

January 2, 2025

Noble Energy, Inc – Volkens Coleman T4N-R64W-S23 L01 (Facility)

Site Investigation

NWNW Sec. 23, T4N, R64W

40.298549, -104.527065

Weld County, Colorado

Fremont Project No. C023-266

Facility # 414380, Remediation #30386

Site Overview – Site History

The site consists of the former Volkens Coleman T4N-R64W-S23 L01 (facility). A historical release was identified at the aboveground storage tanks (ASTs), separator (SEP), and produced water vault (PWV) during decommissioning activities on October 23 and 24, 2024. A comprehensive site investigation was undertaken on October 15, 2024 to define the magnitude and extent of soil impacts. Soil impacts will be removed via excavation at and adjacent to the former impacted locations. The proposed dimensions of the AST/PWV excavation extent are estimated to be 80'x50'x13'deep and the SEP excavation is estimated to measure 55'x25'x7' deep. Groundwater was encountered at approximately six feet below ground surface (bgs) during the site investigation.

Conceptual Site Model*

*Data presented represents the most recent sampling event

- **Land Use** – Agricultural (non-cropland)
- **Lithology (USCS)** – CL, CH, SC, and SP
- **Potential Receptors within ¼ mile** – Facility within Aquatic Native Species Conservation Waters, Riverine 60ft W; Farm Structures 0.02/0.05/0.05/0.08 mi S, 0.03mi SE, 0.18/0.19/0.19/0.22/0.24/0.24mi SW, Residential Structures 0.04mi S, 0.20mi SW
- **Groundwater Encountered** – yes
- **Estimated Depth to Groundwater** – ~6 ft
- **Impacted Media and Excavation Extent** – Soil and groundwater – 80'x50'x13'deep (AST/PWV), 55'x25'x7' deep (SEP)
- **Volume of Impacts Removed** – Impacts remain in situ
- **Waste Type** – Non-hazardous

Contaminants of Concern (COC)

The laboratory data indicate PAH soil constituents exceed the ECMC Table 915-1 standards in 2 of the 15 samples collected, inorganics soil constituents exceed the ECMC Table 915-1 in 13 of the 15 samples collected, and metals soil constituents exceed the ECMC Table 915-1 in all 15 samples collected during the October 15, 2024 supplemental site investigation conducted at and adjacent to the former AST, PWV, and SEP locations. Based on the analytical data from the October 23/24, 2023 initial decommissioning site investigation and the October 15, 2024 site investigation COCs include benzene, 1,2,4 Trimethylbenzene, 1,3,5 Trimethylbenzene, naphthalene, benzo (a) anthracene, 1-Methylnaphthalene, 2-Methylnaphthalene, pH, EC, SAR, arsenic, barium, and selenium. The soil analytical data are summarized in Tables 2-5.

Groundwater was encountered at approximately six feet bgs. Groundwater was collected from temporary monitoring wells MW01, MW02, MW03, MW04, and MW05 on 10/16/2024 and were sampled for Table 915 organic constituents in groundwater (BTEX, 1,2,4 Trimethylbenzene, 1,3,5 Trimethylbenzene, and Naphthalene) and Table 915 inorganic constituents total dissolved solids (TDS), chloride, and sulfate. The laboratory data indicate organic groundwater constituents exceed the ECMC Table 915-1 standards in 1 of the 5 samples and inorganic groundwater constituents exceed the ECMC Table 915-1 in 2 of the 5 groundwater samples collected. Based on the analytical data from the October 23, 2023 initial decommissioning site investigation and the October 16, 2024 sampling event, groundwater COCs include benzene, 1,2,4 Trimethylbenzene, 1,3,5 Trimethylbenzene, chloride, and sulfate. A copy of the laboratory's report, quality control data, and chain-of-custody documentation is attached.

Remedial Actions

The source will be excavated, and confirmation soil samples will be collected and analyzed for the full Table 915 suite of constituents. Groundwater sample(s) will be collected for Table 915-1 organic constituents in groundwater (BTEX, 1,2,4 Trimethylbenzene, 1,3,5 Trimethylbenzene, and Naphthalene) and Table 915-1 inorganic constituents total dissolved solids (TDS), chloride, and sulfate. Should no additional active remediation be required following source removal at the location, a no further action (NFA) determination will be requested within 90 days following laboratory confirmation of the removal of impacted soils concerning the applicable Table 915-1 screening levels at the site.

If residual groundwater impacts are observed, an NFA will be requested once four consecutive quarters of groundwater sampling have been completed and reported at the location with concentrations of Table 915 constituents below regulatory limits. As needed, soil and/or groundwater remediation plans will be developed and submitted to ECMC in a supplemental Form 27.

Remarks

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

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



1/2/25

Date_____

Jordan Suttles

Geologist

Reviewed by:

Handwritten signature of Ethan Black for PVH. The signature is in black ink and includes the text "Ethan Black" and "for PVH" written below it.

1/2/25

Date_____

Paul V. Henehan, P.E.

Senior Consultant

Attachments:

Tables

Figures

Boring Logs

Appendix :

Appendix A: Groundwater Sampling Plan

SAMPLING METHODS AND PROCEDURES

Water Level Measurements

All groundwater level measurements will be obtained using an electric measuring device, which indicates when a probe is in contact with groundwater. Measurements will be obtained by lowering the device into the well until the water surface had been encountered, and by measuring the distance from the top of the inside riser pipe to the probe. All the measurements will be recorded to the nearest 0.01 ft. To minimize cross-contamination, the water level indicator will be decontaminated with isopropyl alcohol and distilled water between each well.

Monitoring Well Sampling

All monitoring wells were sampled from the “cleanest” to the “most contaminated” according to the protocols listed below.

Field Protocol

- | | |
|--------|--|
| Step 1 | Measure water level in each well. |
| Step 2 | Purge each monitoring well by evacuating a minimum of three well bore volumes using a disposable polyethylene bailer. |
| Step 3 | Collect water samples using a disposable polyethylene bailer. |
| Step 4 | Cool samples to approximately 4°C for transportation. |
| Step 5 | Store water samples and transport to a specific laboratory, following all documentation and chain-of-custody procedures. |

Upon completion of groundwater sampling, a chain-of-custody log will be completed. Chain-of-custody records include the following information: project, project number, shipped by, shipped to, suspected hazard, sampling point, location, field identification number, date collected, sample type, number of containers, analysis required, and sampler's signature.

The chain-of-custody records will be shipped with the samples to the laboratory. Upon arrival at the laboratory the samples will be checked in and signed by the appropriate laboratory personnel. Laboratory identification numbers will be noted on the chain-of-custody record. Upon completion of the laboratory analysis, the completed chain-of-custody record will be returned to the project manager.

Analytical Methods

The following list identifies the various chemical constituents and analytical methods which will be used for their quantification.

<u>Chemical Parameter</u>	<u>Method</u>
Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX)	EPA Method – 8260B
1,2,4- and 1,3,5-Trimethylbenzene and Naphthalene	EPA Method – 8260B
Chloride and Sulfate Anions	EPA Method – 300.0
Total Dissolved Solids (TDS)	Standard Method 2540C

ATTACHMENTS

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
REM # 30386

Sample ID	Sample Date	Depth	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
AST01@6.0"	10/24/2023	0.5 Ft	40.2987995	-104.5270637	-	0
AST02@6.0"	10/24/2023	0.5 Ft	40.2987610	-104.5270655	-	47.5
AST03@6.0"	10/24/2023	0.5 Ft	40.2987196	-104.5270672	-	39.6
AST04@6.0"	10/24/2023	0.5 Ft	40.2986801	-104.5270717	-	0.6
AST05@6.0"	10/24/2023	0.5 Ft	40.2986411	-104.5270765	-	0
SEP01@6.0"	10/23/2023	0.5 Ft	40.2984543	-104.5268872	-	0.9
SEP02@6.0"	10/23/2023	0.5 Ft	40.2984588	-104.5269292	-	0.7
SEP03@4.0'	10/23/2023	4.0 Ft	40.2984549	-104.5269688	-	3.2
SEP04@4.0'	10/23/2023	4.0 Ft	40.2984559	-104.5270154	-	13.7
SEP05@4.0'	10/23/2023	4.0 Ft	40.2984551	-104.5270575	-	1.3
PWVB01@7.0'	10/23/2023	7.0 Ft	40.2988032	-104.5270046	-	76.5
PWVB02@7.0'	10/23/2023	7.0 Ft	40.2987644	-104.5270160	-	106.1
PWVB03@7.0'	10/23/2023	7.0 Ft	40.2987245	-104.5270159	-	35.4
PWVB04@7.0'	10/23/2023	7.0 Ft	40.2986783	-104.5270126	-	9
PWVB05@7.0'	10/23/2023	7.0 Ft	40.2986445	-104.5270113	-	8.5
PWVN01@6.0'	10/23/2023	6.0 Ft	40.2988216	-104.5270023	-	1.4
PWVS01@6.0'	10/23/2023	6.0 Ft	40.2986238	-104.5270108	-	2
PWVE01@6.0'	10/23/2023	6.0 Ft	40.2987990	-104.5269843	-	1.5
PWVE02@6.0'	10/23/2023	6.0 Ft	40.2987630	-104.5269968	-	17.6
PWVE03@6.0'	10/23/2023	6.0 Ft	40.2987236	-104.5269891	-	17.2
PWVE04@6.0'	10/23/2023	6.0 Ft	40.2986822	-104.5269923	-	3.9

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
REM # 30386

Sample ID	Sample Date	Depth	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
PWVE05@6.0'	10/23/2023	6.0 Ft	40.2986470	-104.5269817	-	1.5
PWVW01@6.0'	10/23/2023	6.0 Ft	40.2988088	-104.5270282	-	4.4
PWVW02@6.0'	10/23/2023	6.0 Ft	40.2987669	-104.5270459	-	487.4
PWVW03@6.0'	10/23/2023	6.0 Ft	40.2987235	-104.5270382	-	234.3
PWVW04@6.0'	10/23/2023	6.0 Ft	40.2986794	-104.5270330	-	62.4
PWVW05@6.0'	10/23/2023	6.0 Ft	40.2986435	-104.5270350	-	1.6
MET01@6.0"	10/23/2023	0.5 Ft	40.2984510	-104.5271603	-	0
MET02@6.0"	10/23/2023	0.5 Ft	40.2983846	-104.5271558	-	0
ECD01@6.0"	10/23/2023	0.5 Ft	40.2983586	-104.5269766	-	0
ECD02@6.0"	10/23/2023	0.5 Ft	40.2983592	-104.5270273	-	0
GW01	10/23/23	7.5 Ft	40.2988032	-104.5270046	-	N/A
GW02	10/23/23	7.5 Ft	40.2987644	-104.5270160	-	N/A
GW03	10/23/23	7.5 Ft	40.2987245	-104.5270159	-	N/A
GW04	10/23/23	7.5 Ft	40.2986783	-104.5270126	-	N/A
GW05	10/23/23	7.5 Ft	40.2986445	-104.5270113	-	N/A
BKG01	10/24/2023	0.5 Ft, 4.0 Ft, 6.5 Ft	40.2982067	-104.5269214	-	Refer to Bore Log
BKG02	10/24/2023	0.5 Ft, 4.0 Ft, 6.5 Ft	40.2984074	-104.526617	-	Refer to Bore Log
BKG03	10/24/2023	0.5 Ft, 4.0 Ft, 6.5 Ft	40.2986739	-104.526613	-	Refer to Bore Log
BKG04	10/24/2023	0.5 Ft, 4.0 Ft, 6.5 Ft	40.298885	-104.5266548	-	Refer to Bore Log
BKG05	10/24/2023	0.5 Ft, 4.0 Ft, 6.5 Ft	40.2990278	-104.5271237	-	Refer to Bore Log

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
REM # 30386

Sample ID	Sample Date	Depth	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
MW-1	10/15/2024	6.0 Ft, 12.0 Ft	40.2987227	-104.5270368	-	Refer to Bore Log
MW-2	10/15/2024	6.0 Ft, 12.0 Ft	40.2987242	-104.5271201	-	Refer to Bore Log
MW-3	10/15/2024	1.0 Ft, 12.0 Ft	40.2986194	-104.5270673	-	Refer to Bore Log
MW-4	10/15/2024	6.0 Ft, 12.0 Ft	40.2987164	-104.5269575	-	Refer to Bore Log
MW-5	10/15/2024	6.0 Ft, 12.0 Ft	40.298839	-104.5269998	-	Refer to Bore Log
Sep01 @0.5'	10/15/2024	0.5 Ft	40.2984534	-104.5268866	1.2	0
Sep02 @0.5'	10/15/2024	0.5 Ft	40.2984568	-104.5269314	1.2	0
Sep03 @4'	10/15/2024	4.0 Ft	40.2984517	-104.5269708	1.2	0
Sep05 @4'	10/15/2024	4.0 Ft	40.2984542	-104.5270632	1.5	0
31FL06@3'	10/15/2024	3.0 Ft	40.2984100	-104.5268773	1.2	0

1. Global Positioning System (GPS) data is provided in decimal degrees using North American Datum (NAD) 83 UTMZone 13 North.

2. Volatile organic compound (VOC) concentrations are measured in the field using a photoionization detector (PID).

PDOP = Position Dilution of Precision

ppm = Parts per million

in. = Inches

ft. = Feet

bgs = Below ground surface

TABLE 2
SUMMARY OF VOLATILE ORGANIC SOIL CHEMISTRY DATA
NOBLE 100322
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
REM # 30386

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 (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	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	500**		
AST01@6.0"	10/24/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST02@6.0"	10/24/2023	0.5 Ft	0.016	<0.0050	0.030	0.29	0.068	0.049	0.0052	<500	2.6	<50	<50
AST03@6.0"	10/24/2023	0.5 Ft	0.0035	<0.0050	<0.0050	0.28	0.049	0.027	<0.0038	<500	3.1	<50	<50
AST04@6.0"	10/24/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
AST05@6.0"	10/24/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP01@6.0"	10/23/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP02@6.0"	10/23/2023	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP03@4.0'	10/23/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP04@4.0'	10/23/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
SEP05@4.0'	10/23/2023	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVB01@7.0'	10/23/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	0.0076	0.072	0.0042	<500	51	210	<50
PWVB02@7.0'	10/23/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVB03@7.0'	10/23/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVB04@7.0'	10/23/2023	7.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVB05@7.0'	10/23/2023	7.0 Ft	0.0040	<0.0050	0.0059	0.038	0.051	0.030	<0.0038	<500	<0.50	<50	<50
PWVN01@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVS01@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVE01@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVE02@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVE03@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	0.60	<50	<50
PWVE04@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVE05@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVW01@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVW02@6.0'	10/23/2023	6.0 Ft	0.0062	<0.0050	0.40	1.1	0.40	0.88	0.18	<500	220	60	<50
PWVW03@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	0.0057	0.022	<0.0050	0.22	<0.0038	<500	9.8	<50	<50
PWVW04@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
PWVW05@6.0'	10/23/2023	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

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 (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	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	500**		
MW-01 @6'	10/15/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
MW-01 @12'	10/15/2024	12.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
MW-02 @6'	10/15/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
MW-02 @12'	10/15/2024	12.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
MW-03 @1'	10/15/2024	1.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
MW-03 @12'	10/15/2024	12.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
MW-04 @6'	10/15/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
MW-04 @12'	10/15/2024	12.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
MW-05 @6'	10/15/2024	6.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
MW-05 @12'	10/15/2024	12.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
Sep01 @0.5'	10/15/2024	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
Sep02 @0.5'	10/15/2024	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
Sep03 @4'	10/15/2024	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
Sep05 @4'	10/15/2024	4.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	130	<50
31FL06@3'	10/15/2024	3.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50

1. Bold values exceed the ECMC Table 915-1 limit(s)

2. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)

3. * Indicates laboratory minimum detection limit in excess of SSL

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

NA - Not analyzed

VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO

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
AST01@6.0"	10/24/2023	0.5 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
AST02@6.0"	10/24/2023	0.5 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	0.0119	0.0326
AST03@6.0"	10/24/2023	0.5 Ft	<0.00500	<0.00500	<0.00500	0.0128	0.0215	0.00772	0.00599	<0.00500	<0.00500	<0.00500	0.00974	<0.00500	<0.00500	<0.00500
AST04@6.0"	10/24/2023	0.5 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
AST05@6.0"	10/24/2023	0.5 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
SEP01@6.0"	10/23/2023	0.5 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
SEP02@6.0"	10/23/2023	0.5 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
SEP03@4.0'	10/23/2023	4.0 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
SEP04@4.0'	10/23/2023	4.0 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
SEP05@4.0'	10/23/2023	4.0 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
PWVB01@7.0'	10/23/2023	7.0 Ft	<0.00500	0.00649	0.0208	<0.00500	<0.00500	<0.00500	0.0126	<0.00500	0.0102	<0.00500	<0.00500	0.0107	0.205	0.258
PWVB02@7.0'	10/23/2023	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	0.00518	0.0126
PWVB03@7.0'	10/23/2023	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
PWVB04@7.0'	10/23/2023	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
PWVB05@7.0'	10/23/2023	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
PWVN01@6.0'	10/23/2023	6.0 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
PWVS01@6.0'	10/23/2023	6.0 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
PWVE01@6.0'	10/23/2023	6.0 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
PWVE02@6.0'	10/23/2023	6.0 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	0.0112	0.0261
PWVE03@6.0'	10/23/2023	6.0 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
PWVE04@6.0'	10/23/2023	6.0 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
PWVE05@6.0'	10/23/2023	6.0 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
PWVW01@6.0'	10/23/2023	6.0 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
PWVW02@6.0'	10/23/2023	6.0 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	0.153	0.341
PWVW03@6.0'	10/23/2023	6.0 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	0.0101	0.0224
PWVW04@6.0'	10/23/2023	6.0 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
PWVW05@6.0'	10/23/2023	6.0 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

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
MW-01 @6'	10/15/2024	6.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00627	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
MW-01 @12'	10/15/2024	12.0 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
MW-02 @6'	10/15/2024	6.0 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
MW-02 @12'	10/15/2024	12.0 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
MW-03 @1'	10/15/2024	1.0 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
MW-03 @12'	10/15/2024	12.0 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
MW-04 @6'	10/15/2024	6.0 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
MW-04 @12'	10/15/2024	12.0 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
MW-05 @6'	10/15/2024	6.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0102	<0.00500	<0.00500	0.00796	<0.00500	<0.00500
MW-05 @12'	10/15/2024	12.0 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
Sep01 @0.5'	10/15/2024	0.5 Ft	0.00592	0.0252	0.0339	0.0200	0.0306	0.0124	0.0339	<0.00500	0.0881	0.00841	0.0166	0.0727	<0.00500	<0.00500
Sep02 @0.5'	10/15/2024	0.5 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
Sep03 @4'	10/15/2024	4.0 Ft	0.00618	0.0442	0.109	0.0636	0.0931	0.0347	0.106	0.00914	0.260	0.0110	0.0565	0.217	<0.00500	<0.00500
Sep05 @4'	10/15/2024	4.0 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
31FL06@3'	10/15/2024	3.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500

1. Bold values exceed the ECMC Table 915-1 limit(s)

2. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)

3. * Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE 100322
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
REM # 30386

Sample ID	Sample Date	Depth (ft)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
AST01@6.0"	10/24/2023	0.5 Ft	8.61	0.115	0.372	<2.00
AST02@6.0"	10/24/2023	0.5 Ft	8.84	0.272	1.29	<2.00
AST03@6.0"	10/24/2023	0.5 Ft	8.20	0.290	1.29	<2.00
AST04@6.0"	10/24/2023	0.5 Ft	7.95	0.282	1.14	<2.00
AST05@6.0"	10/24/2023	0.5 Ft	7.81	0.429	1.78	<2.00
SEP01@6.0"	10/23/2023	0.5 Ft	8.58	0.109	0.145	<2.00
SEP02@6.0"	10/23/2023	0.5 Ft	8.56	0.0992	0.136	<2.00
SEP03@4.0'	10/23/2023	4.0 Ft	8.60	0.194	0.674	<2.00
SEP04@4.0'	10/23/2023	4.0 Ft	8.02	0.153	0.278	<2.00
SEP05@4.0'	10/23/2023	4.0 Ft	8.34	0.173	0.476	<2.00
PWVB01@7.0'	10/23/2023	7.0 Ft	9.39	0.192	0.484	<2.00
PWVB02@7.0'	10/23/2023	7.0 Ft	8.46	0.206	0.809	<2.00
PWVB03@7.0'	10/23/2023	7.0 Ft	8.09	0.137	0.0856	<2.00
PWVB04@7.0'	10/23/2023	7.0 Ft	10.4	0.200	0.829	<2.00
PWVB05@7.0'	10/23/2023	7.0 Ft	10.9	0.312	0.829	<2.00
PWVN01@6.0'	10/23/2023	6.0 Ft	8.51	0.151	0.402	<2.00
PWVS01@6.0'	10/23/2023	6.0 Ft	8.32	0.123	0.0646	<2.00
PWVE01@6.0'	10/23/2023	6.0 Ft	8.34	0.232	0.900	<2.00
PWVE02@6.0'	10/23/2023	6.0 Ft	7.51	0.204	0.0780	<2.00
PWVE03@6.0'	10/23/2023	6.0 Ft	7.78	0.0925	0.202	<2.00
PWVE04@6.0'	10/23/2023	6.0 Ft	8.16	0.356	0.290	<2.00

Sample ID	Sample Date	Depth (ft)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
PWVE05@6.0'	10/23/2023	6.0 Ft	8.12	0.175	0.339	<2.00
PWVW01@6.0'	10/23/2023	6.0 Ft	8.56	0.187	0.598	<2.00
PWVW02@6.0'	10/23/2023	6.0 Ft	8.56	0.160	0.563	<2.00
PWVW03@6.0'	10/23/2023	6.0 Ft	8.29	0.235	1.13	<2.00
PWVW04@6.0'	10/23/2023	6.0 Ft	8.69	0.191	0.861	<2.00
PWVW05@6.0'	10/23/2023	6.0 Ft	8.37	0.142	2.02	<2.00
MW-01 @6'	10/15/2024	6.0 Ft	9.37	0.205	1.85	<2.00
MW-01 @12'	10/15/2024	12.0 Ft	8.50	0.560	3.83	<2.00
MW-02 @6'	10/15/2024	6.0 Ft	8.27	0.653	2.54	<2.00
MW-02 @12'	10/15/2024	12.0 Ft	8.51	0.408	3.80	<2.00
MW-03 @1'	10/15/2024	1.0 Ft	8.09	0.425	1.84	<2.00
MW-03 @12'	10/15/2024	12.0 Ft	8.45	0.343	4.24	<2.00
MW-04 @6'	10/15/2024	6.0 Ft	8.39	0.592	5.31	<2.00
MW-04 @12'	10/15/2024	12.0 Ft	8.61	0.572	4.88	<2.00
MW-05 @6'	10/15/2024	6.0 Ft	9.44	0.262	3.85	<2.00
MW-05 @12'	10/15/2024	12.0 Ft	8.87	0.464	3.25	<2.00
Sep01 @0.5'	10/15/2024	0.5 Ft	8.58	0.245	0.801	<2.00
Sep02 @0.5'	10/15/2024	0.5 Ft	8.94	0.148	0.248	<2.00
Sep03 @4'	10/15/2024	4.0 Ft	8.89	0.202	1.32	<2.00
Sep05 @4'	10/15/2024	4.0 Ft	8.40	0.189	0.167	<2.00

Sample ID	Sample Date	Depth (ft)	pH (Standard Units)	EC (mmhos/cm)	SAR (Standard Units)	Boron (mg/L)
ECMC Table 915-1 Soil Suitability Limits			6 - 8.3	<4	<6	2
31FL06 @3'	10/15/2024	3.0 Ft	8.44	0.265	1.42	<2.00
BKG01@6.0"	10/24/2023	0.5 Ft	7.81	0.196	0.821	<2.00
BKG01@4.0'	10/24/2023	4.0 Ft	7.89	1.58	5.42	<2.00
BKG01@6.5'	10/24/2023	6.5 Ft	7.85	0.853	3.77	<2.00
BKG02@6.0"	10/24/2023	0.5 Ft	8.26	0.493	4.38	<2.00
BKG02@4.0'	10/24/2023	4.0 Ft	7.87	3.13	9.83	<2.00
BKG02@6.5'	10/24/2023	6.5 Ft	7.75	1.54	5.78	<2.00
BKG03@6.0"	10/24/2023	0.5 Ft	8.25	0.749	6.20	<2.00
BKG03@4.0'	10/24/2023	4.0 Ft	8.05	0.987	6.04	<2.00
BKG03@6.5'	10/24/2023	6.5 Ft	8.20	0.362	2.94	<2.00
BKG04@6.0"	10/24/2023	0.5 Ft	8.44	0.424	3.59	<2.00
BKG04@4.0'	10/24/2023	4.0 Ft	8.38	1.68	9.20	<2.00
BKG04@6.5'	10/24/2023	6.5 Ft	8.30	0.519	3.78	<2.00
BKG05@6.0"	10/24/2023	0.5 Ft	8.37	0.365	2.83	<2.00
BKG05@4.0'	10/24/2023	4.0 Ft	8.17	2.07	8.54	<2.00
BKG05@6.5'	10/24/2023	6.5 Ft	7.90	1.57	7.18	<2.00
Maximum Root Background Concentration (0 - 3 ft)			8.44	0.749	6.20	<2.00
Average Root Background Concentration (0 - 3 ft)			8.23	0.445	3.56	<2.00
Maximum Background Concentration			8.44	3.13	9.83	<2.00
Average Background Concentration			8.10	1.10	5.35	<2.00

1. Bold faced values exceed the ECMC Table 915-1 limit(s)
 2. Blue highlighted soil analytical values indicate a regulatory exceedance
- NA - Not analyzed

TABLE 5
SUMMARY OF METALS IN SOIL CHEMISTRY DATA
NOBLE 100322
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
REM # 30386

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
AST01@6.0"	10/24/2023	0.5 Ft	0.901	33.9	<0.200	<0.30	2.05	2.21	1.46	<0.260	<0.0020	4.70
AST02@6.0"	10/24/2023	0.5 Ft	1.11	73.7	<0.200	<0.30	3.26	7.27	2.61	<0.260	0.0276	11.0
AST03@6.0"	10/24/2023	0.5 Ft	0.923	100	<0.200	<0.30	3.73	8.01	2.70	<0.260	0.0343	12.9
AST04@6.0"	10/24/2023	0.5 Ft	0.940	92.4	0.216	<0.30	4.14	7.24	2.66	<0.260	0.0323	12.9
AST05@6.0"	10/24/2023	0.5 Ft	0.959	86.0	0.218	<0.30	5.52	6.78	2.53	<0.260	0.0319	16.3
SEP01@6.0"	10/23/2023	0.5 Ft	0.904	81.1	<0.200	<0.30	3.05	6.23	2.30	<0.260	0.0257	10.6
SEP02@6.0"	10/23/2023	0.5 Ft	1.08	65.8	<0.200	<0.30	2.93	4.66	2.25	<0.260	0.0210	8.95
SEP03@4.0'	10/23/2023	4.0 Ft	0.971	79.7	<0.200	<0.30	3.01	5.74	2.48	<0.260	0.0224	18.7
SEP04@4.0'	10/23/2023	4.0 Ft	0.872	87.0	<0.200	<0.30	1.97	3.46	1.88	<0.260	<0.0200	7.39
SEP05@4.0'	10/23/2023	4.0 Ft	0.849	85.6	<0.200	<0.30	2.81	5.44	2.33	<0.260	0.0264	9.57
PWVB01@7.0'	10/23/2023	7.0 Ft	0.788	50.4	<0.200	<0.30	3.40	3.50	1.88	<0.260	<0.0200	8.72
PWVB02@7.0'	10/23/2023	7.0 Ft	0.910	50.6	<0.200	<0.30	2.52	3.59	1.92	<0.260	<0.0200	10.2
PWVB03@7.0'	10/23/2023	7.0 Ft	0.860	99.9	<0.200	<0.30	3.38	6.64	2.62	<0.260	0.0297	9.95
PWVB04@7.0'	10/23/2023	7.0 Ft	0.345	37.9	<0.200	<0.30	2.98	6.03	1.90	<0.260	0.0256	10.5
PWVB05@7.0'	10/23/2023	7.0 Ft	0.659	121	<0.200	<0.30	3.36	7.48	2.80	<0.260	0.0319	11.5
PWVN01@6.0'	10/23/2023	6.0 Ft	0.893	83.9	<0.200	<0.30	3.49	6.46	2.57	<0.260	0.0258	11.3
PWVS01@6.0'	10/23/2023	6.0 Ft	0.845	96.5	<0.200	<0.30	2.93	5.96	2.33	<0.260	0.0240	10.1
PWVE01@6.0'	10/23/2023	6.0 Ft	0.744	76.8	<0.200	<0.30	2.74	5.19	2.70	<0.260	0.0231	9.03
PWVE02@6.0'	10/23/2023	6.0 Ft	1.03	96.3	0.205	<0.30	3.60	11.8	2.91	<0.260	0.0387	13.2
PWVE03@6.0'	10/23/2023	6.0 Ft	0.766	79.9	<0.200	<0.30	2.63	6.35	2.59	<0.260	<0.0200	10.6
PWVE04@6.0'	10/23/2023	6.0 Ft	2.44	106	<0.200	<0.30	6.41	7.58	5.03	<0.260	0.0324	20.7
PWVE05@6.0'	10/23/2023	6.0 Ft	1.71	57.3	<0.200	<0.30	3.78	4.91	3.69	<0.260	<0.0200	14.9
PWVW01@6.0'	10/23/2023	6.0 Ft	2.53	58.8	<0.200	<0.30	5.64	4.52	3.69	<0.260	<0.0200	15.0
PWVW02@6.0'	10/23/2023	6.0 Ft	1.43	58.1	<0.200	<0.30	4.17	4.32	3.33	<0.260	<0.0200	14.1
PWVW03@6.0'	10/23/2023	6.0 Ft	3.23	128	0.202	<0.30	7.17	8.70	5.66	<0.260	0.0369	21.6
PWVW04@6.0'	10/23/2023	6.0 Ft	2.10	63.8	<0.200	<0.30	5.60	5.23	3.82	<0.260	<0.0200	16.8
PWVW05@6.0'	10/23/2023	6.0 Ft	4.26	85.3	0.215	<0.30	6.85	8.18	5.19	<0.260	0.0298	23.3

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
MW-01 @6'	10/15/2024	6.0 Ft	0.635	33.6	<0.200	<0.30	7.42	5.42	6.05	<0.260	0.0280	29.2
MW-01 @12'	10/15/2024	12.0 Ft	1.66	4.89	<0.200	<0.30	1.10	1.22	0.843	<0.260	<0.0200	3.92
MW-02 @6'	10/15/2024	6.0 Ft	1.87	89.5	<0.200	<0.30	6.63	7.17	8.96	<0.260	0.0222	31.6
MW-02 @12'	10/15/2024	12.0 Ft	0.725	10.1	<0.200	<0.30	1.30	2.38	1.57	<0.260	<0.0200	9.38
MW-03 @1'	10/15/2024	1.0 Ft	1.64	180	0.268	<0.30	14.4	10.4	12.3	<0.260	0.0429	52.5
MW-03 @12'	10/15/2024	12.0 Ft	0.387	13.2	<0.200	<0.30	2.18	3.20	2.20	<0.260	<0.0200	11.9
MW-04 @6'	10/15/2024	6.0 Ft	1.66	88.3	<0.200	<0.30	7.48	7.76	8.96	<0.260	0.0304	35.3
MW-04 @12'	10/15/2024	12.0 Ft	0.238	8.37	<0.200	<0.30	1.28	1.89	1.07	<0.260	<0.0200	7.12
MW-05 @6'	10/15/2024	6.0 Ft	1.85	125	0.260	<0.30	12.1	13.2	10.1	<0.260	0.0436	47.2
MW-05 @12'	10/15/2024	12.0 Ft	1.27	9.03	<0.200	<0.30	1.25	2.02	1.02	<0.260	<0.0200	5.54
Sep01 @0.5'	10/15/2024	0.5 Ft	1.52	103	<0.200	<0.30	8.25	7.39	7.44	<0.260	0.0380	35.3
Sep02 @0.5'	10/15/2024	0.5 Ft	2.07	50.7	<0.200	<0.30	8.53	4.31	5.23	<0.260	<0.0200	20.7
Sep03 @4'	10/15/2024	4.0 Ft	1.55	116	<0.200	<0.30	8.79	7.08	7.92	<0.260	0.0264	33.0
Sep05 @4'	10/15/2024	4.0 Ft	1.55	117	0.237	<0.30	11.8	8.84	8.73	<0.260	0.0382	43.4
31FL06 @3'	10/15/2024	3.0 Ft	1.76	137	0.317	<0.30	20.8	11.8	11.5	<0.260	0.0501	62.8
BKG01@6.0"	10/24/2023	0.5 Ft	1.06	117	0.307	<0.30	3.58	9.61	2.76	<0.260	0.0554	13.6
BKG01@4.0'	10/24/2023	4.0 Ft	0.946	116	<0.200	<0.30	2.61	5.43	2.47	<0.260	0.0235	8.81
BKG01@6.5'	10/24/2023	6.5 Ft	0.843	81.2	<0.200	<0.30	2.25	5.17	2.38	<0.260	0.0223	8.56
BKG02@6.0"	10/24/2023	0.5 Ft	1.03	127	0.262	<0.30	3.17	9.29	2.60	<0.260	0.0472	11.5
BKG02@4.0'	10/24/2023	4.0 Ft	0.766	136	<0.200	<0.30	1.86	3.85	1.70	<0.260	<0.0200	7.12
BKG02@6.5'	10/24/2023	6.5 Ft	0.653	21.5	<0.200	<0.30	1.39	2.60	1.14	<0.260	<0.0200	5.20
BKG03@6.0"	10/24/2023	0.5 Ft	1.00	114	0.287	<0.30	3.12	9.14	2.44	<0.260	0.0387	12.5
BKG03@4.0'	10/24/2023	4.0 Ft	0.840	76.4	<0.200	<0.30	2.79	6.81	2.44	<0.260	0.0231	10.0
BKG03@6.5'	10/24/2023	6.5 Ft	0.802	160	<0.200	<0.30	2.63	6.07	2.59	<0.260	0.0248	9.42
BKG04@6.0"	10/24/2023	0.5 Ft	1.05	119	0.292	<0.30	4.37	9.78	2.80	<0.260	0.0500	13.6
BKG04@4.0'	10/24/2023	4.0 Ft	0.979	116	<0.200	<0.30	2.23	5.81	2.46	<0.260	0.0283	8.61
BKG04@6.5'	10/24/2023	6.5 Ft	1.50	165	0.235	<0.30	4.68	10.1	4.05	<0.260	0.0488	13.7
BKG05@6.0"	10/24/2023	0.5 Ft	1.02	128	0.329	<0.30	3.72	9.55	2.91	0.268	0.0471	14.1
BKG05@4.0'	10/24/2023	4.0 Ft	0.750	70.5	<0.200	<0.30	2.66	6.49	2.44	<0.260	0.0305	8.98

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
BKG05@6.5'	10/24/2023	6.5 Ft	1.23	134	<0.200	<0.30	2.91	7.68	2.78	<0.260	0.0343	10.4
Maximum Root Zone Background Concentration (0 - 3 ft)			1.06	128	0.329	<0.30	4.37	9.78	2.91	0.268	0.0554	14.1
125% Average Root Zone Background Concentration (0 - 3 ft)			1.29	151	0.369	<0.30	4.49	11.8	3.38	0.327	0.0596	16.3
Maximum Background Concentration			1.50	165	0.329	<0.30	4.68	10.1	4.05	0.268	0.0554	14.1
125% Average Background Concentration			1.21	140	0.293	<0.30	3.66	8.95	3.16	0.326	0.0428	13.0

1. Bold values exceed the ECMC Table 915-1 limit(s)

2. Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL)

* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed

TABLE 6
SUMMARY OF GROUNDWATER ELEVATION DATA AND ORGANIC CHEMISTRY DATA
NOBLE 100322
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
REM # 30386

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 Below TOC (ft)	Groundwater Elevation (ft)	LNAPL Thickness (ft)
ECMC Table 915-1 Limits		5.0	560	700	1400	140	67	67				
GW01	10/23/23	1.5	1.3	6.4	82	<1.0	50	27	N/A	N/A	N/A	NP
GW02	10/23/23	230	32	51	340	8.0	110	47	N/A	N/A	N/A	NP
GW03	10/23/23	88	30	68	730	17	250	150	N/A	N/A	N/A	NP
GW04	10/23/23	110	5.4	33	240	8.3	89	37	N/A	N/A	N/A	NP
GW05	10/23/23	68	3.7	29	170	5.8	94	29	N/A	N/A	N/A	NP
MW-1	10/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	1.3	<1.0	100.00	7.27	92.73	NP
MW-2	10/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	100.94	8.18	92.76	NP
MW-3	10/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	101.80	7.91	93.89	NP
MW-4	10/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	94.62	6.91	87.71	NP
MW-5	10/16/24	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	100.02	7.40	92.62	NP

1. Bold values exceed the ECMC limit(s)

2. Red highlighted groundwater analytical values indicate a regulatory exceedance

NP - No measurable LNAPL, NA - Not Analyzed, NL - No Limit, INA - Inaccessible, IW - Insufficient Water, DES - Destroyed

TABLE 7
SUMMARY OF INORGANIC GROUNDWATER CHEMISTRY DATA
NOBLE 100322
VOLKENS COLEMAN T4N-R64W-S23 L01, WELD COUNTY, COLORADO
REM # 30386

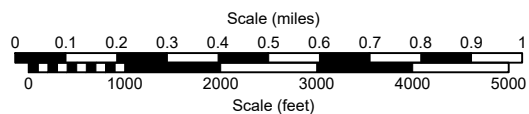
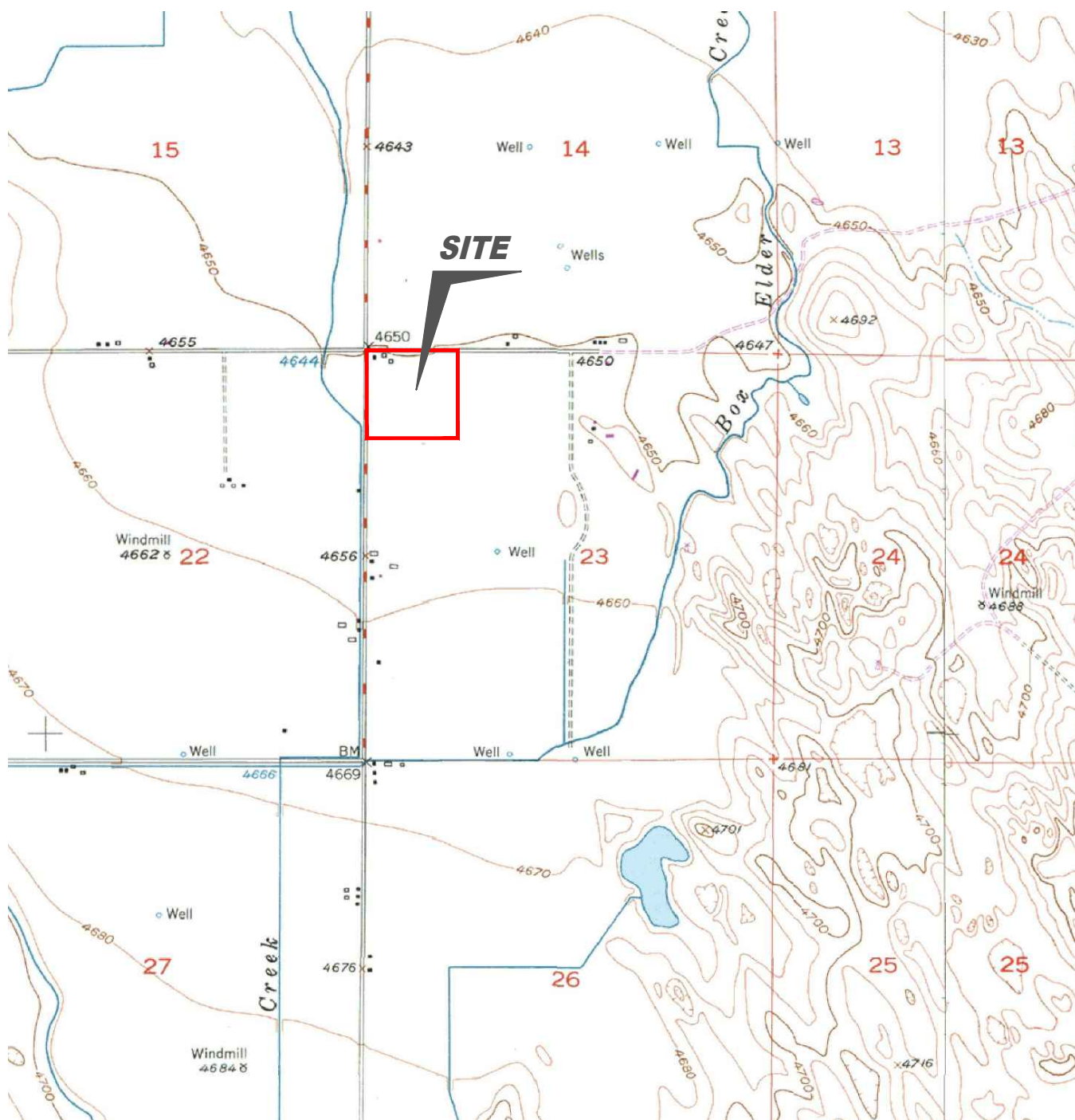
Sample ID	Sample Date	Total Dissolved Solids (mg/L)	Chloride Ion (mg/L)	Sulfate Ion (mg/L)
ECMC Table 915-1 Limits*		<1.25 x local background	250 or <1.25 x local background	250 or <1.25 x local background
MW-1	10/16/24	1100	193	356
MW-2	10/16/24	1050	264	372
MW-3	10/16/24	1350	194	379
MW-4	10/16/24	1350	239	544
MW-5	10/16/24	1110	153	333
Background Concentration (Current)		1687.5	-	473.75

1. Bold values exceed the ECMC limit(s)

2. Blue highlighted groundwater analytical values indicate a regulatory exceedance

NP - No measurable LNAPL, NA - Not Analyzed, INA - Inaccessible, IW - Insufficient Water, DES - Destroyed

MW-3 used as upgradient background monitoring well



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Energy, Inc. - Volkens Coleman T4N-R64W-S23 L01
 NWNW Sec. 23, T4N, R64W, 6th PM
 Weld County, Colorado
 40.298432°, -104.527048°

Project # CO23-266	API #	Facility # 414380
Date 2/19/25	Remediation # 30386	Filename 23266TFC





LEGEND

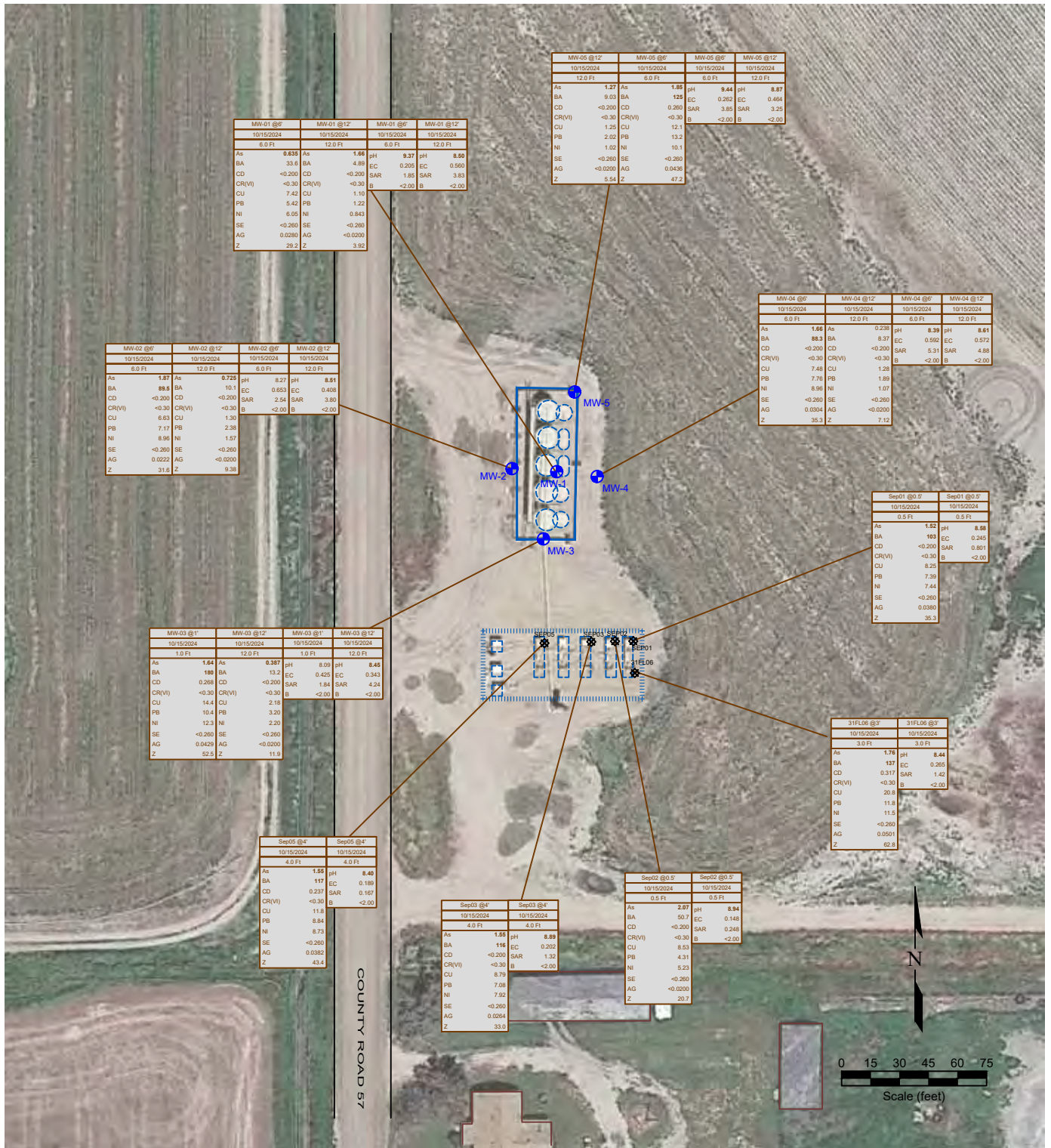
MONITORING WELL	ABOVE GROUND STORAGE TANK	FORMER FACILITY	FENCE LINE
BUILDING	BUILDING	CONTAINMENT BERM	CONTAINMENT WALL

Figure 2
SITE MAP

Noble Energy, Inc. - Volkens Coleman T4N-R64W-S23 L01
 NWNW Sec. 23, T4N, R64W, 6th PM
 Weld County, Colorado
 40.298432°, -104.527048°

Project No. CO23-266	API #	Facility # 414380
Date 2/19/25	Remediation # 30386	Filename 23266QFCA





LEGEND



SAMPLE DATE	SAMPLE ID	SAMPLE DATE	SAMPLE ID
DEPTH	DEPTH (ft)	DEPTH	DEPTH (ft)
As <0.01	ARSENIC (mg/kg)	pH <0.01	pH (pH units)
BA <0.01	BARIUM (mg/kg)	EC <0.01	EC (microsiemens)
CD <0.01	CADMIUM (mg/kg)	SAR <0.01	SAR (units)
CR(VI) <0.01	CHROMIUM (mg/kg)	B <0.01	BORON (mg/L)
CU <0.01	COPPER (mg/kg)		
PB <0.01	LEAD (mg/kg)		
NI <0.01	NICKEL (mg/kg)		
SE <0.01	SELENIUM (mg/kg)		
AG <0.01	SILVER (mg/kg)		
Z <0.01	ZINC (mg/kg)		

Figure 4

METALS AND INORGANIC SOIL CHEMISTRY MAP

Noble Energy, Inc. - Volkens Coleman T4N-R64W-S23 L01
 NWNW Sec. 23, T4N, R64W, 6th PM
 Weld County, Colorado
 40.298432°, -104.527048°

Project No. CO23-266	API #	Facility # 414380	
Date 2/20/25	Remediation # 30386	Filename 23266QFCA	



LEGEND

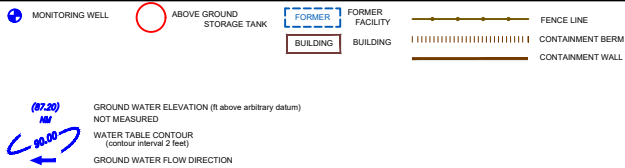


Figure 5

INFERRED GROUNDWATER CONTOUR MAP

October 16, 2024

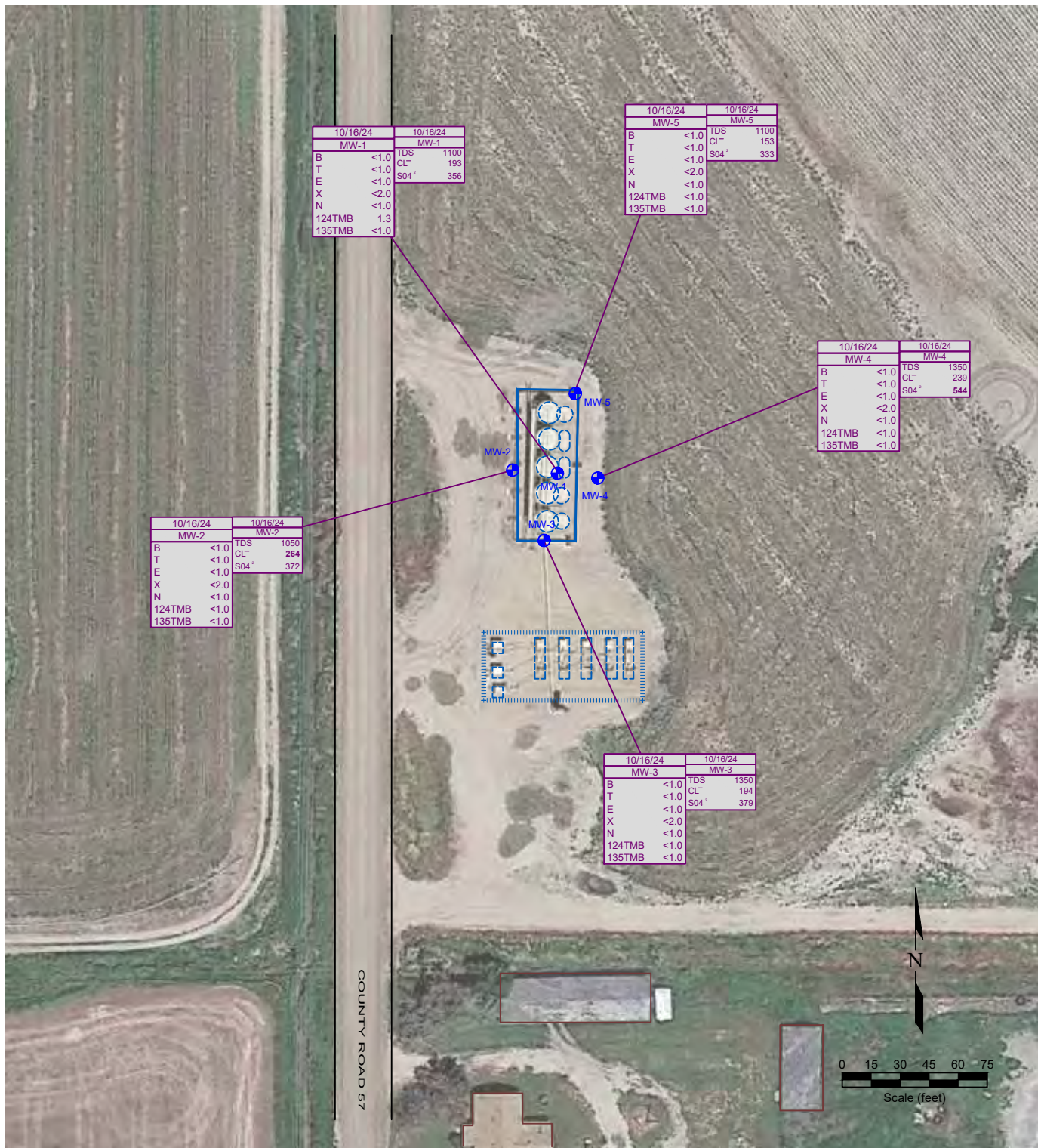
Noble Energy, Inc. - Volkens Coleman T4N-R64W-S23 L01

NWNW Sec. 23, T4N, R64W, 6th PM

Weld County, Colorado

40.298432°, -104.527048°

Project No. CO23-266	API #	Facility # 414380	
Date 2/19/25	Remediation # 30386	Filename 23266QFCA	



LEGEND



10/16/24	DATE SAMPLED
MW-1	
B	<1.0
T	<1.0
E	<1.0
X	<2.0
N	<1.0
124TMB	<1.0
135TMB	<1.0

10/16/24	DATE SAMPLED
MW-1	
TDS	1100
CL ⁻	193
S04 ²⁻	356

Noble Energy, Inc. - Volkens Coleman T4N-R64W-S23 L01
 NWNW Sec. 23, T4N, R64W, 6th PM
 Weld County, Colorado
 40.298432°, -104.527048°

Project No. CO23-266	API #	Facility # 414380
Date 2/19/25	Remediation # 30386	Filename 23266QFCA



Figure 6
GROUNDWATER CHEMISTRY MAP

[illegible]

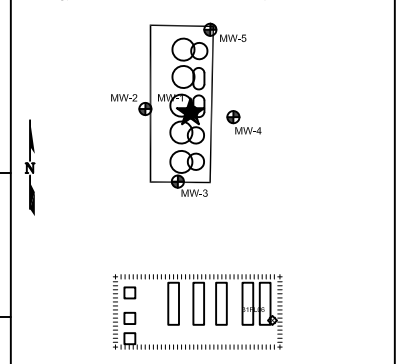
Boring/Well No. SB-31FL06	Total Depth 3'	Location Noble Energy, Inc. Volkens Coleman T4N-R64W-S23 L01 NWNW Sec. 23, T4N, R64W, 6th PM Weld County, Colorado						
Project No./Name C023-266 / Noble Volkens Coleman T4N-R64W-S23 L01								
Drilling Contractor/Driller DrillPro / Terrence, Glen, Bennett								
Geologist/Office Jordan Suttles / Fremont Environmental, Inc.		Approved By						
Drilling Equipment/Method Geoprobe		Size/Type of Bit 2.5" direct push			Sampling Method direct push		Start/Finish Date 10/15/2024	
Well Installed?	Casing Mtrl./Dia.	Screen:						
Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	.	Type .	Mtrl. .	Length .	Dia. .	Slot Size .		
Elevation of: (ft. above datum)	Ground Surface	Top of Well Casing	Top of Screen	Bottom of Screen	Ground Water Surface/Date Measured			

[illegible]



BORING/WELL CONSTRUCTION LOG

Boring/Well Location Sketch Map



Page 1 of 1

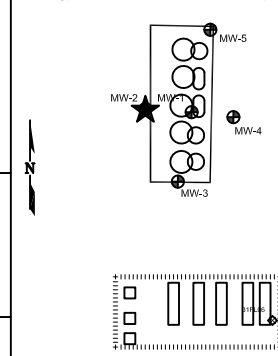
Boring/Well No. MW-1		Total Depth 12'		Location Noble Energy, Inc. Volkens Coleman T4N-R64W-S23 L01 NNW Sec. 23, T4N, R64W, 6th PM Weld County, Colorado			
Project No./Name C023-266 / Noble Volkens Coleman T4N-R64W-S23 L01				Approved By			
Drilling Contractor/Driller DrillPro / Terrence, Glen, Bennett				Sampling Method direct push			
Geologist/Office Jordan Suttles / Fremont Environmental, Inc.				Start/Finish Date 10/15/2024			
Drilling Equipment/Method Geoprobe				Size/Type of Bit 2.5" direct push			
Well Installed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Casing Mtrl./Dia. PVC 1"		Screen: Type slotted Mtrl. SCH40 Length 10' Dia. . Slot Size 0.010"			
Elevation of: (ft. above datum)		Ground Surface 1.64		Top of Well Casing 101.64		Ground Water Surface/Date Measured 7.27 10/16/2024	

DEPTH (feet)	WELL CONSTRUCTION		LITHOLOGY		Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
			GRAPHIC LOG	VISUAL DESCRIPTION				
	Bentonite	1" Blank	NR					NR
				Brown, stiff, sandy clay, some gravels at 4', dry, no stain, no odor		75%		0.4
			CL					0.2
								0.2
5	#10-20 Silica Sand	1" Screen		Brown, sandy clay, soft, some gravels at 4' - 5', moist, no stain, no odor				NR
								5.8
						75%		0.5
								0.2
10			SC	Brown, clayey sand, wet throughout, no stain, no odor				0.1
								0.2
						100%		0.2
								0.2
				TD 12'				
15								
20								



BORING/WELL CONSTRUCTION LOG

Boring/Well Location Sketch Map



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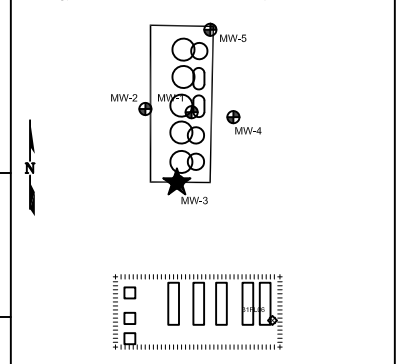
Boring/Well No. MW-2	Total Depth 12'	Location Noble Energy, Inc. Volkens Coleman T4N-R64W-S23 L01 NNW Sec. 23, T4N, R64W, 6th PM Weld County, Colorado	
Project No./Name C023-266 / Noble Volkens Coleman T4N-R64W-S23 L01		Approved By	
Drilling Contractor/Driller DrillPro / Terrence, Glen, Bennett		Sampling Method direct push	
Geologist/Office Jordan Suttles / Fremont Environmental, Inc.		Start/Finish Date 10/15/2024	
Drilling Equipment/Method Geoprobe		Size/Type of Bit 2.5" direct push	
Well Installed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Casing Mtrl./Dia. PVC 1"	Screen: Type slotted Mtrl. SCH40 Length 10' Dia. . Slot Size 0.010"	
Elevation of: (ft. above datum)	Ground Surface 0.70	Top of Well Casing 100.94	Top of Screen .
		Bottom of Screen .	Ground Water Surface/Date Measured 8.18 10/16/2024

DEPTH (feet)	WELL CONSTRUCTION		LITHOLOGY		Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
			GRAPHIC LOG	VISUAL DESCRIPTION				
5	Bentonite		1" Blank	NR		75%		NR
				CH				0.2
								0.3
				SC				0.3
	#10-20 Silica Sand		1" Screen	NR				NR
				CH				0.3
								0.3
				SC				0.3
				NR				
				CL				NR
10						75%		0.3
								0.3
15								0.3
20								0.3



BORING/WELL CONSTRUCTION LOG

Boring/Well Location Sketch Map



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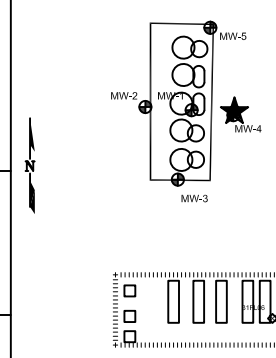
Boring/Well No. MW-3	Total Depth 12'	Location Noble Energy, Inc. Volkens Coleman T4N-R64W-S23 L01 NNW Sec. 23, T4N, R64W, 6th PM Weld County, Colorado	
Project No./Name C023-266 / Noble Volkens Coleman T4N-R64W-S23 L01		Approved By	
Drilling Contractor/Driller DrillPro / Terrence, Glen, Bennett		Sampling Method direct push	
Geologist/Office Jordan Suttles / Fremont Environmental, Inc.		Start/Finish Date 10/15/2024	
Drilling Equipment/Method Geoprobe		Size/Type of Bit 2.5" direct push	
Well Installed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Casing Mtrl./Dia. PVC 1"	Screen: Type slotted Mtrl. SCH40 Length 10' Dia. . Slot Size 0.010"	
Elevation of: (ft. above datum)	Ground Surface 0.84	Top of Well Casing 101.80	Top of Screen .
		Bottom of Screen .	Ground Water Surface/Date Measured 7.91 10/16/2024

DEPTH (feet)	WELL CONSTRUCTION		LITHOLOGY		Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
			GRAPHIC LOG	VISUAL DESCRIPTION				
5	Bentonite	1" Blank	CH	Tan clay, stiff, dry, no stain, no odor		100%	2.7	
							1.2	
			CL	Gravel layer overall, sandy clay, soft, slight moisture, no stain, no odor			0.5	
	#10-20 Silica Sand	1" Screen	NR				0.5	
							NR	
10			CH	Brown/gray clay, stiff-soft, moist, no stain, no odor		50%	NR	
							0.4	
			CL	Brown/ tan, sandy clay, saturated/wet, no stain, no odor, stiff			0.4	
							0.2	
			SC	Clayey sand, tan/brown, wet, no stain, no odor, slightly stiff		100%	0.2	
15				TD 12'			0.2	
20								



BORING/WELL CONSTRUCTION LOG

Boring/Well Location Sketch Map



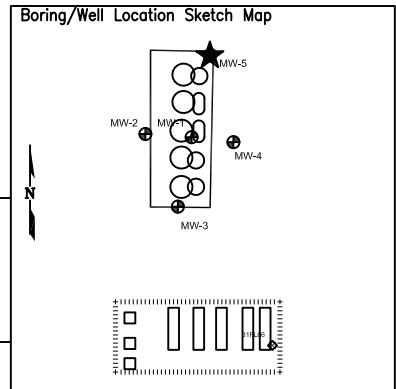
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Boring/Well No. MW-4		Total Depth 12'		Location Noble Energy, Inc. Volkens Coleman T4N-R64W-S23 L01 NNW Sec. 23, T4N, R64W, 6th PM Weld County, Colorado	
Project No./Name C023-266 / Noble Volkens Coleman T4N-R64W-S23 L01		Drilling Contractor/Driller DrillPro / Terrence, Glen, Bennett		Approved By	
Geologist/Office Jordan Suttles / Fremont Environmental, Inc.		Drilling Equipment/Method Geoprobe		Size/Type of Bit 2.5" direct push	
Well Installed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Casing Mtrl./Dia. PVC 1"		Screen: Type slotted Mtrl. SCH40 Length 10' Dia. . Slot Size 0.010"	
Elevation of: (ft. above datum)		Ground Surface 2.02		Top of Well Casing 99.62	
		Top of Screen .		Bottom of Screen .	
		Ground Water Surface/Date Measured 6.91		10/16/2024	

DEPTH (feet)	WELL CONSTRUCTION		LITHOLOGY		Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
			GRAPHIC LOG	VISUAL DESCRIPTION				
5	Bentonite	1" Blank	NR	Brown, stiff, clay, dry, no stain, no odor		75%		NR
			CH					0.2
								0.2
								0.2
	#10-20 Silica Sand	1" Screen		Brown, stiff, clay, saturated at 6', no stain, no odor				NR
10						75%		0.5
								0.4
								0.4
				Brown, stiff, clay, wet 11' to 12', no stain, no odor				0.3
								0.3
15			SC	Brown, clayey sand, soft, no stain, no odor		100%		0.3
				TD 12'				0.3
20								



BORING/WELL CONSTRUCTION LOG



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Boring/Well No. MW-5		Total Depth 12'		Location Noble Energy, Inc. Volkens Coleman T4N-R64W-S23 L01 NNW Sec. 23, T4N, R64W, 6th PM Weld County, Colorado	
Project No./Name C023-266 / Noble Volkens Coleman T4N-R64W-S23 L01				Approved By	
Drilling Contractor/Driller DrillPro / Terrence, Glen, Bennett					
Geologist/Office Jordan Suttles / Fremont Environmental, Inc.					
Drilling Equipment/Method Geoprobe		Size/Type of Bit 2.5" direct push		Sampling Method direct push	
				Start/Finish Date 10/15/2024	
Well Installed? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		Casing Mtrl./Dia. PVC 1"		Screen: Type slotted Mtrl. SCH40 Length 10' Dia. . Slot Size 0.010"	
Elevation of: (ft. above datum)		Ground Surface 1.62		Top of Well Casing 100.02	
		Top of Screen .		Bottom of Screen .	
		Ground Water Surface/Date Measured 7.40		10/16/2024	

DEPTH (feet)	WELL CONSTRUCTION		LITHOLOGY		Penetration Rate (blows/6")	Recovery (%)	Sample Interval (feet)	PID Values (ppm)
			GRAPHIC LOG	VISUAL DESCRIPTION				
5	Bentonite	1" Blank	NR			50%		NR
			SC	Sandy clay, brown, 2' - 3', dry, no stain, no odor, stiff			0.1	
			CH	Gray clay, stiff, no stain, no odor, dry			0.1	
	#10-20 Silica Sand	1" Screen	NR				NR	
			CH	Gray clay, soft - stiff, oxidized staining, no odor, moist		25%	NR	
10			CL	Brown sandy clay, soft, wet, no stain, no odor			0.2	
							0.2	
							0.2	
						100%	0.2	
				TD 12'			0.2	
15								
20								

APPENDIX

SAMPLING METHODS AND PROCEDURES

Water Level Measurements

All groundwater level measurements will be obtained using an electric measuring device, which indicates when a probe is in contact with groundwater. Measurements will be obtained by lowering the device into the well until the water surface had been encountered, and by measuring the distance from the top of the inside riser pipe to the probe. All the measurements will be recorded to the nearest 0.01 ft. To minimize cross-contamination, the water level indicator will be decontaminated with isopropyl alcohol and distilled water between each well.

Monitoring Well Sampling

All monitoring wells were sampled from the “cleanest” to the “most contaminated” according to the protocols listed below.

Field Protocol

- | | |
|--------|--|
| Step 1 | Measure water level in each well. |
| Step 2 | Purge each monitoring well by evacuating a minimum of three well bore volumes using a disposable polyethylene bailer. |
| Step 3 | Collect water samples using a disposable polyethylene bailer. |
| Step 4 | Cool samples to approximately 4°C for transportation. |
| Step 5 | Store water samples and transport to a specific laboratory, following all documentation and chain-of-custody procedures. |

Upon completion of groundwater sampling, a chain-of-custody log will be completed. Chain-of-custody records include the following information: project, project number, shipped by, shipped to, suspected hazard, sampling point, location, field identification number, date collected, sample type, number of containers, analysis required, and sampler's signature.

The chain-of-custody records will be shipped with the samples to the laboratory. Upon arrival at the laboratory the samples will be checked in and signed by the appropriate laboratory personnel. Laboratory identification numbers will be noted on the chain-of-custody record. Upon completion of the laboratory analysis, the completed chain-of-custody record will be returned to the project manager.

Analytical Methods

The following list identifies the various chemical constituents and analytical methods which will be used for their quantification.

<u>Chemical Parameter</u>	<u>Method</u>
Benzene, Toluene, Ethylbenzene and Total Xylenes (BTEX)	EPA Method – 8260B
1,2,4- and 1,3,5-Trimethylbenzene and Naphthalene	EPA Method – 8260B
Chloride and Sulfate Anions	EPA Method – 300.0
Total Dissolved Solids (TDS)	Standard Method 2540C