26	1.48	0.230
E03@8.0'	7/20/2023	8.0 Ft	7.48	0.443	0.148	0.137
B08@9.0'	7/24/2023	9.0 Ft	7.81	0.956	2.35	0.202
S03@8.0'	7/24/2023	8.0 Ft	7.90	0.651	0.311	0.296
E02@8.0'	7/24/2023	8.0 Ft	7.73	0.909	2.04	0.116

Bold faced values exceed the COGCC Table 915-1 concentrations

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

Local Background Samples (BKG01@10.0', BKG02@10.0', BKG03@10.0', BKG04@10.0', BKG05@10.0')

TABLE 4
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

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
WCS01@5.0'	7/6/2023	5.0 Ft	0.627	29.8	<0.240	<0.30	1.53	2.61	1.49	<0.312	<0.0240	5.74
BKG01@10.0'	7/6/2002	10.0 Ft	1.25	64.0	<0.241	<0.30	3.27	3.30	2.36	<0.313	<0.0241	8.98
BKG02@10.0'	7/6/2023	10.0 Ft	0.777	106	<0.248	<0.30	2.05	5.01	3.31	<0.323	0.0298	9.64
BKG03@10.0'	7/6/2023	10.0 Ft	2.11	31.1	<0.249	<0.30	1.42	2.47	1.53	<0.324	<0.0249	5.56
BKG04@10.0'	7/6/2023	10.0 Ft	0.744	28.2	<0.237	<0.30	1.52	2.29	1.28	<0.307	<0.0237	7.46
B01@9.0'	7/7/2023	9.0 Ft	0.924	25.3	<0.242	<0.30	1.89	2.81	2.41	<0.315	<0.0242	9.94
S01@8.0'	7/7/2023	8.0 Ft	1.56	48.2	<0.247	<0.30	2.65	3.79	3.28	<0.321	<0.0247	12.3
W01@7.0'	7/7/2023	7.0 Ft	3.20	44.6	<0.232	<0.30	4.09	4.08	4.20	<0.302	0.0339	14.5
Imported Fill	7/7/2023	N/A	2.69	51.1	<0.223	<0.30	4.33	6.42	5.42	<0.290	<0.0223	16.1
BKG05@10.0'	7/7/2023	10.0 Ft	2.33	54.9	<0.250	<0.30	3.10	3.52	3.24	<0.325	0.103	13.7
N01@8.0'	7/10/2023	8.0 Ft	1.64	47.0	<0.237	<0.30	2.25	3.61	3.10	<0.308	<0.0237	11.2
W02@8.0'	7/10/2023	8.0 Ft	1.64	67.8	<0.243	<0.30	3.48	4.54	4.14	<0.316	<0.0243	13.2
W03@8.0'	7/10/2023	8.0 Ft	1.75	45.1	<0.238	<0.30	2.79	2.94	2.72	<0.309	<0.0238	9.83
B02@9.0'	7/11/2023	9.0 Ft	0.595	33.4	<0.241	<0.30	1.16	2.79	1.19	<0.313	<0.0241	5.40
S02@7.0'	7/11/2023	7.0 Ft	1.93	64.7	<0.237	<0.30	1.50	3.59	1.49	<0.308	<0.0237	5.91
B03@9.0'	7/13/2023	9.0 Ft	0.925	48.3	<0.238	<0.30	1.57	3.89	1.78	<0.309	<0.0238	7.54
N02@8.0'	7/14/2023	8.0 Ft	1.31	58.6	<0.235	<0.30	2.40	3.84	3.02	<0.305	<0.0235	11.8
B04@9.0'	7/17/2023	9.0 Ft	1.63	35.9	<0.243	<0.30	2.55	3.46	3.59	<0.316	<0.0243	15.2
B05@9.0'	7/17/2023	9.0 Ft	1.62	36.6	<0.239	<0.30	2.16	3.29	2.99	<0.311	<0.0239	12.4
B06@9.0'	7/18/2023	9.0 Ft	1.45	27.6	<0.238	<0.30	1.48	2.42	1.70	<0.309	<0.0238	6.39
E01@8.0'	7/19/2023	8.0 Ft	2.51	102	<0.255	<0.30	2.26	3.59	2.70	<0.332	0.0301	8.25
B07@9.0'	7/20/2023	9.0 Ft	1.34	21.8	<0.200	<0.30	1.72	2.00	1.59	<0.310	<0.0200	6.79
N03@8.0'	7/20/2023	8.0 Ft	3.20	67.5	0.213	<0.30	4.56	5.24	5.26	<0.321	0.0281	20.0
E03@8.0'	7/20/2023	8.0 Ft	4.31	55.6	<0.200	<0.30	3.22	3.60	3.89	<0.323	<0.0200	13.0
B08@9.0'	7/24/2023	9.0 Ft	1.76	22.4	<0.200	<0.30	4.34	4.67	3.55	<0.312	<0.0200	14.3
S03@8.0'	7/24/2023	8.0 Ft	3.74	101	<0.200	<0.30	4.32	4.79	5.94	<0.327	0.0312	16.8
E02@8.0'	7/24/2023	8.0 Ft	2.80	66.5	<0.200	<0.30	4.03	4.24	5.10	<0.320	<0.0200	17.2

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

Local Background Samples (BKG01@10.0', BKG02@10.0', BKG03@10.0', BKG04@10.0', BKG05@10.0')

TABLE 5
SUMMARY OF GROUNDWATER ELEVATION DATA AND ORGANIC CHEMISTRY DATA
NOBLE ENERGY INC.
PTF-64N64W 32SENE, WELD COUNTY, COLORADO
FREMONT PROJECT NO. C022-089

Sample ID	Sample Date	Benzene (µg/L)	Toluene (µg/L)	Ethyl-Benzene (µg/L)	Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-Trimethyl-Benzene (µg/L)	1,3,5-Trimethyl-Benzene (µg/L)	TOC Elevation (ft)	Depth to Groundwater (ft)	Groundwater Elevation (ft)	LNAPL Thickness (ft)
ECMC Table 915-1 Limits		5.0	560	700	1400	140	67	67				
GW01	7/12/2023	<1.0	<1.0	<1.0	<2.0	6.4	3.4	2.8	N/A	9.0 Ft	N/A	NP
GW02	7/12/2023	<1.0	<1.0	<1.0	<2.0	<1.0	2.3	2.0	N/A	9.0 Ft	N/A	NP
GW03	7/17/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	N/A	9.0 Ft	N/A	NP
GW04	7/19/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	N/A	9.0 Ft	N/A	NP
GW05	7/24/2023	<1.0	<1.0	<1.0	13	<1.0	5.8	15	N/A	9.0 Ft	N/A	NP

Bold face values exceed the COGCC limits

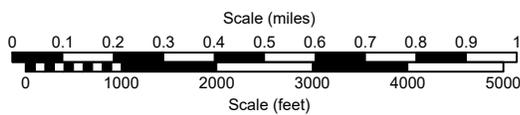
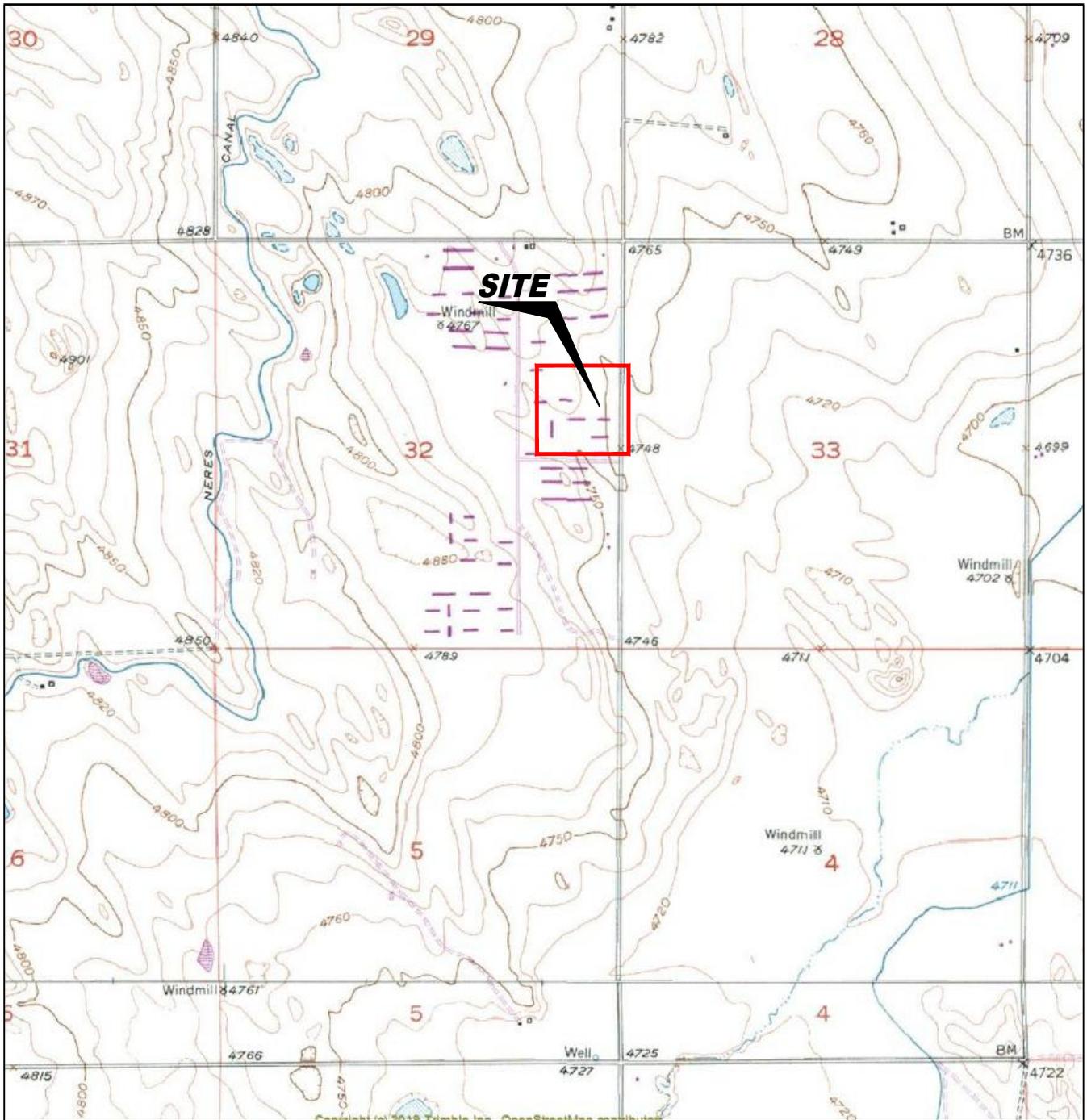
Red highlighted 915-1 Limits indicate the referenced groundwater screening level

NP - No measureable

LNAPL

NA - Not Analyzed

FIGURES



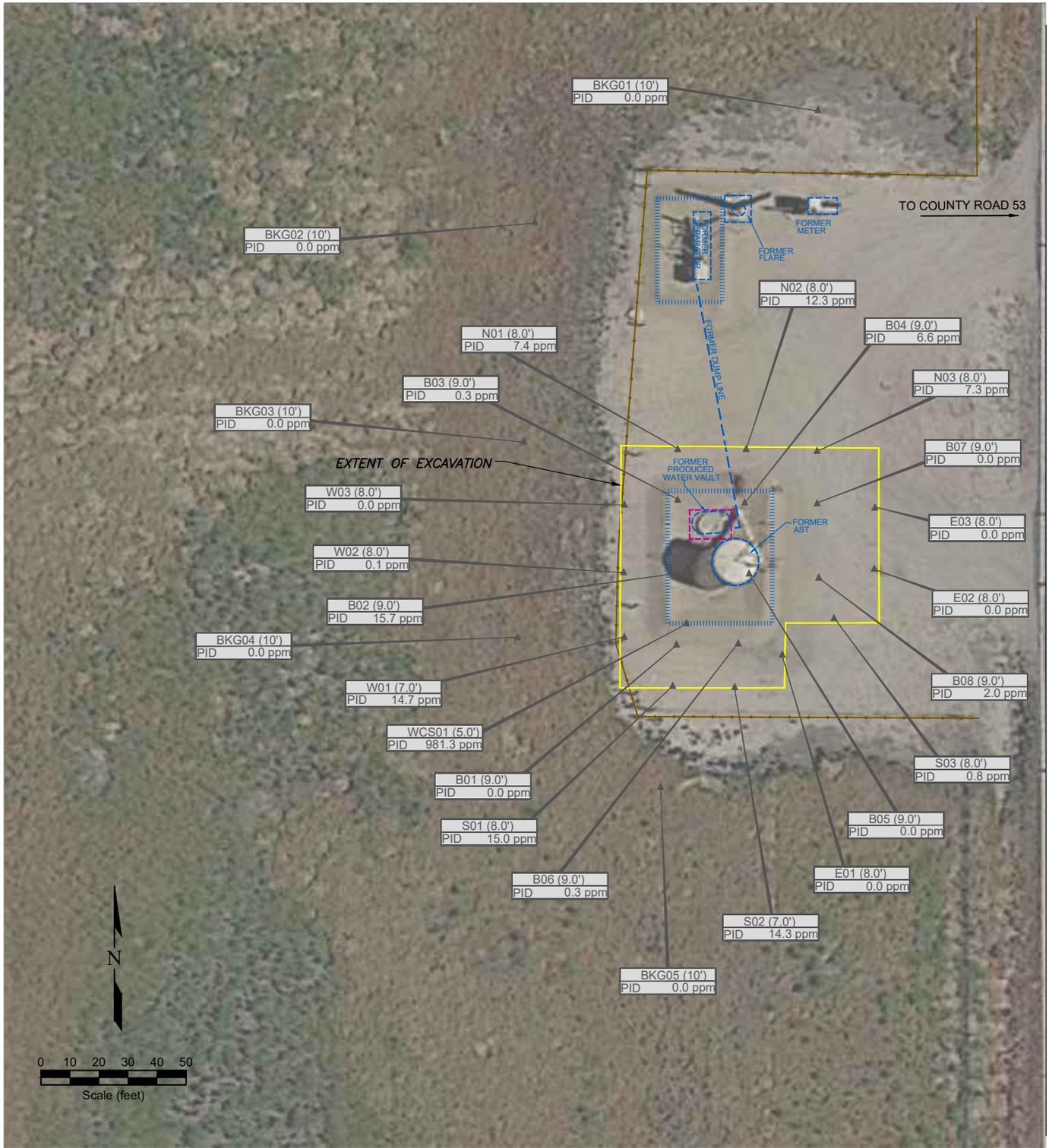
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Energy, Inc. ~ PTF-64N64W 32SENE
SENE Sec. 32, T4N, R64W, 6th PM
Weld County, Colorado
40.271692°, -104.565620°

Project # C022-089	API # 05-123-14878	Facility # 327571
Date 09/21/2023	Remediation # 23226	Filename 22089T





LEGEND

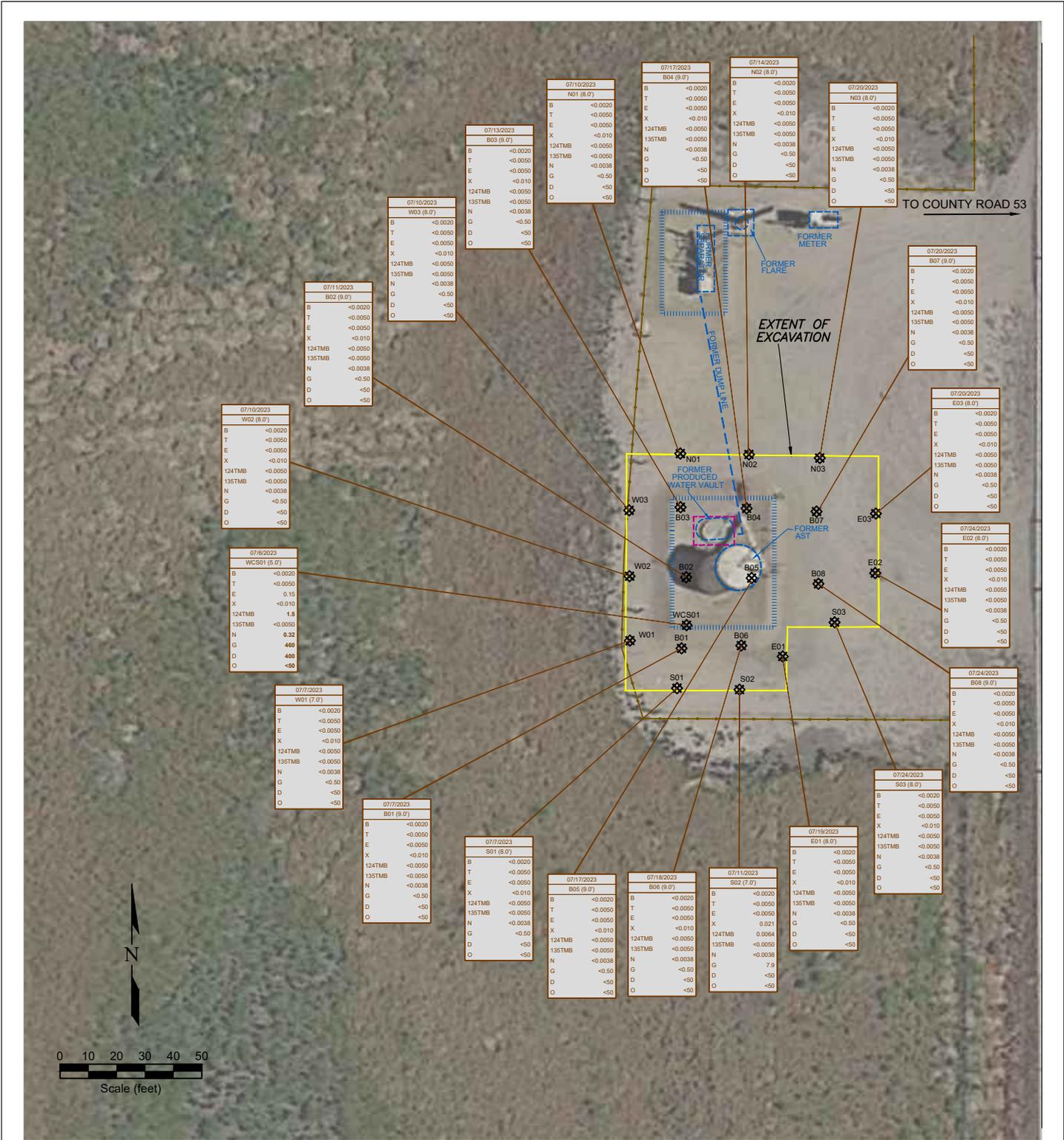
▲ PID READING LOCATION	○ ABOVE GROUND STORAGE TANK	FORMER FACILITY	BUILDING	CONTAINMENT WALL	EXTENT OF EXCAVATION
FORMER EQUIPMENT	FORMER FLARE	FORMER METER	FORMER WATER VAULT	EXTENT OF EXCAVATION	EXTENT OF EXCAVATION
				FENCE LINE	DUMP LINE

**Figure 2
SITE MAP**

Noble Energy, Inc. ~ PTF-64N64W 32SENE
 SENE Sec. 32, T4N, R64W, 6th PM
 Weld County, Colorado
 40.271692°, -104.565620°

Project No. C022-089	API # 05-123-14878	Facility # 327571
Date 9/23/2023	Remediation # 23226	Filename 22089QN2





LEGEND

- SOIL SAMPLE LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- BUILDING
- CONTAINMENT WALL
- EXTENT OF EXCAVATION
- FENCE LINE
- DUMP LINE

7/8/2023	DATE SAMPLED	7/20/2023	DATE SAMPLED
WCS01 (5.0')	SAMPLE ID and DEPTH (ft)	WCS01 (5.0')	SAMPLE ID and DEPTH (ft)
ACE <-0.0020	ACENAPHTHENE (mg/kg)	B <-0.0020	BENZENE (mg/kg)
ANT <-0.0050	ANTHRACENE (mg/kg)	T <-0.0050	TOLUENE (mg/kg)
BAF <-0.0050	BENZO (A) ANTHRACENE (mg/kg)	E <-0.0050	ETHYLBENZENE (mg/kg)
BaP <-0.0050	BENZO (B) FLUORANTHENE (mg/kg)	X <-0.010	TOTAL XYLENES (mg/kg)
ChV <-0.0050	BENZO (K) FLUORANTHENE (mg/kg)	124TMB <-0.0050	1,2,4-TRIMETHYLBENZENE (mg/kg)
DBA/ANT <-0.0050	BENZO (A) PYRENE (mg/kg)	135TMB <-0.0050	1,3,5-TRIMETHYLBENZENE (mg/kg)
FLU <-0.0050	CHRYSENE (mg/kg)	N <-0.0038	NAPHTHALENE (mg/kg)
FL <0.008	DIBENZ (A,H) ANTHRACENE (mg/kg)	G <-0.50	TPH-GRO (mg/kg)
123&4&5&6&7&8&9&10&11&12	FLUORANTHENE (mg/kg)	D <-50	TPH-ORO (mg/kg)
MAN <-0.0050	INDENO (1,2,3-CD) PYRENE (mg/kg)	O <-50	
2MN <-0.0050	1-METHYLNAPHTHALENE (mg/kg)		
PY <-0.0050	2-METHYLNAPHTHALENE (mg/kg)		
	PYRENE (mg/kg)		

8/23/2023	DATE SAMPLED	8/23/2023	DATE SAMPLED
WCS01 (13.0')	SAMPLE ID & DEPTH (ft)	AA <0.999	ARSENIC (mg/kg)
BA <-0.0050		BAR <0.999	BARIUM (mg/kg)
CB <-0.246		CA <-0.246	CADMIUM (mg/kg)
CU <2.39		CO <2.39	COPPER (mg/kg)
FE <5.97		NI <5.97	NICKEL (mg/kg)
HC <-0.280		SE <-0.280	SELENIUM (mg/kg)
AG <-0.024		SI <-0.024	SILVER (mg/kg)
CR/10 <-0.39		HE <-0.39	HEXAVALENT CHROMIUM (mg/kg)
Z <9.95		Z <9.95	ZINC (mg/kg)

**Figure 3
ORGANIC SOIL CHEMISTRY MAP**

**Noble Energy, Inc. ~ PTF-64N64W 32SENE
SENE Sec. 32, T4N, R64W, 6th PM
Weld County, Colorado
40.271692°, -104.565620°**

Project No. C022-089	API # 05-123-14878	Facility # 327571
Date 9/23/2023	Remediation # 23226	Filename 22089QN3

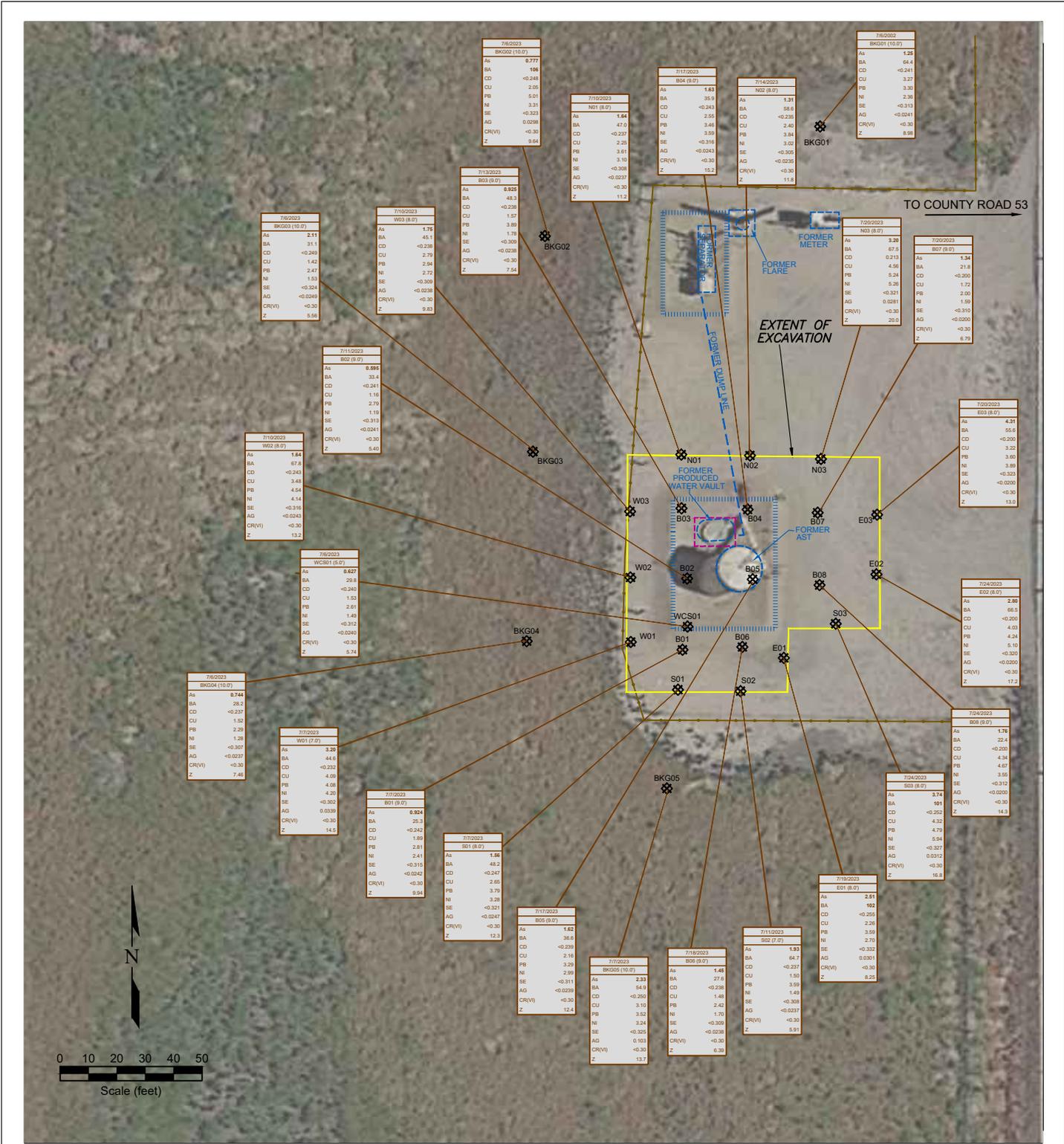


Figure 5
METALS IN SOIL CHEMISTRY MAP

Noble Energy, Inc. ~ PTF-64N64W 32SENE
 SENE Sec. 32, T4N, R64W, 6th PM
 Weld County, Colorado
 40.271692° , -104.565620°

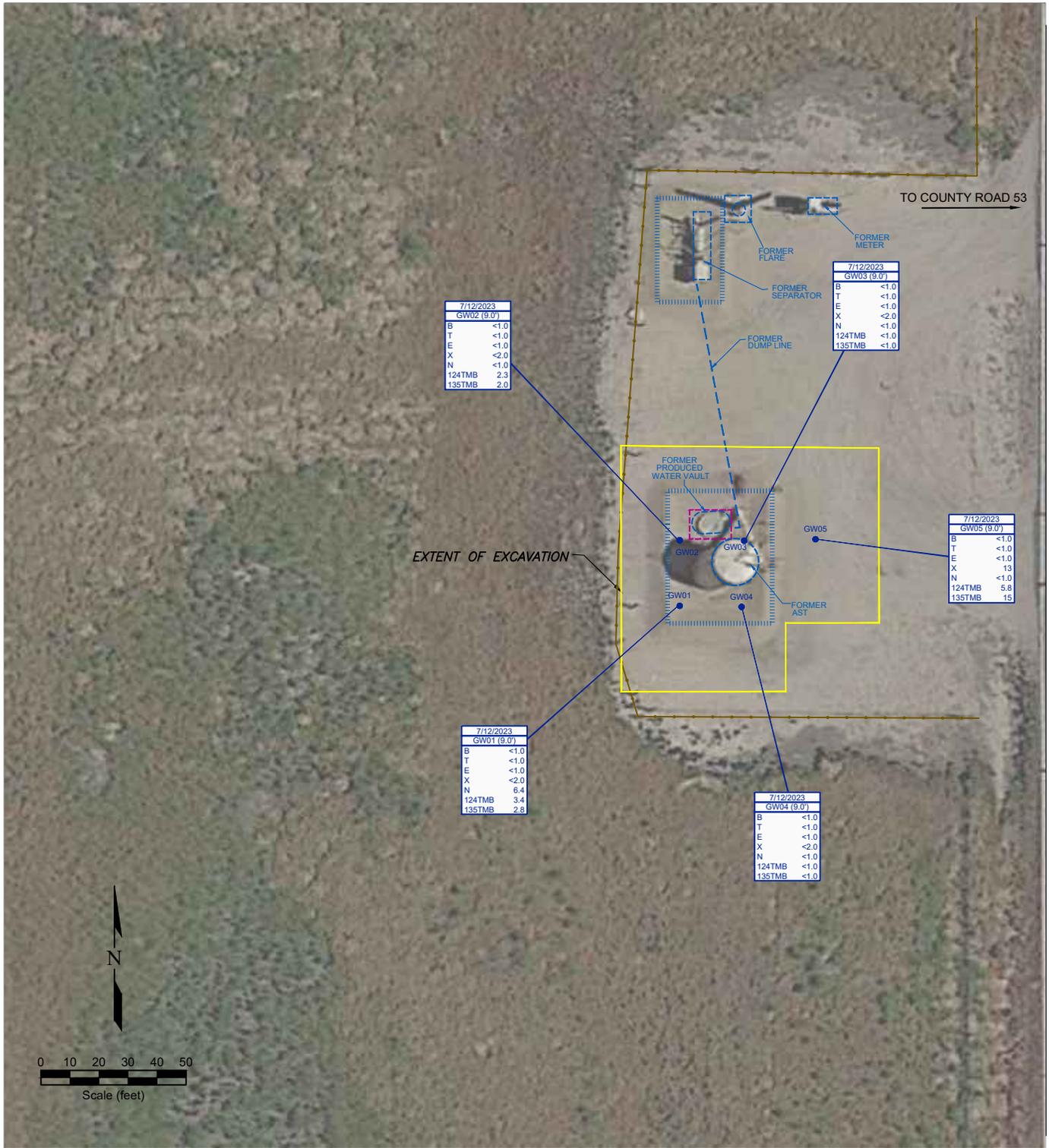
LEGEND

- SOIL SAMPLE LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- FORMER BUILDING
- BUILDING
- CONTAINMENT WALL
- EXTENT OF EXCAVATION
- EXTENT OF EXCAVATION
- FENCE LINE
- DUMP LINE

7/6/2023	DATE SAMPLED	7/6/2023	DATE SAMPLED
WCS01 (5.0')	SAMPLE ID and DEPTH (ft)	WCS01 (5.0')	SAMPLE ID and DEPTH (ft)
ACE	ACENAPHTHENE (mg/kg)	B	BENZENE (mg/kg)
ANT	ANTHRACENE (mg/kg)	T	TOLUENE (mg/kg)
BA	BENZO (A) ANTHRACENE (mg/kg)	E	ETHYLBENZENE (mg/kg)
BAF	BENZO (B) FLUORANTHENE (mg/kg)	X	TOTAL XYLENES (mg/kg)
BaP	BENZO (K) FLUORANTHENE (mg/kg)	1,2,4TMB	1,2,4-TRIMETHYLBENZENE (mg/kg)
Chv	BENZO (A) PYRENE (mg/kg)	1,3,5TMB	1,3,5-TRIMETHYLBENZENE (mg/kg)
DBA/ANT	CHRYSENE (mg/kg)	N	NAPHTHALENE (mg/kg)
FLU	DIBENZ (A,H) ANTHRACENE (mg/kg)	D	TPH-GRO (mg/kg)
FL	FLUORANTHENE (mg/kg)	D	TPH-ORO (mg/kg)
1,2,3,4,6,8P	INDENO (1,2,3-CD) PYRENE (mg/kg)		
MAN	1-METHYLNAPHTHALENE (mg/kg)		
2MN	2-METHYLNAPHTHALENE (mg/kg)		
PY	PYRENE (mg/kg)		

7/6/2023	DATE SAMPLED	7/6/2023	DATE SAMPLED
WCS01 (5.0')	SAMPLE ID & DEPTH (ft)	WCS01 (5.0')	SAMPLE ID & DEPTH (ft)
PH	SAR (units)	AS	ARSENIC (mg/kg)
EC	EC (microhm/cm)	BA	BARIUM (mg/kg)
B	BORON (mg/L)	CU	CADMIUM (mg/kg)
		PB	COPPER (mg/kg)
		NI	COBALT (mg/kg)
		AG	SILVER (mg/kg)
		CR(VI)	HEXAVALENT CHROMIUM (mg/kg)
		Z	ZINC (mg/kg)

Project No. C022-089	API # 05-123-14878	Facility # 327571	
Date 9/23/2023	Remediation # 23226	Filename 22089QN5	



LEGEND

- WATER SAMPLE LOCATION
- ABOVE GROUND STORAGE TANK
- FORMER FACILITY
- BUILDING
- BUILDING
- CONTAINMENT WALL
- EXTENT OF EXCAVATION
- EXTENT OF EXCAVATION
- FENCE LINE
- DUMP LINE

DATE SAMPLED	SAMPLE ID & DEPTH (ft)
7/12/2023	GW01 (9.0')
B	<1.0
T	<1.0
E	<1.0
X	<2.0
N	6.4
124TMB	3.4
135TMB	2.8

Figure 7

GROUNDWATER CHEMISTRY MAP

Noble Energy, Inc. ~ PTF-64N64W 32SENE
 SENE Sec. 32, T4N, R64W, 6th PM
 Weld County, Colorado
 40.271692°, -104.565620°

Project No. C022-089	API # 05-123-14878	Facility # 327571
Date 9/22/23	Remediation # 23226	Filename 22089QN2



APPENDIX A

PHOTO LOG



Description:

PTF-64N64W 32SENE (Northern Facility) - Waste Characterization Sample - WCS01@5.0' - Staining and Odor Present - PID 981.3pp



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - First Base Sample - B01@9.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Second Base Sample - B02@9.0' - No Impacts Noted - PID 15.7ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Third Base Sample - B03@9.0' - No Impacts Noted - PID 0.3ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Fourth Base Sample - B04@9.0' - No Impacts Noted - PID 6.6ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Fifth Base Sample - B05@9.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Sixth Base Sample - B06@9.0' - No Impacts Noted - PID 0.3ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Seventh Base Sample - B07@9.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Floor of Excavation - Eighth Base Sample - B08@9.0' - No Impacts Noted - PID 2.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - North Sidewall of Excavation - Second Sample - N02@8.0' - No Impacts Noted - PID 12.3ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - North Sidewall of Excavation - Third Sample - N03@8.0' - No Impacts Noted - PID 7.3ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - South Sidewall of Excavation - First Sample - S01@8.0' - No Impacts Noted - PID 15.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - South Sidewall of Excavation - Second Sample - S02@7.0' - No Impacts Noted - PID 14.3ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - South Sidewall of Excavation - Third Sample - S03@8.0' - No Impacts Noted - PID 0.8ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - East Sidewall of Excavation - First Sample - E01@8.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - East Sidewall of Excavation - Second Sample - E02@8.0' - No Impacts Noted - PID 1.2ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - East Sidewall of Excavation - Third Sample - E03@8.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - West Sidewall of Excavation - First Sample - W01@7.0' - No Impacts Noted - PID 14.7ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - West Sidewall of Excavation - Second Sample - W02@8.0' - No Impacts Noted - PID 0.1ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - West Sidewall of Excavation - Third Sample - W03@8.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - First Groundwater Sample - GW01 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Second Groundwater Sample - GW02 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Third Groundwater Sample - GW03 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Fourth Groundwater Sample - GW04 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Fifth Groundwater Sample - GW05 - No Odor or Sheen - Depth to Groundwater - 9.0 Feet



Description:

PTF-64N64W 32SENE (Northern Facility) - First Local Background Sample - BKG01@10.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Second Local Background Sample - BKG02@10.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Third Local Background Sample - BKG03@10.0' - No Impacts Noted - PID 0.0ppm



Description:

PTF-64N64W 32SENE (Northern Facility) - Fourth Local Background Sample - BKG04@10.0' - No Impacts Noted - PID 0.0ppm

Photo Log



Description:

PTF-64N64W 32SENE (Northern Facility) - Fifth Local Background Sample - BKG05@10.0' - No Impacts Noted - PID 0.0ppm

APPENDIX B

LABORATORY DOCUMENTATION

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 12, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

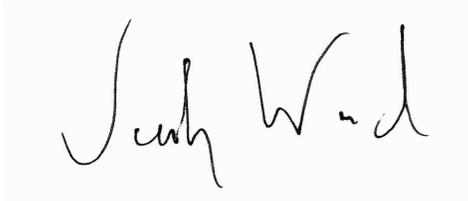
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307064

Enclosed are the results of analyses for samples received by Summit Scientific on 07/06/23 16:58. 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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
WCS01@5.0'	2307064-01	Soil	07/06/23 00:00	07/06/23 16:58
BKG01@10.0'	2307064-02	Soil	07/06/23 00:00	07/06/23 16:58
BKG02@10.0'	2307064-03	Soil	07/06/23 00:00	07/06/23 16:58
BKG03@10.0'	2307064-04	Soil	07/06/23 00:00	07/06/23 16:58
BKG04@10.0'	2307064-05	Soil	07/06/23 00:00	07/06/23 16:58

Summit Scientific

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

SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307064	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henchan	Company: Noble
City/State/Zip:	E-Mail: Paulh@Fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeff@Fremontenv.com Ethamb@Fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWF-A238-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMS (915)	DRO,ORO,GRD	PAHs (915)	EC,PH,SAR, Boron	Metals (915)			
1	WCS01@5.0'	7/6/23		2			X														
2	BK601@10.0'	↓		1																	
3	BK602@10.0'	↓		1																	
4	BK603@10.0'	↓		1																	
5	BK604@10.0'	↓		1																	
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <i>[Signature]</i>	Date/Time: 7/6/23 16:57	Received by: <i>[Signature]</i>	Date/Time: 7/6/23 16:58	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 22.5	Corrected Temperature	IR gun #: 2	HNO3 lot #:	Standard	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2307064

Client: Fremont Client Project ID: PTF-64N64W 32 SENE

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

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

Temp (°C) 22.5 Thermometer # 2

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

Vah Ward
Custodian Printed Name

7/6/23 16:58
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

WCS01@5.0'
2307064-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGG0151	07/06/23	07/07/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	0.15	0.0050		"	"	"	"	"	"	
Xylenes (total)	ND	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	1.5	0.050		"	10	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	1	"	"	"	"	
Naphthalene	0.32	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	460	5.0		"	10	"	"	"	"	

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		88.3 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		112 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		421 %		50-150		"	"	"	"	S-02

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	400	50		mg/kg	1	BGG0152	07/06/23	07/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		105 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

WCS01@5.0'
2307064-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0153	07/07/23	07/08/23	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	0.0365	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	0.161	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	0.218	0.00500		"	"	"	"	"	"	E

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		71.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		75.2 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.110	0.0100		mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

WCS01@5.0'
2307064-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.627	0.240		mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	29.8	0.479		"	"	"	"	"	"	
Cadmium	ND	0.240		"	"	"	"	"	"	
Copper	1.53	0.479		"	"	"	"	"	"	
Lead	2.61	0.240		"	"	"	"	"	"	
Nickel	1.49	0.479		"	"	"	"	"	"	
Selenium	ND	0.312	0.210	"	"	"	"	"	"	
Silver	ND	0.0240		"	"	"	"	"	"	
Zinc	5.74	0.479		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/06/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: 07/06/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	47.3	0.0599		mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	45.7	0.0599		"	"	"	"	"	"	
Sodium	64.6	0.0599		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/06/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.61	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

WCS01@5.0'
2307064-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.5			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.66	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.23			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

BKG01@10.0'
2307064-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.246	0.0100		mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	1.25	0.241		mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	64.0	0.482		"	"	"	"	"	"	
Cadmium	ND	0.241		"	"	"	"	"	"	
Copper	3.27	0.482		"	"	"	"	"	"	
Lead	3.30	0.241		"	"	"	"	"	"	
Nickel	2.36	0.482		"	"	"	"	"	"	
Selenium	ND	0.313	0.211	"	"	"	"	"	"	
Silver	ND	0.0241		"	"	"	"	"	"	
Zinc	8.98	0.482		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	50.7	0.0602		mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	34.0	0.0602		"	"	"	"	"	"	
Sodium	62.0	0.0602		"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

BKG01@10.0'
2307064-02 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.65	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.0			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.23	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.83			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG02@10.0'
2307064-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0760	0.0100		mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.777	0.248		mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	106	0.496		"	"	"	"	"	"	
Cadmium	ND	0.248		"	"	"	"	"	"	
Copper	2.05	0.496		"	"	"	"	"	"	
Lead	5.01	0.248		"	"	"	"	"	"	
Nickel	3.31	0.496		"	"	"	"	"	"	
Selenium	ND	0.323	0.217	"	"	"	"	"	"	
Silver	0.0298	0.0248		"	"	"	"	"	"	
Zinc	9.64	0.496		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	41.8	0.0620		mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	16.7	0.0620		"	"	"	"	"	"	
Sodium	40.8	0.0620		"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

BKG02@10.0'
2307064-03 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.35	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.6			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.04	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.84			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG03@10.0'
2307064-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.0515	0.0100		mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.11	0.249		mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	31.1	0.499		"	"	"	"	"	"	
Cadmium	ND	0.249		"	"	"	"	"	"	
Copper	1.42	0.499		"	"	"	"	"	"	
Lead	2.47	0.249		"	"	"	"	"	"	
Nickel	1.53	0.499		"	"	"	"	"	"	
Selenium	ND	0.324	0.218	"	"	"	"	"	"	
Silver	ND	0.0249		"	"	"	"	"	"	
Zinc	5.56	0.499		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	110	0.0623		mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	48.9	0.0623		"	"	"	"	"	"	
Sodium	89.1	0.0623		"	"	"	"	"	"	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

BKG03@10.0'
2307064-04 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.78	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.2			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.70	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.78			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

Summit Scientific

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PO Box 1289
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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

BKG04@10.0'
2307064-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.125	0.0100		mg/L	1	BGG0196	07/07/23	07/10/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	0.744	0.237		mg/kg dry	1	BGG0156	07/07/23	07/08/23	EPA 6020B	
Barium	28.2	0.473		"	"	"	"	"	"	
Cadmium	ND	0.237		"	"	"	"	"	"	
Copper	1.52	0.473		"	"	"	"	"	"	
Lead	2.29	0.237		"	"	"	"	"	"	
Nickel	1.28	0.473		"	"	"	"	"	"	
Selenium	ND	0.307	0.207	"	"	"	"	"	"	
Silver	ND	0.0237		"	"	"	"	"	"	
Zinc	7.46	0.473		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0158	07/07/23	07/07/23	EPA 7196A	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	32.3	0.0591		mg/L dry	1	BGG0148	07/06/23	07/10/23	EPA 6020B	
Magnesium	18.0	0.0591		"	"	"	"	"	"	
Sodium	56.2	0.0591		"	"	"	"	"	"	

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

BKG04@10.0'
2307064-05 (Soil)

Summit Scientific

Calculated Analysis

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.97	0.00100		units	1	BGG0255	07/10/23	07/10/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	84.6			%	1	BGG0159	07/07/23	07/07/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.884	0.0100		mmhos/cm	1	BGG0190	07/07/23	07/07/23	EPA 120.1	

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

Date Sampled: **07/06/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.93			pH Units	1	BGG0191	07/07/23	07/07/23	EPA 9045D	

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

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 BGG0151 - EPA 5030 Soil MS

Blank (BGG0151-BLK1)

Prepared: 07/06/23 Analyzed: 07/07/23

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>	0.0593		"	0.0400		148	50-150			
<i>Surrogate: Toluene-d8</i>	0.0308		"	0.0400		77.0	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0335		"	0.0400		83.8	50-150			

LCS (BGG0151-BS1)

Prepared: 07/06/23 Analyzed: 07/07/23

Benzene	0.173	0.0020	mg/kg	0.150		115	70-130			
Toluene	0.156	0.0050	"	0.150		104	70-130			
Ethylbenzene	0.160	0.0050	"	0.150		107	70-130			
m,p-Xylene	0.321	0.010	"	0.300		107	70-130			
o-Xylene	0.159	0.0050	"	0.150		106	70-130			
1,2,4-Trimethylbenzene	0.189	0.0050	"	0.150		126	70-130			
1,3,5-Trimethylbenzene	0.187	0.0050	"	0.150		124	70-130			
Naphthalene	0.171	0.0038	"	0.150		114	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0546		"	0.0400		137	50-150			
<i>Surrogate: Toluene-d8</i>	0.0305		"	0.0400		76.3	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0316		"	0.0400		79.0	50-150			

Matrix Spike (BGG0151-MS1)

Source: 2307062-01

Prepared: 07/06/23 Analyzed: 07/07/23

Benzene	0.174	0.0020	mg/kg	0.150	ND	116	70-130			
Toluene	0.156	0.0050	"	0.150	ND	104	70-130			
Ethylbenzene	0.158	0.0050	"	0.150	ND	105	70-130			
m,p-Xylene	0.317	0.010	"	0.300	ND	106	70-130			
o-Xylene	0.158	0.0050	"	0.150	ND	105	70-130			
1,2,4-Trimethylbenzene	0.190	0.0050	"	0.150	ND	126	70-130			
1,3,5-Trimethylbenzene	0.186	0.0050	"	0.150	ND	124	70-130			
Naphthalene	0.163	0.0038	"	0.150	ND	108	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0573		"	0.0400		143	50-150			
<i>Surrogate: Toluene-d8</i>	0.0305		"	0.0400		76.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0324		"	0.0400		81.0	50-150			

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Fremont Environmental
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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

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		

Batch BGG0151 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0151-MSD1)	Source: 2307062-01			Prepared: 07/06/23 Analyzed: 07/07/23						
Benzene	0.174	0.0020	mg/kg	0.150	ND	116	70-130	0.0172	30	
Toluene	0.157	0.0050	"	0.150	ND	104	70-130	0.230	30	
Ethylbenzene	0.161	0.0050	"	0.150	ND	107	70-130	1.60	30	
m,p-Xylene	0.322	0.010	"	0.300	ND	107	70-130	1.40	30	
o-Xylene	0.160	0.0050	"	0.150	ND	107	70-130	1.34	30	
1,2,4-Trimethylbenzene	0.188	0.0050	"	0.150	ND	125	70-130	0.858	30	
1,3,5-Trimethylbenzene	0.185	0.0050	"	0.150	ND	123	70-130	0.534	30	
Naphthalene	0.172	0.0038	"	0.150	ND	115	70-130	5.78	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0566</i>		<i>"</i>	<i>0.0400</i>		<i>142</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0308</i>		<i>"</i>	<i>0.0400</i>		<i>76.9</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0315</i>		<i>"</i>	<i>0.0400</i>		<i>78.8</i>	<i>50-150</i>			

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

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 BGG0152 - EPA 3550A

Blank (BGG0152-BLK1)

Prepared: 07/06/23 Analyzed: 07/07/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.2		"	12.5		81.3	30-150				

LCS (BGG0152-BS1)

Prepared: 07/06/23 Analyzed: 07/07/23

C10-C28 (DRO)	491	50	mg/kg	500		98.1	70-130				
Surrogate: <i>o</i> -Terphenyl	11.6		"	12.5		92.6	30-150				

Matrix Spike (BGG0152-MS1)

Source: 2307062-01

Prepared: 07/06/23 Analyzed: 07/07/23

C10-C28 (DRO)	431	50	mg/kg	500	15.6	83.2	70-130				
Surrogate: <i>o</i> -Terphenyl	15.7		"	12.5		126	30-150				

Matrix Spike Dup (BGG0152-MSD1)

Source: 2307062-01

Prepared: 07/06/23 Analyzed: 07/07/23

C10-C28 (DRO)	429	50	mg/kg	500	15.6	82.7	70-130	0.586	20		
Surrogate: <i>o</i> -Terphenyl	14.3		"	12.5		115	30-150				

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGG0153 - EPA 5030 Soil MS

Blank (BGG0153-BLK1)

Prepared & Analyzed: 07/07/23

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>0.0278</i>		"	<i>0.0333</i>		<i>83.5</i>		<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0341</i>		"	<i>0.0333</i>		<i>102</i>		<i>40-150</i>			

LCS (BGG0153-BS1)

Prepared & Analyzed: 07/07/23

Acenaphthene	0.0326	0.00500	mg/kg	0.0333	97.9	31-137
Anthracene	0.0324	0.00500	"	0.0333	97.1	30-120
Benzo (a) anthracene	0.0266	0.00500	"	0.0333	79.8	30-120
Benzo (a) pyrene	0.0306	0.00500	"	0.0333	91.7	30-120
Benzo (b) fluoranthene	0.0281	0.00500	"	0.0333	84.2	30-120
Benzo (k) fluoranthene	0.0284	0.00500	"	0.0333	85.1	30-120
Chrysene	0.0334	0.00500	"	0.0333	100	30-120
Dibenz (a,h) anthracene	0.0340	0.00500	"	0.0333	102	30-120
Fluoranthene	0.0325	0.00500	"	0.0333	97.6	30-120
Fluorene	0.0313	0.00500	"	0.0333	93.9	30-120
Indeno (1,2,3-cd) pyrene	0.0301	0.00500	"	0.0333	90.3	30-120
Pyrene	0.0334	0.00500	"	0.0333	100	35-142
1-Methylnaphthalene	0.0173	0.00500	"	0.0333	51.8	35-142
2-Methylnaphthalene	0.0251	0.00500	"	0.0333	75.3	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0301</i>		"	<i>0.0333</i>	<i>90.4</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0372</i>		"	<i>0.0333</i>	<i>112</i>	<i>40-150</i>

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

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 BGG0153 - EPA 5030 Soil MS

Matrix Spike (BGG0153-MS1)	Source: 2307051-01			Prepared & Analyzed: 07/07/23						
Acenaphthene	0.0135	0.00500	mg/kg	0.0333	ND	40.4	31-137			
Anthracene	0.0162	0.00500	"	0.0333	ND	48.7	30-120			
Benzo (a) anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120			
Benzo (a) pyrene	0.0142	0.00500	"	0.0333	ND	42.7	30-120			
Benzo (b) fluoranthene	0.0145	0.00500	"	0.0333	ND	43.6	30-120			
Benzo (k) fluoranthene	0.0146	0.00500	"	0.0333	ND	43.8	30-120			
Chrysene	0.0141	0.00500	"	0.0333	ND	42.2	30-120			
Dibenz (a,h) anthracene	0.0136	0.00500	"	0.0333	ND	40.9	30-120			
Fluoranthene	0.0141	0.00500	"	0.0333	ND	42.2	30-120			
Fluorene	0.0150	0.00500	"	0.0333	ND	44.9	30-120			
Indeno (1,2,3-cd) pyrene	0.0137	0.00500	"	0.0333	ND	41.2	30-120			
Pyrene	0.0151	0.00500	"	0.0333	ND	45.4	35-142			
1-Methylnaphthalene	0.0139	0.00500	"	0.0333	ND	41.7	15-130			
2-Methylnaphthalene	0.0149	0.00500	"	0.0333	ND	44.7	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0170		"	0.0333		51.1	40-150			
Surrogate: Fluoranthene-d10	0.0139		"	0.0333		41.6	40-150			

Matrix Spike Dup (BGG0153-MSD1)	Source: 2307051-01			Prepared & Analyzed: 07/07/23						
Acenaphthene	0.0141	0.00500	mg/kg	0.0333	ND	42.3	31-137	4.77	30	
Anthracene	0.0152	0.00500	"	0.0333	ND	45.6	30-120	6.61	30	
Benzo (a) anthracene	0.0144	0.00500	"	0.0333	ND	43.1	30-120	19.1	30	
Benzo (a) pyrene	0.0156	0.00500	"	0.0333	ND	46.7	30-120	8.76	30	
Benzo (b) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.2	30-120	3.26	30	
Benzo (k) fluoranthene	0.0137	0.00500	"	0.0333	ND	41.2	30-120	6.11	30	
Chrysene	0.0133	0.00500	"	0.0333	ND	40.0	30-120	5.27	30	
Dibenz (a,h) anthracene	0.0149	0.00500	"	0.0333	ND	44.8	30-120	9.22	30	
Fluoranthene	0.0152	0.00500	"	0.0333	ND	45.5	30-120	7.55	30	
Fluorene	0.0137	0.00500	"	0.0333	ND	41.2	30-120	8.43	30	
Indeno (1,2,3-cd) pyrene	0.0138	0.00500	"	0.0333	ND	41.5	30-120	0.752	30	
Pyrene	0.0142	0.00500	"	0.0333	ND	42.6	35-142	6.25	30	
1-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	45.9	15-130	9.69	50	
2-Methylnaphthalene	0.0137	0.00500	"	0.0333	ND	41.1	15-130	8.52	50	
Surrogate: 2-Methylnaphthalene-d10	0.0158		"	0.0333		47.4	40-150			
Surrogate: Fluoranthene-d10	0.0190		"	0.0333		57.0	40-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

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 BGG0196 - EPA 3050B

Blank (BGG0196-BLK1)				Prepared: 07/07/23 Analyzed: 07/10/23							
Boron	ND	0.0100	mg/L								
LCS (BGG0196-BS1)				Prepared: 07/07/23 Analyzed: 07/10/23							
Boron	4.19	0.0100	mg/L	5.00	83.7	80-120					
Duplicate (BGG0196-DUP1)				Source: 2307014-01		Prepared: 07/07/23 Analyzed: 07/10/23					
Boron	0.0776	0.0100	mg/L		0.102			27.2	20		QR-01
Matrix Spike (BGG0196-MS1)				Source: 2307014-01		Prepared: 07/07/23 Analyzed: 07/10/23					
Boron	3.81	0.0100	mg/L	5.00	0.102	74.2	75-125				QM-07
Matrix Spike Dup (BGG0196-MSD1)				Source: 2307014-01		Prepared: 07/07/23 Analyzed: 07/10/23					
Boron	4.44	0.0100	mg/L	5.00	0.102	86.7	75-125	15.1	25		

Summit Scientific

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 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0156 - EPA 3050B

Blank (BGG0156-BLK1)

Prepared & Analyzed: 07/07/23

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 (BGG0156-BS1)

Prepared & Analyzed: 07/07/23

Arsenic	35.2	0.200	mg/kg wet	40.0	87.9	80-120
Barium	32.0	0.400	"	40.0	80.1	80-120
Cadmium	1.83	0.200	"	2.00	91.5	80-120
Copper	35.7	0.400	"	40.0	89.3	80-120
Lead	16.1	0.200	"	20.0	80.5	80-120
Nickel	35.3	0.400	"	40.0	88.3	80-120
Selenium	3.50	0.260	"	4.00	87.5	80-120
Silver	1.87	0.0200	"	2.00	93.3	80-120
Zinc	35.8	0.400	"	40.0	89.6	80-120

Duplicate (BGG0156-DUP1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

Arsenic	0.826	0.236	mg/kg dry	0.969	16.0	20	
Barium	38.6	0.471	"	46.0	17.6	20	
Cadmium	0.0843	0.236	"	0.106	23.2	20	QR-01
Copper	1.49	0.471	"	1.65	10.3	20	
Lead	4.87	0.236	"	5.84	18.1	20	
Nickel	2.10	0.471	"	2.53	18.2	20	
Selenium	ND	0.306	"	ND		20	
Silver	0.0160	0.0236	"	0.0188	16.2	20	
Zinc	7.34	0.471	"	7.90	7.33	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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

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 BGG0156 - EPA 3050B

Matrix Spike (BGG0156-MS1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

Arsenic	16.9	0.236	mg/kg dry	47.1	0.969	33.8	75-125				QM-07
Barium	89.6	0.471	"	47.1	46.0	92.4	75-125				
Cadmium	2.14	0.236	"	2.36	0.106	86.5	75-125				
Copper	18.9	0.471	"	47.1	1.65	36.5	75-125				QM-07
Lead	25.6	0.236	"	23.6	5.84	84.0	75-125				
Nickel	19.5	0.471	"	47.1	2.53	36.0	75-125				QM-07
Selenium	4.21	0.306	"	4.71	ND	89.3	75-125				
Silver	2.05	0.0236	"	2.36	0.0188	86.0	75-125				
Zinc	24.3	0.471	"	47.1	7.90	34.8	75-125				QM-07

Matrix Spike Dup (BGG0156-MSD1)

Source: 2307014-01

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

Arsenic	16.7	0.236	mg/kg dry	47.1	0.969	33.4	75-125	1.04	25		QM-07
Barium	80.8	0.471	"	47.1	46.0	73.8	75-125	10.3	25		QM-07
Cadmium	1.96	0.236	"	2.36	0.106	78.8	75-125	8.83	25		
Copper	18.5	0.471	"	47.1	1.65	35.9	75-125	1.67	25		QM-07
Lead	23.2	0.236	"	23.6	5.84	73.8	75-125	9.85	25		QM-07
Nickel	19.0	0.471	"	47.1	2.53	34.9	75-125	2.51	25		QM-07
Selenium	3.67	0.306	"	4.71	ND	77.9	75-125	13.7	25		
Silver	1.87	0.0236	"	2.36	0.0188	78.7	75-125	8.85	25		
Zinc	24.2	0.471	"	47.1	7.90	34.6	75-125	0.299	25		QM-07

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0158 - 3060A Mod

Blank (BGG0158-BLK1)

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0158-BS1)

Prepared & Analyzed: 07/07/23

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

Duplicate (BGG0158-DUP1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0158-MS1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent 27.6 0.30 mg/kg dry 29.4 ND 93.8 75-125

Matrix Spike Dup (BGG0158-MSD1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

Chromium, Hexavalent 25.7 0.30 mg/kg dry 29.4 ND 87.4 75-125 7.06 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

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 BGG0148 - General Preparation

Blank (BGG0148-BLK1)

Prepared: 07/06/23 Analyzed: 07/10/23

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

LCS (BGG0148-BS1)

Prepared: 07/06/23 Analyzed: 07/10/23

Calcium	4.24	0.0500	mg/L wet	5.00		84.7	70-130			
Magnesium	4.41	0.0500	"	5.00		88.2	70-130			
Sodium	4.32	0.0500	"	5.00		86.4	70-130			

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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

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 BGG0159 - General Preparation

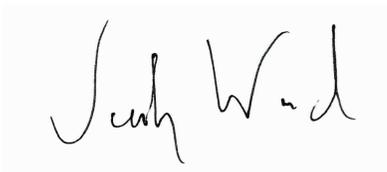
Duplicate (BGG0159-DUP1)

Source: 2307014-01

Prepared & Analyzed: 07/07/23

% Solids	84.8		%		84.9			0.136	20	
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Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

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 BGG0190 - General Preparation

Blank (BGG0190-BLK1)

Prepared & Analyzed: 07/07/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0190-BS1)

Prepared & Analyzed: 07/07/23

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

Duplicate (BGG0190-DUP1)

Source: 2307062-01

Prepared & Analyzed: 07/07/23

Specific Conductance (EC) 0.559 0.0100 mmhos/cm 0.586 4.70 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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/12/23 08:25

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 BGG0191 - General Preparation

LCS (BGG0191-BS1)

Prepared & Analyzed: 07/07/23

pH	9.20	pH Units	9.18	100	95-105
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Duplicate (BGG0191-DUP1)

Source: 2307062-01

Prepared & Analyzed: 07/07/23

pH	7.94	pH Units	7.90	0.505	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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/12/23 08:25

Notes and Definitions

- S-02 The surrogate recovery for this sample cannot be accurately quantified due to interference from coeluting organic compounds present in the sample extract.
- 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.
- 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 80401

303.277.9310

July 13, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

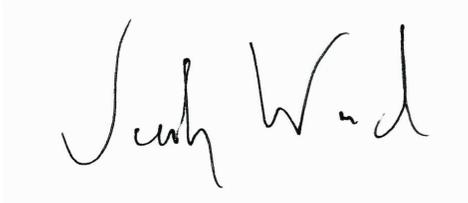
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307093

Enclosed are the results of analyses for samples received by Summit Scientific on 07/07/23 16:20. 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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B01@9.0'	2307093-01	Soil	07/07/23 00:00	07/07/23 16:20
S01@8.0'	2307093-02	Soil	07/07/23 00:00	07/07/23 16:20
W01@7.0'	2307093-03	Soil	07/07/23 00:00	07/07/23 16:20
Imported Fill	2307093-04	Soil	07/07/23 00:00	07/07/23 16:20
BKG05@10.0'	2307093-05	Soil	07/07/23 00:00	07/07/23 16:20

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.

SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307093	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henehan	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeffg@fremontenv.com Ethanb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DR3ORO, GRO	PAHs (915)	EC, pH, SAR, Boron		Metals (915)
1	Bo1@9.0'	7/7/23		0			X												
2	So1@8.0'																		
3	Wo1@7.0'																		
4	Imported Fill																		
5	BKG05@10.0'			1															
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by:	Date/Time: 7/7/23 16:20	Received by:	Date/Time: 7/7/23 16:20	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 21.9	Corrected Temperature	IR gun #:		Standard	Field Turb.	HNO3 lot #:

S₂

Sample Receipt Checklist

S2 Work Order# 2307093

Client: Fremont Client Project ID: PTF-64N64W 3ZSENE

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

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

Temp (°C)

Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on file
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"/>	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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	NO sample times
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.

Veh Wad
Custodian Printed Name

7/7/23 16:20
Date/Time



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

B01@9.0'
2307093-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0203	07/07/23	07/07/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		79.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0202	07/07/23	07/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		92.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

B01@9.0'
2307093-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0208	07/10/23	07/10/23	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: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		88.4 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		104 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0876	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

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

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

B01@9.0'
2307093-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.924	0.242		mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B	
Barium	25.3	0.484		"	"	"	"	"	"	
Cadmium	ND	0.242		"	"	"	"	"	"	
Copper	1.89	0.484		"	"	"	"	"	"	
Lead	2.81	0.242		"	"	"	"	"	"	
Nickel	2.41	0.484		"	"	"	"	"	"	
Selenium	ND	0.315	0.212	"	"	"	"	"	"	
Silver	ND	0.0242		"	"	"	"	"	"	
Zinc	9.94	0.484		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	45.2	0.0605		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	20.3	0.0605		"	"	"	"	"	"	
Sodium	50.4	0.0605		"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.56	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

B01@9.0'
2307093-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.6			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.900	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.94			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

S01@8.0'
2307093-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0203	07/07/23	07/07/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		86.9 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0202	07/07/23	07/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		94.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

S01@8.0'
2307093-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0208	07/10/23	07/10/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		64.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		98.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.153	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

S01@8.0'
2307093-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.56	0.247		mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B	
Barium	48.2	0.493		"	"	"	"	"	"	
Cadmium	ND	0.247		"	"	"	"	"	"	
Copper	2.65	0.493		"	"	"	"	"	"	
Lead	3.79	0.247		"	"	"	"	"	"	
Nickel	3.28	0.493		"	"	"	"	"	"	
Selenium	ND	0.321	0.216	"	"	"	"	"	"	
Silver	ND	0.0247		"	"	"	"	"	"	
Zinc	12.3	0.493		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.6	0.0617		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	20.8	0.0617		"	"	"	"	"	"	
Sodium	40.2	0.0617		"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.28	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

S01@8.0'
2307093-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	81.1			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.952	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.92			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

W01@7.0'
2307093-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0203	07/07/23	07/07/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		88.5 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0202	07/07/23	07/07/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

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

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

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

W01@7.0'
2307093-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0208	07/10/23	07/10/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		59.0 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.199	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

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

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

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

W01@7.0'
2307093-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.20	0.232		mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B	
Barium	44.6	0.465		"	"	"	"	"	"	
Cadmium	ND	0.232		"	"	"	"	"	"	
Copper	4.09	0.465		"	"	"	"	"	"	
Lead	4.08	0.232		"	"	"	"	"	"	
Nickel	4.20	0.465		"	"	"	"	"	"	
Selenium	ND	0.302	0.203	"	"	"	"	"	"	
Silver	0.0339	0.0232		"	"	"	"	"	"	
Zinc	14.5	0.465		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	27.2	0.0581		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	7.01	0.0581		"	"	"	"	"	"	
Sodium	3.11	0.0581		"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.138	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

W01@7.0'
2307093-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	86.1			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

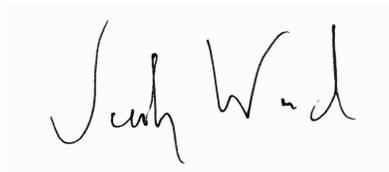
Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.352	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.56			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Imported Fill
2307093-04 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0203	07/07/23	07/07/23	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: **07/07/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		89.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.2 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0202	07/07/23	07/08/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		88.8 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Imported Fill
2307093-04 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0208	07/10/23	07/10/23	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: **07/07/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		59.1 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		70.5 %		40-150		"	"	"	"	"

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.193	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

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

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

Imported Fill
2307093-04 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.69	0.223		mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B	
Barium	51.1	0.446		"	"	"	"	"	"	
Cadmium	ND	0.223		"	"	"	"	"	"	
Copper	4.33	0.446		"	"	"	"	"	"	
Lead	6.42	0.223		"	"	"	"	"	"	
Nickel	5.42	0.446		"	"	"	"	"	"	
Selenium	ND	0.290	0.195	"	"	"	"	"	"	
Silver	ND	0.0223		"	"	"	"	"	"	
Zinc	16.1	0.446		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	10.5	0.0557		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	5.47	0.0557		"	"	"	"	"	"	
Sodium	69.8	0.0557		"	"	"	"	"	"	

Calculated Analysis

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	4.35	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

**Imported Fill
 2307093-04 (Soil)**

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	89.8			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.583	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	8.35			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

BKG05@10.0'
2307093-05 (Soil)

Summit Scientific

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.292	0.0100		mg/L	1	BGG0248	07/10/23	07/11/23	EPA 6020B	

Total Metals by EPA 6020B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Arsenic	2.33	0.250		mg/kg dry	1	BGG0210	07/10/23	07/12/23	EPA 6020B	
Barium	54.9	0.499		"	"	"	"	"	"	
Cadmium	ND	0.250		"	"	"	"	"	"	
Copper	3.10	0.499		"	"	"	"	"	"	
Lead	3.52	0.250		"	"	"	"	"	"	
Nickel	3.24	0.499		"	"	"	"	"	"	
Selenium	ND	0.325	0.218	"	"	"	"	"	"	
Silver	0.103	0.0250		"	"	"	"	"	"	
Zinc	13.7	0.499		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0212	07/10/23	07/10/23	EPA 7196A	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Calcium	45.6	0.0624		mg/L dry	1	BGG0207	07/09/23	07/12/23	EPA 6020B	
Magnesium	41.2	0.0624		"	"	"	"	"	"	
Sodium	93.6	0.0624		"	"	"	"	"	"	

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Fremont Environmental
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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

BKG05@10.0'
2307093-05 (Soil)

Summit Scientific

Calculated Analysis

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.42	0.00100		units	1	BGG0356	07/12/23	07/12/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.1			%	1	BGG0214	07/10/23	07/10/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.44	0.0100		mmhos/cm	1	BGG0233	07/10/23	07/10/23	EPA 120.1	

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

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.88			pH Units	1	BGG0232	07/10/23	07/10/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

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 BGG0203 - EPA 5030 Soil MS

Blank (BGG0203-BLK1)

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

Benzene	ND	0.0020	mg/kg							
Toluene	ND	0.0050	"							
Ethylbenzene	ND	0.0050	"							
Xylenes (total)	ND	0.010	"							
1,2,4-Trimethylbenzene	ND	0.0050	"							
1,3,5-Trimethylbenzene	ND	0.0050	"							
Naphthalene	ND	0.0038	"							
Gasoline Range Hydrocarbons	ND	0.50	"							
Surrogate: 1,2-Dichloroethane-d4	0.0302		"	0.0400		75.4	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.6	50-150			
Surrogate: 4-Bromofluorobenzene	0.0387		"	0.0400		96.8	50-150			

LCS (BGG0203-BS1)

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

Benzene	0.0632	0.0020	mg/kg	0.0750		84.3	70-130			
Toluene	0.0778	0.0050	"	0.0750		104	70-130			
Ethylbenzene	0.0902	0.0050	"	0.0750		120	70-130			
m,p-Xylene	0.179	0.010	"	0.150		120	70-130			
o-Xylene	0.0804	0.0050	"	0.0750		107	70-130			
1,2,4-Trimethylbenzene	0.0851	0.0050	"	0.0750		113	70-130			
1,3,5-Trimethylbenzene	0.0887	0.0050	"	0.0750		118	70-130			
Naphthalene	0.0698	0.0038	"	0.0750		93.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0317		"	0.0400		79.4	50-150			
Surrogate: Toluene-d8	0.0399		"	0.0400		99.8	50-150			
Surrogate: 4-Bromofluorobenzene	0.0395		"	0.0400		98.8	50-150			

Matrix Spike (BGG0203-MS1)

Source: 2307093-01

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

Benzene	0.0633	0.0020	mg/kg	0.0750	ND	84.4	70-130			
Toluene	0.0784	0.0050	"	0.0750	ND	105	70-130			
Ethylbenzene	0.0905	0.0050	"	0.0750	ND	121	70-130			
m,p-Xylene	0.180	0.010	"	0.150	ND	120	70-130			
o-Xylene	0.0798	0.0050	"	0.0750	ND	106	70-130			
1,2,4-Trimethylbenzene	0.0845	0.0050	"	0.0750	ND	113	70-130			
1,3,5-Trimethylbenzene	0.0882	0.0050	"	0.0750	ND	118	70-130			
Naphthalene	0.0752	0.0038	"	0.0750	ND	100	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0330		"	0.0400		82.4	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.0	50-150			

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Fremont Environmental
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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

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

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

Batch BGG0203 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0203-MSD1)	Source: 2307093-01			Prepared: 07/07/23 Analyzed: 07/08/23					
Benzene	0.0635	0.0020	mg/kg	0.0750	ND	84.6	70-130	0.237	30
Toluene	0.0771	0.0050	"	0.0750	ND	103	70-130	1.74	30
Ethylbenzene	0.0943	0.0050	"	0.0750	ND	126	70-130	4.12	30
m,p-Xylene	0.185	0.010	"	0.150	ND	123	70-130	2.98	30
o-Xylene	0.0837	0.0050	"	0.0750	ND	112	70-130	4.77	30
1,2,4-Trimethylbenzene	0.0883	0.0050	"	0.0750	ND	118	70-130	4.44	30
1,3,5-Trimethylbenzene	0.0922	0.0050	"	0.0750	ND	123	70-130	4.36	30
Naphthalene	0.0791	0.0038	"	0.0750	ND	106	70-130	5.05	30
Surrogate: 1,2-Dichloroethane-d4	0.0321		"	0.0400		80.2	50-150		
Surrogate: Toluene-d8	0.0384		"	0.0400		95.9	50-150		
Surrogate: 4-Bromofluorobenzene	0.0402		"	0.0400		100	50-150		

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

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 BGG0202 - EPA 3550A

Blank (BGG0202-BLK1)

Prepared & Analyzed: 07/07/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.6		"	12.5		92.8		30-150			

LCS (BGG0202-BS1)

Prepared & Analyzed: 07/07/23

C10-C28 (DRO)	479	50	mg/kg	500		95.8		70-130			
Surrogate: <i>o</i> -Terphenyl	11.5		"	12.5		91.8		30-150			

Matrix Spike (BGG0202-MS1)

Source: 2307093-01

Prepared & Analyzed: 07/07/23

C10-C28 (DRO)	485	50	mg/kg	500	16.8	93.7		70-130			
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5		85.6		30-150			

Matrix Spike Dup (BGG0202-MSD1)

Source: 2307093-01

Prepared & Analyzed: 07/07/23

C10-C28 (DRO)	450	50	mg/kg	500	16.8	86.7		70-130	7.52	20	
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5		86.8		30-150			

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

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 BGG0208 - EPA 5030 Soil MS

Blank (BGG0208-BLK1)

Prepared & Analyzed: 07/10/23

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>0.0391</i>		"	<i>0.0333</i>		<i>117</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0366</i>		"	<i>0.0333</i>		<i>110</i>	<i>40-150</i>			

LCS (BGG0208-BS1)

Prepared & Analyzed: 07/10/23

Acenaphthene	0.0325	0.00500	mg/kg	0.0333	97.6	31-137
Anthracene	0.0327	0.00500	"	0.0333	98.0	30-120
Benzo (a) anthracene	0.0308	0.00500	"	0.0333	92.5	30-120
Benzo (a) pyrene	0.0296	0.00500	"	0.0333	88.7	30-120
Benzo (b) fluoranthene	0.0328	0.00500	"	0.0333	98.5	30-120
Benzo (k) fluoranthene	0.0327	0.00500	"	0.0333	98.2	30-120
Chrysene	0.0324	0.00500	"	0.0333	97.2	30-120
Dibenz (a,h) anthracene	0.0299	0.00500	"	0.0333	89.7	30-120
Fluoranthene	0.0277	0.00500	"	0.0333	83.2	30-120
Fluorene	0.0317	0.00500	"	0.0333	95.2	30-120
Indeno (1,2,3-cd) pyrene	0.0225	0.00500	"	0.0333	67.6	30-120
Pyrene	0.0256	0.00500	"	0.0333	76.7	35-142
1-Methylnaphthalene	0.0312	0.00500	"	0.0333	93.6	35-142
2-Methylnaphthalene	0.0355	0.00500	"	0.0333	107	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0295</i>		"	<i>0.0333</i>	<i>88.4</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0377</i>		"	<i>0.0333</i>	<i>113</i>	<i>40-150</i>

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Fremont Environmental
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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

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 BGG0208 - EPA 5030 Soil MS

Matrix Spike (BGG0208-MS1)	Source: 2307083-01			Prepared & Analyzed: 07/10/23						
Acenaphthene	0.0135	0.00500	mg/kg	0.0333	ND	40.5	31-137			
Anthracene	0.0134	0.00500	"	0.0333	ND	40.3	30-120			
Benzo (a) anthracene	0.0163	0.00500	"	0.0333	ND	48.9	30-120			
Benzo (a) pyrene	0.0144	0.00500	"	0.0333	ND	43.2	30-120			
Benzo (b) fluoranthene	0.0144	0.00500	"	0.0333	ND	43.1	30-120			
Benzo (k) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.7	30-120			
Chrysene	0.0172	0.00500	"	0.0333	ND	51.6	30-120			
Dibenz (a,h) anthracene	0.0145	0.00500	"	0.0333	ND	43.6	30-120			
Fluoranthene	0.0142	0.00500	"	0.0333	ND	42.5	30-120			
Fluorene	0.0141	0.00500	"	0.0333	ND	42.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0160	0.00500	"	0.0333	ND	48.1	30-120			
Pyrene	0.0138	0.00500	"	0.0333	ND	41.4	35-142			
1-Methylnaphthalene	0.0153	0.00500	"	0.0333	ND	46.0	15-130			
2-Methylnaphthalene	0.0163	0.00500	"	0.0333	ND	48.9	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0147		"	0.0333		44.1	40-150			
Surrogate: Fluoranthene-d10	0.0160		"	0.0333		48.0	40-150			

Matrix Spike Dup (BGG0208-MSD1)	Source: 2307083-01			Prepared & Analyzed: 07/10/23						
Acenaphthene	0.0164	0.00500	mg/kg	0.0333	ND	49.2	31-137	19.5	30	
Anthracene	0.0170	0.00500	"	0.0333	ND	50.9	30-120	23.3	30	
Benzo (a) anthracene	0.0166	0.00500	"	0.0333	ND	49.9	30-120	1.92	30	
Benzo (a) pyrene	0.0151	0.00500	"	0.0333	ND	45.4	30-120	4.99	30	
Benzo (b) fluoranthene	0.0166	0.00500	"	0.0333	ND	49.7	30-120	14.2	30	
Benzo (k) fluoranthene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	16.7	30	
Chrysene	0.0172	0.00500	"	0.0333	ND	51.7	30-120	0.283	30	
Dibenz (a,h) anthracene	0.0143	0.00500	"	0.0333	ND	43.0	30-120	1.53	30	
Fluoranthene	0.0145	0.00500	"	0.0333	ND	43.5	30-120	2.33	30	
Fluorene	0.0163	0.00500	"	0.0333	ND	49.0	30-120	15.1	30	
Indeno (1,2,3-cd) pyrene	0.0157	0.00500	"	0.0333	ND	47.1	30-120	2.10	30	
Pyrene	0.0153	0.00500	"	0.0333	ND	45.9	35-142	10.4	30	
1-Methylnaphthalene	0.0146	0.00500	"	0.0333	ND	43.7	15-130	5.17	50	
2-Methylnaphthalene	0.0195	0.00500	"	0.0333	ND	58.6	15-130	18.2	50	
Surrogate: 2-Methylnaphthalene-d10	0.0162		"	0.0333		48.6	40-150			
Surrogate: Fluoranthene-d10	0.0195		"	0.0333		58.4	40-150			

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

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 BGG0248 - EPA 3050B

Blank (BGG0248-BLK1)

Prepared: 07/10/23 Analyzed: 07/11/23

Boron ND 0.0100 mg/L

LCS (BGG0248-BS1)

Prepared: 07/10/23 Analyzed: 07/11/23

Boron 6.02 0.0100 mg/L 5.00 120 80-120

Duplicate (BGG0248-DUP1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/11/23

Boron 0.104 0.0100 mg/L 0.0876 17.1 20

Matrix Spike (BGG0248-MS1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/11/23

Boron 5.95 0.0100 mg/L 5.00 0.0876 117 75-125

Matrix Spike Dup (BGG0248-MSD1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/11/23

Boron 5.99 0.0100 mg/L 5.00 0.0876 118 75-125 0.628 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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/13/23 12:09

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 BGG0210 - EPA 3050B

Blank (BGG0210-BLK1)

Prepared: 07/10/23 Analyzed: 07/12/23

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 (BGG0210-BS1)

Prepared: 07/10/23 Analyzed: 07/12/23

Arsenic	33.9	0.200	mg/kg wet	40.0	84.8	80-120					
Barium	35.8	0.400	"	40.0	89.4	80-120					
Cadmium	1.81	0.200	"	2.00	90.3	80-120					
Copper	38.5	0.400	"	40.0	96.2	80-120					
Lead	18.0	0.200	"	20.0	89.9	80-120					
Nickel	37.8	0.400	"	40.0	94.4	80-120					
Selenium	3.88	0.260	"	4.00	97.1	80-120					
Silver	1.77	0.0200	"	2.00	88.7	80-120					
Zinc	37.2	0.400	"	40.0	93.1	80-120					

Duplicate (BGG0210-DUP1)

Source: 2307093-01

Prepared: 07/10/23 Analyzed: 07/12/23

Arsenic	0.812	0.242	mg/kg dry	0.924			13.0	20			
Barium	22.4	0.484	"	25.3			12.3	20			
Cadmium	0.0494	0.242	"	0.0596			18.7	20			
Copper	1.74	0.484	"	1.89			7.94	20			
Lead	2.27	0.242	"	2.81			21.2	20			QR-01
Nickel	2.11	0.484	"	2.41			13.2	20			
Selenium	ND	0.315	"	ND				20			
Silver	0.00726	0.0242	"	0.0111			42.1	20			QR-01
Zinc	8.62	0.484	"	9.94			14.2	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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

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 BGG0210 - EPA 3050B

Matrix Spike (BGG0210-MS1)	Source: 2307093-01			Prepared: 07/10/23		Analyzed: 07/12/23					
Arsenic	41.5	0.242	mg/kg dry	48.4	0.924	83.8	75-125				
Barium	68.8	0.484	"	48.4	25.3	89.8	75-125				
Cadmium	2.12	0.242	"	2.42	0.0596	85.3	75-125				
Copper	38.9	0.484	"	48.4	1.89	76.4	75-125				
Lead	23.0	0.242	"	24.2	2.81	83.5	75-125				
Nickel	39.7	0.484	"	48.4	2.41	77.0	75-125				
Selenium	4.10	0.315	"	4.84	ND	84.7	75-125				
Silver	2.02	0.0242	"	2.42	0.0111	83.0	75-125				
Zinc	48.0	0.484	"	48.4	9.94	78.7	75-125				

Matrix Spike Dup (BGG0210-MSD1)	Source: 2307093-01			Prepared: 07/10/23		Analyzed: 07/12/23					
Arsenic	40.9	0.242	mg/kg dry	48.4	0.924	82.5	75-125	1.50	25		
Barium	70.6	0.484	"	48.4	25.3	93.4	75-125	2.52	25		
Cadmium	2.21	0.242	"	2.42	0.0596	89.0	75-125	4.17	25		
Copper	38.7	0.484	"	48.4	1.89	76.1	75-125	0.349	25		
Lead	23.9	0.242	"	24.2	2.81	87.0	75-125	3.60	25		
Nickel	39.2	0.484	"	48.4	2.41	76.0	75-125	1.23	25		
Selenium	4.24	0.315	"	4.84	ND	87.5	75-125	3.22	25		
Silver	2.09	0.0242	"	2.42	0.0111	86.0	75-125	3.48	25		
Zinc	47.6	0.484	"	48.4	9.94	77.9	75-125	0.852	25		

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0212 - 3060A Mod

Blank (BGG0212-BLK1)

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0212-BS1)

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent 24.1 0.30 mg/kg wet 25.0 96.4 80-120

Duplicate (BGG0212-DUP1)

Source: 2307093-01

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0212-MS1)

Source: 2307093-01

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent 29.1 0.30 mg/kg dry 30.3 ND 96.2 75-125

Matrix Spike Dup (BGG0212-MSD1)

Source: 2307093-01

Prepared & Analyzed: 07/10/23

Chromium, Hexavalent 29.8 0.30 mg/kg dry 30.3 ND 98.4 75-125 2.26 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

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

Summit Scientific

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

Batch BGG0207 - General Preparation

Blank (BGG0207-BLK1)

Prepared: 07/09/23 Analyzed: 07/12/23

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

LCS (BGG0207-BS1)

Prepared: 07/09/23 Analyzed: 07/12/23

Calcium	4.47	0.0500	mg/L wet	5.00	89.3	70-130
Magnesium	5.92	0.0500	"	5.00	118	70-130
Sodium	5.69	0.0500	"	5.00	114	70-130

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

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 BGG0214 - General Preparation

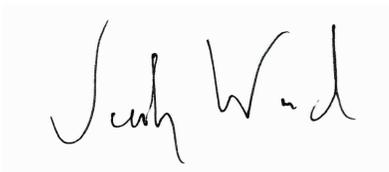
Duplicate (BGG0214-DUP1)

Source: 2307093-01

Prepared & Analyzed: 07/10/23

% Solids	82.1		%		82.6			0.581		20	
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Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

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 BGG0233 - General Preparation

Blank (BGG0233-BLK1)

Prepared & Analyzed: 07/10/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0233-BS1)

Prepared & Analyzed: 07/10/23

Specific Conductance (EC) 0.152 0.0100 mmhos/cm 0.150 102 95-105

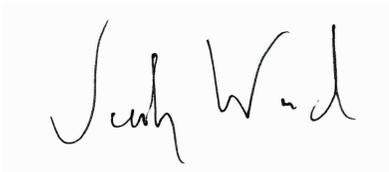
Duplicate (BGG0233-DUP1)

Source: 2306631-02

Prepared & Analyzed: 07/10/23

Specific Conductance (EC) 1.60 0.0100 mmhos/cm 1.66 3.55 20

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/13/23 12:09

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 BGG0232 - General Preparation

LCS (BGG0232-BS1)

Prepared & Analyzed: 07/10/23

pH	9.16	pH Units	9.18	99.8	95-105
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Duplicate (BGG0232-DUP1)

Source: 2306631-02

Prepared & Analyzed: 07/10/23

pH	7.65	pH Units	7.62	0.393	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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/13/23 12:09

Notes and Definitions

- 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.
- 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

July 17, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307137

Enclosed are the results of analyses for samples received by Summit Scientific on 07/10/23 16:30. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N01@8.0'	2307137-01	Soil	07/10/23 00:00	07/10/23 16:30
W02@8.0'	2307137-02	Soil	07/10/23 00:00	07/10/23 16:30
W03@8.0'	2307137-03	Soil	07/10/23 00:00	07/10/23 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.

SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307137	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henchan	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	Jeff@fremontenv.com Ethemb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	GRD, PRO, DRO	PAHs (915)		EC, PH, SAR, Baran	Metals (915)
1	N01@8.0'	7/10/23		2			X							X	X	X	X	X	
2	W02@8.0'	↓		←										←	←	←	←	←	
3	W03@8.0'	↓		←										←	←	←	←	←	
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by:	Date/Time: 7/10/23 1630	Received by:	Date/Time: 7/10/23 16:30	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 25.2	Corrected Temperature	IR gun #: 2	HNO3 lot #:	Standard	Field Turb.	

S₂

S2 Work Order# 2307137

Sample Receipt Checklist

Client: Fremont Client Project ID: PTF-64NG4W 32SENE

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"/>	
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"/>	<i>Same day</i>
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 type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>NO Sample times</i>
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"/>	
<u>Additional Comments (if any):</u>				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

John Wood
Custodian Printed Name

7/10/23 16:30
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

N01@8.0'
2307137-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0257	07/10/23	07/10/23	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: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		97.7 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0258	07/10/23	07/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		117 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

N01@8.0'
2307137-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0265	07/11/23	07/11/23	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: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		50.8 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		61.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.261	0.0100		mg/L	1	BGG0283	07/11/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/23 00:00**

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

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

N01@8.0'
2307137-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.64	0.237		mg/kg dry	1	BGG0260	07/11/23	07/12/23	EPA 6020B	
Barium	47.0	0.473		"	"	"	"	"	"	
Cadmium	ND	0.237		"	"	"	"	"	"	
Copper	2.25	0.473		"	"	"	"	"	"	
Lead	3.61	0.237		"	"	"	"	"	"	
Nickel	3.10	0.473		"	"	"	"	"	"	
Selenium	ND	0.308	0.207	"	"	"	"	"	"	
Silver	ND	0.0237		"	"	"	"	"	"	
Zinc	11.2	0.473		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0261	07/11/23	07/11/23	EPA 7196A	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.7	0.0592		mg/L dry	1	BGG0259	07/10/23	07/13/23	EPA 6020B	
Magnesium	24.8	0.0592		"	"	"	"	"	"	
Sodium	28.5	0.0592		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.864	0.00100		units	1	BGG0385	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

N01@8.0'
2307137-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.5			%	1	BGG0262	07/11/23	07/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.11	0.0100		mmhos/cm	1	BGG0270	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.63			pH Units	1	BGG0271	07/11/23	07/11/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W02@8.0'
2307137-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGG0257	07/10/23	07/10/23	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: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		99.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		99.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0258	07/10/23	07/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		128 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W02@8.0'
2307137-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0265	07/11/23	07/12/23	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: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.7 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		52.3 %		40-150		"	"	"	"	"

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.296	0.0100		mg/L	1	BGG0283	07/11/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/23 00:00**

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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W02@8.0'
2307137-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.64	0.243		mg/kg dry	1	BGG0260	07/11/23	07/12/23	EPA 6020B	
Barium	67.8	0.486		"	"	"	"	"	"	
Cadmium	ND	0.243		"	"	"	"	"	"	
Copper	3.48	0.486		"	"	"	"	"	"	
Lead	4.54	0.243		"	"	"	"	"	"	
Nickel	4.14	0.486		"	"	"	"	"	"	
Selenium	ND	0.316	0.213	"	"	"	"	"	"	
Silver	ND	0.0243		"	"	"	"	"	"	
Zinc	13.2	0.486		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0261	07/11/23	07/11/23	EPA 7196A	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	70.0	0.0607		mg/L dry	1	BGG0259	07/10/23	07/13/23	EPA 6020B	
Magnesium	27.3	0.0607		"	"	"	"	"	"	
Sodium	44.5	0.0607		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.14	0.00100		units	1	BGG0385	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

W02@8.0'
2307137-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.3			%	1	BGG0262	07/11/23	07/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.08	0.0100		mmhos/cm	1	BGG0270	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.53			pH Units	1	BGG0271	07/11/23	07/11/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

W03@8.0'
2307137-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0257	07/10/23	07/10/23	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: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		98.0 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		96.5 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		94.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0258	07/10/23	07/10/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		127 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W03@8.0'
2307137-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0265	07/11/23	07/12/23	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: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		49.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		55.0 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.178	0.0100		mg/L	1	BGG0283	07/11/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/10/23 00:00**

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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

W03@8.0'
2307137-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.75	0.238		mg/kg dry	1	BGG0260	07/11/23	07/12/23	EPA 6020B	
Barium	45.1	0.475		"	"	"	"	"	"	
Cadmium	ND	0.238		"	"	"	"	"	"	
Copper	2.79	0.475		"	"	"	"	"	"	
Lead	2.94	0.238		"	"	"	"	"	"	
Nickel	2.72	0.475		"	"	"	"	"	"	
Selenium	ND	0.309	0.208	"	"	"	"	"	"	
Silver	ND	0.0238		"	"	"	"	"	"	
Zinc	9.83	0.475		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/10/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0261	07/11/23	07/11/23	EPA 7196A	

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

Date Sampled: 07/10/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	49.1	0.0594		mg/L dry	1	BGG0259	07/10/23	07/13/23	EPA 6020B	
Magnesium	21.3	0.0594		"	"	"	"	"	"	
Sodium	51.5	0.0594		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/10/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.55	0.00100		units	1	BGG0385	07/13/23	07/13/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

W03@8.0'
2307137-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.2			%	1	BGG0262	07/11/23	07/11/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.12	0.0100		mmhos/cm	1	BGG0270	07/11/23	07/11/23	EPA 120.1	

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

Date Sampled: **07/10/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.45			pH Units	1	BGG0271	07/11/23	07/11/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0257 - EPA 5030 Soil MS

Blank (BGG0257-BLK1)

Prepared & Analyzed: 07/10/23

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>	0.0385		"	0.0400		96.3	50-150			
<i>Surrogate: Toluene-d8</i>	0.0412		"	0.0400		103	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0388		"	0.0400		96.9	50-150			

LCS (BGG0257-BS1)

Prepared & Analyzed: 07/10/23

Benzene	0.0648	0.0020	mg/kg	0.0750		86.4	70-130			
Toluene	0.0859	0.0050	"	0.0750		115	70-130			
Ethylbenzene	0.0962	0.0050	"	0.0750		128	70-130			
m,p-Xylene	0.187	0.010	"	0.150		125	70-130			
o-Xylene	0.0886	0.0050	"	0.0750		118	70-130			
1,2,4-Trimethylbenzene	0.0892	0.0050	"	0.0750		119	70-130			
1,3,5-Trimethylbenzene	0.0919	0.0050	"	0.0750		123	70-130			
Naphthalene	0.0735	0.0038	"	0.0750		98.0	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0392		"	0.0400		98.1	50-150			
<i>Surrogate: Toluene-d8</i>	0.0418		"	0.0400		104	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0418		"	0.0400		105	50-150			

Matrix Spike (BGG0257-MS1)

Source: 2307137-01

Prepared & Analyzed: 07/10/23

Benzene	0.0591	0.0020	mg/kg	0.0750	ND	78.8	70-130			
Toluene	0.0775	0.0050	"	0.0750	ND	103	70-130			
Ethylbenzene	0.0871	0.0050	"	0.0750	ND	116	70-130			
m,p-Xylene	0.173	0.010	"	0.150	ND	115	70-130			
o-Xylene	0.0814	0.0050	"	0.0750	ND	109	70-130			
1,2,4-Trimethylbenzene	0.0841	0.0050	"	0.0750	ND	112	70-130			
1,3,5-Trimethylbenzene	0.0848	0.0050	"	0.0750	ND	113	70-130			
Naphthalene	0.0768	0.0038	"	0.0750	ND	102	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0412		"	0.0400		103	50-150			
<i>Surrogate: Toluene-d8</i>	0.0399		"	0.0400		99.8	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0407		"	0.0400		102	50-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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 BGG0257 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0257-MSD1)	Source: 2307137-01			Prepared & Analyzed: 07/10/23						
Benzene	0.0589	0.0020	mg/kg	0.0750	ND	78.6	70-130	0.356	30	
Toluene	0.0771	0.0050	"	0.0750	ND	103	70-130	0.466	30	
Ethylbenzene	0.0901	0.0050	"	0.0750	ND	120	70-130	3.42	30	
m,p-Xylene	0.176	0.010	"	0.150	ND	118	70-130	1.91	30	
o-Xylene	0.0844	0.0050	"	0.0750	ND	113	70-130	3.62	30	
1,2,4-Trimethylbenzene	0.0860	0.0050	"	0.0750	ND	115	70-130	2.26	30	
1,3,5-Trimethylbenzene	0.0884	0.0050	"	0.0750	ND	118	70-130	4.23	30	
Naphthalene	0.0765	0.0038	"	0.0750	ND	102	70-130	0.470	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.0</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0393</i>		<i>"</i>	<i>0.0400</i>		<i>98.3</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0397</i>		<i>"</i>	<i>0.0400</i>		<i>99.3</i>	<i>50-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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 BGG0258 - EPA 3550A

Blank (BGG0258-BLK1)

Prepared: 07/10/23 Analyzed: 07/11/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	14.6		"	12.5		117	30-150				

LCS (BGG0258-BS1)

Prepared: 07/10/23 Analyzed: 07/11/23

C10-C28 (DRO)	389	50	mg/kg	500		77.7	70-130				
Surrogate: <i>o</i> -Terphenyl	14.4		"	12.5		115	30-150				

Matrix Spike (BGG0258-MS1)

Source: 2307137-01

Prepared: 07/10/23 Analyzed: 07/11/23

C10-C28 (DRO)	331	50	mg/kg	500	8.62	64.5	70-130				QM-07
Surrogate: <i>o</i> -Terphenyl	14.1		"	12.5		113	30-150				

Matrix Spike Dup (BGG0258-MSD1)

Source: 2307137-01

Prepared: 07/10/23 Analyzed: 07/11/23

C10-C28 (DRO)	327	50	mg/kg	500	8.62	63.7	70-130	1.26	20		QM-07
Surrogate: <i>o</i> -Terphenyl	12.2		"	12.5		97.5	30-150				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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 BGG0265 - EPA 5030 Soil MS

Blank (BGG0265-BLK1)

Prepared & Analyzed: 07/11/23

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>0.0306</i>		<i>"</i>	<i>0.0333</i>		<i>91.7</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0360</i>		<i>"</i>	<i>0.0333</i>		<i>108</i>	<i>40-150</i>			

LCS (BGG0265-BS1)

Prepared & Analyzed: 07/11/23

Acenaphthene	0.0340	0.00500	mg/kg	0.0333	102	31-137
Anthracene	0.0335	0.00500	"	0.0333	101	30-120
Benzo (a) anthracene	0.0352	0.00500	"	0.0333	106	30-120
Benzo (a) pyrene	0.0322	0.00500	"	0.0333	96.5	30-120
Benzo (b) fluoranthene	0.0341	0.00500	"	0.0333	102	30-120
Benzo (k) fluoranthene	0.0332	0.00500	"	0.0333	99.6	30-120
Chrysene	0.0339	0.00500	"	0.0333	102	30-120
Dibenz (a,h) anthracene	0.0313	0.00500	"	0.0333	93.8	30-120
Fluoranthene	0.0343	0.00500	"	0.0333	103	30-120
Fluorene	0.0335	0.00500	"	0.0333	101	30-120
Indeno (1,2,3-cd) pyrene	0.0247	0.00500	"	0.0333	74.0	30-120
Pyrene	0.0352	0.00500	"	0.0333	106	35-142
1-Methylnaphthalene	0.0308	0.00500	"	0.0333	92.3	35-142
2-Methylnaphthalene	0.0355	0.00500	"	0.0333	106	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0313</i>		<i>"</i>	<i>0.0333</i>	<i>94.0</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0399</i>		<i>"</i>	<i>0.0333</i>	<i>120</i>	<i>40-150</i>

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

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 BGG0265 - EPA 5030 Soil MS

Matrix Spike (BGG0265-MS1)

Source: 2306563-01

Prepared & Analyzed: 07/11/23

Acenaphthene	0.0244	0.00500	mg/kg	0.0333	ND	73.2	31-137			
Anthracene	0.0236	0.00500	"	0.0333	ND	70.7	30-120			
Benzo (a) anthracene	0.0256	0.00500	"	0.0333	ND	76.9	30-120			
Benzo (a) pyrene	0.0225	0.00500	"	0.0333	ND	67.5	30-120			
Benzo (b) fluoranthene	0.0246	0.00500	"	0.0333	ND	73.8	30-120			
Benzo (k) fluoranthene	0.0242	0.00500	"	0.0333	ND	72.6	30-120			
Chrysene	0.0244	0.00500	"	0.0333	ND	73.1	30-120			
Dibenz (a,h) anthracene	0.0222	0.00500	"	0.0333	ND	66.6	30-120			
Fluoranthene	0.0243	0.00500	"	0.0333	ND	72.8	30-120			
Fluorene	0.0241	0.00500	"	0.0333	ND	72.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0170	0.00500	"	0.0333	ND	50.9	30-120			
Pyrene	0.0262	0.00500	"	0.0333	ND	78.5	35-142			
1-Methylnaphthalene	0.0218	0.00500	"	0.0333	ND	65.3	15-130			
2-Methylnaphthalene	0.0247	0.00500	"	0.0333	ND	74.0	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0230		"	0.0333		69.0	40-150			
Surrogate: Fluoranthene-d10	0.0285		"	0.0333		85.5	40-150			

Matrix Spike Dup (BGG0265-MSD1)

Source: 2306563-01

Prepared & Analyzed: 07/11/23

Acenaphthene	0.0222	0.00500	mg/kg	0.0333	ND	66.7	31-137	9.21	30
Anthracene	0.0217	0.00500	"	0.0333	ND	65.0	30-120	8.36	30
Benzo (a) anthracene	0.0237	0.00500	"	0.0333	ND	71.0	30-120	7.89	30
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.9	30-120	8.58	30
Benzo (b) fluoranthene	0.0219	0.00500	"	0.0333	ND	65.6	30-120	11.9	30
Benzo (k) fluoranthene	0.0217	0.00500	"	0.0333	ND	65.2	30-120	10.8	30
Chrysene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	10.7	30
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	11.9	30
Fluoranthene	0.0221	0.00500	"	0.0333	ND	66.2	30-120	9.50	30
Fluorene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	9.46	30
Indeno (1,2,3-cd) pyrene	0.0154	0.00500	"	0.0333	ND	46.2	30-120	9.66	30
Pyrene	0.0236	0.00500	"	0.0333	ND	70.7	35-142	10.4	30
1-Methylnaphthalene	0.0211	0.00500	"	0.0333	ND	63.4	15-130	2.95	50
2-Methylnaphthalene	0.0210	0.00500	"	0.0333	ND	63.0	15-130	16.1	50
Surrogate: 2-Methylnaphthalene-d10	0.0235		"	0.0333		70.5	40-150		
Surrogate: Fluoranthene-d10	0.0258		"	0.0333		77.5	40-150		

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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 BGG0283 - EPA 3050B

Blank (BGG0283-BLK1)

Prepared: 07/11/23 Analyzed: 07/13/23

Boron ND 0.0100 mg/L

LCS (BGG0283-BS1)

Prepared: 07/11/23 Analyzed: 07/13/23

Boron 5.67 0.0100 mg/L 5.00 113 80-120

Duplicate (BGG0283-DUP1)

Source: 2307065-01

Prepared: 07/11/23 Analyzed: 07/13/23

Boron 0.245 0.0100 mg/L 0.275 11.4 20

Matrix Spike (BGG0283-MS1)

Source: 2307065-01

Prepared: 07/11/23 Analyzed: 07/13/23

Boron 5.72 0.0100 mg/L 5.00 0.275 109 75-125

Matrix Spike Dup (BGG0283-MSD1)

Source: 2307065-01

Prepared: 07/11/23 Analyzed: 07/13/23

Boron 5.86 0.0100 mg/L 5.00 0.275 112 75-125 2.45 25

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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 BGG0260 - EPA 3050B

Blank (BGG0260-BLK1)

Prepared: 07/11/23 Analyzed: 07/12/23

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 (BGG0260-BS1)

Prepared: 07/11/23 Analyzed: 07/12/23

Arsenic	37.1	0.200	mg/kg wet	40.0	92.8	80-120
Barium	37.1	0.400	"	40.0	92.7	80-120
Cadmium	1.75	0.200	"	2.00	87.6	80-120
Copper	35.7	0.400	"	40.0	89.3	80-120
Lead	17.7	0.200	"	20.0	88.4	80-120
Nickel	34.3	0.400	"	40.0	85.8	80-120
Selenium	4.07	0.260	"	4.00	102	80-120
Silver	1.76	0.0200	"	2.00	87.8	80-120
Zinc	34.5	0.400	"	40.0	86.4	80-120

Duplicate (BGG0260-DUP1)

Source: 2305454-30

Prepared: 07/11/23 Analyzed: 07/12/23

Arsenic	1.60	0.217	mg/kg dry	1.78	11.1	20
Barium	16.5	0.435	"	17.7	7.18	20
Cadmium	0.122	0.217	"	0.131	6.87	20
Copper	2.28	0.435	"	2.41	5.91	20
Lead	4.23	0.217	"	4.68	10.1	20
Nickel	5.20	0.435	"	5.54	6.33	20
Selenium	ND	0.283	"	ND		20
Silver	0.0100	0.0217	"	0.0100	0.00	20
Zinc	24.4	0.435	"	26.3	7.55	20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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 BGG0260 - EPA 3050B

Matrix Spike (BGG0260-MS1)

Source: 2305454-30

Prepared: 07/11/23 Analyzed: 07/12/23

Arsenic	44.6	0.217	mg/kg dry	43.5	1.78	98.4	75-125			
Barium	63.8	0.435	"	43.5	17.7	106	75-125			
Cadmium	2.31	0.217	"	2.17	0.131	100	75-125			
Copper	32.0	0.435	"	43.5	2.41	68.2	75-125			QM-07
Lead	26.6	0.217	"	21.7	4.68	101	75-125			
Nickel	34.4	0.435	"	43.5	5.54	66.5	75-125			QM-07
Selenium	4.33	0.283	"	4.35	ND	99.5	75-125			
Silver	2.11	0.0217	"	2.17	0.0100	96.7	75-125			
Zinc	58.4	0.435	"	43.5	26.3	73.8	75-125			QM-07

Matrix Spike Dup (BGG0260-MSD1)

Source: 2305454-30

Prepared: 07/11/23 Analyzed: 07/12/23

Arsenic	45.3	0.217	mg/kg dry	43.5	1.78	100	75-125	1.66	25	
Barium	61.3	0.435	"	43.5	17.7	100	75-125	4.07	25	
Cadmium	2.24	0.217	"	2.17	0.131	96.8	75-125	3.21	25	
Copper	32.7	0.435	"	43.5	2.41	69.6	75-125	1.86	25	QM-07
Lead	25.5	0.217	"	21.7	4.68	96.0	75-125	3.99	25	
Nickel	35.4	0.435	"	43.5	5.54	68.6	75-125	2.67	25	QM-07
Selenium	4.25	0.283	"	4.35	ND	97.9	75-125	1.71	25	
Silver	2.03	0.0217	"	2.17	0.0100	92.8	75-125	4.08	25	
Zinc	59.8	0.435	"	43.5	26.3	77.1	75-125	2.45	25	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0261 - 3060A Mod

Blank (BGG0261-BLK1)

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0261-BS1)

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent 24.2 0.30 mg/kg wet 25.0 97.0 80-120

Duplicate (BGG0261-DUP1)

Source: 2307137-01

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0261-MS1)

Source: 2307137-01

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent 28.3 0.30 mg/kg dry 29.6 ND 95.6 75-125

Matrix Spike Dup (BGG0261-MSD1)

Source: 2307137-01

Prepared & Analyzed: 07/11/23

Chromium, Hexavalent 29.4 0.30 mg/kg dry 29.6 ND 99.4 75-125 3.90 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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

Summit Scientific

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

Batch BGG0259 - General Preparation

Blank (BGG0259-BLK1)

Prepared: 07/10/23 Analyzed: 07/13/23

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

LCS (BGG0259-BS1)

Prepared: 07/10/23 Analyzed: 07/13/23

Calcium	4.31	0.0500	mg/L wet	5.00		86.1	70-130			
Magnesium	4.71	0.0500	"	5.00		94.1	70-130			
Sodium	4.74	0.0500	"	5.00		94.7	70-130			

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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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 BGG0262 - General Preparation

Duplicate (BGG0262-DUP1)

Source: 2305454-30

Prepared & Analyzed: 07/11/23

% Solids	92.0		%		92.0			0.0189	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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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 BGG0270 - General Preparation

Blank (BGG0270-BLK1)

Prepared & Analyzed: 07/11/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0270-BS1)

Prepared & Analyzed: 07/11/23

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 104 95-105

Duplicate (BGG0270-DUP1)

Source: 2306663-01

Prepared & Analyzed: 07/11/23

Specific Conductance (EC) 2.22 0.0100 mmhos/cm 2.27 2.40 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:33

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 BGG0271 - General Preparation

LCS (BGG0271-BS1)

Prepared & Analyzed: 07/11/23

pH	9.06		pH Units	9.18		98.7	95-105
----	------	--	----------	------	--	------	--------

Duplicate (BGG0271-DUP1)

Source: 2306663-01

Prepared & Analyzed: 07/11/23

pH	8.20		pH Units	8.19		0.122	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:33

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.

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

July 17, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307162

Enclosed are the results of analyses for samples received by Summit Scientific on 07/11/23 16:25. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B02@9.0'	2307162-01	Soil	07/11/23 00:00	07/11/23 16:25
S02@7.0'	2307162-02	Soil	07/11/23 00:00	07/11/23 16:25

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.

SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307162	

	Send Data To:	Send Invoice To:
Client: Fremont Env	Project Manager: Paul Henahan	Company: Noble
Address:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32NESE
City/State/Zip:	jeffj@fremontenv.com Ethamb@fremontenv.com	AFE#:
Phone:	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
Sampler Name: JG	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DRO,ORO,GRD	PAHs (915)	EC,PH,SAR, Selen	Metals (915)		
1	B02@9.0'	7/11/23		2			X			X				X	X	X	X	X	X	
2	S02@7.0'	7/11/23		2			X			X				X	X	X	X	X	X	
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 7/11/23 16:25	Received by: Jay Ward	Date/Time: 7/11/23 16:25	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days	Field Temp.	
Temperature Upon Receipt: 24.9	Corrected Temperature	IR gun #: Z	HNO3 lot #:	Standard	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2307162

Client: Fremont Client Project ID: PTF-64N64W 32SENE

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

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

Temp (°C) 24.9 Thermometer # Z

	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 file
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"/>	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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No Sample tags
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.

John Ward
Custodian Printed Name

7/11/23 16:25
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

B02@9.0'
2307162-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0306	07/11/23	07/11/23	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: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		117 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		108 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		104 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0307	"	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		86.0 %		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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

B02@9.0'
2307162-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0314	07/12/23	07/12/23	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: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		60.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0155	0.0100		mg/L	1	BGG0319	07/12/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/11/23 00:00**

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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

B02@9.0'
2307162-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.595	0.241		mg/kg dry	1	BGG0310	07/12/23	07/13/23	EPA 6020B	
Barium	33.4	0.482		"	"	"	"	"	"	
Cadmium	ND	0.241		"	"	"	"	"	"	
Copper	1.16	0.482		"	"	"	"	"	"	
Lead	2.79	0.241		"	"	"	"	"	"	
Nickel	1.19	0.482		"	"	"	"	"	"	
Selenium	ND	0.313	0.211	"	"	"	"	"	"	
Silver	ND	0.0241		"	"	"	"	"	"	
Zinc	5.40	0.482		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/11/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0311	07/12/23	07/12/23	EPA 7196A	

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

Date Sampled: 07/11/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	84.3	0.0602		mg/L dry	1	BGG0343	07/12/23	07/14/23	EPA 6020B	
Magnesium	29.6	0.0602		"	"	"	"	"	"	
Sodium	85.6	0.0602		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/11/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.04	0.00100		units	1	BGG0462	07/15/23	07/15/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

B02@9.0'
2307162-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.0			%	1	BGG0313	07/12/23	07/12/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.20	0.0100		mmhos/cm	1	BGG0390	07/13/23	07/13/23	EPA 120.1	

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

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.51			pH Units	1	BGG0391	07/13/23	07/13/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

S02@7.0'
2307162-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020		mg/kg	1	BGG0306	07/11/23	07/11/23	EPA 8260B	
Toluene	ND	0.0050		"	"	"	"	"	"	
Ethylbenzene	ND	0.0050		"	"	"	"	"	"	
Xylenes (total)	0.021	0.010		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	0.0064	0.0050		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.0050		"	"	"	"	"	"	
Naphthalene	ND	0.0038		"	"	"	"	"	"	
Gasoline Range Hydrocarbons	7.9	0.50		"	"	"	"	"	"	

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4		119 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		99.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		118 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0307	"	07/11/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl		82.7 %		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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

S02@7.0'
2307162-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0314	07/12/23	07/12/23	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: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		43.1 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		46.4 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.0282	0.0100		mg/L	1	BGG0319	07/12/23	07/13/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

S02@7.0'
2307162-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.93	0.237		mg/kg dry	1	BGG0310	07/12/23	07/13/23	EPA 6020B	
Barium	64.7	0.473		"	"	"	"	"	"	
Cadmium	ND	0.237		"	"	"	"	"	"	
Copper	1.50	0.473		"	"	"	"	"	"	
Lead	3.59	0.237		"	"	"	"	"	"	
Nickel	1.49	0.473		"	"	"	"	"	"	
Selenium	ND	0.308	0.207	"	"	"	"	"	"	
Silver	ND	0.0237		"	"	"	"	"	"	
Zinc	5.91	0.473		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0311	07/12/23	07/12/23	EPA 7196A	

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

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	25.5	0.0591		mg/L dry	1	BGG0343	07/12/23	07/14/23	EPA 6020B	
Magnesium	29.4	0.0591		"	"	"	"	"	"	
Sodium	39.5	0.0591		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.26	0.00100		units	1	BGG0462	07/15/23	07/15/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

S02@7.0'
2307162-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.5			%	1	BGG0313	07/12/23	07/12/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	0.855	0.0100		mmhos/cm	1	BGG0390	07/13/23	07/13/23	EPA 120.1	

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

Date Sampled: **07/11/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.83			pH Units	1	BGG0391	07/13/23	07/13/23	EPA 9045D	

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0306 - EPA 5030 Soil MS

Blank (BGG0306-BLK1)

Prepared & Analyzed: 07/11/23

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	0.0368		"	0.0400		91.9	50-150			
Surrogate: Toluene-d8	0.0398		"	0.0400		99.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0380		"	0.0400		95.1	50-150			

LCS (BGG0306-BS1)

Prepared & Analyzed: 07/11/23

Benzene	0.0617	0.0020	mg/kg	0.0750		82.3	70-130			
Toluene	0.0825	0.0050	"	0.0750		110	70-130			
Ethylbenzene	0.0925	0.0050	"	0.0750		123	70-130			
m,p-Xylene	0.182	0.010	"	0.150		121	70-130			
o-Xylene	0.0840	0.0050	"	0.0750		112	70-130			
1,2,4-Trimethylbenzene	0.0854	0.0050	"	0.0750		114	70-130			
1,3,5-Trimethylbenzene	0.0896	0.0050	"	0.0750		119	70-130			
Naphthalene	0.0700	0.0038	"	0.0750		93.4	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0385		"	0.0400		96.2	50-150			
Surrogate: Toluene-d8	0.0393		"	0.0400		98.2	50-150			
Surrogate: 4-Bromofluorobenzene	0.0409		"	0.0400		102	50-150			

Matrix Spike (BGG0306-MS1)

Source: 2307164-01

Prepared: 07/11/23 Analyzed: 07/12/23

Benzene	0.0618	0.0020	mg/kg	0.0750	ND	82.4	70-130			
Toluene	0.0798	0.0050	"	0.0750	ND	106	70-130			
Ethylbenzene	0.0957	0.0050	"	0.0750	ND	128	70-130			
m,p-Xylene	0.185	0.010	"	0.150	ND	124	70-130			
o-Xylene	0.0875	0.0050	"	0.0750	ND	117	70-130			
1,2,4-Trimethylbenzene	0.0880	0.0050	"	0.0750	ND	117	70-130			
1,3,5-Trimethylbenzene	0.0905	0.0050	"	0.0750	ND	121	70-130			
Naphthalene	0.0713	0.0038	"	0.0750	ND	95.1	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0358		"	0.0400		89.4	50-150			
Surrogate: Toluene-d8	0.0395		"	0.0400		98.7	50-150			
Surrogate: 4-Bromofluorobenzene	0.0389		"	0.0400		97.2	50-150			

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

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

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

Batch BGG0306 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0306-MSD1)	Source: 2307164-01			Prepared: 07/11/23 Analyzed: 07/12/23						
Benzene	0.0606	0.0020	mg/kg	0.0750	ND	80.8	70-130	1.86	30	
Toluene	0.0811	0.0050	"	0.0750	ND	108	70-130	1.64	30	
Ethylbenzene	0.0939	0.0050	"	0.0750	ND	125	70-130	1.87	30	
m,p-Xylene	0.187	0.010	"	0.150	ND	124	70-130	0.774	30	
o-Xylene	0.0859	0.0050	"	0.0750	ND	115	70-130	1.83	30	
1,2,4-Trimethylbenzene	0.0867	0.0050	"	0.0750	ND	116	70-130	1.51	30	
1,3,5-Trimethylbenzene	0.0910	0.0050	"	0.0750	ND	121	70-130	0.529	30	
Naphthalene	0.0725	0.0038	"	0.0750	ND	96.7	70-130	1.67	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0349</i>		<i>"</i>	<i>0.0400</i>		<i>87.2</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0382</i>		<i>"</i>	<i>0.0400</i>		<i>95.6</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0388</i>		<i>"</i>	<i>0.0400</i>		<i>97.0</i>	<i>50-150</i>			

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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

Extractable Petroleum Hydrocarbons by 8015 - Quality Control
Summit Scientific

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

Batch BGG0307 - EPA 3550A

Blank (BGG0307-BLK1)

Prepared & Analyzed: 07/11/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.9		"	12.5		87.2	30-150				

LCS (BGG0307-BS1)

Prepared: 07/11/23 Analyzed: 07/12/23

C10-C28 (DRO)	459	50	mg/kg	500		91.9	70-130				
Surrogate: <i>o</i> -Terphenyl	10.9		"	12.5		87.3	30-150				

Matrix Spike (BGG0307-MS1)

Source: 2307164-01

Prepared: 07/11/23 Analyzed: 07/12/23

C10-C28 (DRO)	374	50	mg/kg	500	26.5	69.6	70-130				QM-07
Surrogate: <i>o</i> -Terphenyl	9.67		"	12.5		77.4	30-150				

Matrix Spike Dup (BGG0307-MSD1)

Source: 2307164-01

Prepared: 07/11/23 Analyzed: 07/12/23

C10-C28 (DRO)	415	50	mg/kg	500	26.5	77.6	70-130	10.2	20		
Surrogate: <i>o</i> -Terphenyl	11.0		"	12.5		87.7	30-150				

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGG0314 - EPA 5030 Soil MS

Blank (BGG0314-BLK1)

Prepared & Analyzed: 07/12/23

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	"							
Surrogate: 2-Methylnaphthalene-d10	0.0352		"	0.0333		106	40-150			
Surrogate: Fluoranthene-d10	0.0273		"	0.0333		82.0	40-150			

LCS (BGG0314-BS1)

Prepared & Analyzed: 07/12/23

Acenaphthene	0.0292	0.00500	mg/kg	0.0333		87.6	31-137			
Anthracene	0.0277	0.00500	"	0.0333		83.0	30-120			
Benzo (a) anthracene	0.0213	0.00500	"	0.0333		64.0	30-120			
Benzo (a) pyrene	0.0248	0.00500	"	0.0333		74.4	30-120			
Benzo (b) fluoranthene	0.0241	0.00500	"	0.0333		72.4	30-120			
Benzo (k) fluoranthene	0.0282	0.00500	"	0.0333		84.5	30-120			
Chrysene	0.0312	0.00500	"	0.0333		93.6	30-120			
Dibenz (a,h) anthracene	0.0221	0.00500	"	0.0333		66.4	30-120			
Fluoranthene	0.0282	0.00500	"	0.0333		84.7	30-120			
Fluorene	0.0287	0.00500	"	0.0333		86.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0182	0.00500	"	0.0333		54.5	30-120			
Pyrene	0.0299	0.00500	"	0.0333		89.6	35-142			
1-Methylnaphthalene	0.0164	0.00500	"	0.0333		49.3	35-142			
2-Methylnaphthalene	0.0278	0.00500	"	0.0333		83.3	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0328		"	0.0333		98.5	40-150			
Surrogate: Fluoranthene-d10	0.0332		"	0.0333		99.7	40-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0314 - EPA 5030 Soil MS

Matrix Spike (BGG0314-MS1)	Source: 2307140-01			Prepared & Analyzed: 07/12/23						
Acenaphthene	0.0168	0.00500	mg/kg	0.0333	ND	50.5	31-137			
Anthracene	0.0149	0.00500	"	0.0333	ND	44.7	30-120			
Benzo (a) anthracene	0.0153	0.00500	"	0.0333	ND	45.8	30-120			
Benzo (a) pyrene	0.0142	0.00500	"	0.0333	ND	42.5	30-120			
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333	ND	42.9	30-120			
Benzo (k) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.5	30-120			
Chrysene	0.0159	0.00500	"	0.0333	ND	47.8	30-120			
Dibenz (a,h) anthracene	0.0138	0.00500	"	0.0333	ND	41.4	30-120			
Fluoranthene	0.0141	0.00500	"	0.0333	ND	42.3	30-120			
Fluorene	0.0158	0.00500	"	0.0333	ND	47.3	30-120			
Indeno (1,2,3-cd) pyrene	0.0140	0.00500	"	0.0333	ND	41.9	30-120			
Pyrene	0.0161	0.00500	"	0.0333	ND	48.3	35-142			
1-Methylnaphthalene	0.0161	0.00500	"	0.0333	ND	48.4	15-130			
2-Methylnaphthalene	0.0155	0.00500	"	0.0333	ND	46.5	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0170		"	0.0333		51.1	40-150			
Surrogate: Fluoranthene-d10	0.0166		"	0.0333		49.7	40-150			

Matrix Spike Dup (BGG0314-MSD1)	Source: 2307140-01			Prepared & Analyzed: 07/12/23						
Acenaphthene	0.0156	0.00500	mg/kg	0.0333	ND	46.7	31-137	7.80	30	
Anthracene	0.0158	0.00500	"	0.0333	ND	47.5	30-120	6.18	30	
Benzo (a) anthracene	0.0182	0.00500	"	0.0333	ND	54.7	30-120	17.7	30	
Benzo (a) pyrene	0.0150	0.00500	"	0.0333	ND	45.0	30-120	5.80	30	
Benzo (b) fluoranthene	0.0174	0.00500	"	0.0333	ND	52.3	30-120	19.8	30	
Benzo (k) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.6	30-120	2.21	30	
Chrysene	0.0166	0.00500	"	0.0333	ND	49.9	30-120	4.36	30	
Dibenz (a,h) anthracene	0.0154	0.00500	"	0.0333	ND	46.3	30-120	11.0	30	
Fluoranthene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	4.21	30	
Fluorene	0.0155	0.00500	"	0.0333	ND	46.6	30-120	1.52	30	
Indeno (1,2,3-cd) pyrene	0.0138	0.00500	"	0.0333	ND	41.4	30-120	1.31	30	
Pyrene	0.0168	0.00500	"	0.0333	ND	50.5	35-142	4.62	30	
1-Methylnaphthalene	0.0168	0.00500	"	0.0333	ND	50.5	15-130	4.17	50	
2-Methylnaphthalene	0.0152	0.00500	"	0.0333	ND	45.5	15-130	2.17	50	
Surrogate: 2-Methylnaphthalene-d10	0.0182		"	0.0333		54.7	40-150			
Surrogate: Fluoranthene-d10	0.0173		"	0.0333		52.0	40-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

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

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

Batch BGG0319 - EPA 3050B

Blank (BGG0319-BLK1)

Prepared: 07/12/23 Analyzed: 07/13/23

Boron ND 0.0100 mg/L

LCS (BGG0319-BS1)

Prepared: 07/12/23 Analyzed: 07/13/23

Boron 5.30 0.0100 mg/L 5.00 106 80-120

Duplicate (BGG0319-DUP1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Boron 0.213 0.0100 mg/L 0.250 15.7 20

Matrix Spike (BGG0319-MS1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Boron 5.86 0.0100 mg/L 5.00 0.250 112 75-125

Matrix Spike Dup (BGG0319-MSD1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Boron 6.07 0.0100 mg/L 5.00 0.250 116 75-125 3.52 25

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

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 BGG0310 - EPA 3050B

Blank (BGG0310-BLK1)

Prepared: 07/12/23 Analyzed: 07/13/23

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 (BGG0310-BS1)

Prepared: 07/12/23 Analyzed: 07/13/23

Arsenic	32.6	0.200	mg/kg wet	40.0	81.5	80-120				
Barium	32.7	0.400	"	40.0	81.8	80-120				
Cadmium	1.68	0.200	"	2.00	84.1	80-120				
Copper	32.1	0.400	"	40.0	80.4	80-120				
Lead	16.6	0.200	"	20.0	82.8	80-120				
Nickel	32.3	0.400	"	40.0	80.8	80-120				
Selenium	3.76	0.260	"	4.00	94.1	80-120				
Silver	1.63	0.0200	"	2.00	81.5	80-120				
Zinc	32.1	0.400	"	40.0	80.3	80-120				

Duplicate (BGG0310-DUP1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Arsenic	0.914	0.234	mg/kg dry	1.00	9.10	20				
Barium	71.5	0.469	"	133	60.1	20				QR-03
Cadmium	0.251	0.234	"	0.372	39.0	20				QR-01
Copper	2.29	0.469	"	2.50	8.72	20				
Lead	6.00	0.234	"	8.77	37.5	20				QR-03
Nickel	2.34	0.469	"	3.04	26.2	20				QR-01
Selenium	ND	0.305	"	ND		20				
Silver	0.0136	0.0234	"	0.0192	34.3	20				QR-01
Zinc	7.73	0.469	"	8.13	5.04	20				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

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 BGG0310 - EPA 3050B

Matrix Spike (BGG0310-MS1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Arsenic	13.7	0.234	mg/kg dry	46.9	1.00	27.0	75-125				QM-01
Barium	145	0.469	"	46.9	133	26.3	75-125				QM-01
Cadmium	2.56	0.234	"	2.34	0.372	93.2	75-125				
Copper	15.1	0.469	"	46.9	2.50	26.8	75-125				QM-01
Lead	28.2	0.234	"	23.4	8.77	82.8	75-125				
Nickel	14.9	0.469	"	46.9	3.04	25.3	75-125				QM-01
Selenium	4.70	0.305	"	4.69	ND	100	75-125				
Silver	2.20	0.0234	"	2.34	0.0192	92.9	75-125				
Zinc	21.5	0.469	"	46.9	8.13	28.6	75-125				QM-01

Matrix Spike Dup (BGG0310-MSD1)

Source: 2307161-03

Prepared: 07/12/23 Analyzed: 07/13/23

Arsenic	14.1	0.234	mg/kg dry	46.9	1.00	27.9	75-125	2.99	25		QM-01
Barium	162	0.469	"	46.9	133	62.3	75-125	11.0	25		QM-01
Cadmium	2.79	0.234	"	2.34	0.372	103	75-125	8.62	25		
Copper	15.6	0.469	"	46.9	2.50	28.0	75-125	3.73	25		QM-01
Lead	30.8	0.234	"	23.4	8.77	94.2	75-125	9.03	25		
Nickel	15.7	0.469	"	46.9	3.04	27.0	75-125	5.01	25		QM-01
Selenium	4.64	0.305	"	4.69	ND	99.0	75-125	1.21	25		
Silver	2.41	0.0234	"	2.34	0.0192	102	75-125	9.19	25		
Zinc	22.5	0.469	"	46.9	8.13	30.7	75-125	4.49	25		QM-01

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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

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 BGG0311 - 3060A Mod

Blank (BGG0311-BLK1)

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0311-BS1)

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent 24.0 0.30 mg/kg wet 25.0 96.2 80-120

Duplicate (BGG0311-DUP1)

Source: 2307014-06

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0311-MS1)

Source: 2307014-06

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent 26.1 0.30 mg/kg dry 28.2 ND 92.8 75-125

Matrix Spike Dup (BGG0311-MSD1)

Source: 2307014-06

Prepared & Analyzed: 07/12/23

Chromium, Hexavalent 27.7 0.30 mg/kg dry 28.2 ND 98.4 75-125 5.86 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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

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

Summit Scientific

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

Batch BGG0343 - General Preparation

Blank (BGG0343-BLK1)

Prepared: 07/12/23 Analyzed: 07/14/23

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

LCS (BGG0343-BS1)

Prepared: 07/12/23 Analyzed: 07/14/23

Calcium	4.89	0.0500	mg/L wet	5.00		97.8	70-130			
Magnesium	5.91	0.0500	"	5.00		118	70-130			
Sodium	5.95	0.0500	"	5.00		119	70-130			

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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

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 BGG0313 - General Preparation

Duplicate (BGG0313-DUP1)

Source: 2307014-06

Prepared & Analyzed: 07/12/23

% Solids	88.4		%		88.8			0.439	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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

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

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

Batch BGG0390 - General Preparation

Blank (BGG0390-BLK1)

Prepared & Analyzed: 07/13/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0390-BS1)

Prepared & Analyzed: 07/13/23

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

Duplicate (BGG0390-DUP1)

Source: 2307083-01

Prepared & Analyzed: 07/13/23

Specific Conductance (EC) 0.341 0.0100 mmhos/cm 0.346 1.48 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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/17/23 11:47

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

Summit Scientific

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

Batch BGG0391 - General Preparation

LCS (BGG0391-BS1)

Prepared & Analyzed: 07/13/23

pH	9.10	pH Units	9.18	99.1	95-105
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Duplicate (BGG0391-DUP1)

Source: 2307083-01

Prepared & Analyzed: 07/13/23

pH	7.64	pH Units	7.56	1.05	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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/17/23 11:47

Notes and Definitions

- 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-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

July 13, 2023

Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order #2307190

Enclosed are the results of analyses for samples received by Summit Scientific on 07/12/23 16:15. If you have any questions concerning this report, please feel free to contact me.

Sincerely,



Mikayla Axtell For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/13/23 06:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
GW01	2307190-01	Water	07/12/23 00:00	07/12/23 16:15
GW02	2307190-02	Water	07/12/23 00:00	07/12/23 16:15

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.

SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307190	

Send Data To:		Send Invoice To:	
Client: <u>Fremont Env</u>	Project Manager: <u>Paul Henahan</u>	Company: <u>Noble</u>	
Address:	E-Mail: <u>Paulh@fremontenv.com</u>	Project Name/Location: <u>PTF-64N64W 325ENE</u>	
City/State/Zip:	<u>Jeff@fremontenv.com</u> <u>Ethan@fremontenv.com</u>	AFE#:	
Phone:	Project Name: <u>PTF-64N64W 325ENE</u>	PO/Billing Codes: <u>UWRWE-A2338-ABN</u>	
Sampler Name: <u>J6</u>	Project Number:	Contact:	

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested					Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs(915)				
1	GW01	7/12/23		W	X				X				X	X				
2	GW02	7/12/23		W	X				X				X	X				
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		

Relinquished by: 	Date/Time: <u>7/12/23 16:15</u>	Received by: <u>Van Wald</u>	Date/Time: <u>7/12/23 16:15</u>	TAT Business Days	Field DO	Notes: <u>Bill to Noble</u>
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by:	Date/Time:	Received by:	Date/Time:	1 Day <input type="checkbox"/>	Field ORP	
Relinquished by:	Date/Time:	Received by:	Date/Time:	2 Days <input type="checkbox"/>	Field pH	
Relinquished by:	Date/Time:	Received by:	Date/Time:	3 Days <input type="checkbox"/>	Field Temp.	
Temperature Upon Receipt: <u>24.8</u>	Corrected Temperature	IR gun #: <u>2</u>	HNO3 lot #:	Standard <input type="checkbox"/>	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2307190Client: Fremont Client Project ID: PTF-64NG4W 3ZSENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____ Matrix (Check all that apply) Air Soil/Solid Water Other Temp (°C) 24.8 Thermometer # 2

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

Custodian Printed Name

7/12/23 16:15

Date/Time



Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/13/23 06:56

GW01
2307190-01 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGG0363	07/12/23	07/12/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	6.4	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	3.4	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	2.8	1.0		"	"	"	"	"	"	

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	14.6	110 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.2	99.2 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.0 %		21-167		"	"	"	"	

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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/13/23 06:56

GW02
2307190-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGG0363	07/12/23	07/12/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	2.3	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	2.0	1.0		"	"	"	"	"	"	

Date Sampled: **07/12/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	13.8	104 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	12.9	96.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	12.9	96.5 %		21-167		"	"	"	"	

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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/13/23 06:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0363 - EPA 5030 Water MS

Blank (BGG0363-BLK1)

Prepared: 07/12/23 Analyzed: 07/13/23

Benzene	ND	1.0	ug/l								
Toluene	ND	1.0	"								
Ethylbenzene	ND	1.0	"								
Xylenes (total)	ND	2.0	"								
Naphthalene	ND	1.0	"								
1,2,4-Trimethylbenzene	ND	1.0	"								
1,3,5-Trimethylbenzene	ND	1.0	"								
Surrogate: 1,2-Dichloroethane-d4	13.2		"	13.3		99.2		23-173			
Surrogate: Toluene-d8	12.8		"	13.3		95.8		20-170			
Surrogate: 4-Bromofluorobenzene	12.4		"	13.3		93.0		21-167			

LCS (BGG0363-BS1)

Prepared: 07/12/23 Analyzed: 07/13/23

Benzene	35.9	1.0	ug/l	41.7		86.2		51-132			
Toluene	37.9	1.0	"	41.7		90.9		51-138			
Ethylbenzene	37.8	1.0	"	41.7		90.7		58-146			
m,p-Xylene	76.6	2.0	"	83.3		91.9		57-144			
o-Xylene	36.4	1.0	"	41.7		87.2		53-146			
Naphthalene	37.8	1.0	"	41.7		90.6		70-130			
1,2,4-Trimethylbenzene	38.6	1.0	"	41.7		92.7		70-130			
1,3,5-Trimethylbenzene	40.2	1.0	"	41.7		96.5		70-130			
Surrogate: 1,2-Dichloroethane-d4	13.9		"	13.3		104		23-173			
Surrogate: Toluene-d8	13.2		"	13.3		98.9		20-170			
Surrogate: 4-Bromofluorobenzene	12.9		"	13.3		97.1		21-167			

Matrix Spike (BGG0363-MS1)

Source: 2307190-01

Prepared: 07/12/23 Analyzed: 07/13/23

Benzene	36.3	1.0	ug/l	41.7	ND	87.2		34-141			
Toluene	38.8	1.0	"	41.7	ND	93.1		27-151			
Ethylbenzene	38.7	1.0	"	41.7	ND	92.9		29-160			
m,p-Xylene	77.7	2.0	"	83.3	ND	93.2		20-166			
o-Xylene	36.8	1.0	"	41.7	ND	88.3		33-159			
Naphthalene	47.8	1.0	"	41.7	6.36	99.4		70-130			
1,2,4-Trimethylbenzene	39.6	1.0	"	41.7	3.38	86.9		70-130			
1,3,5-Trimethylbenzene	41.2	1.0	"	41.7	2.76	92.3		70-130			
Surrogate: 1,2-Dichloroethane-d4	14.0		"	13.3		105		23-173			
Surrogate: Toluene-d8	13.6		"	13.3		102		20-170			
Surrogate: 4-Bromofluorobenzene	13.2		"	13.3		99.4		21-167			

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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/13/23 06:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0363 - EPA 5030 Water MS

Matrix Spike Dup (BGG0363-MSD1)	Source: 2307190-01			Prepared: 07/12/23 Analyzed: 07/13/23					
Benzene	36.2	1.0	ug/l	41.7	ND	87.0	34-141	0.303	30
Toluene	38.4	1.0	"	41.7	ND	92.3	27-151	0.932	30
Ethylbenzene	38.2	1.0	"	41.7	ND	91.7	29-160	1.35	30
m,p-Xylene	76.7	2.0	"	83.3	ND	92.0	20-166	1.27	30
o-Xylene	36.6	1.0	"	41.7	ND	87.8	33-159	0.573	30
Naphthalene	48.1	1.0	"	41.7	6.36	100	70-130	0.689	30
1,2,4-Trimethylbenzene	39.4	1.0	"	41.7	3.38	86.4	70-130	0.608	30
1,3,5-Trimethylbenzene	41.1	1.0	"	41.7	2.76	92.0	70-130	0.316	30
Surrogate: 1,2-Dichloroethane-d4	14.6		"	13.3		109	23-173		
Surrogate: Toluene-d8	13.4		"	13.3		101	20-170		
Surrogate: 4-Bromofluorobenzene	13.5		"	13.3		101	21-167		

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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/13/23 06:56

Notes and Definitions

DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference

Summit Scientific

4653 Table Mountain Drive, Golden, Colorado 80401

303.277.9310

July 20, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

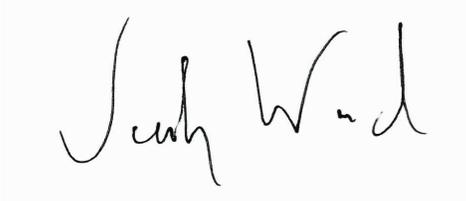
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307213

Enclosed are the results of analyses for samples received by Summit Scientific on 07/13/23 16:23. 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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B03@9.0'	2307213-01	Soil	07/13/23 00:00	07/13/23 16:23

Summit Scientific

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SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307213	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henehan	Company: Noble
City/State/Zip:	E-Mail: Paul.H@Fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeffg@fremontenv.com Ethanh@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DRO,ORO, GRO	PAHs (915)	EC,PH,SAR, Bpbn	Metals (915)		
1	B03@9.0'	7/13/23		2			X			X				X	X	X	X	X	X	
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <i>[Signature]</i>	Date/Time: 7/13/23 16:23	Received by: <i>[Signature]</i>	Date/Time: 7/13/23 16:23	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 27.3	Corrected Temperature	IR gun #: 2	HNO3 lot #:	Standard	Field Turb.	

S₂

Sample Receipt Checklist

S2 Work Order# 2307213

Client: Fremont Client Project ID: PTF-64N64W 32 SENE

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

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

Temp (°C) 27.3 Thermometer # 2

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

John Wald
Custodian Printed Name

7/13/23 16:23
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/20/23 10:56

B03@9.0'
2307213-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0401	07/13/23	07/13/23	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: **07/13/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		98.2 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		98.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		105 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0402	07/13/23	07/13/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		95.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/20/23 10:56

B03@9.0'
2307213-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0405	07/14/23	07/14/23	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: **07/13/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		56.7 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		64.3 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

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

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.123	0.0100		mg/L	1	BGG0417	07/14/23	07/17/23	EPA 6020B	

Total Metals by EPA 6020B

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

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/20/23 10:56

B03@9.0'
2307213-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	0.925	0.238		mg/kg dry	1	BGG0404	07/14/23	07/15/23	EPA 6020B	
Barium	48.3	0.475		"	"	"	"	"	"	
Cadmium	ND	0.238		"	"	"	"	"	"	
Copper	1.57	0.475		"	"	"	"	"	"	
Lead	3.89	0.238		"	"	"	"	"	"	
Nickel	1.78	0.475		"	"	"	"	"	"	
Selenium	ND	0.309	0.208	"	"	"	"	"	"	
Silver	ND	0.0238		"	"	"	"	"	"	
Zinc	7.54	0.475		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: 07/13/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0409	07/14/23	07/14/23	EPA 7196A	

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

Date Sampled: 07/13/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	41.9	0.0594		mg/L dry	1	BGG0400	07/13/23	07/15/23	EPA 6020B	
Magnesium	18.6	0.0594		"	"	"	"	"	"	
Sodium	43.0	0.0594		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: 07/13/23 00:00

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.39	0.00100		units	1	BGG0463	07/15/23	07/15/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/20/23 10:56

B03@9.0'
2307213-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.2			%	1	BGG0436	07/14/23	07/14/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.17	0.0100		mmhos/cm	1	BGG0427	07/14/23	07/14/23	EPA 120.1	

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

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

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.43			pH Units	1	BGG0425	07/14/23	07/14/23	EPA 9045D	

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/20/23 10:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0401 - EPA 5030 Soil MS

Blank (BGG0401-BLK1)

Prepared & Analyzed: 07/13/23

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>	0.0376		"	0.0400		94.0		50-150		
<i>Surrogate: Toluene-d8</i>	0.0402		"	0.0400		100		50-150		
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0402		"	0.0400		101		50-150		

LCS (BGG0401-BS1)

Prepared & Analyzed: 07/13/23

Benzene	0.0674	0.0020	mg/kg	0.0750		89.8		70-130		
Toluene	0.0814	0.0050	"	0.0750		109		70-130		
Ethylbenzene	0.0876	0.0050	"	0.0750		117		70-130		
m,p-Xylene	0.171	0.010	"	0.150		114		70-130		
o-Xylene	0.0790	0.0050	"	0.0750		105		70-130		
1,2,4-Trimethylbenzene	0.0808	0.0050	"	0.0750		108		70-130		
1,3,5-Trimethylbenzene	0.0844	0.0050	"	0.0750		113		70-130		
Naphthalene	0.0654	0.0038	"	0.0750		87.2		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0393		"	0.0400		98.2		50-150		
<i>Surrogate: Toluene-d8</i>	0.0396		"	0.0400		99.0		50-150		
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0398		"	0.0400		99.5		50-150		

Matrix Spike (BGG0401-MS1)

Source: 2307216-01

Prepared & Analyzed: 07/13/23

Benzene	0.0622	0.0020	mg/kg	0.0750	ND	83.0		70-130		
Toluene	0.0731	0.0050	"	0.0750	ND	97.5		70-130		
Ethylbenzene	0.0767	0.0050	"	0.0750	ND	102		70-130		
m,p-Xylene	0.153	0.010	"	0.150	ND	102		70-130		
o-Xylene	0.0722	0.0050	"	0.0750	ND	96.3		70-130		
1,2,4-Trimethylbenzene	0.0737	0.0050	"	0.0750	ND	98.3		70-130		
1,3,5-Trimethylbenzene	0.0754	0.0050	"	0.0750	ND	101		70-130		
Naphthalene	0.0659	0.0038	"	0.0750	ND	87.8		70-130		
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0424		"	0.0400		106		50-150		
<i>Surrogate: Toluene-d8</i>	0.0392		"	0.0400		98.0		50-150		
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0410		"	0.0400		103		50-150		

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
 07/20/23 10:56

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0401 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0401-MSD1)	Source: 2307216-01			Prepared & Analyzed: 07/13/23						
Benzene	0.0678	0.0020	mg/kg	0.0750	ND	90.4	70-130	8.49	30	
Toluene	0.0760	0.0050	"	0.0750	ND	101	70-130	3.86	30	
Ethylbenzene	0.0822	0.0050	"	0.0750	ND	110	70-130	6.87	30	
m,p-Xylene	0.164	0.010	"	0.150	ND	109	70-130	6.89	30	
o-Xylene	0.0761	0.0050	"	0.0750	ND	102	70-130	5.26	30	
1,2,4-Trimethylbenzene	0.0780	0.0050	"	0.0750	ND	104	70-130	5.62	30	
1,3,5-Trimethylbenzene	0.0802	0.0050	"	0.0750	ND	107	70-130	6.21	30	
Naphthalene	0.0712	0.0038	"	0.0750	ND	94.9	70-130	7.71	30	
Surrogate: 1,2-Dichloroethane-d4	0.0418		"	0.0400		105	50-150			
Surrogate: Toluene-d8	0.0392		"	0.0400		98.0	50-150			
Surrogate: 4-Bromofluorobenzene	0.0396		"	0.0400		99.1	50-150			

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/20/23 10:56

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 BGG0402 - EPA 3550A

Blank (BGG0402-BLK1)

Prepared & Analyzed: 07/13/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	12.0		"	12.5		95.8	30-150				

LCS (BGG0402-BS1)

Prepared & Analyzed: 07/13/23

C10-C28 (DRO)	568	50	mg/kg	500		114	70-130				
Surrogate: <i>o</i> -Terphenyl	11.5		"	12.5		92.0	30-150				

Matrix Spike (BGG0402-MS1)

Source: 2307216-01

Prepared & Analyzed: 07/13/23

C10-C28 (DRO)	512	50	mg/kg	500	10.6	100	70-130				
Surrogate: <i>o</i> -Terphenyl	10.9		"	12.5		87.2	30-150				

Matrix Spike Dup (BGG0402-MSD1)

Source: 2307216-01

Prepared & Analyzed: 07/13/23

C10-C28 (DRO)	658	50	mg/kg	500	10.6	130	70-130	25.0	20		QR-02
Surrogate: <i>o</i> -Terphenyl	12.0		"	12.5		95.6	30-150				

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/20/23 10:56

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0405 - EPA 5030 Soil MS

Blank (BGG0405-BLK1)

Prepared & Analyzed: 07/14/23

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>0.0152</i>		"	<i>0.0333</i>		<i>45.5</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0170</i>		"	<i>0.0333</i>		<i>51.0</i>	<i>40-150</i>			

LCS (BGG0405-BS1)

Prepared & Analyzed: 07/14/23

Acenaphthene	0.0160	0.00500	mg/kg	0.0333		48.1	31-137			
Anthracene	0.0150	0.00500	"	0.0333		45.0	30-120			
Benzo (a) anthracene	0.0140	0.00500	"	0.0333		42.0	30-120			
Benzo (a) pyrene	0.0139	0.00500	"	0.0333		41.8	30-120			
Benzo (b) fluoranthene	0.0135	0.00500	"	0.0333		40.6	30-120			
Benzo (k) fluoranthene	0.0145	0.00500	"	0.0333		43.5	30-120			
Chrysene	0.0152	0.00500	"	0.0333		45.6	30-120			
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333		45.9	30-120			
Fluoranthene	0.0149	0.00500	"	0.0333		44.7	30-120			
Fluorene	0.0157	0.00500	"	0.0333		47.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0150	0.00500	"	0.0333		45.1	30-120			
Pyrene	0.0147	0.00500	"	0.0333		44.1	35-142			
1-Methylnaphthalene	0.0138	0.00500	"	0.0333		41.5	35-142			
2-Methylnaphthalene	0.0145	0.00500	"	0.0333		43.5	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0149</i>		"	<i>0.0333</i>		<i>44.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0172</i>		"	<i>0.0333</i>		<i>51.7</i>	<i>40-150</i>			

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/20/23 10:56

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 BGG0405 - EPA 5030 Soil MS

Matrix Spike (BGG0405-MS1)	Source: 2307209-01			Prepared & Analyzed: 07/14/23							
Acenaphthene	0.0195	0.00500	mg/kg	0.0333	ND	58.6	31-137				
Anthracene	0.0155	0.00500	"	0.0333	ND	46.5	30-120				
Benzo (a) anthracene	0.0169	0.00500	"	0.0333	ND	50.7	30-120				
Benzo (a) pyrene	0.0141	0.00500	"	0.0333	ND	42.4	30-120				
Benzo (b) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.6	30-120				
Benzo (k) fluoranthene	0.0139	0.00500	"	0.0333	ND	41.7	30-120				
Chrysene	0.0166	0.00500	"	0.0333	ND	49.8	30-120				
Dibenz (a,h) anthracene	0.0166	0.00500	"	0.0333	ND	49.7	30-120				
Fluoranthene	0.0149	0.00500	"	0.0333	ND	44.7	30-120				
Fluorene	0.0201	0.00500	"	0.0333	ND	60.2	30-120				
Indeno (1,2,3-cd) pyrene	0.0135	0.00500	"	0.0333	ND	40.4	30-120				
Pyrene	0.0164	0.00500	"	0.0333	ND	49.2	35-142				
1-Methylnaphthalene	0.0145	0.00500	"	0.0333	ND	43.5	15-130				
2-Methylnaphthalene	0.0164	0.00500	"	0.0333	ND	49.3	15-130				
Surrogate: 2-Methylnaphthalene-d10	0.0170		"	0.0333		51.1	40-150				
Surrogate: Fluoranthene-d10	0.0179		"	0.0333		53.6	40-150				

Matrix Spike Dup (BGG0405-MSD1)	Source: 2307209-01			Prepared & Analyzed: 07/14/23							
Acenaphthene	0.0166	0.00500	mg/kg	0.0333	ND	49.8	31-137	16.3	30		
Anthracene	0.0155	0.00500	"	0.0333	ND	46.4	30-120	0.342	30		
Benzo (a) anthracene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	3.06	30		
Benzo (a) pyrene	0.0194	0.00500	"	0.0333	ND	58.1	30-120	31.4	30		QR-02
Benzo (b) fluoranthene	0.0152	0.00500	"	0.0333	ND	45.6	30-120	6.88	30		
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	21.7	30		
Chrysene	0.0164	0.00500	"	0.0333	ND	49.2	30-120	1.13	30		
Dibenz (a,h) anthracene	0.0159	0.00500	"	0.0333	ND	47.7	30-120	3.99	30		
Fluoranthene	0.0150	0.00500	"	0.0333	ND	45.1	30-120	0.995	30		
Fluorene	0.0190	0.00500	"	0.0333	ND	57.1	30-120	5.39	30		
Indeno (1,2,3-cd) pyrene	0.0148	0.00500	"	0.0333	ND	44.4	30-120	9.50	30		
Pyrene	0.0173	0.00500	"	0.0333	ND	52.0	35-142	5.63	30		
1-Methylnaphthalene	0.0170	0.00500	"	0.0333	ND	51.1	15-130	16.0	50		
2-Methylnaphthalene	0.0138	0.00500	"	0.0333	ND	41.3	15-130	17.8	50		
Surrogate: 2-Methylnaphthalene-d10	0.0142		"	0.0333		42.7	40-150				
Surrogate: Fluoranthene-d10	0.0181		"	0.0333		54.2	40-150				

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/20/23 10:56

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 BGG0417 - EPA 3050B

Blank (BGG0417-BLK1)

Prepared: 07/14/23 Analyzed: 07/17/23

Boron ND 0.0100 mg/L

LCS (BGG0417-BS1)

Prepared: 07/14/23 Analyzed: 07/17/23

Boron 5.12 0.0100 mg/L 5.00 102 80-120

Duplicate (BGG0417-DUP1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/17/23

Boron 0.176 0.0100 mg/L 0.123 34.9 20 QR-04

Matrix Spike (BGG0417-MS1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/17/23

Boron 6.81 0.0100 mg/L 5.00 0.123 134 75-125 QM-07

Matrix Spike Dup (BGG0417-MSD1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/17/23

Boron 6.93 0.0100 mg/L 5.00 0.123 136 75-125 1.66 25 QM-07

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/20/23 10:56

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0404 - EPA 3050B

Blank (BGG0404-BLK1)

Prepared: 07/14/23 Analyzed: 07/15/23

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 (BGG0404-BS1)

Prepared: 07/14/23 Analyzed: 07/15/23

Arsenic	41.3	0.200	mg/kg wet	40.0		103	80-120		
Barium	32.3	0.400	"	40.0		80.8	80-120		
Cadmium	1.98	0.200	"	2.00		99.1	80-120		
Copper	41.8	0.400	"	40.0		105	80-120		
Lead	16.2	0.200	"	20.0		80.8	80-120		
Nickel	41.1	0.400	"	40.0		103	80-120		
Selenium	4.13	0.260	"	4.00		103	80-120		
Silver	1.91	0.0200	"	2.00		95.5	80-120		
Zinc	42.4	0.400	"	40.0		106	80-120		

Duplicate (BGG0404-DUP1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/15/23

Arsenic	0.729	0.238	mg/kg dry	0.925		23.7	20	QR-01
Barium	35.5	0.475	"	48.3		30.6	20	QR-04
Cadmium	0.0850	0.238	"	0.142		49.9	20	QR-01
Copper	1.35	0.475	"	1.57		15.3	20	
Lead	2.75	0.238	"	3.89		34.4	20	QR-04
Nickel	1.61	0.475	"	1.78		9.56	20	
Selenium	ND	0.309	"	ND			20	
Silver	0.0109	0.0238	"	0.0166		41.4	20	QR-01
Zinc	6.91	0.475	"	7.54		8.74	20	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/20/23 10:56

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 BGG0404 - EPA 3050B

Matrix Spike (BGG0404-MS1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/15/23

Arsenic	23.3	0.238	mg/kg dry	47.5	0.925	47.1	75-125				QM-01
Barium	68.9	0.475	"	47.5	48.3	43.3	75-125				QM-01
Cadmium	1.98	0.238	"	2.38	0.142	77.3	75-125				
Copper	23.2	0.475	"	47.5	1.57	45.5	75-125				QM-01
Lead	18.6	0.238	"	23.8	3.89	62.0	75-125				QM-01
Nickel	23.5	0.475	"	47.5	1.78	45.7	75-125				QM-01
Selenium	6.43	0.309	"	4.75	ND	135	75-125				QM-01
Silver	1.77	0.0238	"	2.38	0.0166	73.6	75-125				QM-01
Zinc	29.3	0.475	"	47.5	7.54	45.8	75-125				QM-01

Matrix Spike Dup (BGG0404-MSD1)

Source: 2307213-01

Prepared: 07/14/23 Analyzed: 07/15/23

Arsenic	23.6	0.238	mg/kg dry	47.5	0.925	47.8	75-125	1.53	25		QM-01
Barium	69.9	0.475	"	47.5	48.3	45.3	75-125	1.37	25		QM-01
Cadmium	1.97	0.238	"	2.38	0.142	77.1	75-125	0.240	25		
Copper	23.9	0.475	"	47.5	1.57	46.9	75-125	2.92	25		QM-01
Lead	19.1	0.238	"	23.8	3.89	63.8	75-125	2.29	25		QM-01
Nickel	24.1	0.475	"	47.5	1.78	46.9	75-125	2.47	25		QM-01
Selenium	7.34	0.309	"	4.75	ND	155	75-125	13.3	25		QM-01
Silver	1.80	0.0238	"	2.38	0.0166	75.0	75-125	1.81	25		
Zinc	29.9	0.475	"	47.5	7.54	47.0	75-125	2.03	25		QM-01

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/20/23 10:56

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 BGG0400 - General Preparation

Blank (BGG0400-BLK1)

Prepared: 07/13/23 Analyzed: 07/15/23

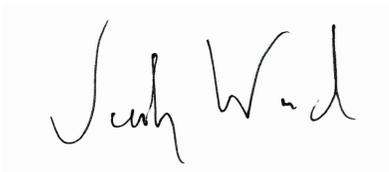
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BGG0400-BS1)

Prepared: 07/13/23 Analyzed: 07/15/23

Calcium	4.33	0.0500	mg/L wet	5.00		86.6	70-130			
Magnesium	5.55	0.0500	"	5.00		111	70-130			
Sodium	5.63	0.0500	"	5.00		113	70-130			

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
 07/20/23 10:56

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 BGG0436 - General Preparation

Duplicate (BGG0436-DUP1)

Source: 2306315-05

Prepared & Analyzed: 07/14/23

% Solids	88.1		%		89.1			1.07	20	
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Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/20/23 10:56

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 BGG0427 - General Preparation

Blank (BGG0427-BLK1)

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0427-BS1)

Prepared & Analyzed: 07/14/23

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

Duplicate (BGG0427-DUP1)

Source: 2307213-01

Prepared & Analyzed: 07/14/23

Specific Conductance (EC) 1.15 0.0100 mmhos/cm 1.17 1.55 20

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
 07/20/23 10:56

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 BGG0425 - General Preparation

LCS (BGG0425-BS1)

Prepared & Analyzed: 07/14/23

pH	9.09	pH Units	9.18	99.0	95-105
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Duplicate (BGG0425-DUP1)

Source: 2307213-01

Prepared & Analyzed: 07/14/23

pH	7.45	pH Units	7.43	0.269	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/20/23 10:56

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-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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-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

July 25, 2023

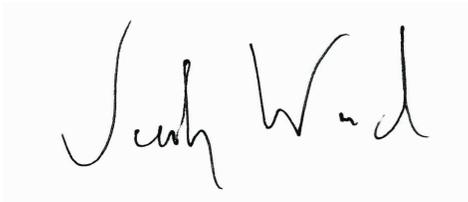
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order #2307249

Enclosed are the results of analyses for samples received by Summit Scientific on 07/14/23 15:21. 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 "nd" at the end of the last name.

Jacob Wood For Paul Shrewsbury
President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
N02@8.0'	2307249-01	Soil	07/14/23 00:00	07/14/23 15:21

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.

S₂

Sample Receipt Checklist

S2 Work Order# 2307249

Client: Fremont

Client Project ID: PTF-64N64W 32SENE

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

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

Temp (°C) 24.4 Thermometer # 2

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

Vin Wood
Custodian Printed Name

7/14/23 15:21
Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

N02@8.0'
2307249-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG0456	07/14/23	07/14/23	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: **07/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0446	112 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0399	99.8 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0410	102 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0457	"	07/14/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.8	94.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

N02@8.0'
2307249-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0469	07/17/23	07/18/23	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: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0288	86.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0172	51.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.137	0.0100	mg/L	1	BGG0486	07/17/23	07/20/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/14/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

N02@8.0'
2307249-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.31	0.235	mg/kg dry	1	BGG0465	07/17/23	07/18/23	EPA 6020B
Barium	58.6	0.470	"	"	"	"	"	"
Cadmium	ND	0.235	"	"	"	"	"	"
Copper	2.40	0.470	"	"	"	"	"	"
Lead	3.84	0.235	"	"	"	"	"	"
Nickel	3.02	0.470	"	"	"	"	"	"
Selenium	ND	0.305	"	"	"	"	"	"
Silver	ND	0.0235	"	"	"	"	"	"
Zinc	11.8	0.470	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0467	07/17/23	07/17/23	EPA 7196A	

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

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	40.2	0.0587	mg/L dry	1	BGG0455	07/14/23	07/19/23	EPA 6020B	
Magnesium	28.4	0.0587	"	"	"	"	"	"	
Sodium	43.1	0.0587	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.27	0.00100	units	1	BGG0577	07/19/23	07/19/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

N02@8.0'
2307249-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	85.1		%	1	BGG0468	07/17/23	07/17/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.849	0.0100	mmhos/cm	1	BGG0501	07/17/23	07/17/23	EPA 120.1	

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

Date Sampled: **07/14/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.91		pH Units	1	BGG0500	07/17/23	07/17/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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 BGG0456 - EPA 5030 Soil MS

Blank (BGG0456-BLK1)

Prepared & Analyzed: 07/14/23

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>	0.0452		"	0.0400		113	50-150				
<i>Surrogate: Toluene-d8</i>	0.0400		"	0.0400		100	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0404		"	0.0400		101	50-150				

LCS (BGG0456-BS1)

Prepared & Analyzed: 07/14/23

Benzene	0.113	0.0020	mg/kg	0.100		113	70-130				
Toluene	0.116	0.0050	"	0.100		116	70-130				
Ethylbenzene	0.115	0.0050	"	0.100		115	70-130				
m,p-Xylene	0.224	0.010	"	0.200		112	70-130				
o-Xylene	0.107	0.0050	"	0.100		107	70-130				
1,2,4-Trimethylbenzene	0.113	0.0050	"	0.100		113	70-130				
1,3,5-Trimethylbenzene	0.117	0.0050	"	0.100		117	70-130				
Naphthalene	0.112	0.0038	"	0.100		112	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0405		"	0.0400		101	50-150				
<i>Surrogate: Toluene-d8</i>	0.0404		"	0.0400		101	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0396		"	0.0400		98.9	50-150				

Matrix Spike (BGG0456-MS1)

Source: 2307249-01

Prepared & Analyzed: 07/14/23

Benzene	0.116	0.0020	mg/kg	0.100	ND	116	70-130				
Toluene	0.122	0.0050	"	0.100	ND	122	70-130				
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130				
m,p-Xylene	0.230	0.010	"	0.200	ND	115	70-130				
o-Xylene	0.111	0.0050	"	0.100	ND	111	70-130				
1,2,4-Trimethylbenzene	0.119	0.0050	"	0.100	ND	119	70-130				
1,3,5-Trimethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130				
Naphthalene	0.128	0.0038	"	0.100	ND	128	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0431		"	0.0400		108	50-150				
<i>Surrogate: Toluene-d8</i>	0.0404		"	0.0400		101	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0404		"	0.0400		101	50-150				

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Fremont Environmental
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Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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		

Batch BGG0456 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0456-MSD1)	Source: 2307249-01			Prepared & Analyzed: 07/14/23						
Benzene	0.118	0.0020	mg/kg	0.100	ND	118	70-130	1.76	30	
Toluene	0.122	0.0050	"	0.100	ND	122	70-130	0.0987	30	
Ethylbenzene	0.117	0.0050	"	0.100	ND	117	70-130	0.103	30	
m,p-Xylene	0.228	0.010	"	0.200	ND	114	70-130	0.942	30	
o-Xylene	0.112	0.0050	"	0.100	ND	112	70-130	1.59	30	
1,2,4-Trimethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130	0.963	30	
1,3,5-Trimethylbenzene	0.122	0.0050	"	0.100	ND	122	70-130	0.864	30	
Naphthalene	0.122	0.0038	"	0.100	ND	122	70-130	4.75	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0436</i>		<i>"</i>	<i>0.0400</i>		<i>109</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0405</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0403</i>		<i>"</i>	<i>0.0400</i>		<i>101</i>	<i>50-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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 BGG0457 - EPA 3550A

Blank (BGG0457-BLK1)

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.9		"	12.5		87.4		30-150			

LCS (BGG0457-BS1)

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	596	50	mg/kg	500		119		70-130			
Surrogate: <i>o</i> -Terphenyl	12.2		"	12.5		97.3		30-150			

Matrix Spike (BGG0457-MS1)

Source: 2307249-01

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	600	50	mg/kg	500	9.74	118		70-130			
Surrogate: <i>o</i> -Terphenyl	12.0		"	12.5		96.1		30-150			

Matrix Spike Dup (BGG0457-MSD1)

Source: 2307249-01

Prepared & Analyzed: 07/14/23

C10-C28 (DRO)	594	50	mg/kg	500	9.74	117		70-130	0.951	20	
Surrogate: <i>o</i> -Terphenyl	11.8		"	12.5		94.4		30-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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 BGG0469 - EPA 5030 Soil MS

Blank (BGG0469-BLK1)

Prepared & Analyzed: 07/17/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0398		"	0.0333		120	40-150			
Surrogate: Fluoranthene-d10	0.0238		"	0.0333		71.4	40-150			

LCS (BGG0469-BS1)

Prepared & Analyzed: 07/17/23

Acenaphthene	0.0263	0.00500	mg/kg	0.0333		78.9	31-137			
Anthracene	0.0269	0.00500	"	0.0333		80.8	30-120			
Benzo (a) anthracene	0.0197	0.00500	"	0.0333		59.0	30-120			
Benzo (a) pyrene	0.0259	0.00500	"	0.0333		77.7	30-120			
Benzo (b) fluoranthene	0.0236	0.00500	"	0.0333		70.8	30-120			
Benzo (k) fluoranthene	0.0252	0.00500	"	0.0333		75.6	30-120			
Chrysene	0.0273	0.00500	"	0.0333		82.0	30-120			
Dibenz (a,h) anthracene	0.0225	0.00500	"	0.0333		67.5	30-120			
Fluoranthene	0.0264	0.00500	"	0.0333		79.3	30-120			
Fluorene	0.0262	0.00500	"	0.0333		78.5	30-120			
Indeno (1,2,3-cd) pyrene	0.0215	0.00500	"	0.0333		64.5	30-120			
Pyrene	0.0287	0.00500	"	0.0333		86.2	35-142			
1-Methylnaphthalene	0.0186	0.00500	"	0.0333		55.7	35-142			
2-Methylnaphthalene	0.0383	0.00500	"	0.0333		115	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0310		"	0.0333		93.0	40-150			
Surrogate: Fluoranthene-d10	0.0275		"	0.0333		82.6	40-150			

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PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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 BGG0469 - EPA 5030 Soil MS

Matrix Spike (BGG0469-MS1)	Source: 2307272-01			Prepared & Analyzed: 07/17/23						
Acenaphthene	0.0138	0.00500	mg/kg	0.0333	ND	41.4	31-137			
Anthracene	0.0143	0.00500	"	0.0333	ND	42.8	30-120			
Benzo (a) anthracene	0.0154	0.00500	"	0.0333	ND	46.1	30-120			
Benzo (a) pyrene	0.0135	0.00500	"	0.0333	ND	40.5	30-120			
Benzo (b) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.1	30-120			
Benzo (k) fluoranthene	0.0144	0.00500	"	0.0333	ND	43.1	30-120			
Chrysene	0.0139	0.00500	"	0.0333	ND	41.7	30-120			
Dibenz (a,h) anthracene	0.0144	0.00500	"	0.0333	ND	43.1	30-120			
Fluoranthene	0.0147	0.00500	"	0.0333	ND	44.2	30-120			
Fluorene	0.0144	0.00500	"	0.0333	ND	43.2	30-120			
Indeno (1,2,3-cd) pyrene	0.0153	0.00500	"	0.0333	ND	46.0	30-120			
Pyrene	0.0140	0.00500	"	0.0333	ND	41.9	35-142			
1-Methylnaphthalene	0.0230	0.00500	"	0.0333	ND	68.9	15-130			
2-Methylnaphthalene	0.0277	0.00500	"	0.0333	ND	83.0	15-130			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0235</i>		<i>"</i>	<i>0.0333</i>		<i>70.6</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0154</i>		<i>"</i>	<i>0.0333</i>		<i>46.3</i>	<i>40-150</i>			

Matrix Spike Dup (BGG0469-MSD1)	Source: 2307272-01			Prepared & Analyzed: 07/17/23						
Acenaphthene	0.0138	0.00500	mg/kg	0.0333	ND	41.5	31-137	0.389	30	
Anthracene	0.0146	0.00500	"	0.0333	ND	43.8	30-120	2.50	30	
Benzo (a) anthracene	0.0188	0.00500	"	0.0333	ND	56.5	30-120	20.2	30	
Benzo (a) pyrene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	21.9	30	
Benzo (b) fluoranthene	0.0170	0.00500	"	0.0333	ND	51.1	30-120	12.9	30	
Benzo (k) fluoranthene	0.0173	0.00500	"	0.0333	ND	51.9	30-120	18.5	30	
Chrysene	0.0140	0.00500	"	0.0333	ND	41.9	30-120	0.452	30	
Dibenz (a,h) anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120	19.0	30	
Fluoranthene	0.0137	0.00500	"	0.0333	ND	41.2	30-120	7.02	30	
Fluorene	0.0135	0.00500	"	0.0333	ND	40.5	30-120	6.53	30	
Indeno (1,2,3-cd) pyrene	0.0160	0.00500	"	0.0333	ND	47.9	30-120	3.97	30	
Pyrene	0.0173	0.00500	"	0.0333	ND	51.9	35-142	21.2	30	
1-Methylnaphthalene	0.0187	0.00500	"	0.0333	ND	56.0	15-130	20.8	50	
2-Methylnaphthalene	0.0290	0.00500	"	0.0333	ND	86.9	15-130	4.51	50	
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0300</i>		<i>"</i>	<i>0.0333</i>		<i>90.0</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0151</i>		<i>"</i>	<i>0.0333</i>		<i>45.4</i>	<i>40-150</i>			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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			%REC	Limits	RPD	Limit	

Batch BGG0486 - EPA 3050B

Blank (BGG0486-BLK1)

Prepared: 07/17/23 Analyzed: 07/20/23

Boron ND 0.0100 mg/L

LCS (BGG0486-BS1)

Prepared: 07/17/23 Analyzed: 07/20/23

Boron 4.66 0.0100 mg/L 5.00 93.3 80-120

Duplicate (BGG0486-DUP1)

Source: 2305666-01

Prepared: 07/17/23 Analyzed: 07/20/23

Boron 0.109 0.0100 mg/L 0.126 14.3 20

Matrix Spike (BGG0486-MS1)

Source: 2305666-01

Prepared: 07/17/23 Analyzed: 07/20/23

Boron 4.69 0.0100 mg/L 5.00 0.126 91.2 75-125

Matrix Spike Dup (BGG0486-MSD1)

Source: 2305666-01

Prepared: 07/17/23 Analyzed: 07/20/23

Boron 4.74 0.0100 mg/L 5.00 0.126 92.2 75-125 1.07 25

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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 BGG0465 - EPA 3050B

Blank (BGG0465-BLK1)

Prepared: 07/17/23 Analyzed: 07/18/23

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 (BGG0465-BS1)

Prepared: 07/17/23 Analyzed: 07/18/23

Arsenic	36.3	0.200	mg/kg wet	40.0	90.9	80-120				
Barium	38.0	0.400	"	40.0	95.1	80-120				
Cadmium	1.86	0.200	"	2.00	93.0	80-120				
Copper	39.4	0.400	"	40.0	98.4	80-120				
Lead	18.6	0.200	"	20.0	92.9	80-120				
Nickel	38.3	0.400	"	40.0	95.8	80-120				
Selenium	3.77	0.260	"	4.00	94.3	80-120				
Silver	1.87	0.0200	"	2.00	93.7	80-120				
Zinc	37.9	0.400	"	40.0	94.8	80-120				

Duplicate (BGG0465-DUP1)

Source: 2305666-01

Prepared: 07/17/23 Analyzed: 07/18/23

Arsenic	2.19	0.233	mg/kg dry	2.55	15.3	20				
Barium	333	0.466	"	348	4.60	20				
Cadmium	0.211	0.233	"	0.248	16.4	20				
Copper	2.91	0.466	"	3.51	18.7	20				
Lead	5.35	0.233	"	7.06	27.5	20				QR-04
Nickel	2.92	0.466	"	3.51	18.6	20				
Selenium	ND	0.303	"	ND		20				
Silver	0.0172	0.0233	"	0.0224	25.9	20				QR-01
Zinc	12.7	0.466	"	14.9	16.4	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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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 BGG0465 - EPA 3050B

Matrix Spike (BGG0465-MS1)	Source: 2305666-01			Prepared: 07/17/23 Analyzed: 07/18/23						QM-07
Arsenic	43.3	0.233	mg/kg dry	46.6	2.55	87.5	75-125			
Barium	488	0.466	"	46.6	348	299	75-125			
Cadmium	2.42	0.233	"	2.33	0.248	93.3	75-125			
Copper	34.8	0.466	"	46.6	3.51	67.2	75-125			
Lead	27.5	0.233	"	23.3	7.06	87.9	75-125			
Nickel	34.9	0.466	"	46.6	3.51	67.4	75-125			
Selenium	3.95	0.303	"	4.66	ND	84.8	75-125			
Silver	2.15	0.0233	"	2.33	0.0224	91.5	75-125			
Zinc	46.9	0.466	"	46.6	14.9	68.7	75-125			

Matrix Spike Dup (BGG0465-MSD1)	Source: 2305666-01			Prepared: 07/17/23 Analyzed: 07/18/23						QM-07
Arsenic	43.2	0.233	mg/kg dry	46.6	2.55	87.3	75-125	0.256	25	
Barium	485	0.466	"	46.6	348	293	75-125	0.561	25	
Cadmium	2.39	0.233	"	2.33	0.248	92.0	75-125	1.20	25	
Copper	34.8	0.466	"	46.6	3.51	67.2	75-125	0.0803	25	
Lead	27.5	0.233	"	23.3	7.06	87.8	75-125	0.0829	25	
Nickel	34.9	0.466	"	46.6	3.51	67.5	75-125	0.0973	25	
Selenium	4.13	0.303	"	4.66	ND	88.8	75-125	4.55	25	
Silver	2.13	0.0233	"	2.33	0.0224	90.4	75-125	1.18	25	
Zinc	46.9	0.466	"	46.6	14.9	68.6	75-125	0.106	25	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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 BGG0467 - 3060A Mod

Blank (BGG0467-BLK1)

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0467-BS1)

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent 20.4 0.30 mg/kg wet 25.0 81.6 80-120

Duplicate (BGG0467-DUP1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0467-MS1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent 27.3 0.30 mg/kg dry 29.1 ND 93.8 75-125

Matrix Spike Dup (BGG0467-MSD1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

Chromium, Hexavalent 27.8 0.30 mg/kg dry 29.1 ND 95.6 75-125 1.90 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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 BGG0455 - General Preparation

Blank (BGG0455-BLK1)

Prepared: 07/14/23 Analyzed: 07/18/23

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

LCS (BGG0455-BS1)

Prepared: 07/14/23 Analyzed: 07/18/23

Calcium	5.99	0.0500	mg/L wet	5.00		120	70-130			
Magnesium	5.76	0.0500	"	5.00		115	70-130			
Sodium	5.48	0.0500	"	5.00		110	70-130			

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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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 BGG0468 - General Preparation

Duplicate (BGG0468-DUP1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

% Solids	84.9		%		85.9			1.20	20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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 BGG0501 - General Preparation

Blank (BGG0501-BLK1)

Prepared & Analyzed: 07/17/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0501-BS1)

Prepared & Analyzed: 07/17/23

Specific Conductance (EC) 0.158 0.0100 mmhos/cm 0.150 105 95-105

Duplicate (BGG0501-DUP1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

Specific Conductance (EC) 0.256 0.0100 mmhos/cm 0.261 2.13 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henchan

Reported:
 07/25/23 09:26

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 BGG0500 - General Preparation

LCS (BGG0500-BS1)

Prepared & Analyzed: 07/17/23

pH	9.12	pH Units	9.18	99.3	95-105
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Duplicate (BGG0500-DUP1)

Source: 2305666-01

Prepared & Analyzed: 07/17/23

pH	8.16	pH Units	8.25	1.10	20
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Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henchan

Reported:
07/25/23 09:26

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-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS/LCSD recovery.
- 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

July 25, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

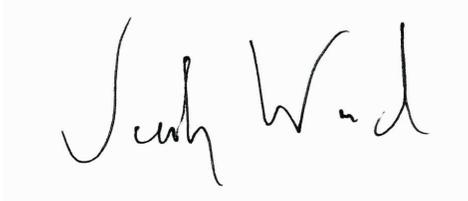
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307280

Enclosed are the results of analyses for samples received by Summit Scientific on 07/17/23 16:33. 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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B04@9.0'	2307280-01	Soil	07/17/23 00:00	07/17/23 16:33
B05@9.0'	2307280-02	Soil	07/17/23 00:00	07/17/23 16:33
GW03	2307280-03	Water	07/17/23 00:00	07/17/23 16:33

Summit Scientific

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

SUMMIT SCIENTIFIC

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

Lab ID 2307280 Page 1 of 1

Client: <u>Fremont Env</u>	Send Data To: Project Manager: <u>Paul Henehan</u>	Send Invoice To: Company: <u>Noble</u>
Address:	E-Mail: <u>Paulh@fremontenv.com</u>	Project Name/Location: <u>PTF-64N64W 32SENE</u>
City/State/Zip:	<u>jeffg@fremontenv.com Ethamb@fremontenv.com</u>	AFE#:
Phone:	Project Name: <u>PTF-64N64W 32SENE</u>	PO/Billing Codes: <u>UWRWE-A2338-ABN</u>
Sampler Name: <u>JG</u>	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DRD, ORO, GRO	PAHs (915)	EC, PH, SAR, Boron	Metals (915)		
1	B04@9.0'	7/17/23		WJW			XX				XX									
2	B05@9.0'	↓		WJW			XX				XX									
3	GW03	↓		WJW	X				X											
4									X											
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: <u>[Signature]</u> Date/Time: <u>7/17/23 1635</u>	Received by: <u>Jan Wood</u> Date/Time: <u>7/17/23 16:33</u>	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Received by:	Same Day <input checked="" type="checkbox"/>	Field EC	
Relinquished by:	Received by:	1 Day <input type="checkbox"/>	Field ORP	
Relinquished by:	Received by:	2 Days <input type="checkbox"/>	Field pH	
Relinquished by:	Received by:	3 Days <input type="checkbox"/>	Field Temp.	
Temperature Upon Receipt: <u>28.3</u>	Corrected Temperature	Standard <input type="checkbox"/>	Field Turb.	
	IR gun #: <u>7</u>		HNO3 lot #:	

S₂

Sample Receipt Checklist

S2 Work Order# 2307280

Client: Fremont Client Project ID: 9TF-64N64W 3ZSENE

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

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

Temp (°C) 28.3 Thermometer # 2

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Are samples due within 48 hours present?	<input 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 checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out Completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	no sample times
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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	HCl
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 checked="" type="checkbox"/>	<input type="checkbox"/>	
Additional Comments (if any):				
⁽¹⁾ If NO, then contact the client before proceeding with analysis and note in case narrative.				

Josh Wood

Custodian Printed Name

7/17/23 16:33

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B04@9.0'
2307280-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0510	07/17/23	07/17/23	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: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		126 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		87.7 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0509	"	07/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		88.2 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B04@9.0'
2307280-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0516	07/18/23	07/19/23	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: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		47.4 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		44.5 %		40-150		"	"	"	"	"

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	0.145	0.0100		mg/L	1	BGG0518	07/18/23	07/20/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/17/23 00:00**

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

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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

B04@9.0'
2307280-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.63	0.243		mg/kg dry	1	BGG0511	07/18/23	07/20/23	EPA 6020B	
Barium	35.9	0.486		"	"	"	"	"	"	
Cadmium	ND	0.243		"	"	"	"	"	"	
Copper	2.55	0.486		"	"	"	"	"	"	
Lead	3.46	0.243		"	"	"	"	"	"	
Nickel	3.59	0.486		"	"	"	"	"	"	
Selenium	ND	0.316	0.213	"	"	"	"	"	"	
Silver	ND	0.0243		"	"	"	"	"	"	
Zinc	15.2	0.486		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0513	07/18/23	07/18/23	EPA 7196A	

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

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	62.6	0.0607		mg/L dry	1	BGG0508	07/17/23	07/19/23	EPA 6020B	
Magnesium	28.7	0.0607		"	"	"	"	"	"	
Sodium	64.7	0.0607		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.70	0.00100		units	1	BGG0646	07/20/23	07/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

B04@9.0'
2307280-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	82.3			%	1	BGG0515	07/18/23	07/18/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.10	0.0100		mmhos/cm	1	BGG0528	07/18/23	07/18/23	EPA 120.1	

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

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.60			pH Units	1	BGG0529	07/18/23	07/18/23	EPA 9045D	

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B05@9.0'
2307280-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0510	07/17/23	07/17/23	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: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		133 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		88.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0509	"	07/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		90.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B05@9.0'
2307280-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0516	07/18/23	07/19/23	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: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		41.1 %		40-150		"	"	"	"	"
Surrogate: Fluoranthene-d10		54.9 %		40-150		"	"	"	"	"

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.117	0.0100		mg/L	1	BGG0518	07/18/23	07/20/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/17/23 00:00**

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 - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

B05@9.0'
2307280-02 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.62	0.239		mg/kg dry	1	BGG0511	07/18/23	07/20/23	EPA 6020B	
Barium	36.6	0.478		"	"	"	"	"	"	
Cadmium	ND	0.239		"	"	"	"	"	"	
Copper	2.16	0.478		"	"	"	"	"	"	
Lead	3.29	0.239		"	"	"	"	"	"	
Nickel	2.99	0.478		"	"	"	"	"	"	
Selenium	ND	0.311	0.209	"	"	"	"	"	"	
Silver	ND	0.0239		"	"	"	"	"	"	
Zinc	12.4	0.478		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0513	07/18/23	07/18/23	EPA 7196A	

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

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	60.3	0.0598		mg/L dry	1	BGG0508	07/17/23	07/19/23	EPA 6020B	
Magnesium	27.2	0.0598		"	"	"	"	"	"	
Sodium	62.0	0.0598		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.66	0.00100		units	1	BGG0646	07/20/23	07/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

B05@9.0'
2307280-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	83.6			%	1	BGG0515	07/18/23	07/18/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/17/23 00:00**

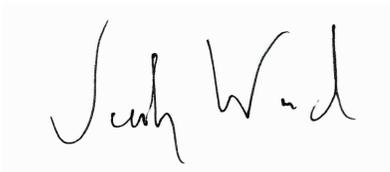
Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.06	0.0100		mmhos/cm	1	BGG0528	07/18/23	07/18/23	EPA 120.1	

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

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.67			pH Units	1	BGG0529	07/18/23	07/18/23	EPA 9045D	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

GW03
2307280-03 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0		ug/l	1	BGG0506	07/17/23	07/18/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **07/17/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.4 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		85.9 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		96.2 %		21-167		"	"	"	"	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

Volatile Organic Compounds by EPA Method 8260B - Quality Control

Summit Scientific

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

Batch BGG0506 - EPA 5030 Water MS

Blank (BGG0506-BLK1)

Prepared: 07/17/23 Analyzed: 07/19/23

Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
<i>Surrogate: 1,2-Dichloroethane-d4</i>	20.2		"	13.3		151	23-173			
<i>Surrogate: Toluene-d8</i>	11.8		"	13.3		88.7	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	15.0		"	13.3		112	21-167			

LCS (BGG0506-BS1)

Prepared: 07/17/23 Analyzed: 07/19/23

Benzene	43.3	1.0	ug/l	50.0		86.5	51-132			
Toluene	45.2	1.0	"	50.0		90.3	51-138			
Ethylbenzene	40.4	1.0	"	50.0		80.9	58-146			
m,p-Xylene	69.2	2.0	"	100		69.2	57-144			
o-Xylene	40.8	1.0	"	50.0		81.6	53-146			
Naphthalene	37.2	1.0	"	50.0		74.4	70-130			
1,2,4-Trimethylbenzene	45.6	1.0	"	50.0		91.1	70-130			
1,3,5-Trimethylbenzene	39.6	1.0	"	50.0		79.3	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	17.5		"	13.3		131	23-173			
<i>Surrogate: Toluene-d8</i>	12.3		"	13.3		92.0	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	14.6		"	13.3		110	21-167			

Matrix Spike (BGG0506-MS1)

Source: 2307260-01

Prepared: 07/17/23 Analyzed: 07/19/23

Benzene	24.4	1.0	ug/l	50.0	ND	48.9	34-141			
Toluene	20.1	1.0	"	50.0	ND	40.2	27-151			
Ethylbenzene	41.1	1.0	"	50.0	ND	82.2	29-160			
m,p-Xylene	40.4	2.0	"	100	ND	40.4	20-166			
o-Xylene	21.5	1.0	"	50.0	ND	43.0	33-159			
Naphthalene	39.8	1.0	"	50.0	ND	79.5	70-130			
1,2,4-Trimethylbenzene	45.7	1.0	"	50.0	ND	91.4	70-130			
1,3,5-Trimethylbenzene	39.8	1.0	"	50.0	ND	79.5	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	16.9		"	13.3		127	23-173			
<i>Surrogate: Toluene-d8</i>	12.4		"	13.3		92.8	20-170			
<i>Surrogate: 4-Bromofluorobenzene</i>	14.9		"	13.3		112	21-167			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

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		

Batch BGG0506 - EPA 5030 Water MS

Matrix Spike Dup (BGG0506-MSD1)	Source: 2307260-01			Prepared: 07/17/23 Analyzed: 07/19/23						
Benzene	27.2	1.0	ug/l	50.0	ND	54.4	34-141	10.7	30	
Toluene	22.4	1.0	"	50.0	ND	44.8	27-151	10.6	30	
Ethylbenzene	43.8	1.0	"	50.0	ND	87.5	29-160	6.29	30	
m,p-Xylene	45.5	2.0	"	100	ND	45.5	20-166	12.0	30	
o-Xylene	24.4	1.0	"	50.0	ND	48.9	33-159	12.7	30	
Naphthalene	46.6	1.0	"	50.0	ND	93.2	70-130	15.9	30	
1,2,4-Trimethylbenzene	50.0	1.0	"	50.0	ND	100	70-130	9.05	30	
1,3,5-Trimethylbenzene	43.0	1.0	"	50.0	ND	86.1	70-130	7.87	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>17.4</i>		<i>"</i>	<i>13.3</i>		<i>130</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>12.2</i>		<i>"</i>	<i>13.3</i>		<i>91.7</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>14.6</i>		<i>"</i>	<i>13.3</i>		<i>109</i>	<i>21-167</i>			

Batch BGG0510 - EPA 5030 Soil MS

Blank (BGG0510-BLK1)	Prepared: 07/17/23 Analyzed: 07/18/23									
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>	<i>0.0522</i>		<i>"</i>	<i>0.0400</i>		<i>130</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0353</i>		<i>"</i>	<i>0.0400</i>		<i>88.3</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0548</i>		<i>"</i>	<i>0.0400</i>		<i>137</i>	<i>50-150</i>			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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 BGG0510 - EPA 5030 Soil MS

LCS (BGG0510-BS1)

Prepared: 07/17/23 Analyzed: 07/18/23

Benzene	0.102	0.0020	mg/kg	0.100		102	70-130			
Toluene	0.129	0.0050	"	0.100		129	70-130			
Ethylbenzene	0.116	0.0050	"	0.100		116	70-130			
1,2,4-Trimethylbenzene	0.122	0.0050	"	0.100		122	70-130			
1,3,5-Trimethylbenzene	0.124	0.0050	"	0.100		124	70-130			
Naphthalene	0.102	0.0038	"	0.100		102	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0490		"	0.0400		123	50-150			
Surrogate: Toluene-d8	0.0376		"	0.0400		94.1	50-150			

Matrix Spike (BGG0510-MS1)

Source: 2307280-01

Prepared: 07/17/23 Analyzed: 07/18/23

Benzene	0.124	0.0020	mg/kg	0.100	ND	124	70-130			
Toluene	0.117	0.0050	"	0.100	ND	117	70-130			
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130			
1,2,4-Trimethylbenzene	0.124	0.0050	"	0.100	ND	124	70-130			
1,3,5-Trimethylbenzene	0.130	0.0050	"	0.100	ND	130	70-130			
Naphthalene	0.0973	0.0038	"	0.100	ND	97.3	70-130			
Surrogate: 1,2-Dichloroethane-d4	0.0511		"	0.0400		128	50-150			
Surrogate: Toluene-d8	0.0382		"	0.0400		95.4	50-150			

Matrix Spike Dup (BGG0510-MSD1)

Source: 2307280-01

Prepared: 07/17/23 Analyzed: 07/18/23

Benzene	0.105	0.0020	mg/kg	0.100	ND	105	70-130	16.7	30	
Toluene	0.101	0.0050	"	0.100	ND	101	70-130	14.3	30	
Ethylbenzene	0.115	0.0050	"	0.100	ND	115	70-130	0.470	30	
1,2,4-Trimethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130	6.68	30	
1,3,5-Trimethylbenzene	0.118	0.0050	"	0.100	ND	118	70-130	9.77	30	
Naphthalene	0.104	0.0038	"	0.100	ND	104	70-130	7.05	30	
Surrogate: 1,2-Dichloroethane-d4	0.0511		"	0.0400		128	50-150			
Surrogate: Toluene-d8	0.0381		"	0.0400		95.2	50-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

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 BGG0509 - EPA 3550A

Blank (BGG0509-BLK1)

Prepared: 07/17/23 Analyzed: 07/19/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	9.53		"	12.5		76.3	30-150				

LCS (BGG0509-BS1)

Prepared: 07/17/23 Analyzed: 07/19/23

C10-C28 (DRO)	603	50	mg/kg	500		121	70-130				
Surrogate: <i>o</i> -Terphenyl	11.0		"	12.5		88.3	30-150				

Matrix Spike (BGG0509-MS1)

Source: 2307280-01

Prepared: 07/17/23 Analyzed: 07/19/23

C10-C28 (DRO)	424	50	mg/kg	500	ND	84.9	70-130				
Surrogate: <i>o</i> -Terphenyl	8.97		"	12.5		71.8	30-150				

Matrix Spike Dup (BGG0509-MSD1)

Source: 2307280-01

Prepared: 07/17/23 Analyzed: 07/19/23

C10-C28 (DRO)	634	50	mg/kg	500	ND	127	70-130	39.6	20		QR-04
Surrogate: <i>o</i> -Terphenyl	12.3		"	12.5		98.7	30-150				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

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 BGG0516 - EPA 5030 Soil MS

Blank (BGG0516-BLK1)

Prepared: 07/18/23 Analyzed: 07/19/23

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>0.0233</i>		<i>"</i>	<i>0.0333</i>		<i>70.0</i>		<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0313</i>		<i>"</i>	<i>0.0333</i>		<i>93.8</i>		<i>40-150</i>		

LCS (BGG0516-BS1)

Prepared: 07/18/23 Analyzed: 07/19/23

Acenaphthene	0.0276	0.00500	mg/kg	0.0333	82.9	31-137
Anthracene	0.0269	0.00500	"	0.0333	80.7	30-120
Benzo (a) anthracene	0.0226	0.00500	"	0.0333	67.8	30-120
Benzo (a) pyrene	0.0227	0.00500	"	0.0333	68.1	30-120
Benzo (b) fluoranthene	0.0252	0.00500	"	0.0333	75.5	30-120
Benzo (k) fluoranthene	0.0254	0.00500	"	0.0333	76.3	30-120
Chrysene	0.0233	0.00500	"	0.0333	70.0	30-120
Dibenz (a,h) anthracene	0.0225	0.00500	"	0.0333	67.4	30-120
Fluoranthene	0.0304	0.00500	"	0.0333	91.3	30-120
Fluorene	0.0276	0.00500	"	0.0333	82.8	30-120
Indeno (1,2,3-cd) pyrene	0.0235	0.00500	"	0.0333	70.5	30-120
Pyrene	0.0230	0.00500	"	0.0333	68.9	35-142
1-Methylnaphthalene	0.0197	0.00500	"	0.0333	59.2	35-142
2-Methylnaphthalene	0.0371	0.00500	"	0.0333	111	35-142
<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>0.0311</i>		<i>"</i>	<i>0.0333</i>	<i>93.4</i>	<i>40-150</i>

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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 BGG0516 - EPA 5030 Soil MS

Matrix Spike (BGG0516-MS1)

Source: 2307214-02

Prepared: 07/18/23 Analyzed: 07/19/23

Acenaphthene	0.0185	0.00500	mg/kg	0.0333	ND	55.6	31-137			
Anthracene	0.0172	0.00500	"	0.0333	ND	51.5	30-120			
Benzo (a) anthracene	0.0170	0.00500	"	0.0333	ND	50.9	30-120			
Benzo (a) pyrene	0.0151	0.00500	"	0.0333	ND	45.3	30-120			
Benzo (b) fluoranthene	0.0177	0.00500	"	0.0333	ND	53.2	30-120			
Benzo (k) fluoranthene	0.0179	0.00500	"	0.0333	ND	53.7	30-120			
Chrysene	0.0172	0.00500	"	0.0333	ND	51.6	30-120			
Dibenz (a,h) anthracene	0.0153	0.00500	"	0.0333	ND	45.9	30-120			
Fluoranthene	0.0186	0.00500	"	0.0333	ND	55.7	30-120			
Fluorene	0.0192	0.00500	"	0.0333	ND	57.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0163	0.00500	"	0.0333	ND	48.9	30-120			
Pyrene	0.0190	0.00500	"	0.0333	ND	57.0	35-142			
1-Methylnaphthalene	0.0163	0.00500	"	0.0333	ND	49.0	15-130			
2-Methylnaphthalene	0.0212	0.00500	"	0.0333	ND	63.5	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0138		"	0.0333		41.3	40-150			
Surrogate: Fluoranthene-d10	0.0181		"	0.0333		54.4	40-150			

Matrix Spike Dup (BGG0516-MSD1)

Source: 2307214-02

Prepared: 07/18/23 Analyzed: 07/19/23

Acenaphthene	0.0225	0.00500	mg/kg	0.0333	ND	67.5	31-137	19.4	30	
Anthracene	0.0219	0.00500	"	0.0333	ND	65.7	30-120	24.2	30	
Benzo (a) anthracene	0.0218	0.00500	"	0.0333	ND	65.3	30-120	24.9	30	
Benzo (a) pyrene	0.0204	0.00500	"	0.0333	ND	61.1	30-120	29.6	30	
Benzo (b) fluoranthene	0.0225	0.00500	"	0.0333	ND	67.6	30-120	23.9	30	
Benzo (k) fluoranthene	0.0230	0.00500	"	0.0333	ND	69.1	30-120	25.0	30	
Chrysene	0.0225	0.00500	"	0.0333	ND	67.5	30-120	26.7	30	
Dibenz (a,h) anthracene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	25.2	30	
Fluoranthene	0.0223	0.00500	"	0.0333	ND	66.9	30-120	18.3	30	
Fluorene	0.0229	0.00500	"	0.0333	ND	68.6	30-120	17.2	30	
Indeno (1,2,3-cd) pyrene	0.0199	0.00500	"	0.0333	ND	59.6	30-120	19.7	30	
Pyrene	0.0247	0.00500	"	0.0333	ND	74.2	35-142	26.2	30	
1-Methylnaphthalene	0.0215	0.00500	"	0.0333	ND	64.5	15-130	27.3	50	
2-Methylnaphthalene	0.0240	0.00500	"	0.0333	ND	72.0	15-130	12.5	50	
Surrogate: 2-Methylnaphthalene-d10	0.0214		"	0.0333		64.3	40-150			
Surrogate: Fluoranthene-d10	0.0227		"	0.0333		68.0	40-150			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

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 BGG0518 - EPA 3050B

Blank (BGG0518-BLK1)

Prepared: 07/18/23 Analyzed: 07/20/23

Boron ND 0.0100 mg/L

LCS (BGG0518-BS1)

Prepared: 07/18/23 Analyzed: 07/20/23

Boron 4.84 0.0100 mg/L 5.00 96.8 80-120

Duplicate (BGG0518-DUP1)

Source: 2307274-01

Prepared: 07/18/23 Analyzed: 07/20/23

Boron 0.214 0.0100 mg/L 0.165 25.7 20 QR-04

Matrix Spike (BGG0518-MS1)

Source: 2307274-01

Prepared: 07/18/23 Analyzed: 07/20/23

Boron 5.62 0.0100 mg/L 5.00 0.165 109 75-125

Matrix Spike Dup (BGG0518-MSD1)

Source: 2307274-01

Prepared: 07/18/23 Analyzed: 07/20/23

Boron 5.33 0.0100 mg/L 5.00 0.165 103 75-125 5.35 25

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0511 - EPA 3050B

Blank (BGG0511-BLK1)

Prepared: 07/18/23 Analyzed: 07/20/23

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 (BGG0511-BS1)

Prepared: 07/18/23 Analyzed: 07/20/23

Arsenic	34.9	0.200	mg/kg wet	40.0	87.2	80-120
Barium	35.5	0.400	"	40.0	88.7	80-120
Cadmium	1.80	0.200	"	2.00	90.0	80-120
Copper	38.2	0.400	"	40.0	95.4	80-120
Lead	18.0	0.200	"	20.0	89.9	80-120
Nickel	37.2	0.400	"	40.0	93.1	80-120
Selenium	3.95	0.260	"	4.00	98.7	80-120
Silver	1.79	0.0200	"	2.00	89.7	80-120
Zinc	37.4	0.400	"	40.0	93.6	80-120

Duplicate (BGG0511-DUP1)

Source: 2306637-01

Prepared: 07/18/23 Analyzed: 07/20/23

Arsenic	1.97	0.237	mg/kg dry	1.93	1.92	20
Barium	76.5	0.475	"	76.4	0.145	20
Cadmium	0.214	0.237	"	0.233	8.07	20
Copper	4.62	0.475	"	4.93	6.46	20
Lead	5.13	0.237	"	6.52	23.8	20
Nickel	3.95	0.475	"	3.92	0.832	20
Selenium	ND	0.308	"	ND		20
Silver	0.0223	0.0237	"	0.0228	2.11	20
Zinc	19.0	0.475	"	20.4	7.25	20

QR-04

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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 BGG0511 - EPA 3050B

Matrix Spike (BGG0511-MS1)

Source: 2306637-01

Prepared: 07/18/23 Analyzed: 07/20/23

Arsenic	44.4	0.237	mg/kg dry	47.5	1.93	89.6	75-125				
Barium	152	0.475	"	47.5	76.4	158	75-125				QM-05
Cadmium	2.56	0.237	"	2.37	0.233	98.0	75-125				
Copper	41.9	0.475	"	47.5	4.93	77.8	75-125				
Lead	27.9	0.237	"	23.7	6.52	89.9	75-125				
Nickel	41.0	0.475	"	47.5	3.92	78.2	75-125				
Selenium	4.98	0.308	"	4.75	ND	105	75-125				
Silver	2.28	0.0237	"	2.37	0.0228	94.9	75-125				
Zinc	59.3	0.475	"	47.5	20.4	81.9	75-125				

Matrix Spike Dup (BGG0511-MSD1)

Source: 2306637-01

Prepared: 07/18/23 Analyzed: 07/20/23

Arsenic	43.5	0.237	mg/kg dry	47.5	1.93	87.5	75-125	2.19	25		
Barium	150	0.475	"	47.5	76.4	154	75-125	1.32	25		QM-05
Cadmium	2.53	0.237	"	2.37	0.233	96.8	75-125	1.19	25		
Copper	41.2	0.475	"	47.5	4.93	76.5	75-125	1.54	25		
Lead	27.4	0.237	"	23.7	6.52	87.9	75-125	1.74	25		
Nickel	40.4	0.475	"	47.5	3.92	76.8	75-125	1.62	25		
Selenium	4.53	0.308	"	4.75	ND	95.5	75-125	9.34	25		
Silver	2.25	0.0237	"	2.37	0.0228	93.8	75-125	1.22	25		
Zinc	58.8	0.475	"	47.5	20.4	80.8	75-125	0.955	25		

Post Spike (BGG0511-PS1)

Source: 2306637-01

Prepared: 07/18/23 Analyzed: 07/20/23

Arsenic	97.5		ug/l	100	4.07	93.5	75-125				
Barium	266		"	100	161	105	75-125				
Cadmium	5.52		"	5.00	0.490	101	75-125				
Copper	93.0		"	100	10.4	82.6	75-125				
Lead	63.1		"	50.0	13.7	98.7	75-125				
Nickel	90.3		"	100	8.26	82.1	75-125				
Selenium	10.6		"	10.0	0.190	104	75-125				
Silver	4.98		"	5.00	0.0480	98.7	75-125				
Zinc	127		"	100	43.1	84.0	75-125				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0513 - 3060A Mod

Blank (BGG0513-BLK1)

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0513-BS1)

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent 22.7 0.30 mg/kg wet 25.0 90.8 80-120

Duplicate (BGG0513-DUP1)

Source: 2307015-03

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0513-MS1)

Source: 2307015-03

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent 26.4 0.30 mg/kg dry 28.7 ND 92.0 75-125

Matrix Spike Dup (BGG0513-MSD1)

Source: 2307015-03

Prepared & Analyzed: 07/18/23

Chromium, Hexavalent 26.9 0.30 mg/kg dry 28.7 ND 93.6 75-125 1.72 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

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 BGG0508 - General Preparation

Blank (BGG0508-BLK1)

Prepared: 07/17/23 Analyzed: 07/19/23

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

LCS (BGG0508-BS1)

Prepared: 07/17/23 Analyzed: 07/19/23

Calcium	5.85	0.0500	mg/L wet	5.00		117	70-130			
Magnesium	5.78	0.0500	"	5.00		116	70-130			
Sodium	5.83	0.0500	"	5.00		117	70-130			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

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

Summit Scientific

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

Batch BGG0515 - General Preparation

Duplicate (BGG0515-DUP1)

Source: 2307253-01

Prepared & Analyzed: 07/18/23

% Solids	85.4		%		85.6			0.171	20	
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Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

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 BGG0528 - General Preparation

Blank (BGG0528-BLK1)

Prepared & Analyzed: 07/18/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0528-BS1)

Prepared & Analyzed: 07/18/23

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

Duplicate (BGG0528-DUP1)

Source: 2307274-01

Prepared & Analyzed: 07/18/23

Specific Conductance (EC) 0.262 0.0100 mmhos/cm 0.264 0.950 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 - PTF-64N64W 32SENE

Project Number: [none]
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:23

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 BGG0529 - General Preparation

LCS (BGG0529-BS1)

Prepared & Analyzed: 07/18/23

pH	9.02	pH Units	9.18	98.3	95-105
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Duplicate (BGG0529-DUP1)

Source: 2307274-01

Prepared & Analyzed: 07/18/23

pH	7.56	pH Units	7.53	0.398	20
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Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: [none]
Project Manager: Paul Henehan

Reported:
07/25/23 09:23

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.
- 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 80401

303.277.9310

July 25, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

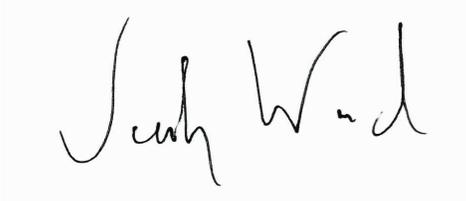
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307298

Enclosed are the results of analyses for samples received by Summit Scientific on 07/18/23 16:36. 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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/25/23 09:29

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B06@9.0'	2307298-01	Soil	07/18/23 00:00	07/18/23 16:36

Summit Scientific

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

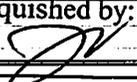
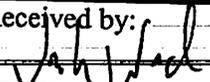
SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307298	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henehan	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeffg@fremontenv.com Ethanb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions	
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	Pb, Cd, Cr, Ni, Cu, Zn, Mn, Fe, Al, Ag, As, Ba, Be, Bi, Br, Ca, Co, Cs, D, Hg, K, Li, Mg, Mo, Ni, Pb, Se, Sr, Tl, U, V, W, Y, Zn	PAHs (915)	EC, PH, SAR, ^{Born}	Metals (915)		
1	B06@9.0'	7/18/23		2			X			X				X	X	X	X	X	X	
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				

Relinquished by: 	Date/Time: 7/18/23 16:37	Received by: 	Date/Time: 7/18/23 16:36	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt: 24.0	Corrected Temperature	IR gun #: 2	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2307298Client: Fremont Client Project ID: PTF-64N64W 32SENEShipped Via: H.D./P.U./FedEx/UPS/USPS/Other Airbill #: _____ Matrix (Check all that apply) Air Soil/Solid Water Other Temp (°C) Thermometer #

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? ⁽¹⁾ NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	on ice
If custody seals are present, are they intact? ⁽¹⁾	<input 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"/>	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 type="checkbox"/>	<input checked="" type="checkbox"/>	
Is a chain-of-custody (COC) form present and filled out completely? ⁽¹⁾	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	No Sample times
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.

Vah Wad

Custodian Printed Name

7/18/23 16:36

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/25/23 09:29

B06@9.0'
2307298-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0552	07/18/23	07/18/23	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: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		92.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		94.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		112 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0553	07/18/23	07/18/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/18/23 00:00**

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

PAH by EPA Method 8270D SIM

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 Wellington CO, 80549

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Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

B06@9.0'
2307298-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Acenaphthene	ND	0.00500		mg/kg	1	BGG0560	07/19/23	07/20/23	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: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 2-Methylnaphthalene-d10		44.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		44.1 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Boron	ND	0.0100		mg/L	1	BGG0558	07/19/23	07/20/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/18/23 00:00**

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/25/23 09:29

B06@9.0'
2307298-01 (Soil)

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Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.45	0.238		mg/kg dry	1	BGG0563	07/19/23	07/20/23	EPA 6020B	
Barium	27.6	0.476		"	"	"	"	"	"	
Cadmium	ND	0.238		"	"	"	"	"	"	
Copper	1.48	0.476		"	"	"	"	"	"	
Lead	2.42	0.238		"	"	"	"	"	"	
Nickel	1.70	0.476		"	"	"	"	"	"	
Selenium	ND	0.309	0.208	"	"	"	"	"	"	
Silver	ND	0.0238		"	"	"	"	"	"	
Zinc	6.39	0.476		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0565	07/19/23	07/19/23	EPA 7196A	

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

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	79.0	0.0595		mg/L dry	1	BGG0551	07/18/23	07/19/23	EPA 6020B	
Magnesium	38.1	0.0595		"	"	"	"	"	"	
Sodium	80.2	0.0595		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.85	0.00100		units	1	BGG0645	07/20/23	07/20/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
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Reported:
 07/25/23 09:29

B06@9.0'
2307298-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	84.0			%	1	BGG0559	07/19/23	07/19/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.27	0.0100		mmhos/cm	1	BGG0574	07/19/23	07/19/23	EPA 120.1	

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

Date Sampled: **07/18/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.60			pH Units	1	BGG0573	07/19/23	07/19/23	EPA 9045D	

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/25/23 09:29

Volatile Organic Compounds by EPA Method 8260B - Quality Control

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

Batch BGG0552 - EPA 5030 Soil MS

Blank (BGG0552-BLK1)

Prepared: 07/18/23 Analyzed: 07/19/23

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>	0.0338		"	0.0400		84.6	50-150			
<i>Surrogate: Toluene-d8</i>	0.0366		"	0.0400		91.5	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0439		"	0.0400		110	50-150			

LCS (BGG0552-BS1)

Prepared: 07/18/23 Analyzed: 07/19/23

Benzene	0.0888	0.0020	mg/kg	0.100		88.8	70-130			
Toluene	0.0769	0.0050	"	0.100		76.9	70-130			
Ethylbenzene	0.124	0.0050	"	0.100		124	70-130			
m,p-Xylene	0.245	0.010	"	0.200		122	70-130			
o-Xylene	0.127	0.0050	"	0.100		127	70-130			
1,2,4-Trimethylbenzene	0.109	0.0050	"	0.100		109	70-130			
1,3,5-Trimethylbenzene	0.0982	0.0050	"	0.100		98.2	70-130			
Naphthalene	0.124	0.0038	"	0.100		124	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0269		"	0.0400		67.3	50-150			
<i>Surrogate: Toluene-d8</i>	0.0353		"	0.0400		88.2	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0417		"	0.0400		104	50-150			

Matrix Spike (BGG0552-MS1)

Source: 2307298-01

Prepared: 07/18/23 Analyzed: 07/19/23

Benzene	0.0722	0.0020	mg/kg	0.100	ND	72.2	70-130			
Toluene	0.0717	0.0050	"	0.100	ND	71.7	70-130			
Ethylbenzene	0.0764	0.0050	"	0.100	ND	76.4	70-130			
m,p-Xylene	0.151	0.010	"	0.200	0.00543	72.6	70-130			
o-Xylene	0.0756	0.0050	"	0.100	ND	75.6	70-130			
1,2,4-Trimethylbenzene	0.0814	0.0050	"	0.100	ND	81.4	70-130			
1,3,5-Trimethylbenzene	0.0745	0.0050	"	0.100	ND	74.5	70-130			
Naphthalene	0.0988	0.0038	"	0.100	ND	98.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0323		"	0.0400		80.9	50-150			
<i>Surrogate: Toluene-d8</i>	0.0368		"	0.0400		92.0	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0421		"	0.0400		105	50-150			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

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

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

Batch BGG0552 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0552-MSD1)	Source: 2307298-01			Prepared: 07/18/23 Analyzed: 07/19/23						
Benzene	0.0707	0.0020	mg/kg	0.100	ND	70.7	70-130	2.06	30	
Toluene	0.0720	0.0050	"	0.100	ND	72.0	70-130	0.376	30	
Ethylbenzene	0.0741	0.0050	"	0.100	ND	74.1	70-130	2.99	30	
m,p-Xylene	0.148	0.010	"	0.200	0.00543	71.1	70-130	2.05	30	
o-Xylene	0.0731	0.0050	"	0.100	ND	73.1	70-130	3.27	30	
1,2,4-Trimethylbenzene	0.0800	0.0050	"	0.100	ND	80.0	70-130	1.67	30	
1,3,5-Trimethylbenzene	0.0730	0.0050	"	0.100	ND	73.0	70-130	2.03	30	
Naphthalene	0.0941	0.0038	"	0.100	ND	94.1	70-130	4.91	30	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0341</i>		<i>"</i>	<i>0.0400</i>		<i>85.3</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0361</i>		<i>"</i>	<i>0.0400</i>		<i>90.3</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0416</i>		<i>"</i>	<i>0.0400</i>		<i>104</i>	<i>50-150</i>			

Summit Scientific

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

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 BGG0553 - EPA 3550A

Blank (BGG0553-BLK1)

Prepared: 07/18/23 Analyzed: 07/19/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.8		"	12.5		86.4	30-150				

LCS (BGG0553-BS1)

Prepared: 07/18/23 Analyzed: 07/19/23

C10-C28 (DRO)	563	50	mg/kg	500		113	70-130				
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5		85.2	30-150				

Matrix Spike (BGG0553-MS1)

Source: 2307298-01

Prepared: 07/18/23 Analyzed: 07/19/23

C10-C28 (DRO)	523	50	mg/kg	500	13.1	102	70-130				
Surrogate: <i>o</i> -Terphenyl	10.9		"	12.5		87.0	30-150				

Matrix Spike Dup (BGG0553-MSD1)

Source: 2307298-01

Prepared: 07/18/23 Analyzed: 07/19/23

C10-C28 (DRO)	511	50	mg/kg	500	13.1	99.6	70-130	2.41	20		
Surrogate: <i>o</i> -Terphenyl	10.7		"	12.5		86.0	30-150				

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/25/23 09:29

PAH by EPA Method 8270D SIM - Quality Control

Summit Scientific

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

Batch BGG0560 - EPA 5030 Soil MS

Blank (BGG0560-BLK1)

Prepared: 07/19/23 Analyzed: 07/20/23

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>0.0246</i>		"	<i>0.0333</i>		<i>73.8</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0193</i>		"	<i>0.0333</i>		<i>57.8</i>	<i>40-150</i>			

LCS (BGG0560-BS1)

Prepared: 07/19/23 Analyzed: 07/20/23

Acenaphthene	0.0223	0.00500	mg/kg	0.0333	66.9	31-137
Anthracene	0.0228	0.00500	"	0.0333	68.5	30-120
Benzo (a) anthracene	0.0250	0.00500	"	0.0333	75.0	30-120
Benzo (a) pyrene	0.0214	0.00500	"	0.0333	64.3	30-120
Benzo (b) fluoranthene	0.0239	0.00500	"	0.0333	71.6	30-120
Benzo (k) fluoranthene	0.0240	0.00500	"	0.0333	71.9	30-120
Chrysene	0.0242	0.00500	"	0.0333	72.6	30-120
Dibenz (a,h) anthracene	0.0213	0.00500	"	0.0333	64.0	30-120
Fluoranthene	0.0240	0.00500	"	0.0333	72.1	30-120
Fluorene	0.0241	0.00500	"	0.0333	72.4	30-120
Indeno (1,2,3-cd) pyrene	0.0228	0.00500	"	0.0333	68.3	30-120
Pyrene	0.0248	0.00500	"	0.0333	74.3	35-142
1-Methylnaphthalene	0.0250	0.00500	"	0.0333	75.0	35-142
2-Methylnaphthalene	0.0252	0.00500	"	0.0333	75.5	35-142
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0220</i>		"	<i>0.0333</i>	<i>65.9</i>	<i>40-150</i>
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0237</i>		"	<i>0.0333</i>	<i>71.0</i>	<i>40-150</i>

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/25/23 09:29

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 BGG0560 - EPA 5030 Soil MS

Matrix Spike (BGG0560-MS1)	Source: 2307297-01			Prepared: 07/19/23 Analyzed: 07/20/23						
Acenaphthene	0.0175	0.00500	mg/kg	0.0333	ND	52.5	31-137			
Anthracene	0.0174	0.00500	"	0.0333	ND	52.2	30-120			
Benzo (a) anthracene	0.0204	0.00500	"	0.0333	ND	61.1	30-120			
Benzo (a) pyrene	0.0160	0.00500	"	0.0333	ND	48.1	30-120			
Benzo (b) fluoranthene	0.0186	0.00500	"	0.0333	ND	55.9	30-120			
Benzo (k) fluoranthene	0.0187	0.00500	"	0.0333	ND	56.1	30-120			
Chrysene	0.0193	0.00500	"	0.0333	ND	57.8	30-120			
Dibenz (a,h) anthracene	0.0164	0.00500	"	0.0333	ND	49.3	30-120			
Fluoranthene	0.0178	0.00500	"	0.0333	ND	53.3	30-120			
Fluorene	0.0179	0.00500	"	0.0333	0.0250	NR	30-120			QM-07
Indeno (1,2,3-cd) pyrene	0.0178	0.00500	"	0.0333	ND	53.4	30-120			
Pyrene	0.0209	0.00500	"	0.0333	ND	62.7	35-142			
1-Methylnaphthalene	0.0192	0.00500	"	0.0333	ND	57.7	15-130			
2-Methylnaphthalene	0.0178	0.00500	"	0.0333	0.144	NR	15-130			QM-07
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0181</i>		"	<i>0.0333</i>		<i>54.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0172</i>		"	<i>0.0333</i>		<i>51.6</i>	<i>40-150</i>			

Matrix Spike Dup (BGG0560-MSD1)	Source: 2307297-01			Prepared: 07/19/23 Analyzed: 07/20/23						
Acenaphthene	0.0159	0.00500	mg/kg	0.0333	ND	47.7	31-137	9.54	30	
Anthracene	0.0163	0.00500	"	0.0333	ND	49.0	30-120	6.27	30	
Benzo (a) anthracene	0.0174	0.00500	"	0.0333	ND	52.1	30-120	15.9	30	
Benzo (a) pyrene	0.0160	0.00500	"	0.0333	ND	47.8	30-120	0.482	30	
Benzo (b) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.4	30-120	2.70	30	
Benzo (k) fluoranthene	0.0180	0.00500	"	0.0333	ND	54.0	30-120	3.96	30	
Chrysene	0.0181	0.00500	"	0.0333	ND	54.4	30-120	6.15	30	
Dibenz (a,h) anthracene	0.0152	0.00500	"	0.0333	ND	45.7	30-120	7.72	30	
Fluoranthene	0.0168	0.00500	"	0.0333	ND	50.5	30-120	5.41	30	
Fluorene	0.0172	0.00500	"	0.0333	0.0250	NR	30-120	3.93	30	QM-07
Indeno (1,2,3-cd) pyrene	0.0183	0.00500	"	0.0333	ND	54.8	30-120	2.61	30	
Pyrene	0.0204	0.00500	"	0.0333	ND	61.3	35-142	2.24	30	
1-Methylnaphthalene	0.0207	0.00500	"	0.0333	ND	62.0	15-130	7.06	50	
2-Methylnaphthalene	0.0190	0.00500	"	0.0333	0.144	NR	15-130	6.48	50	QM-07
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0194</i>		"	<i>0.0333</i>		<i>58.2</i>	<i>40-150</i>			
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0155</i>		"	<i>0.0333</i>		<i>46.5</i>	<i>40-150</i>			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

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 BGG0558 - EPA 3050B

Blank (BGG0558-BLK1)

Prepared: 07/19/23 Analyzed: 07/20/23

Boron ND 0.0100 mg/L

LCS (BGG0558-BS1)

Prepared: 07/19/23 Analyzed: 07/20/23

Boron 5.04 0.0100 mg/L 5.00 101 80-120

Duplicate (BGG0558-DUP1)

Source: 2307295-01

Prepared: 07/19/23 Analyzed: 07/20/23

Boron 0.0325 0.0100 mg/L 0.0156 70.3 20 QR-01

Matrix Spike (BGG0558-MS1)

Source: 2307295-01

Prepared: 07/19/23 Analyzed: 07/20/23

Boron 4.98 0.0100 mg/L 5.00 0.0156 99.3 75-125

Matrix Spike Dup (BGG0558-MSD1)

Source: 2307295-01

Prepared: 07/19/23 Analyzed: 07/20/23

Boron 5.03 0.0100 mg/L 5.00 0.0156 100 75-125 0.905 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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/25/23 09:29

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0563 - EPA 3050B

Blank (BGG0563-BLK1)

Prepared: 07/19/23 Analyzed: 07/20/23

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 (BGG0563-BS1)

Prepared: 07/19/23 Analyzed: 07/20/23

Arsenic	36.9	0.200	mg/kg wet	40.0	92.3	80-120
Barium	33.8	0.400	"	40.0	84.6	80-120
Cadmium	1.73	0.200	"	2.00	86.6	80-120
Copper	36.0	0.400	"	40.0	89.9	80-120
Lead	18.5	0.200	"	20.0	92.5	80-120
Nickel	35.6	0.400	"	40.0	89.0	80-120
Selenium	3.91	0.260	"	4.00	97.8	80-120
Silver	1.64	0.0200	"	2.00	82.2	80-120
Zinc	40.6	0.400	"	40.0	102	80-120

Duplicate (BGG0563-DUP1)

Source: 2307283-02

Prepared: 07/19/23 Analyzed: 07/20/23

Arsenic	1.21	0.235	mg/kg dry	1.11	8.64	20	
Barium	129	0.469	"	95.8	29.7	20	QR-04
Cadmium	0.241	0.235	"	0.190	23.8	20	QR-01
Copper	1.33	0.469	"	1.23	8.31	20	
Lead	4.46	0.235	"	3.75	17.3	20	
Nickel	1.66	0.469	"	1.56	6.13	20	
Selenium	ND	0.305	"	ND		20	
Silver	0.0263	0.0235	"	0.0206	24.0	20	QR-01
Zinc	5.30	0.469	"	4.96	6.60	20	

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

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 BGG0563 - EPA 3050B

Matrix Spike (BGG0563-MS1)

Source: 2307283-02

Prepared: 07/19/23 Analyzed: 07/20/23

Arsenic	15.9	0.235	mg/kg dry	46.9	1.11	31.5	75-125				QM-01
Barium	173	0.469	"	46.9	95.8	164	75-125				QM-01
Cadmium	1.82	0.235	"	2.35	0.190	69.3	75-125				QM-01
Copper	16.0	0.469	"	46.9	1.23	31.5	75-125				QM-01
Lead	19.3	0.235	"	23.5	3.75	66.1	75-125				QM-01
Nickel	16.6	0.469	"	46.9	1.56	32.1	75-125				QM-01
Selenium	4.31	0.305	"	4.69	ND	91.9	75-125				
Silver	1.65	0.0235	"	2.35	0.0206	69.4	75-125				QM-01
Zinc	21.4	0.469	"	46.9	4.96	35.0	75-125				QM-01

Matrix Spike Dup (BGG0563-MSD1)

Source: 2307283-02

Prepared: 07/19/23 Analyzed: 07/20/23

Arsenic	16.2	0.235	mg/kg dry	46.9	1.11	32.1	75-125	1.77	25		QM-01
Barium	188	0.469	"	46.9	95.8	196	75-125	8.38	25		QM-01
Cadmium	2.03	0.235	"	2.35	0.190	78.3	75-125	11.0	25		
Copper	16.1	0.469	"	46.9	1.23	31.7	75-125	0.620	25		QM-01
Lead	21.0	0.235	"	23.5	3.75	73.6	75-125	8.74	25		QM-01
Nickel	16.6	0.469	"	46.9	1.56	32.1	75-125	0.186	25		QM-01
Selenium	3.47	0.305	"	4.69	ND	74.0	75-125	21.6	25		QM-01
Silver	1.78	0.0235	"	2.35	0.0206	75.0	75-125	7.63	25		
Zinc	21.2	0.469	"	46.9	4.96	34.7	75-125	0.671	25		QM-01

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

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 BGG0565 - 3060A Mod

Blank (BGG0565-BLK1)

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0565-BS1)

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent 23.9 0.30 mg/kg wet 25.0 95.6 80-120

Duplicate (BGG0565-DUP1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0565-MS1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent 23.6 0.30 mg/kg dry 25.4 ND 93.0 75-125

Matrix Spike Dup (BGG0565-MSD1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

Chromium, Hexavalent 22.4 0.30 mg/kg dry 25.4 ND 88.0 75-125 5.52 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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

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 BGG0551 - General Preparation

Blank (BGG0551-BLK1)

Prepared: 07/18/23 Analyzed: 07/19/23

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

LCS (BGG0551-BS1)

Prepared: 07/18/23 Analyzed: 07/19/23

Calcium	5.47	0.0500	mg/L wet	5.00		109	70-130			
Magnesium	5.82	0.0500	"	5.00		116	70-130			
Sodium	5.93	0.0500	"	5.00		119	70-130			

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

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 BGG0559 - General Preparation

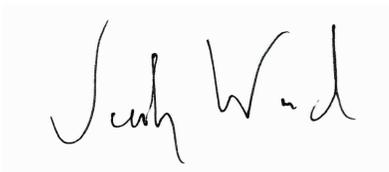
Duplicate (BGG0559-DUP1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

% Solids	98.3		%		98.3			0.0101	20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

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 BGG0574 - General Preparation

Blank (BGG0574-BLK1)

Prepared & Analyzed: 07/19/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0574-BS1)

Prepared & Analyzed: 07/19/23

Specific Conductance (EC) 0.155 0.0100 mmhos/cm 0.150 104 95-105

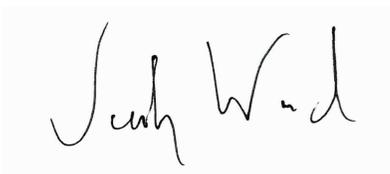
Duplicate (BGG0574-DUP1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

Specific Conductance (EC) 0.131 0.0100 mmhos/cm 0.132 1.22 20

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/25/23 09:29

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 BGG0573 - General Preparation

LCS (BGG0573-BS1)

Prepared & Analyzed: 07/19/23

pH	9.03	pH Units	9.18	98.4	95-105
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Duplicate (BGG0573-DUP1)

Source: 2307295-01

Prepared & Analyzed: 07/19/23

pH	6.17	pH Units	6.14	0.487	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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/25/23 09:29

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-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 80401

303.277.9310

July 27, 2023

Paul Henehan

Fremont Environmental

PO Box 1289

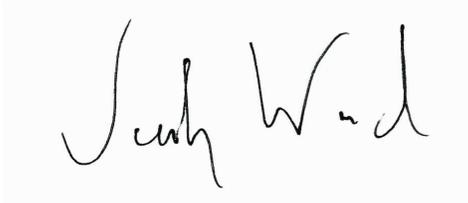
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order # 2307343

Enclosed are the results of analyses for samples received by Summit Scientific on 07/19/23 16:39. 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 long, sweeping underline.

Jacob Wood For Paul Shrewsbury

President



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:
07/27/23 08:34

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
E01@8.0'	2307343-01	Soil	07/19/23 00:00	07/19/23 16:39
GW04	2307343-02	Water	07/19/23 00:00	07/19/23 16:39

Summit Scientific

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

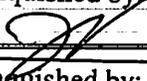
SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307343	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henehan	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeffg@fremontenv.com Ethemb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix		Analysis Requested						Special Instructions		
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMS (915)	DRD, DRD, GRO	PAHS (915)		EC, pH, SA, B, Boron	Metals (915)
1	E01@8.0'	7/19/23		3			X												
2	GW04	7/19/23		3	X					X	X								
3									X										
4																			
5																			
6																			
7																			
8																			
9																			
10																			
11																			
12																			
13																			
14																			
15																			

Relinquished by: 	Date/Time: 7/19/23 16:39	Received by: Josh Wood	Date/Time: 7/19/23 16:39	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 24.1	Corrected Temperature	IR gun #: 2	HNO3 lot #:	Standard	Field Turb.	

S₂

S2 Work Order# 2307343

Sample Receipt Checklist

Client: Fremont Client Project ID: PTF-64N64W 3ZSENE

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

[X] [] [] [] []

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

Temp (°C) 24.1 Thermometer # 2

Table with 5 columns: Question, Yes, No, N/A, Comments (if any). Rows include: If samples require cooling, is the temperature < 6°C? (1), If custody seals are present, are they intact? (1), Are samples due within 48 hours present?, Are water samples with short hold times present?, 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), If samples are acid preserved for metals, is the pH <= 2? (1), 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.

John Wald Custodian Printed Name

7/19/23 16:39 Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/27/23 08:34

E01@8.0'
2307343-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	0.0020		mg/kg	1	BGG0598	07/19/23	07/19/23	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: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		84.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8		89.3 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		100 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0599	07/19/23	07/19/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: o-Terphenyl		87.1 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/27/23 08:34

E01@8.0'
2307343-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500		mg/kg	1	BGG0643	07/20/23	07/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500		"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500		"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500		"	"	"	"	"	"	
Chrysene	ND	0.00500		"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500		"	"	"	"	"	"	
Fluoranthene	ND	0.00500		"	"	"	"	"	"	
Fluorene	ND	0.00500		"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500		"	"	"	"	"	"	
Pyrene	ND	0.00500		"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500		"	"	"	"	"	"	

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10		47.9 %		40-150		"	"	"	"	
Surrogate: Fluoranthene-d10		53.6 %		40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.285	0.0100		mg/L	1	BGG0627	07/20/23	07/22/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/19/23 00:00**

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/27/23 08:34

E01@8.0'
2307343-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.51	0.255		mg/kg dry	1	BGG0601	07/20/23	07/20/23	EPA 6020B	
Barium	102	0.511		"	"	"	"	"	"	
Cadmium	ND	0.255		"	"	"	"	"	"	
Copper	2.26	0.511		"	"	"	"	"	"	
Lead	3.59	0.255		"	"	"	"	"	"	
Nickel	2.70	0.511		"	"	"	"	"	"	
Selenium	ND	0.332	0.223	"	"	"	"	"	"	
Silver	0.0301	0.0255		"	"	"	"	"	"	
Zinc	8.25	0.511		"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30		mg/kg dry	1	BGG0603	07/20/23	07/20/23	EPA 7196A	

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

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.2	0.0639		mg/L dry	1	BGG0586	07/19/23	07/24/23	EPA 6020B	
Magnesium	70.3	0.0639		"	"	"	"	"	"	
Sodium	41.1	0.0639		"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting Limit	MDL	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.821	0.00100		units	1	BGG0794	07/25/23	07/25/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
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Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

E01@8.0'
2307343-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
% Solids	78.3			%	1	BGG0605	07/20/23	07/20/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Specific Conductance (EC)	1.31	0.0100		mmhos/cm	1	BGG0638	07/20/23	07/20/23	EPA 120.1	

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

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
pH	7.69			pH Units	1	BGG0637	07/20/23	07/20/23	EPA 9045D	

Summit Scientific

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

GW04
2307343-02 (Water)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Z-01

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Benzene	ND	1.0		ug/l	1	BGG0600	07/19/23	07/19/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	ND	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	ND	1.0		"	"	"	"	"	"	

Date Sampled: **07/19/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	MDL							
Surrogate: 1,2-Dichloroethane-d4		99.6 %		23-173		"	"	"	"	
Surrogate: Toluene-d8		86.6 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		97.7 %		21-167		"	"	"	"	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/27/23 08:34

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 BGG0598 - EPA 5030 Soil MS

Blank (BGG0598-BLK1)

Prepared & Analyzed: 07/19/23

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>	0.0338		"	0.0400		84.4	50-150			
<i>Surrogate: Toluene-d8</i>	0.0360		"	0.0400		90.0	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0406		"	0.0400		101	50-150			

LCS (BGG0598-BS1)

Prepared & Analyzed: 07/19/23

Benzene	0.0798	0.0020	mg/kg	0.100		79.8	70-130			
Toluene	0.0827	0.0050	"	0.100		82.7	70-130			
Ethylbenzene	0.0941	0.0050	"	0.100		94.1	70-130			
m,p-Xylene	0.186	0.010	"	0.200		93.0	70-130			
o-Xylene	0.0881	0.0050	"	0.100		88.1	70-130			
1,2,4-Trimethylbenzene	0.100	0.0050	"	0.100		100	70-130			
1,3,5-Trimethylbenzene	0.0958	0.0050	"	0.100		95.8	70-130			
Naphthalene	0.0934	0.0038	"	0.100		93.4	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0293		"	0.0400		73.2	50-150			
<i>Surrogate: Toluene-d8</i>	0.0367		"	0.0400		91.6	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0405		"	0.0400		101	50-150			

Matrix Spike (BGG0598-MS1)

Source: 2307344-01

Prepared & Analyzed: 07/19/23

Benzene	0.0724	0.0020	mg/kg	0.100	ND	72.4	70-130			
Toluene	0.0729	0.0050	"	0.100	ND	72.9	70-130			
Ethylbenzene	0.0803	0.0050	"	0.100	ND	80.3	70-130			
m,p-Xylene	0.160	0.010	"	0.200	ND	79.9	70-130			
o-Xylene	0.0765	0.0050	"	0.100	ND	76.5	70-130			
1,2,4-Trimethylbenzene	0.0849	0.0050	"	0.100	ND	84.9	70-130			
1,3,5-Trimethylbenzene	0.0806	0.0050	"	0.100	ND	80.6	70-130			
Naphthalene	0.0620	0.0038	"	0.100	ND	62.0	70-130			QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0333		"	0.0400		83.2	50-150			
<i>Surrogate: Toluene-d8</i>	0.0356		"	0.0400		89.0	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0422		"	0.0400		105	50-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/27/23 08:34

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 BGG0598 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0598-MSD1)	Source: 2307344-01			Prepared & Analyzed: 07/19/23						
Benzene	0.0702	0.0020	mg/kg	0.100	ND	70.2	70-130	3.11	30	
Toluene	0.0711	0.0050	"	0.100	ND	71.1	70-130	2.50	30	
Ethylbenzene	0.0789	0.0050	"	0.100	ND	78.9	70-130	1.77	30	
m,p-Xylene	0.156	0.010	"	0.200	ND	78.1	70-130	2.26	30	
o-Xylene	0.0749	0.0050	"	0.100	ND	74.9	70-130	2.10	30	
1,2,4-Trimethylbenzene	0.0840	0.0050	"	0.100	ND	84.0	70-130	1.14	30	
1,3,5-Trimethylbenzene	0.0770	0.0050	"	0.100	ND	77.0	70-130	4.57	30	
Naphthalene	0.0630	0.0038	"	0.100	ND	63.0	70-130	1.54	30	QM-07
Surrogate: 1,2-Dichloroethane-d4	0.0311		"	0.0400		77.8	50-150			
Surrogate: Toluene-d8	0.0354		"	0.0400		88.4	50-150			
Surrogate: 4-Bromofluorobenzene	0.0425		"	0.0400		106	50-150			

Batch BGG0600 - EPA 5030 Water MS

Blank (BGG0600-BLK1)	Prepared & Analyzed: 07/19/23									
Benzene	ND	1.0	ug/l							
Toluene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes (total)	ND	2.0	"							
Naphthalene	ND	1.0	"							
1,2,4-Trimethylbenzene	ND	1.0	"							
1,3,5-Trimethylbenzene	ND	1.0	"							
Surrogate: 1,2-Dichloroethane-d4	12.5		"	13.3		94.0	23-173			
Surrogate: Toluene-d8	11.7		"	13.3		87.8	20-170			
Surrogate: 4-Bromofluorobenzene	12.7		"	13.3		95.3	21-167			

LCS (BGG0600-BS1)	Prepared & Analyzed: 07/19/23									
Benzene	27.6	1.0	ug/l	33.3		82.8	51-132			
Toluene	27.6	1.0	"	33.3		82.8	51-138			
Ethylbenzene	27.3	1.0	"	33.3		81.8	58-146			
m,p-Xylene	67.5	2.0	"	66.7		101	57-144			
o-Xylene	28.6	1.0	"	33.3		86.0	53-146			
Naphthalene	31.4	1.0	"	33.3		94.3	70-130			
1,2,4-Trimethylbenzene	26.8	1.0	"	33.3		80.3	70-130			
1,3,5-Trimethylbenzene	27.7	1.0	"	33.3		83.0	70-130			
Surrogate: 1,2-Dichloroethane-d4	12.3		"	13.3		92.5	23-173			
Surrogate: Toluene-d8	11.9		"	13.3		89.4	20-170			
Surrogate: 4-Bromofluorobenzene	12.5		"	13.3		94.1	21-167			

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

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 BGG0600 - EPA 5030 Water MS

Matrix Spike (BGG0600-MS1)

Source: 2307343-02

Prepared & Analyzed: 07/19/23

Benzene	27.8	1.0	ug/l	33.3	ND	83.6	34-141			
Toluene	27.8	1.0	"	33.3	ND	83.5	27-151			
Ethylbenzene	28.4	1.0	"	33.3	ND	85.1	29-160			
m,p-Xylene	69.7	2.0	"	66.7	ND	105	20-166			
o-Xylene	29.5	1.0	"	33.3	ND	88.4	33-159			
Naphthalene	32.5	1.0	"	33.3	ND	97.4	70-130			
1,2,4-Trimethylbenzene	27.6	1.0	"	33.3	ND	82.9	70-130			
1,3,5-Trimethylbenzene	28.6	1.0	"	33.3	ND	85.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>12.3</i>		<i>"</i>	<i>13.3</i>		<i>92.0</i>	<i>23-173</i>			
<i>Surrogate: Toluene-d8</i>	<i>11.6</i>		<i>"</i>	<i>13.3</i>		<i>87.4</i>	<i>20-170</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.6</i>		<i>"</i>	<i>13.3</i>		<i>94.4</i>	<i>21-167</i>			

Matrix Spike Dup (BGG0600-MSD1)

Source: 2307343-02

Prepared: 07/19/23 Analyzed: 07/20/23

Benzene	27.6	1.0	ug/l	33.3	ND	82.9	34-141	0.829	30
Toluene	27.6	1.0	"	33.3	ND	82.9	27-151	0.757	30
Ethylbenzene	27.6	1.0	"	33.3	ND	82.7	29-160	2.86	30
m,p-Xylene	67.9	2.0	"	66.7	ND	102	20-166	2.66	30
o-Xylene	28.9	1.0	"	33.3	ND	86.6	33-159	2.06	30
Naphthalene	33.0	1.0	"	33.3	ND	99.0	70-130	1.62	30
1,2,4-Trimethylbenzene	27.1	1.0	"	33.3	ND	81.2	70-130	2.01	30
1,3,5-Trimethylbenzene	28.0	1.0	"	33.3	ND	83.9	70-130	2.19	30
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>12.5</i>		<i>"</i>	<i>13.3</i>		<i>93.6</i>	<i>23-173</i>		
<i>Surrogate: Toluene-d8</i>	<i>11.8</i>		<i>"</i>	<i>13.3</i>		<i>88.7</i>	<i>20-170</i>		
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>12.3</i>		<i>"</i>	<i>13.3</i>		<i>92.0</i>	<i>21-167</i>		

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

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 BGG0599 - EPA 3550A

Blank (BGG0599-BLK1)

Prepared & Analyzed: 07/19/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.2		"	12.5		89.8	30-150				

LCS (BGG0599-BS1)

Prepared & Analyzed: 07/19/23

C10-C28 (DRO)	723	50	mg/kg	500		145	70-130				QR-02
Surrogate: <i>o</i> -Terphenyl	15.4		"	12.5		123	30-150				

Matrix Spike (BGG0599-MS1)

Source: 2307344-01

Prepared: 07/19/23 Analyzed: 07/20/23

C10-C28 (DRO)	494	50	mg/kg	500	28.4	93.2	70-130				
Surrogate: <i>o</i> -Terphenyl	11.2		"	12.5		89.3	30-150				

Matrix Spike Dup (BGG0599-MSD1)

Source: 2307344-01

Prepared: 07/19/23 Analyzed: 07/20/23

C10-C28 (DRO)	607	50	mg/kg	500	28.4	116	70-130	20.5	20		QR-02
Surrogate: <i>o</i> -Terphenyl	11.7		"	12.5		93.8	30-150				

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGG0643 - EPA 5030 Soil MS

Blank (BGG0643-BLK1)

Prepared: 07/20/23 Analyzed: 07/22/23

Acenaphthene	ND	0.00500	mg/kg							
Anthracene	ND	0.00500	"							
Benzo (a) anthracene	ND	0.00500	"							
Benzo (a) pyrene	ND	0.00500	"							
Benzo (b) fluoranthene	ND	0.00500	"							
Benzo (k) fluoranthene	ND	0.00500	"							
Chrysene	ND	0.00500	"							
Dibenz (a,h) anthracene	ND	0.00500	"							
Fluoranthene	ND	0.00500	"							
Fluorene	ND	0.00500	"							
Indeno (1,2,3-cd) pyrene	ND	0.00500	"							
Pyrene	ND	0.00500	"							
1-Methylnaphthalene	ND	0.00500	"							
2-Methylnaphthalene	ND	0.00500	"							
Surrogate: 2-Methylnaphthalene-d10	0.0194		"	0.0333		58.2	40-150			
Surrogate: Fluoranthene-d10	0.0237		"	0.0333		71.1	40-150			

LCS (BGG0643-BS1)

Prepared: 07/20/23 Analyzed: 07/22/23

Acenaphthene	0.0297	0.00500	mg/kg	0.0333		89.2	31-137			
Anthracene	0.0301	0.00500	"	0.0333		90.2	30-120			
Benzo (a) anthracene	0.0198	0.00500	"	0.0333		59.3	30-120			
Benzo (a) pyrene	0.0301	0.00500	"	0.0333		90.2	30-120			
Benzo (b) fluoranthene	0.0318	0.00500	"	0.0333		95.4	30-120			
Benzo (k) fluoranthene	0.0287	0.00500	"	0.0333		86.0	30-120			
Chrysene	0.0304	0.00500	"	0.0333		91.1	30-120			
Dibenz (a,h) anthracene	0.0281	0.00500	"	0.0333		84.2	30-120			
Fluoranthene	0.0271	0.00500	"	0.0333		81.3	30-120			
Fluorene	0.0284	0.00500	"	0.0333		85.1	30-120			
Indeno (1,2,3-cd) pyrene	0.0217	0.00500	"	0.0333		65.0	30-120			
Pyrene	0.0350	0.00500	"	0.0333		105	35-142			
1-Methylnaphthalene	0.0319	0.00500	"	0.0333		95.7	35-142			
2-Methylnaphthalene	0.0234	0.00500	"	0.0333		70.2	35-142			
Surrogate: 2-Methylnaphthalene-d10	0.0237		"	0.0333		71.1	40-150			
Surrogate: Fluoranthene-d10	0.0276		"	0.0333		82.9	40-150			

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/27/23 08:34

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 BGG0643 - EPA 5030 Soil MS

Matrix Spike (BGG0643-MS1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/22/23

Acenaphthene	0.0230	0.00500	mg/kg	0.0333	ND	69.1	31-137			
Anthracene	0.0241	0.00500	"	0.0333	ND	72.4	30-120			
Benzo (a) anthracene	0.0234	0.00500	"	0.0333	ND	70.1	30-120			
Benzo (a) pyrene	0.0236	0.00500	"	0.0333	ND	70.8	30-120			
Benzo (b) fluoranthene	0.0248	0.00500	"	0.0333	ND	74.3	30-120			
Benzo (k) fluoranthene	0.0228	0.00500	"	0.0333	ND	68.4	30-120			
Chrysene	0.0245	0.00500	"	0.0333	ND	73.4	30-120			
Dibenz (a,h) anthracene	0.0234	0.00500	"	0.0333	ND	70.1	30-120			
Fluoranthene	0.0224	0.00500	"	0.0333	ND	67.2	30-120			
Fluorene	0.0233	0.00500	"	0.0333	ND	70.0	30-120			
Indeno (1,2,3-cd) pyrene	0.0185	0.00500	"	0.0333	ND	55.5	30-120			
Pyrene	0.0280	0.00500	"	0.0333	ND	84.0	35-142			
1-Methylnaphthalene	0.0172	0.00500	"	0.0333	ND	51.5	15-130			
2-Methylnaphthalene	0.0222	0.00500	"	0.0333	ND	66.7	15-130			
Surrogate: 2-Methylnaphthalene-d10	0.0190		"	0.0333		57.0	40-150			
Surrogate: Fluoranthene-d10	0.0228		"	0.0333		68.3	40-150			

Matrix Spike Dup (BGG0643-MSD1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/22/23

Acenaphthene	0.0201	0.00500	mg/kg	0.0333	ND	60.4	31-137	13.5	30
Anthracene	0.0198	0.00500	"	0.0333	ND	59.5	30-120	19.6	30
Benzo (a) anthracene	0.0205	0.00500	"	0.0333	ND	61.6	30-120	12.9	30
Benzo (a) pyrene	0.0206	0.00500	"	0.0333	ND	61.7	30-120	13.7	30
Benzo (b) fluoranthene	0.0211	0.00500	"	0.0333	ND	63.2	30-120	16.1	30
Benzo (k) fluoranthene	0.0194	0.00500	"	0.0333	ND	58.3	30-120	16.0	30
Chrysene	0.0209	0.00500	"	0.0333	ND	62.6	30-120	15.9	30
Dibenz (a,h) anthracene	0.0194	0.00500	"	0.0333	ND	58.2	30-120	18.5	30
Fluoranthene	0.0179	0.00500	"	0.0333	ND	53.6	30-120	22.5	30
Fluorene	0.0203	0.00500	"	0.0333	ND	60.9	30-120	13.9	30
Indeno (1,2,3-cd) pyrene	0.0146	0.00500	"	0.0333	ND	43.9	30-120	23.4	30
Pyrene	0.0258	0.00500	"	0.0333	ND	77.4	35-142	8.26	30
1-Methylnaphthalene	0.0106	0.00500	"	0.0333	ND	31.8	15-130	47.5	50
2-Methylnaphthalene	0.0135	0.00500	"	0.0333	ND	40.4	15-130	49.2	50
Surrogate: 2-Methylnaphthalene-d10	0.0135		"	0.0333		40.6	40-150		
Surrogate: Fluoranthene-d10	0.0176		"	0.0333		52.7	40-150		

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

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 BGG0627 - EPA 3050B

Blank (BGG0627-BLK1)

Prepared: 07/20/23 Analyzed: 07/21/23

Boron ND 0.0100 mg/L

LCS (BGG0627-BS1)

Prepared: 07/20/23 Analyzed: 07/21/23

Boron 5.71 0.0100 mg/L 5.00 114 80-120

Duplicate (BGG0627-DUP1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/21/23

Boron 0.440 0.0100 mg/L 0.431 2.14 20

Matrix Spike (BGG0627-MS1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/21/23

Boron 7.12 0.0100 mg/L 5.00 0.431 134 75-125 QM-07

Matrix Spike Dup (BGG0627-MSD1)

Source: 2307320-01

Prepared: 07/20/23 Analyzed: 07/21/23

Boron 7.18 0.0100 mg/L 5.00 0.431 135 75-125 0.881 25 QM-07

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

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 BGG0601 - EPA 3050B

Blank (BGG0601-BLK1)

Prepared & Analyzed: 07/20/23

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 (BGG0601-BS1)

Prepared & Analyzed: 07/20/23

Arsenic	38.3	0.200	mg/kg wet	40.0	95.7	80-120
Barium	32.2	0.400	"	40.0	80.4	80-120
Cadmium	1.90	0.200	"	2.00	94.8	80-120
Copper	38.2	0.400	"	40.0	95.5	80-120
Lead	16.2	0.200	"	20.0	80.8	80-120
Nickel	37.5	0.400	"	40.0	93.9	80-120
Selenium	4.50	0.260	"	4.00	112	80-120
Silver	1.97	0.0200	"	2.00	98.4	80-120
Zinc	38.5	0.400	"	40.0	96.2	80-120

Duplicate (BGG0601-DUP1)

Source: 2306023-01

Prepared & Analyzed: 07/20/23

Arsenic	1.96	0.252	mg/kg dry	1.75	11.0	20	
Barium	111	0.503	"	73.9	40.3	20	QR-04
Cadmium	0.343	0.252	"	0.219	43.9	20	QR-01
Copper	3.02	0.503	"	2.80	7.25	20	
Lead	5.76	0.252	"	4.14	32.8	20	QR-04
Nickel	3.08	0.503	"	2.75	11.4	20	
Selenium	ND	0.327	"	ND		20	
Silver	0.0307	0.0252	"	0.0211	36.9	20	QR-01
Zinc	9.93	0.503	"	8.48	15.7	20	

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

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 BGG0601 - EPA 3050B

Matrix Spike (BGG0601-MS1)	Source: 2306023-01			Prepared & Analyzed: 07/20/23							
Arsenic	17.0	0.252	mg/kg dry	50.3	1.75	30.3	75-125				QM-01
Barium	130	0.503	"	50.3	73.9	112	75-125				
Cadmium	1.89	0.252	"	2.52	0.219	66.3	75-125				QM-01
Copper	17.7	0.503	"	50.3	2.80	29.7	75-125				QM-01
Lead	20.4	0.252	"	25.2	4.14	64.7	75-125				QM-01
Nickel	17.9	0.503	"	50.3	2.75	30.2	75-125				QM-01
Selenium	3.68	0.327	"	5.03	ND	73.1	75-125				QM-01
Silver	1.62	0.0252	"	2.52	0.0211	63.7	75-125				QM-01
Zinc	25.1	0.503	"	50.3	8.48	33.0	75-125				QM-01

Matrix Spike Dup (BGG0601-MSD1)	Source: 2306023-01			Prepared & Analyzed: 07/20/23							
Arsenic	17.8	0.252	mg/kg dry	50.3	1.75	31.8	75-125	4.44	25		QM-01
Barium	129	0.503	"	50.3	73.9	109	75-125	1.40	25		
Cadmium	1.96	0.252	"	2.52	0.219	69.0	75-125	3.61	25		QM-01
Copper	18.5	0.503	"	50.3	2.80	31.1	75-125	4.07	25		QM-01
Lead	21.1	0.252	"	25.2	4.14	67.3	75-125	3.11	25		QM-01
Nickel	18.7	0.503	"	50.3	2.75	31.7	75-125	4.18	25		QM-01
Selenium	3.69	0.327	"	5.03	ND	73.3	75-125	0.301	25		QM-01
Silver	1.67	0.0252	"	2.52	0.0211	65.6	75-125	2.84	25		QM-01
Zinc	25.7	0.503	"	50.3	8.48	34.2	75-125	2.40	25		QM-01

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0603 - 3060A Mod

Blank (BGG0603-BLK1)

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0603-BS1)

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent 23.5 0.30 mg/kg wet 25.0 94.0 80-120

Duplicate (BGG0603-DUP1)

Source: 2306023-01

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0603-MS1)

Source: 2306023-01

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent 30.0 0.30 mg/kg dry 31.5 ND 95.2 75-125

Matrix Spike Dup (BGG0603-MSD1)

Source: 2306023-01

Prepared & Analyzed: 07/20/23

Chromium, Hexavalent 29.8 0.30 mg/kg dry 31.5 ND 94.6 75-125 0.632 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

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

Summit Scientific

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

Batch BGG0586 - General Preparation

Blank (BGG0586-BLK1)

Prepared: 07/19/23 Analyzed: 07/24/23

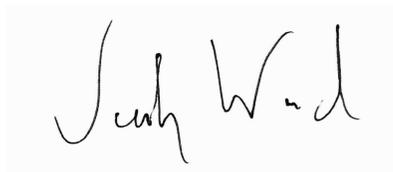
Calcium	ND	0.0500	mg/L wet							
Magnesium	ND	0.0500	"							
Sodium	ND	0.0500	"							

LCS (BGG0586-BS1)

Prepared: 07/19/23 Analyzed: 07/25/23

Calcium	5.63	0.0500	mg/L wet	5.00	113	70-130
Magnesium	4.86	0.0500	"	5.00	97.2	70-130
Sodium	5.04	0.0500	"	5.00	101	70-130

Summit Scientific



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Fremont Environmental PO Box 1289 Wellington CO, 80549	Project: Noble - PTF-64N64W 32SENE Project Number: UWRWE-A2338-ABN Project Manager: Paul Henehan	Reported: 07/27/23 08:34
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Physical Parameters by APHA/ASTM/EPA Methods - Quality Control

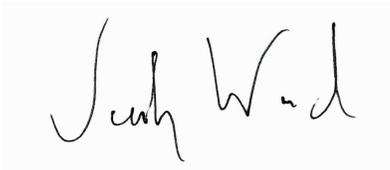
Summit Scientific

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

Batch BGG0605 - General Preparation

Duplicate (BGG0605-DUP1)	Source: 2307335-01		Prepared & Analyzed: 07/20/23							
% Solids	90.0		%		90.2			0.216	20	

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henehan

Reported:
 07/27/23 08:34

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 BGG0638 - General Preparation

Blank (BGG0638-BLK1)

Prepared & Analyzed: 07/20/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0638-BS1)

Prepared & Analyzed: 07/20/23

Specific Conductance (EC) 0.146 0.0100 mmhos/cm 0.150 97.4 95-105

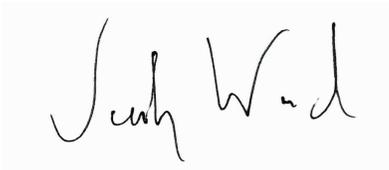
Duplicate (BGG0638-DUP1)

Source: 2307252-01

Prepared & Analyzed: 07/20/23

Specific Conductance (EC) 9.92 0.0100 mmhos/cm 10.0 0.753 20

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henehan

Reported:

07/27/23 08:34

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 BGG0637 - General Preparation

LCS (BGG0637-BS1)

Prepared & Analyzed: 07/20/23

pH 9.02 pH Units 9.18 98.3 95-105

Duplicate (BGG0637-DUP1)

Source: 2307252-01

Prepared & Analyzed: 07/20/23

pH 7.72 pH Units 7.72 0.00 20

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henehan

Reported:
07/27/23 08:34

Notes and Definitions

- Z-01 Unknown computer error. Data quality is unaffected.
- 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-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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-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 16, 2023

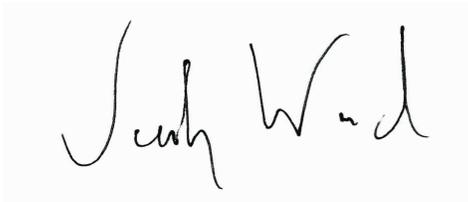
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order #2307370

Enclosed are the results of analyses for samples received by Summit Scientific on 07/20/23 17:27. 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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN

Project Manager: Paul Henchan

Reported:
08/16/23 15:42

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B07@9.0'	2307370-01	Soil	07/20/23 00:00	07/20/23 17:27
N03@8.0'	2307370-02	Soil	07/20/23 00:00	07/20/23 17:27
E03@8.0'	2307370-03	Soil	07/20/23 00:00	07/20/23 17:27

Summit Scientific

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SUMMIT SCIENTIFIC

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

Lab ID	Page <u>1</u> of <u>1</u>
2307370	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henehan	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeff@fremontenv.com Ethan@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2338-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix			Analysis Requested						Special Instructions			
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMBs (915)	DRD, DRD, GRO	PAHs (915)	EC-PH, SAR, Esron		Metals (915)		
1	B07@9.0'	7/20/23		2			X							X	X	X	X	X	X		
2	N03@8.0'	↓		↓			↓							↓	↓	↓	↓	↓	↓		
3	E03@8.0'	↓		↓			↓							↓	↓	↓	↓	↓	↓		
4																					
5																					
6																					
7																					
8																					
9																					
10																					
11																					
12																					
13																					
14																					
15																					

Relinquished by: <i>[Signature]</i>	Date/Time: 7/20/23 16:33	Received by: <i>[Signature]</i>	Date/Time: 7/20/23 16:33	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Temperature Upon Receipt: 24.1	Corrected Temperature	IR gun #: 2	HNO3 lot #:			

S₂

Sample Receipt Checklist

S2 Work Order# 2307370

Client: Fremont Client Project ID: PTF-64N64W 32SENE

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

[X] [] [] [] []

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

Temp (°C) 24.1 Thermometer # 2

	Yes	No	N/A	Comments (if any)
If samples require cooling, is the temperature < 6°C? (1) NOTE: If samples are delivered the same day of sampling, this requirement is met if there is evidence that cooling has begun.	[X]	[]	[]	on ice
If custody seals are present, are they intact? (1)	[]	[]	[X]	
Are samples due within 48 hours present?	[X]	[]	[]	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	[]	[]	[X]	
Is a chain-of-custody (COC) form present and filled out completely? (1)	[]	[X]	[]	no sample times
Is the COC properly relinquished by the client w/ date and time recorded? (1)	[X]	[]	[]	
Were all samples received intact? (1)	[X]	[]	[]	
Was adequate sample volume provided? (1)	[X]	[]	[]	
Does the COC agree with the number and type of sample bottles received? (1)	[X]	[]	[]	
Do the sample IDs on the bottle labels match the COC? (1)	[X]	[X]	[]	1 bottle label does not match COC
For volatiles in water – is there headspace present? If yes, contact client and note in narrative.	[]	[]	[X]	
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.	[]	[]	[X]	
If samples are acid preserved for metals, is the pH ≤ 2? (1) Record the pH in Comments.	[]	[]	[X]	
If dissolved metals are requested, were samples field filtered?	[]	[]	[X]	

Additional Comments (if any):

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

Jah Wald 7/20/23 16:33
Custodian Printed Name Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

B07@9.0'
2307370-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG0650	07/20/23	07/20/23	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: **07/20/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0347	86.8 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0356	89.1 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0404	101 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0651	07/20/23	07/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	8.46	67.7 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project Manager: Paul Henchan

Reported:
08/16/23 15:42

B07@9.0'
2307370-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0675	07/21/23	07/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0193	57.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0181	54.2 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.127	0.0100	mg/L	1	BGG0703	07/23/23	07/24/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/20/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

B07@9.0'
2307370-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Arsenic	1.34	0.200	mg/kg dry	1	BGG0653	07/21/23	07/24/23	EPA 6020B
Barium	21.8	0.400	"	"	"	"	"	"
Cadmium	ND	0.200	"	"	"	"	"	"
Copper	1.72	0.400	"	"	"	"	"	"
Lead	2.00	0.200	"	"	"	"	"	"
Nickel	1.59	0.400	"	"	"	"	"	"
Selenium	ND	0.310	"	"	"	"	"	"
Silver	ND	0.0200	"	"	"	"	"	"
Zinc	6.79	0.400	"	"	"	"	"	"

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0655	07/21/23	07/21/23	EPA 7196A	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	77.2	0.0596	mg/L dry	1	BGG0624	07/20/23	07/21/23	EPA 6020B	
Magnesium	28.3	0.0596	"	"	"	"	"	"	
Sodium	78.3	0.0596	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.94	0.00100	units	1	BGG0734	07/24/23	07/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
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Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

B07@9.0'
2307370-01 (Soil)

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Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.9		%	1	BGG0657	07/21/23	07/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.28	0.0100	mmhos/cm	1	BGG0660	07/21/23	07/21/23	EPA 120.1	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.58		pH Units	1	BGG0661	07/21/23	07/21/23	EPA 9045D	

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Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

N03@8.0'
2307370-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Benzene	ND	0.0020	mg/kg	1	BGG0650	07/20/23	07/20/23	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: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 1,2-Dichloroethane-d4	0.0321	80.2 %	50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0355	88.8 %	50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0406	101 %	50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
C10-C28 (DRO)	ND	50	mg/kg	1	BGG0651	07/20/23	07/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50	"	"	"	"	"	"	

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: o-Terphenyl	9.40	75.2 %	30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

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Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

N03@8.0'
2307370-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0675	07/21/23	07/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0218	65.3 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0179	53.8 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.230	0.0100	mg/L	1	BGG0703	07/23/23	07/24/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/20/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

N03@8.0'
2307370-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.20	0.200	mg/kg dry	1	BGG0653	07/21/23	07/24/23	EPA 6020B	
Cadmium	0.213	0.200	"	"	"	"	"	"	
Copper	4.56	0.400	"	"	"	"	"	"	
Lead	5.24	0.200	"	"	"	"	"	"	
Nickel	5.26	0.400	"	"	"	"	"	"	
Selenium	ND	0.321	"	"	"	"	"	"	
Silver	0.0281	0.0200	"	"	"	"	"	"	
Zinc	20.0	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0655	07/21/23	07/21/23	EPA 7196A	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	44.7	0.0617	mg/L dry	1	BGG0624	07/20/23	07/21/23	EPA 6020B	
Magnesium	24.2	0.0617	"	"	"	"	"	"	
Sodium	49.6	0.0617	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	1.48	0.00100	units	1	BGG0734	07/24/23	07/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.0		%	1	BGG0657	07/21/23	07/21/23	Calculation	

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Reported:
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N03@8.0'
2307370-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	1.26	0.0100	mmhos/cm	1	BGG0660	07/21/23	07/21/23	EPA 120.1	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.30		pH Units	1	BGG0661	07/21/23	07/21/23	EPA 9045D	

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Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

N03@8.0'
2307370-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	67.5	0.400	mg/kg dry	1	BGH0245	07/21/23	08/09/23	EPA 6020B	

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

E03@8.0'
2307370-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG0650	07/20/23	07/20/23	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: **07/20/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0340	85.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0353	88.2 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0413	103 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0651	07/20/23	07/20/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	7.79	62.3 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

E03@8.0'
2307370-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0675	07/21/23	07/22/23	EPA 8270D SIM	
Anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) anthracene	ND	0.00500	"	"	"	"	"	"	
Benzo (a) pyrene	ND	0.00500	"	"	"	"	"	"	
Benzo (b) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Benzo (k) fluoranthene	ND	0.00500	"	"	"	"	"	"	
Chrysene	ND	0.00500	"	"	"	"	"	"	
Dibenz (a,h) anthracene	ND	0.00500	"	"	"	"	"	"	
Fluoranthene	ND	0.00500	"	"	"	"	"	"	
Fluorene	ND	0.00500	"	"	"	"	"	"	
Indeno (1,2,3-cd) pyrene	ND	0.00500	"	"	"	"	"	"	
Pyrene	ND	0.00500	"	"	"	"	"	"	
1-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	
2-Methylnaphthalene	ND	0.00500	"	"	"	"	"	"	

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0189	56.7 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0195	58.6 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.137	0.0100	mg/L	1	BGG0703	07/23/23	07/24/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/20/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

E03@8.0'
2307370-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	4.31	0.200	mg/kg dry	1	BGG0653	07/21/23	07/24/23	EPA 6020B	
Barium	55.6	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	3.22	0.400	"	"	"	"	"	"	
Lead	3.60	0.200	"	"	"	"	"	"	
Nickel	3.89	0.400	"	"	"	"	"	"	
Selenium	ND	0.323	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	13.0	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0655	07/21/23	07/21/23	EPA 7196A	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	50.3	0.0622	mg/L dry	1	BGG0624	07/20/23	07/21/23	EPA 6020B	
Magnesium	18.4	0.0622	"	"	"	"	"	"	
Sodium	4.83	0.0622	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.148	0.00100	units	1	BGG0734	07/24/23	07/24/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

E03@8.0'
2307370-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	80.4		%	1	BGG0657	07/21/23	07/21/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/20/23 00:00**

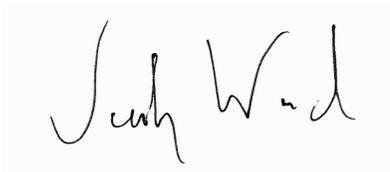
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.443	0.0100	mmhos/cm	1	BGG0660	07/21/23	07/21/23	EPA 120.1	

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

Date Sampled: **07/20/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.48		pH Units	1	BGG0661	07/21/23	07/21/23	EPA 9045D	

Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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 BGG0650 - EPA 5030 Soil MS

Blank (BGG0650-BLK1)

Prepared & Analyzed: 07/20/23

Benzene	ND	0.0020	mg/kg								
Toluene	ND	0.0050	"								
Ethylbenzene	ND	0.0050	"								
Xylenes (total)	ND	0.010	"								
1,2,4-Trimethylbenzene	ND	0.0050	"								
1,3,5-Trimethylbenzene	ND	0.0050	"								
Naphthalene	ND	0.0038	"								
Gasoline Range Hydrocarbons	ND	0.50	"								
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0317		"	0.0400		79.2	50-150				
<i>Surrogate: Toluene-d8</i>	0.0353		"	0.0400		88.4	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0420		"	0.0400		105	50-150				

LCS (BGG0650-BS1)

Prepared & Analyzed: 07/20/23

Benzene	0.114	0.0020	mg/kg	0.115		98.9	70-130				
Toluene	0.116	0.0050	"	0.115		100	70-130				
Ethylbenzene	0.141	0.0050	"	0.115		122	70-130				
m,p-Xylene	0.275	0.010	"	0.230		119	70-130				
o-Xylene	0.135	0.0050	"	0.115		117	70-130				
1,2,4-Trimethylbenzene	0.145	0.0050	"	0.115		126	70-130				
1,3,5-Trimethylbenzene	0.146	0.0050	"	0.115		127	70-130				
Naphthalene	0.109	0.0038	"	0.115		95.1	70-130				
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0293		"	0.0400		73.2	50-150				
<i>Surrogate: Toluene-d8</i>	0.0352		"	0.0400		88.1	50-150				
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0403		"	0.0400		101	50-150				

Matrix Spike (BGG0650-MS1)

Source: 2307370-01

Prepared & Analyzed: 07/20/23

Benzene	0.183	0.0020	mg/kg	0.115	ND	159	70-130			QM-07
Toluene	0.187	0.0050	"	0.115	ND	162	70-130			QM-07
Ethylbenzene	0.230	0.0050	"	0.115	ND	200	70-130			QM-07
m,p-Xylene	0.450	0.010	"	0.230	ND	196	70-130			QM-07
o-Xylene	0.216	0.0050	"	0.115	ND	188	70-130			QM-07
1,2,4-Trimethylbenzene	0.239	0.0050	"	0.115	ND	208	70-130			QM-07
1,3,5-Trimethylbenzene	0.240	0.0050	"	0.115	ND	209	70-130			QM-07
Naphthalene	0.193	0.0038	"	0.115	ND	168	70-130			QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0315		"	0.0400		78.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0356		"	0.0400		89.0	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0415		"	0.0400		104	50-150			

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

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 BGG0650 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0650-MSD1)	Source: 2307370-01			Prepared & Analyzed: 07/20/23						
Benzene	0.186	0.0020	mg/kg	0.115	ND	162	70-130	2.07	30	QM-07
Toluene	0.187	0.0050	"	0.115	ND	162	70-130	0.0643	30	QM-07
Ethylbenzene	0.243	0.0050	"	0.115	ND	211	70-130	5.49	30	QM-07
m,p-Xylene	0.477	0.010	"	0.230	ND	207	70-130	5.76	30	QM-07
o-Xylene	0.227	0.0050	"	0.115	ND	198	70-130	4.96	30	QM-07
1,2,4-Trimethylbenzene	0.251	0.0050	"	0.115	ND	219	70-130	5.18	30	QM-07
1,3,5-Trimethylbenzene	0.253	0.0050	"	0.115	ND	220	70-130	5.10	30	QM-07
Naphthalene	0.195	0.0038	"	0.115	ND	170	70-130	1.02	30	QM-07
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>0.0276</i>		<i>"</i>	<i>0.0400</i>		<i>68.9</i>	<i>50-150</i>			
<i>Surrogate: Toluene-d8</i>	<i>0.0344</i>		<i>"</i>	<i>0.0400</i>		<i>86.0</i>	<i>50-150</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>0.0413</i>		<i>"</i>	<i>0.0400</i>		<i>103</i>	<i>50-150</i>			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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 BGG0651 - EPA 3550A

Blank (BGG0651-BLK1)

Prepared & Analyzed: 07/20/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	10.4		"	12.5		83.3		30-150			

LCS (BGG0651-BS1)

Prepared & Analyzed: 07/20/23

C10-C28 (DRO)	438	50	mg/kg	500		87.6		70-130			
Surrogate: <i>o</i> -Terphenyl	11.6		"	12.5		93.0		30-150			

Matrix Spike (BGG0651-MS1)

Source: 2307370-01

Prepared & Analyzed: 07/20/23

C10-C28 (DRO)	442	50	mg/kg	500	12.4	85.9		70-130			
Surrogate: <i>o</i> -Terphenyl	9.94		"	12.5		79.5		30-150			

Matrix Spike Dup (BGG0651-MSD1)

Source: 2307370-01

Prepared & Analyzed: 07/20/23

C10-C28 (DRO)	385	50	mg/kg	500	12.4	74.6		70-130	13.7	20	
Surrogate: <i>o</i> -Terphenyl	11.1		"	12.5		89.1		30-150			

Summit Scientific

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGG0675 - EPA 5030 Soil MS

Blank (BGG0675-BLK1)

Prepared: 07/21/23 Analyzed: 07/22/23

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>	0.0224		"	0.0333		67.2	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0160		"	0.0333		48.1	40-150			

LCS (BGG0675-BS1)

Prepared: 07/21/23 Analyzed: 07/22/23

Acenaphthene	0.0224	0.00500	mg/kg	0.0333		67.2	31-137			
Anthracene	0.0220	0.00500	"	0.0333		66.1	30-120			
Benzo (a) anthracene	0.0271	0.00500	"	0.0333		81.3	30-120			
Benzo (a) pyrene	0.0240	0.00500	"	0.0333		72.1	30-120			
Benzo (b) fluoranthene	0.0259	0.00500	"	0.0333		77.7	30-120			
Benzo (k) fluoranthene	0.0230	0.00500	"	0.0333		68.9	30-120			
Chrysene	0.0233	0.00500	"	0.0333		70.0	30-120			
Dibenz (a,h) anthracene	0.0259	0.00500	"	0.0333		77.8	30-120			
Fluoranthene	0.0219	0.00500	"	0.0333		65.6	30-120			
Fluorene	0.0222	0.00500	"	0.0333		66.7	30-120			
Indeno (1,2,3-cd) pyrene	0.0275	0.00500	"	0.0333		82.5	30-120			
Pyrene	0.0239	0.00500	"	0.0333		71.6	35-142			
1-Methylnaphthalene	0.0279	0.00500	"	0.0333		83.6	35-142			
2-Methylnaphthalene	0.0210	0.00500	"	0.0333		62.9	35-142			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	0.0267		"	0.0333		80.2	40-150			
<i>Surrogate: Fluoranthene-d10</i>	0.0212		"	0.0333		63.6	40-150			

Summit Scientific

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Fremont Environmental
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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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 BGG0675 - EPA 5030 Soil MS

Matrix Spike (BGG0675-MS1)	Source: 2307360-02			Prepared: 07/21/23 Analyzed: 07/22/23					
Acenaphthene	0.0136	0.00500	mg/kg	0.0333	ND	40.8	31-137		
Anthracene	0.0141	0.00500	"	0.0333	ND	42.3	30-120		
Benzo (a) anthracene	0.0144	0.00500	"	0.0333	ND	43.3	30-120		
Benzo (a) pyrene	0.0118	0.00500	"	0.0333	ND	35.5	30-120		
Benzo (b) fluoranthene	0.0142	0.00500	"	0.0333	ND	42.5	30-120		
Benzo (k) fluoranthene	0.0122	0.00500	"	0.0333	ND	36.6	30-120		
Chrysene	0.0126	0.00500	"	0.0333	ND	37.7	30-120		
Dibenz (a,h) anthracene	0.0134	0.00500	"	0.0333	ND	40.1	30-120		
Fluoranthene	0.0112	0.00500	"	0.0333	ND	33.6	30-120		
Fluorene	0.0143	0.00500	"	0.0333	ND	42.9	30-120		
Indeno (1,2,3-cd) pyrene	0.0106	0.00500	"	0.0333	ND	31.8	30-120		
Pyrene	0.0138	0.00500	"	0.0333	ND	41.5	35-142		
1-Methylnaphthalene	0.0134	0.00500	"	0.0333	ND	40.2	15-130		
2-Methylnaphthalene	0.0106	0.00500	"	0.0333	ND	31.7	15-130		
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0162</i>		<i>"</i>	<i>0.0333</i>		<i>48.6</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0161</i>		<i>"</i>	<i>0.0333</i>		<i>48.4</i>	<i>40-150</i>		

Matrix Spike Dup (BGG0675-MSD1)	Source: 2307360-02			Prepared: 07/21/23 Analyzed: 07/22/23					
Acenaphthene	0.0147	0.00500	mg/kg	0.0333	ND	44.0	31-137	7.50	30
Anthracene	0.0148	0.00500	"	0.0333	ND	44.4	30-120	5.00	30
Benzo (a) anthracene	0.0177	0.00500	"	0.0333	ND	53.1	30-120	20.3	30
Benzo (a) pyrene	0.0159	0.00500	"	0.0333	ND	47.7	30-120	29.3	30
Benzo (b) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	24.3	30
Benzo (k) fluoranthene	0.0160	0.00500	"	0.0333	ND	48.0	30-120	27.0	30
Chrysene	0.0165	0.00500	"	0.0333	ND	49.5	30-120	27.1	30
Dibenz (a,h) anthracene	0.0175	0.00500	"	0.0333	ND	52.6	30-120	27.0	30
Fluoranthene	0.0147	0.00500	"	0.0333	ND	44.2	30-120	27.4	30
Fluorene	0.0153	0.00500	"	0.0333	ND	45.8	30-120	6.51	30
Indeno (1,2,3-cd) pyrene	0.0142	0.00500	"	0.0333	ND	42.6	30-120	28.9	30
Pyrene	0.0177	0.00500	"	0.0333	ND	53.0	35-142	24.4	30
1-Methylnaphthalene	0.0193	0.00500	"	0.0333	ND	57.8	15-130	35.9	50
2-Methylnaphthalene	0.0161	0.00500	"	0.0333	ND	48.3	15-130	41.4	50
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0192</i>		<i>"</i>	<i>0.0333</i>		<i>57.6</i>	<i>40-150</i>		
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0136</i>		<i>"</i>	<i>0.0333</i>		<i>40.7</i>	<i>40-150</i>		

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

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 BGG0703 - EPA 3050B

Blank (BGG0703-BLK1)

Prepared: 07/23/23 Analyzed: 07/24/23

Boron ND 0.0100 mg/L

LCS (BGG0703-BS1)

Prepared: 07/23/23 Analyzed: 07/24/23

Boron 5.49 0.0100 mg/L 5.00 110 80-120

Duplicate (BGG0703-DUP1)

Source: 2307370-01

Prepared: 07/23/23 Analyzed: 07/24/23

Boron 0.162 0.0100 mg/L 0.127 24.0 20 QR-04

Matrix Spike (BGG0703-MS1)

Source: 2307370-01

Prepared: 07/23/23 Analyzed: 07/24/23

Boron 5.50 0.0100 mg/L 5.00 0.127 108 75-125

Matrix Spike Dup (BGG0703-MSD1)

Source: 2307370-01

Prepared: 07/23/23 Analyzed: 07/24/23

Boron 5.88 0.0100 mg/L 5.00 0.127 115 75-125 6.65 25

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

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 BGG0653 - EPA 3050B

Blank (BGG0653-BLK1)

Prepared: 07/21/23 Analyzed: 07/24/23

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 (BGG0653-BS1)

Prepared: 07/21/23 Analyzed: 07/24/23

Arsenic	38.1	0.200	mg/kg wet	40.0	95.3	80-120				
Barium	32.7	0.400	"	40.0	81.7	80-120				
Cadmium	1.93	0.200	"	2.00	96.7	80-120				
Copper	35.0	0.400	"	40.0	87.6	80-120				
Lead	22.2	0.200	"	20.0	111	80-120				
Nickel	33.1	0.400	"	40.0	82.8	80-120				
Selenium	4.72	0.260	"	4.00	118	80-120				
Silver	1.96	0.0200	"	2.00	98.2	80-120				
Zinc	32.9	0.400	"	40.0	82.4	80-120				

Duplicate (BGG0653-DUP1)

Source: 2307370-01

Prepared: 07/21/23 Analyzed: 07/24/23

Arsenic	1.40	0.200	mg/kg dry	1.34	4.27	20				
Barium	35.9	0.400	"	21.8	48.9	20				QR-04
Cadmium	0.0701	0.200	"	0.0558	22.7	20				QR-01
Copper	1.86	0.400	"	1.72	7.64	20				
Lead	2.09	0.200	"	2.00	4.01	20				
Nickel	2.00	0.400	"	1.59	22.8	20				QR-01
Selenium	ND	0.310	"	ND		20				
Silver	0.0134	0.0200	"	0.0105	24.0	20				QR-01
Zinc	8.57	0.400	"	6.79	23.1	20				QM-04

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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 BGG0653 - EPA 3050B

Matrix Spike (BGG0653-MS1)

Source: 2307370-01

Prepared: 07/21/23 Analyzed: 07/24/23

Arsenic	38.9	0.200	mg/kg dry	47.7	1.34	78.8	75-125				
Barium	68.4	0.400	"	47.7	21.8	97.7	75-125				
Cadmium	2.05	0.200	"	2.38	0.0558	83.5	75-125				
Copper	36.6	0.400	"	47.7	1.72	73.1	75-125				QM-07
Lead	21.8	0.200	"	23.8	2.00	83.2	75-125				
Nickel	35.6	0.400	"	47.7	1.59	71.2	75-125				QM-07
Selenium	5.67	0.310	"	4.77	ND	119	75-125				
Silver	1.94	0.0200	"	2.38	0.0105	80.8	75-125				
Zinc	43.1	0.400	"	47.7	6.79	76.1	75-125				

Matrix Spike Dup (BGG0653-MSD1)

Source: 2307370-01

Prepared: 07/21/23 Analyzed: 07/24/23

Arsenic	38.4	0.200	mg/kg dry	47.7	1.34	77.7	75-125	1.34	25		
Barium	68.3	0.400	"	47.7	21.8	97.4	75-125	0.181	25		
Cadmium	2.07	0.200	"	2.38	0.0558	84.3	75-125	0.950	25		
Copper	37.1	0.400	"	47.7	1.72	74.2	75-125	1.50	25		QM-07
Lead	22.0	0.200	"	23.8	2.00	84.0	75-125	0.813	25		
Nickel	36.0	0.400	"	47.7	1.59	72.1	75-125	1.15	25		QM-07
Selenium	5.82	0.310	"	4.77	ND	122	75-125	2.76	25		
Silver	1.95	0.0200	"	2.38	0.0105	81.3	75-125	0.638	25		
Zinc	43.9	0.400	"	47.7	6.79	77.7	75-125	1.81	25		

Batch BGH0245 - EPA 3050B

Blank (BGH0245-BLK1)

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

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	"								

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 - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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 BGH0245 - EPA 3050B

LCS (BGH0245-BS1)

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

Arsenic	39.8	0.200	mg/kg wet	40.0		99.4	80-120			
Barium	37.7	0.400	"	40.0		94.1	80-120			
Cadmium	1.70	0.200	"	2.00		84.8	80-120			
Copper	33.2	0.400	"	40.0		83.0	80-120			
Lead	17.5	0.200	"	20.0		87.5	80-120			
Nickel	32.7	0.400	"	40.0		81.6	80-120			
Selenium	4.11	0.260	"	4.00		103	80-120			
Silver	1.74	0.0200	"	2.00		87.1	80-120			
Zinc	33.7	0.400	"	40.0		84.2	80-120			

Duplicate (BGH0245-DUP1)

Source: 2307286-01

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

Arsenic	1.89	0.200	mg/kg wet		1.85			1.69	20	
Barium	64.4	0.400	"		74.5			14.5	20	
Cadmium	0.0976	0.200	"		0.0992			1.63	20	
Copper	4.63	0.400	"		4.51			2.57	20	
Lead	5.12	0.200	"		5.66			10.0	20	
Nickel	4.69	0.400	"		4.48			4.61	20	
Selenium	ND	0.260	"		ND				20	
Silver	0.0300	0.0200	"		0.0296			1.34	20	
Zinc	14.1	0.400	"		14.1			0.209	20	

Matrix Spike (BGH0245-MS1)

Source: 2307286-01

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

Arsenic	35.4	0.200	mg/kg wet	40.0	1.85	83.9	75-125			
Barium	117	0.400	"	40.0	74.5	106	75-125			
Cadmium	1.63	0.200	"	2.00	0.0992	76.7	75-125			
Copper	23.3	0.400	"	40.0	4.51	47.0	75-125			QM-07
Lead	19.9	0.200	"	20.0	5.66	71.0	75-125			QM-07
Nickel	23.7	0.400	"	40.0	4.48	47.9	75-125			QM-07
Selenium	3.24	0.260	"	4.00	ND	80.9	75-125			
Silver	1.55	0.0200	"	2.00	0.0296	75.9	75-125			
Zinc	33.4	0.400	"	40.0	14.1	48.2	75-125			QM-07

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

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 BGH0245 - EPA 3050B

Matrix Spike Dup (BGH0245-MSD1)	Source: 2307286-01			Prepared: 08/07/23 Analyzed: 08/08/23							
Arsenic	39.6	0.200	mg/kg wet	40.0	1.85	94.5	75-125	11.3	25		
Barium	127	0.400	"	40.0	74.5	132	75-125	8.37	25		QM-07
Cadmium	1.78	0.200	"	2.00	0.0992	84.1	75-125	8.72	25		
Copper	24.9	0.400	"	40.0	4.51	51.0	75-125	6.55	25		QM-07
Lead	22.4	0.200	"	20.0	5.66	83.9	75-125	12.2	25		
Nickel	25.0	0.400	"	40.0	4.48	51.2	75-125	5.44	25		QM-07
Selenium	3.71	0.260	"	4.00	ND	92.8	75-125	13.7	25		
Silver	1.69	0.0200	"	2.00	0.0296	82.9	75-125	8.75	25		
Zinc	36.3	0.400	"	40.0	14.1	55.3	75-125	8.11	25		QM-07

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

Hexavalent Chromium by EPA Method 7196 - Quality Control
Summit Scientific

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

Batch BGG0655 - 3060A Mod

Blank (BGG0655-BLK1)

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0655-BS1)

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent 24.0 0.30 mg/kg wet 25.0 95.8 80-120

Duplicate (BGG0655-DUP1)

Source: 2307370-01

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0655-MS1)

Source: 2307370-01

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent 27.3 0.30 mg/kg dry 29.8 ND 91.6 75-125

Matrix Spike Dup (BGG0655-MSD1)

Source: 2307370-01

Prepared & Analyzed: 07/21/23

Chromium, Hexavalent 26.7 0.30 mg/kg dry 29.8 ND 89.6 75-125 2.21 20

Summit Scientific

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

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 BGG0624 - General Preparation

Blank (BGG0624-BLK1)

Prepared: 07/20/23 Analyzed: 07/21/23

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

LCS (BGG0624-BS1)

Prepared: 07/20/23 Analyzed: 07/21/23

Calcium	5.31	0.0500	mg/L wet	5.00	106	70-130				
Magnesium	5.93	0.0500	"	5.00	119	70-130				
Sodium	6.10	0.0500	"	5.00	122	70-130				

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

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 BGG0657 - General Preparation

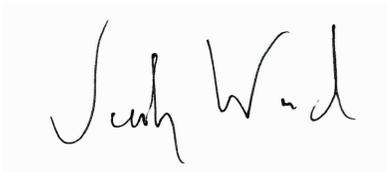
Duplicate (BGG0657-DUP1)

Source: 2307370-01

Prepared & Analyzed: 07/21/23

% Solids	83.7		%		83.9			0.248	20	
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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

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 BGG0660 - General Preparation

Blank (BGG0660-BLK1)

Prepared & Analyzed: 07/21/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0660-BS1)

Prepared & Analyzed: 07/21/23

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

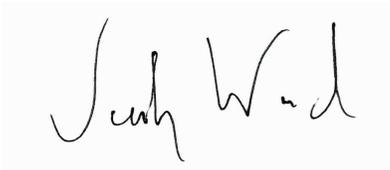
Duplicate (BGG0660-DUP1)

Source: 2307355-01

Prepared & Analyzed: 07/21/23

Specific Conductance (EC) 0.360 0.0100 mmhos/cm 0.360 0.00 20

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/16/23 15:42

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

Summit Scientific

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

Batch BGG0661 - General Preparation

LCS (BGG0661-BS1)

Prepared & Analyzed: 07/21/23

pH	8.83	pH Units	9.18	96.2	95-105
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Duplicate (BGG0661-DUP1)

Source: 2307355-01

Prepared & Analyzed: 07/21/23

pH	8.19	pH Units	8.19	0.00	20
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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/16/23 15:42

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-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 80403

303.277.9310

August 17, 2023

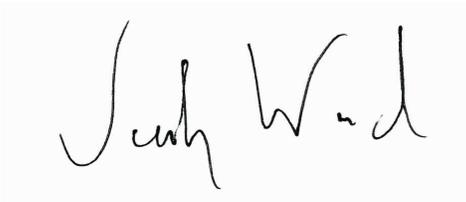
Paul Henchan
Fremont Environmental
PO Box 1289
Wellington, CO 80549

RE: Noble - PTF-64N64W 32SENE

Work Order #2307426

Enclosed are the results of analyses for samples received by Summit Scientific on 07/24/23 17:02. 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 - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B08@9.0'	2307426-01	Soil	07/24/23 00:00	07/24/23 17:02
S03@8.0'	2307426-02	Soil	07/24/23 00:00	07/24/23 17:02
E02@8.0'	2307426-03	Soil	07/24/23 00:00	07/24/23 17:02
GW05	2307426-04	Water	07/24/23 00:00	07/24/23 17:02

Summit Scientific

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

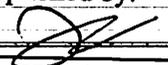
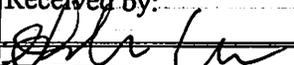
SUMMIT SCIENTIFIC

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

Lab ID	Page 1 of 1
2307426	

Client: Fremont Env	Send Data To:	Send Invoice To:
Address:	Project Manager: Paul Henehan	Company: Noble
City/State/Zip:	E-Mail: Paulh@fremontenv.com	Project Name/Location: PTF-64N64W 32SENE
Phone:	jeffg@fremontenv.com Ethemb@fremontenv.com	AFE#:
Sampler Name: JG	Project Name: PTF-64N64W 32SENE	PO/Billing Codes: UWRWE-A2328-ABN
	Project Number:	Contact:

ID	Sample Description	Date Sampled	Time Sampled	# of containers	Preservative				Matrix				Analysis Requested						Special Instructions				
					HCl	HNO3	None	Other	Water	Soil	Air-Canister #	Other	BTEX+N	TMS (915)	DR,ORO,GRD	PAHs (915)	EC,PH,SAR, Boron	Metals (915)					
1	B08@9.0'	7/24/23		1			X																
2	S03@8.0'	↓		1			X																
3	E02@8.0'	↓		1			X																
4	GW05	↓		1	X				X														
5																							
6																							
7																							
8																							
9																							
10																							
11																							
12																							
13																							
14																							
15																							

Relinquished by: 	Date/Time: 7/24/23	Received by: 	Date/Time: 7/25/23	TAT Business Days	Field DO	Notes: Bill to Noble
Relinquished by:	Date/Time:	Received by:	Date/Time:	Same Day	Field EC	
				1 Day	Field ORP	
				2 Days	Field pH	
				3 Days	Field Temp.	
Relinquished by:	Date/Time:	Received by:	Date/Time:	Standard	Field Turb.	
Temperature Upon Receipt:	Corrected Temperature: 26.6°C	IR gun #:	02	HNO3 lot #:		

S₂

Sample Receipt Checklist

S2 Work Order# 2307420

Client: Fremont Env Client Project ID: PTF-64W6HW 32 SENE

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

[x] [] [] [] []

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

Temp (°C) 26.6°C Thermometer # 02

Table with 4 columns: Yes, No, N/A, Comments (if any). Rows include: 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. If custody seals are present, are they intact? (1) Are samples due within 48 hours present? Are water samples with short hold times present? Note the short hold analysis in the comments column - pH, Nitrate/Nitrite, Ferrous Iron (Fe2+), Hexavalent Chromium (Cr6+, 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, H2SO4, NaOH, HNO3, 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.

GAC

Custodian Printed Name

7/29/23

Date/Time



Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

B08@9.0'
2307426-01 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG0764	07/24/23	07/24/23	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: **07/24/23 00:00**

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	0.0390	97.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0375	93.8 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0765	07/24/23	07/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.2	89.9 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

B08@9.0'
2307426-01 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0775	07/25/23	07/25/23	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: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0136	40.8 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0166	49.9 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.202	0.0100	mg/L	1	BGG0779	07/25/23	07/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/24/23 00:00**

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

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

B08@9.0'
2307426-01 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	1.76	0.200	mg/kg dry	1	BGG0770	07/25/23	07/27/23	EPA 6020B	
Barium	22.4	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.34	0.400	"	"	"	"	"	"	
Lead	4.67	0.200	"	"	"	"	"	"	
Nickel	3.55	0.400	"	"	"	"	"	"	
Selenium	ND	0.312	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	14.3	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0772	07/25/23	07/25/23	EPA 7196A	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	61.1	0.0600	mg/L dry	1	BGG0766	07/24/23	07/26/23	EPA 6020B	
Magnesium	33.8	0.0600	"	"	"	"	"	"	
Sodium	92.1	0.0600	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.35	0.00100	units	1	BGG0906	07/27/23	07/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Summit Scientific

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Fremont Environmental
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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

B08@9.0'
2307426-01 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	83.4		%	1	BGG0774	07/25/23	07/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.956	0.0100	mmhos/cm	1	BGG0788	07/25/23	07/25/23	EPA 120.1	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.81		pH Units	1	BGG0789	07/25/23	07/25/23	EPA 9045D	

Summit Scientific

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG0764	07/24/23	07/24/23	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: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0374	93.6 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0388	97.0 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0384	95.9 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0765	07/24/23	07/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/24/23 00:00**

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

PAH by EPA Method 8270D SIM

Summit Scientific

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Fremont Environmental
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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0775	07/25/23	07/25/23	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: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0138	41.5 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0137	41.1 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.296	0.0100	mg/L	1	BGG0779	07/25/23	07/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/24/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	3.74	0.200	mg/kg dry	1	BGG0770	07/25/23	07/27/23	EPA 6020B	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.32	0.400	"	"	"	"	"	"	
Lead	4.79	0.200	"	"	"	"	"	"	
Nickel	5.94	0.400	"	"	"	"	"	"	
Selenium	ND	0.327	"	"	"	"	"	"	
Silver	0.0312	0.0200	"	"	"	"	"	"	
Zinc	16.8	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0772	07/25/23	07/25/23	EPA 7196A	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	44.5	0.0629	mg/L dry	1	BGG0766	07/24/23	07/26/23	EPA 6020B	
Magnesium	39.1	0.0629	"	"	"	"	"	"	
Sodium	11.8	0.0629	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	0.311	0.00100	units	1	BGG0906	07/27/23	07/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/24/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

% Solids	79.5	%	1	BGG0774	07/25/23	07/25/23	Calculation
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Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.651	0.0100	mmhos/cm	1	BGG0788	07/25/23	07/25/23	EPA 120.1	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.90		pH Units	1	BGG0789	07/25/23	07/25/23	EPA 9045D	

Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

S03@8.0'
2307426-02 (Soil)

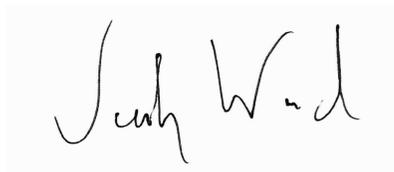
Summit Scientific

Total Metals by EPA 6020B

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit	Units						
Barium	101	0.400	mg/kg dry	1	BGH0609	07/25/23	08/16/23	EPA 6020B	

Summit Scientific



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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

E02@8.0'
2307426-03 (Soil)

Summit Scientific

Volatile Organic Compounds by EPA Method 8260B

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	0.0020		mg/kg	1	BGG0764	07/24/23	07/24/23	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: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	0.0360	90.1 %		50-150		"	"	"	"	
Surrogate: Toluene-d8	0.0378	94.4 %		50-150		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	0.0370	92.6 %		50-150		"	"	"	"	

Extractable Petroleum Hydrocarbons by 8015

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
C10-C28 (DRO)	ND	50		mg/kg	1	BGG0765	07/24/23	07/24/23	EPA 8015M	
C28-C36 (ORO)	ND	50		"	"	"	"	"	"	

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: o-Terphenyl	11.5	91.6 %		30-150		"	"	"	"	

PAH by EPA Method 8270D SIM

Summit Scientific

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

E02@8.0'
2307426-03 (Soil)

Summit Scientific

PAH by EPA Method 8270D SIM

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Acenaphthene	ND	0.00500	mg/kg	1	BGG0775	07/25/23	07/25/23	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: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Surrogate: 2-Methylnaphthalene-d10	0.0173	51.9 %	40-150		"	"	"	"	
Surrogate: Fluoranthene-d10	0.0168	50.5 %	40-150		"	"	"	"	

Total Metals by EPA 6020B Hot Water Soluble Extraction

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Boron	0.116	0.0100	mg/L	1	BGG0779	07/25/23	07/26/23	EPA 6020B	

Total Metals by EPA 6020B

Date Sampled: **07/24/23 00:00**

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

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

E02@8.0'
2307426-03 (Soil)

Summit Scientific

Total Metals by EPA 6020B

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Arsenic	2.80	0.200	mg/kg dry	1	BGG0770	07/25/23	07/27/23	EPA 6020B	
Barium	66.5	0.400	"	"	"	"	"	"	
Cadmium	ND	0.200	"	"	"	"	"	"	
Copper	4.03	0.400	"	"	"	"	"	"	
Lead	4.24	0.200	"	"	"	"	"	"	
Nickel	5.10	0.400	"	"	"	"	"	"	
Selenium	ND	0.320	"	"	"	"	"	"	
Silver	ND	0.0200	"	"	"	"	"	"	
Zinc	17.2	0.400	"	"	"	"	"	"	

Hexavalent Chromium by EPA Method 7196

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Chromium, Hexavalent	ND	0.30	mg/kg dry	1	BGG0772	07/25/23	07/25/23	EPA 7196A	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Calcium	74.1	0.0615	mg/L dry	1	BGG0766	07/24/23	07/26/23	EPA 6020B	
Magnesium	32.6	0.0615	"	"	"	"	"	"	
Sodium	83.8	0.0615	"	"	"	"	"	"	

Calculated Analysis

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Sodium Adsorption Ratio	2.04	0.00100	units	1	BGG0906	07/27/23	07/27/23	Calculation	

Physical Parameters by APHA/ASTM/EPA Methods

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Fremont Environmental
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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

E02@8.0'
2307426-03 (Soil)

Summit Scientific

Physical Parameters by APHA/ASTM/EPA Methods

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
% Solids	81.3		%	1	BGG0774	07/25/23	07/25/23	Calculation	

Specific Conductance by EPA Method 120.1, Saturated Paste Extraction

Date Sampled: **07/24/23 00:00**

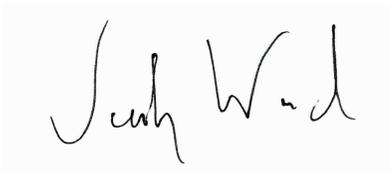
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Specific Conductance (EC)	0.909	0.0100	mmhos/cm	1	BGG0788	07/25/23	07/25/23	EPA 120.1	

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

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
pH	7.73		pH Units	1	BGG0789	07/25/23	07/25/23	EPA 9045D	

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Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

GW05
2307426-04 (Water)

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Volatile Organic Compounds by EPA Method 8260B

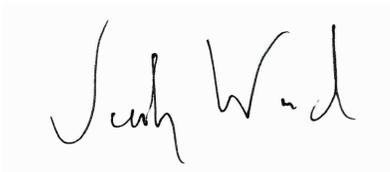
Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Benzene	ND	1.0		ug/l	1	BGG0769	07/24/23	07/24/23	EPA 8260B	
Toluene	ND	1.0		"	"	"	"	"	"	
Ethylbenzene	ND	1.0		"	"	"	"	"	"	
Xylenes (total)	13	2.0		"	"	"	"	"	"	
Naphthalene	ND	1.0		"	"	"	"	"	"	
1,2,4-Trimethylbenzene	5.8	1.0		"	"	"	"	"	"	
1,3,5-Trimethylbenzene	15	1.0		"	"	"	"	"	"	

Date Sampled: **07/24/23 00:00**

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								
Surrogate: 1,2-Dichloroethane-d4	14.3	107 %		23-173		"	"	"	"	
Surrogate: Toluene-d8	13.3	99.5 %		20-170		"	"	"	"	
Surrogate: 4-Bromofluorobenzene	13.1	98.2 %		21-167		"	"	"	"	

Summit Scientific



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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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 BGG0764 - EPA 5030 Soil MS

Blank (BGG0764-BLK1)

Prepared & Analyzed: 07/24/23

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>	0.0331		"	0.0400		82.8	50-150			
<i>Surrogate: Toluene-d8</i>	0.0384		"	0.0400		96.0	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0382		"	0.0400		95.6	50-150			

LCS (BGG0764-BS1)

Prepared: 07/24/23 Analyzed: 07/25/23

Benzene	0.101	0.0020	mg/kg	0.100		101	70-130			
Toluene	0.103	0.0050	"	0.100		103	70-130			
Ethylbenzene	0.120	0.0050	"	0.100		120	70-130			
m,p-Xylene	0.236	0.010	"	0.200		118	70-130			
o-Xylene	0.111	0.0050	"	0.100		111	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100		108	70-130			
1,3,5-Trimethylbenzene	0.116	0.0050	"	0.100		116	70-130			
Naphthalene	0.0708	0.0038	"	0.100		70.8	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0320		"	0.0400		80.0	50-150			
<i>Surrogate: Toluene-d8</i>	0.0384		"	0.0400		96.1	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0399		"	0.0400		99.7	50-150			

Matrix Spike (BGG0764-MS1)

Source: 2307427-01

Prepared: 07/24/23 Analyzed: 07/25/23

Benzene	0.101	0.0020	mg/kg	0.100	ND	101	70-130			
Toluene	0.103	0.0050	"	0.100	ND	103	70-130			
Ethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130			
m,p-Xylene	0.238	0.010	"	0.200	ND	119	70-130			
o-Xylene	0.112	0.0050	"	0.100	ND	112	70-130			
1,2,4-Trimethylbenzene	0.108	0.0050	"	0.100	ND	108	70-130			
1,3,5-Trimethylbenzene	0.116	0.0050	"	0.100	ND	116	70-130			
Naphthalene	0.0930	0.0038	"	0.100	ND	93.0	70-130			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	0.0154		"	0.0400		38.6	50-150			QM-07
<i>Surrogate: Toluene-d8</i>	0.0391		"	0.0400		97.6	50-150			
<i>Surrogate: 4-Bromofluorobenzene</i>	0.0405		"	0.0400		101	50-150			

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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		

Batch BGG0764 - EPA 5030 Soil MS

Matrix Spike Dup (BGG0764-MSD1)

Source: 2307427-01

Prepared: 07/24/23 Analyzed: 07/25/23

Benzene	0.103	0.0020	mg/kg	0.100	ND	103	70-130	1.56	30
Toluene	0.105	0.0050	"	0.100	ND	105	70-130	1.15	30
Ethylbenzene	0.123	0.0050	"	0.100	ND	123	70-130	1.67	30
m,p-Xylene	0.237	0.010	"	0.200	ND	118	70-130	0.606	30
o-Xylene	0.113	0.0050	"	0.100	ND	113	70-130	0.879	30
1,2,4-Trimethylbenzene	0.110	0.0050	"	0.100	ND	110	70-130	1.35	30
1,3,5-Trimethylbenzene	0.121	0.0050	"	0.100	ND	121	70-130	4.47	30
Naphthalene	0.101	0.0038	"	0.100	ND	101	70-130	7.96	30
Surrogate: 1,2-Dichloroethane-d4	0.0298		"	0.0400		74.5	50-150		
Surrogate: Toluene-d8	0.0384		"	0.0400		96.1	50-150		
Surrogate: 4-Bromofluorobenzene	0.0445		"	0.0400		111	50-150		

Batch BGG0769 - EPA 5030 Water MS

Blank (BGG0769-BLK1)

Prepared & Analyzed: 07/24/23

Benzene	ND	1.0	ug/l						
Toluene	ND	1.0	"						
Ethylbenzene	ND	1.0	"						
Xylenes (total)	ND	2.0	"						
Naphthalene	ND	1.0	"						
1,2,4-Trimethylbenzene	ND	1.0	"						
1,3,5-Trimethylbenzene	ND	1.0	"						
Surrogate: 1,2-Dichloroethane-d4	13.7		"	13.3		103	23-173		
Surrogate: Toluene-d8	15.5		"	13.3		117	20-170		
Surrogate: 4-Bromofluorobenzene	12.8		"	13.3		95.6	21-167		

LCS (BGG0769-BS1)

Prepared & Analyzed: 07/24/23

Benzene	37.3	1.0	ug/l	38.3		97.2	51-132		
Toluene	35.1	1.0	"	38.3		91.6	51-138		
Ethylbenzene	33.3	1.0	"	38.3		87.0	58-146		
m,p-Xylene	72.2	2.0	"	76.7		94.1	57-144		
o-Xylene	35.4	1.0	"	38.3		92.4	53-146		
Naphthalene	36.7	1.0	"	38.3		95.7	70-130		
1,2,4-Trimethylbenzene	39.3	1.0	"	38.3		102	70-130		
1,3,5-Trimethylbenzene	40.8	1.0	"	38.3		107	70-130		
Surrogate: 1,2-Dichloroethane-d4	14.8		"	13.3		111	23-173		
Surrogate: Toluene-d8	12.4		"	13.3		93.0	20-170		
Surrogate: 4-Bromofluorobenzene	13.0		"	13.3		97.3	21-167		

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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 BGG0769 - EPA 5030 Water MS

Matrix Spike (BGG0769-MS1)

Source: 2307426-04

Prepared & Analyzed: 07/24/23

Benzene	36.2	1.0	ug/l	38.3	ND	94.5	34-141			
Toluene	33.4	1.0	"	38.3	ND	87.0	27-151			
Ethylbenzene	34.1	1.0	"	38.3	ND	89.1	29-160			
m,p-Xylene	89.4	2.0	"	76.7	13.2	99.5	20-166			
o-Xylene	39.7	1.0	"	38.3	ND	104	33-159			
Naphthalene	52.2	1.0	"	38.3	ND	136	70-130			QM-07
1,2,4-Trimethylbenzene	49.4	1.0	"	38.3	5.84	114	70-130			
1,3,5-Trimethylbenzene	58.9	1.0	"	38.3	14.8	115	70-130			
Surrogate: 1,2-Dichloroethane-d4	14.9		"	13.3		112	23-173			
Surrogate: Toluene-d8	11.5		"	13.3		86.4	20-170			
Surrogate: 4-Bromofluorobenzene	14.1		"	13.3		106	21-167			

Matrix Spike Dup (BGG0769-MSD1)

Source: 2307426-04

Prepared & Analyzed: 07/24/23

Benzene	36.2	1.0	ug/l	38.3	ND	94.6	34-141	0.0828	30	
Toluene	32.8	1.0	"	38.3	ND	85.7	27-151	1.54	30	
Ethylbenzene	37.3	1.0	"	38.3	ND	97.4	29-160	8.90	30	
m,p-Xylene	90.3	2.0	"	76.7	13.2	101	20-166	0.990	30	
o-Xylene	43.1	1.0	"	38.3	ND	112	33-159	8.24	30	
Naphthalene	52.5	1.0	"	38.3	ND	137	70-130	0.497	30	QM-07
1,2,4-Trimethylbenzene	51.5	1.0	"	38.3	5.84	119	70-130	4.20	30	
1,3,5-Trimethylbenzene	60.4	1.0	"	38.3	14.8	119	70-130	2.48	30	
Surrogate: 1,2-Dichloroethane-d4	15.8		"	13.3		119	23-173			
Surrogate: Toluene-d8	11.2		"	13.3		84.4	20-170			
Surrogate: 4-Bromofluorobenzene	15.5		"	13.3		116	21-167			

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

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 BGG0765 - EPA 3550A

Blank (BGG0765-BLK1)

Prepared: 07/24/23 Analyzed: 07/25/23

C10-C28 (DRO)	ND	50	mg/kg								
C28-C36 (ORO)	ND	50	"								
Surrogate: <i>o</i> -Terphenyl	11.5		"	12.5		91.7		30-150			

LCS (BGG0765-BS1)

Prepared: 07/24/23 Analyzed: 07/25/23

C10-C28 (DRO)	534	50	mg/kg	500		107		70-130			
Surrogate: <i>o</i> -Terphenyl	11.4		"	12.5		91.2		30-150			

Matrix Spike (BGG0765-MS1)

Source: 2307427-01

Prepared: 07/24/23 Analyzed: 07/25/23

C10-C28 (DRO)	482	50	mg/kg	500	66.2	83.1		70-130			
Surrogate: <i>o</i> -Terphenyl	11.4		"	12.5		91.5		30-150			

Matrix Spike Dup (BGG0765-MSD1)

Source: 2307427-01

Prepared: 07/24/23 Analyzed: 07/25/23

C10-C28 (DRO)	458	50	mg/kg	500	66.2	78.4		70-130	5.03	20	
Surrogate: <i>o</i> -Terphenyl	11.1		"	12.5		88.4		30-150			

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Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

PAH by EPA Method 8270D SIM - Quality Control
Summit Scientific

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

Batch BGG0775 - EPA 5030 Soil MS

Blank (BGG0775-BLK1)

Prepared & Analyzed: 07/25/23

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>"</i>	<i>0.0333</i>	<i>100</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0264</i>		<i>"</i>	<i>0.0333</i>	<i>79.3</i>	<i>40-150</i>				

LCS (BGG0775-BS1)

Prepared & Analyzed: 07/25/23

Acenaphthene	0.0306	0.00500	mg/kg	0.0333	91.9	31-137				
Anthracene	0.0317	0.00500	"	0.0333	95.0	30-120				
Benzo (a) anthracene	0.0323	0.00500	"	0.0333	96.8	30-120				
Benzo (a) pyrene	0.0297	0.00500	"	0.0333	89.1	30-120				
Benzo (b) fluoranthene	0.0310	0.00500	"	0.0333	93.1	30-120				
Benzo (k) fluoranthene	0.0304	0.00500	"	0.0333	91.3	30-120				
Chrysene	0.0307	0.00500	"	0.0333	92.1	30-120				
Dibenz (a,h) anthracene	0.0274	0.00500	"	0.0333	82.1	30-120				
Fluoranthene	0.0309	0.00500	"	0.0333	92.7	30-120				
Fluorene	0.0304	0.00500	"	0.0333	91.3	30-120				
Indeno (1,2,3-cd) pyrene	0.0227	0.00500	"	0.0333	68.2	30-120				
Pyrene	0.0342	0.00500	"	0.0333	102	35-142				
1-Methylnaphthalene	0.0290	0.00500	"	0.0333	86.9	35-142				
2-Methylnaphthalene	0.0338	0.00500	"	0.0333	101	35-142				
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0260</i>		<i>"</i>	<i>0.0333</i>	<i>78.1</i>	<i>40-150</i>				
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0318</i>		<i>"</i>	<i>0.0333</i>	<i>95.5</i>	<i>40-150</i>				

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Fremont Environmental
PO Box 1289
Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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 BGG0775 - EPA 5030 Soil MS

Matrix Spike (BGG0775-MS1)	Source: 2307436-01			Prepared & Analyzed: 07/25/23								
Acenaphthene	0.0151	0.00500	mg/kg	0.0333	ND	45.3	31-137					
Anthracene	0.0142	0.00500	"	0.0333	ND	42.5	30-120					
Benzo (a) anthracene	0.0142	0.00500	"	0.0333	ND	42.5	30-120					
Benzo (a) pyrene	0.0137	0.00500	"	0.0333	ND	41.0	30-120					
Benzo (b) fluoranthene	0.0143	0.00500	"	0.0333	ND	42.8	30-120					
Benzo (k) fluoranthene	0.0141	0.00500	"	0.0333	ND	42.3	30-120					
Chrysene	0.0141	0.00500	"	0.0333	ND	42.2	30-120					
Dibenz (a,h) anthracene	0.0146	0.00500	"	0.0333	ND	43.8	30-120					
Fluoranthene	0.0135	0.00500	"	0.0333	ND	40.5	30-120					
Fluorene	0.0141	0.00500	"	0.0333	ND	42.4	30-120					
Indeno (1,2,3-cd) pyrene	0.0140	0.00500	"	0.0333	ND	42.1	30-120					
Pyrene	0.0163	0.00500	"	0.0333	ND	48.8	35-142					
1-Methylnaphthalene	0.0144	0.00500	"	0.0333	ND	43.3	15-130					
2-Methylnaphthalene	0.0147	0.00500	"	0.0333	ND	44.0	15-130					
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0146</i>		<i>"</i>	<i>0.0333</i>		<i>43.8</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0141</i>		<i>"</i>	<i>0.0333</i>		<i>42.3</i>	<i>40-150</i>					

Matrix Spike Dup (BGG0775-MSD1)	Source: 2307436-01			Prepared & Analyzed: 07/25/23								
Acenaphthene	0.0196	0.00500	mg/kg	0.0333	ND	58.7	31-137	25.8	30			
Anthracene	0.0186	0.00500	"	0.0333	ND	55.7	30-120	27.0	30			
Benzo (a) anthracene	0.0187	0.00500	"	0.0333	ND	56.2	30-120	27.7	30			
Benzo (a) pyrene	0.0173	0.00500	"	0.0333	ND	52.0	30-120	23.5	30			
Benzo (b) fluoranthene	0.0183	0.00500	"	0.0333	ND	55.0	30-120	24.9	30			
Benzo (k) fluoranthene	0.0181	0.00500	"	0.0333	ND	54.2	30-120	24.5	30			
Chrysene	0.0186	0.00500	"	0.0333	ND	55.9	30-120	27.9	30			
Dibenz (a,h) anthracene	0.0163	0.00500	"	0.0333	ND	48.9	30-120	11.2	30			
Fluoranthene	0.0184	0.00500	"	0.0333	ND	55.2	30-120	30.6	30		QR-02	
Fluorene	0.0197	0.00500	"	0.0333	ND	59.1	30-120	32.8	30		QR-02	
Indeno (1,2,3-cd) pyrene	0.0141	0.00500	"	0.0333	ND	42.2	30-120	0.166	30			
Pyrene	0.0212	0.00500	"	0.0333	ND	63.6	35-142	26.3	30			
1-Methylnaphthalene	0.0188	0.00500	"	0.0333	ND	56.5	15-130	26.4	50			
2-Methylnaphthalene	0.0201	0.00500	"	0.0333	ND	60.2	15-130	31.0	50			
<i>Surrogate: 2-Methylnaphthalene-d10</i>	<i>0.0177</i>		<i>"</i>	<i>0.0333</i>		<i>53.0</i>	<i>40-150</i>					
<i>Surrogate: Fluoranthene-d10</i>	<i>0.0191</i>		<i>"</i>	<i>0.0333</i>		<i>57.2</i>	<i>40-150</i>					

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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

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 BGG0779 - EPA 3050B

Blank (BGG0779-BLK1)

Prepared: 07/25/23 Analyzed: 07/26/23

Boron ND 0.0100 mg/L

LCS (BGG0779-BS1)

Prepared: 07/25/23 Analyzed: 07/26/23

Boron 5.44 0.0100 mg/L 5.00 109 80-120

Duplicate (BGG0779-DUP1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/26/23

Boron 0.196 0.0100 mg/L 0.202 3.04 20

Matrix Spike (BGG0779-MS1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/26/23

Boron 6.47 0.0100 mg/L 5.00 0.202 125 75-125

Matrix Spike Dup (BGG0779-MSD1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/26/23

Boron 6.32 0.0100 mg/L 5.00 0.202 122 75-125 2.32 25

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

Total Metals by EPA 6020B - Quality Control
Summit Scientific

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

Batch BGG0770 - EPA 3050B

Blank (BGG0770-BLK1)

Prepared: 07/25/23 Analyzed: 07/27/23

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 (BGG0770-BS1)

Prepared: 07/25/23 Analyzed: 07/27/23

Arsenic	33.1	0.200	mg/kg wet	40.0	82.7	80-120
Barium	35.3	0.400	"	40.0	88.2	80-120
Cadmium	1.64	0.200	"	2.00	82.0	80-120
Copper	36.3	0.400	"	40.0	90.7	80-120
Lead	16.1	0.200	"	20.0	80.6	80-120
Nickel	35.3	0.400	"	40.0	88.2	80-120
Selenium	4.11	0.260	"	4.00	103	80-120
Silver	1.63	0.0200	"	2.00	81.5	80-120
Zinc	35.2	0.400	"	40.0	88.1	80-120

Duplicate (BGG0770-DUP1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/27/23

Arsenic	1.58	0.200	mg/kg dry	1.76	10.7	20	
Barium	18.2	0.400	"	22.4	20.6	20	QR-04
Cadmium	0.102	0.200	"	0.127	21.8	20	QR-01
Copper	3.73	0.400	"	4.34	14.9	20	
Lead	4.11	0.200	"	4.67	12.9	20	
Nickel	3.12	0.400	"	3.55	12.8	20	
Selenium	ND	0.312	"	ND		20	
Silver	0.0115	0.0200	"	0.0154	28.6	20	QR-01
Zinc	12.2	0.400	"	14.3	16.0	20	

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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 BGG0770 - EPA 3050B

Matrix Spike (BGG0770-MS1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/27/23

Arsenic	32.8	0.200	mg/kg dry	48.0	1.76	64.7	75-125				QM-07
Barium	61.7	0.400	"	48.0	22.4	82.0	75-125				
Cadmium	1.97	0.200	"	2.40	0.127	76.7	75-125				
Copper	35.0	0.400	"	48.0	4.34	63.9	75-125				QM-07
Lead	22.0	0.200	"	24.0	4.67	72.2	75-125				QM-07
Nickel	34.3	0.400	"	48.0	3.55	64.1	75-125				QM-07
Selenium	4.33	0.312	"	4.80	ND	90.4	75-125				
Silver	1.82	0.0200	"	2.40	0.0154	75.1	75-125				
Zinc	44.4	0.400	"	48.0	14.3	62.8	75-125				QM-07

Matrix Spike Dup (BGG0770-MSD1)

Source: 2307426-01

Prepared: 07/25/23 Analyzed: 07/27/23

Arsenic	32.5	0.200	mg/kg dry	48.0	1.76	64.1	75-125	0.860	25		QM-07
Barium	62.3	0.400	"	48.0	22.4	83.1	75-125	0.884	25		
Cadmium	2.01	0.200	"	2.40	0.127	78.7	75-125	2.41	25		
Copper	35.0	0.400	"	48.0	4.34	63.9	75-125	0.0302	25		QM-07
Lead	22.2	0.200	"	24.0	4.67	73.1	75-125	0.940	25		QM-07
Nickel	34.4	0.400	"	48.0	3.55	64.3	75-125	0.356	25		QM-07
Selenium	4.37	0.312	"	4.80	ND	91.0	75-125	0.761	25		
Silver	1.83	0.0200	"	2.40	0.0154	75.5	75-125	0.501	25		
Zinc	43.9	0.400	"	48.0	14.3	61.8	75-125	1.09	25		QM-07

Batch BGH0245 - EPA 3050B

Blank (BGH0245-BLK1)

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

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	"								

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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 BGH0245 - EPA 3050B

LCS (BGH0245-BS1)

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

Arsenic	39.8	0.200	mg/kg wet	40.0		99.4	80-120			
Barium	37.7	0.400	"	40.0		94.1	80-120			
Cadmium	1.70	0.200	"	2.00		84.8	80-120			
Copper	33.2	0.400	"	40.0		83.0	80-120			
Lead	17.5	0.200	"	20.0		87.5	80-120			
Nickel	32.7	0.400	"	40.0		81.6	80-120			
Selenium	4.11	0.260	"	4.00		103	80-120			
Silver	1.74	0.0200	"	2.00		87.1	80-120			
Zinc	33.7	0.400	"	40.0		84.2	80-120			

Duplicate (BGH0245-DUP1)

Source: 2307286-01

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

Arsenic	1.89	0.200	mg/kg wet		1.85			1.69	20	
Barium	64.4	0.400	"		74.5			14.5	20	
Cadmium	0.0976	0.200	"		0.0992			1.63	20	
Copper	4.63	0.400	"		4.51			2.57	20	
Lead	5.12	0.200	"		5.66			10.0	20	
Nickel	4.69	0.400	"		4.48			4.61	20	
Selenium	ND	0.260	"		ND				20	
Silver	0.0300	0.0200	"		0.0296			1.34	20	
Zinc	14.1	0.400	"		14.1			0.209	20	

Matrix Spike (BGH0245-MS1)

Source: 2307286-01

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

Arsenic	35.4	0.200	mg/kg wet	40.0	1.85	83.9	75-125			
Barium	117	0.400	"	40.0	74.5	106	75-125			
Cadmium	1.63	0.200	"	2.00	0.0992	76.7	75-125			
Copper	23.3	0.400	"	40.0	4.51	47.0	75-125			QM-07
Lead	19.9	0.200	"	20.0	5.66	71.0	75-125			QM-07
Nickel	23.7	0.400	"	40.0	4.48	47.9	75-125			QM-07
Selenium	3.24	0.260	"	4.00	ND	80.9	75-125			
Silver	1.55	0.0200	"	2.00	0.0296	75.9	75-125			
Zinc	33.4	0.400	"	40.0	14.1	48.2	75-125			QM-07

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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 BGH0245 - EPA 3050B

Matrix Spike Dup (BGH0245-MSD1)	Source: 2307286-01			Prepared: 08/07/23		Analyzed: 08/08/23					
Arsenic	39.6	0.200	mg/kg wet	40.0	1.85	94.5	75-125	11.3	25		
Barium	127	0.400	"	40.0	74.5	132	75-125	8.37	25	QM-07	
Cadmium	1.78	0.200	"	2.00	0.0992	84.1	75-125	8.72	25		
Copper	24.9	0.400	"	40.0	4.51	51.0	75-125	6.55	25	QM-07	
Lead	22.4	0.200	"	20.0	5.66	83.9	75-125	12.2	25		
Nickel	25.0	0.400	"	40.0	4.48	51.2	75-125	5.44	25	QM-07	
Selenium	3.71	0.260	"	4.00	ND	92.8	75-125	13.7	25		
Silver	1.69	0.0200	"	2.00	0.0296	82.9	75-125	8.75	25		
Zinc	36.3	0.400	"	40.0	14.1	55.3	75-125	8.11	25	QM-07	

Batch BGH0609 - EPA 3050B

Blank (BGH0609-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	"								
Selenium	ND	0.260	"								
Silver	ND	0.0200	"								
Zinc	ND	0.400	"								

LCS (BGH0609-BS1)				Prepared: 08/15/23		Analyzed: 08/16/23					
Arsenic	35.7	0.200	mg/kg wet	40.0		89.2	80-120				
Barium	36.3	0.400	"	40.0		90.8	80-120				
Cadmium	1.79	0.200	"	2.00		89.5	80-120				
Copper	35.2	0.400	"	40.0		88.0	80-120				
Lead	19.0	0.200	"	20.0		95.0	80-120				
Nickel	34.4	0.400	"	40.0		85.9	80-120				
Selenium	3.23	0.260	"	4.00		80.8	80-120				
Silver	1.74	0.0200	"	2.00		87.0	80-120				
Zinc	37.1	0.400	"	40.0		92.7	80-120				

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
Project Manager: Paul Henchan

Reported:
08/17/23 16:03

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 BGH0609 - EPA 3050B

Duplicate (BGH0609-DUP1)		Source: 2307343-01			Prepared: 08/15/23		Analyzed: 08/16/23				
Arsenic	1.40	0.200	mg/kg wet	1.16	18.3	20					
Barium	93.5	0.400	"	76.2	20.3	20					QR-04
Cadmium	0.221	0.200	"	0.124	56.1	20					QR-01
Copper	0.372	0.400	"	0.284	26.8	20					QR-01
Lead	3.58	0.200	"	3.12	13.8	20					
Nickel	1.81	0.400	"	1.68	7.24	20					
Selenium	ND	0.260	"	ND		20					
Silver	0.0272	0.0200	"	0.0220	21.1	20					QR-01
Zinc	4.92	0.400	"	5.08	3.27	20					

Matrix Spike (BGH0609-MS1)		Source: 2307343-01			Prepared: 08/15/23		Analyzed: 08/16/23				
Arsenic	13.9	0.200	mg/kg wet	40.0	1.16	31.9	75-125				QM-01
Barium	143	0.400	"	40.0	76.2	168	75-125				QM-01
Cadmium	2.01	0.200	"	2.00	0.124	94.2	75-125				
Copper	12.6	0.400	"	40.0	0.284	30.8	75-125				QM-01
Lead	20.8	0.200	"	20.0	3.12	88.4	75-125				
Nickel	13.8	0.400	"	40.0	1.68	30.2	75-125				QM-01
Selenium	2.81	0.260	"	4.00	ND	70.1	75-125				QM-01
Silver	1.70	0.0200	"	2.00	0.0220	84.1	75-125				
Zinc	17.8	0.400	"	40.0	5.08	31.8	75-125				QM-01

Matrix Spike Dup (BGH0609-MSD1)		Source: 2307343-01			Prepared: 08/15/23		Analyzed: 08/16/23				
Arsenic	14.1	0.200	mg/kg wet	40.0	1.16	32.3	75-125	1.05	25		QM-01
Barium	132	0.400	"	40.0	76.2	140	75-125	8.19	25		QM-01
Cadmium	1.84	0.200	"	2.00	0.124	85.7	75-125	8.82	25		
Copper	12.8	0.400	"	40.0	0.284	31.4	75-125	1.73	25		QM-01
Lead	20.0	0.200	"	20.0	3.12	84.4	75-125	3.93	25		
Nickel	14.1	0.400	"	40.0	1.68	30.9	75-125	2.09	25		QM-01
Selenium	2.75	0.260	"	4.00	ND	68.7	75-125	2.09	25		QM-01
Silver	1.66	0.0200	"	2.00	0.0220	81.8	75-125	2.71	25		
Zinc	17.8	0.400	"	40.0	5.08	31.8	75-125	0.0247	25		QM-01

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Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

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 BGG0772 - 3060A Mod

Blank (BGG0772-BLK1)

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent ND 0.30 mg/kg wet

LCS (BGG0772-BS1)

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent 23.4 0.30 mg/kg wet 25.0 93.6 80-120

Duplicate (BGG0772-DUP1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent ND 0.30 mg/kg dry ND 20

Matrix Spike (BGG0772-MS1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent 27.7 0.30 mg/kg dry 30.0 ND 92.4 75-125

Matrix Spike Dup (BGG0772-MSD1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

Chromium, Hexavalent 28.5 0.30 mg/kg dry 30.0 ND 95.2 75-125 2.99 20

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Project: Noble - PTF-64N64W 32SENE

Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

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 BGG0766 - General Preparation

Blank (BGG0766-BLK1)

Prepared: 07/24/23 Analyzed: 07/26/23

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

LCS (BGG0766-BS1)

Prepared: 07/24/23 Analyzed: 07/26/23

Calcium	4.93	0.0500	mg/L wet	5.00		98.6	70-130			
Magnesium	4.78	0.0500	"	5.00		95.7	70-130			
Sodium	4.81	0.0500	"	5.00		96.3	70-130			

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 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
 Project Number: UWRWE-A2338-ABN
 Project Manager: Paul Henchan

Reported:
 08/17/23 16:03

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 BGG0774 - General Preparation

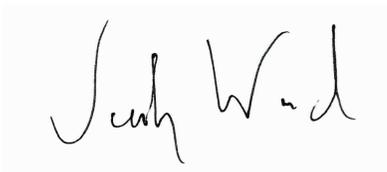
Duplicate (BGG0774-DUP1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

% Solids	84.1		%		83.4			0.805	20	
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Summit Scientific



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Fremont Environmental
 PO Box 1289
 Wellington CO, 80549

Project: Noble - PTF-64N64W 32SENE
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 08/17/23 16:03

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 BGG0788 - General Preparation

Blank (BGG0788-BLK1)

Prepared & Analyzed: 07/25/23

Specific Conductance (EC) ND 0.0100 mmhos/cm

LCS (BGG0788-BS1)

Prepared & Analyzed: 07/25/23

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

Duplicate (BGG0788-DUP1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

Specific Conductance (EC) 0.944 0.0100 mmhos/cm 0.956 1.27 20

Summit Scientific

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Reported:
 08/17/23 16:03

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 BGG0789 - General Preparation

LCS (BGG0789-BS1)

Prepared & Analyzed: 07/25/23

pH 9.02 pH Units 9.18 98.3 95-105

Duplicate (BGG0789-DUP1)

Source: 2307426-01

Prepared & Analyzed: 07/25/23

pH 7.84 pH Units 7.81 0.383 20

Summit Scientific

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Reported:
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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-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- 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-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