

# **FREMONT ENVIRONMENTAL INC.**

November 6, 2024

Mr. Daniel Peterson  
Noble Energy Inc.  
2115 117<sup>th</sup> Avenue  
Greeley, CO 80634

Subject:           **Flowline Closure Data Submittal**  
Howard USX A09-13  
API # 05-123-24494  
SWSW Sec. 9, T6N, R64W  
Weld County, Colorado  
Fremont Project No. C024-056  
Remediation # 32969

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted flowline closure activities for the Noble Energy Inc. (Noble) Howard USX A09-13. Impacted soil was encountered during abandonment activities. Details of the Howard USX A09-13 flowline closure activities are documented in the attached Closure Report. Groundwater was not encountered during flowline abandonment activities.

Please contact me at (336) 541-3048 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

**FREMONT ENVIRONMENTAL INC.**



Aaron Otilar  
Consultant

Attachments:

- Flowline Closure Checklist
- Tables
- Figures
- Photos
- Laboratory Report

# Flowline Closure Checklist

## COGCC Rule 911.a.(4) Environmental Site Closure Assessment Field Form

<i>Additional Attachments:</i>		Tank Battery Closure		Wellhead Closure		Pit Closure		Partially Buried Vault Closure
<i>Site Name &amp; COGCC Facility Number:</i> Howard USX A09-13 (API: 05-123-24494)		<i>Date:</i> 3/7/24						<i>Remediation Project #:</i> 32969
<i>Associated Wells:</i>		<i>Age of Site:</i> 2006				<i>Number of Photos Attached:</i> See Attached		

*Starting point: (GPS coordinates and descriptions)*  
40.4950771, -104.5620942

*End point: (GPS coordinates and descriptions)*  
40.4960238, -104.5641878

*USCS Soil Type:* CL *Estimated Depth to Groundwater:* ~>15 Ft

*Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)*  
**Hydrocarbon Impacts Observed at sample location FL02 2'**

*Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)*  
**None Observed**

Flowlines								
<i>Flowline type</i>	Combined Fluids							
<i>Depth</i>	4 Ft							
<i>Age</i>	2006							
<i>Length</i>	670ft							
<i>Construction Material</i>	Carbon Steel							
<i>Were flowlines pulled?</i>	Yes							
<i>Visual Integrity of lines</i>	Good							
<i>Visual impacts if trenched</i>	N/A							
<i>PID Readings if trenched</i>	N/A							
<i>Sample taken? Location/Sample ID#</i>	Yes, See Attached							
<i>Photo Number(s)</i>	See Attached							

*Other observations regarding on location flowlines:*

### Summary

*Was impacted soil identified?*  
 No  Yes - less than 10 cubic yards  Yes - more than 10 cubic yards

*Total number of samples field screened:* 5 *Total number of samples collected:* 5

*Highest PID Reading: High @ 5.7ppm (FL01 2FT)* *Total number of samples submitted to lab for analysis:* 5

*If more than 10 cubic yards of impacted soil were observed:*

*Vertical extent:* Unknown *Estimated spill volume:* Unknown

*Lateral extent:* Unknown *Volume of soil removed:* Impacts left in place

*Is additional investigation required?*  
**Yes, additional investigation required**

*Was groundwater encountered during the investigation?*  
 No  Yes - not impacted or in contact with impacted soils  Yes - groundwater impacted and/or in contact with impacted soils

*Measured depth to groundwater:* *Was remedial groundwater removal conducted?* Yes  No

*Date Groundwater was encountered:* *Commencement date of removal:*

*Sheen on groundwater?*  Yes  No *Volume of groundwater removed prior to sampling:*

*Free product observed?*  Yes  No *Volume of groundwater removed post sampling:*

*Total number of samples collected:* *Total Volume of groundwater removed:*

*Total number of samples submitted to lab for analysis:*

**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE 100322**  
**HOWARD USX A09-13, WELD COUNTY, COLORADO**  
**REM # 32969**

Sample ID	Sample Date	Depth (ft)	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude	Longitude		
FL01 2FT	03/07/2024	2.0 Ft	40.4950771	-104.5620942	1.0	5.7
FL02 2FT	03/07/2024	2.0 Ft	40.4947779	-104.5621657	0.8	4.9
FL03 2FT	03/07/2024	2.0 Ft	40.4948793	-104.5629537	0.9	4.8
FL04 2FT	03/07/2024	2.0 Ft	40.4956708	-104.5637477	1.2	3.9
FL05 2FT	03/07/2024	2.0 Ft	40.4960238	-104.5641878	0.9	4.7
BKG04@0.5'	03/07/2024	0.5 Ft	40.4948992	-104.5632637	-	1.2
BKG04@2'	03/07/2024	2.0 Ft	40.4948992	-104.5632637	-	1.4
BKG04@5'	03/07/2024	5.0 Ft	40.4948992	-104.5632637	-	1.1
BKG05@0.5'	03/07/2024	0.5 Ft	40.4951318	-104.5625985	-	1.2
BKG05@2'	03/07/2024	2.0 Ft	40.4951318	-104.5625985	-	1.3
BKG05@5'	03/07/2024	5.0 Ft	40.4951318	-104.5625985	-	1.4

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  
HOWARD USX A09-13, WELD COUNTY, COLORADO  
REM # 32969

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**		
FL01 2FT	03/07/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL02 2FT	03/07/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<b>0.021</b>	<500	<0.50	<50	<50
FL03 2FT	03/07/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL04 2FT	03/07/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL05 2FT	03/07/2024	2.0 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
- (<) = Analytical result is less than the indicated laboratory reporting limit.  
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics  
TPH-DRO = Total petroleum hydrocarbons - diesel range organics  
TPH-ORO = Total petroleum hydrocarbons - oil range organics  
mg/kg = Milligrams per kilogram  
ft. = Feet  
bgs = Below ground surface  
NA - Not analyzed

TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE 100322  
HOWARD USX A09-13, WELD COUNTY, COLORADO  
REM # 32969

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
FL01 2FT	03/07/2024	2.0 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
FL02 2FT	03/07/2024	2.0 Ft	0.0151	0.0198	<b>0.0269</b>	0.0160	0.0211	0.00764	0.0237	<0.00500	0.0678	0.0166	0.0304	0.101	<0.00500	<0.00500
FL03 2FT	03/07/2024	2.0 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
FL04 2FT	03/07/2024	2.0 Ft	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00755	<0.00500	<0.00500	0.0149	<0.00500	<0.00500
FL05 2FT	03/07/2024	2.0 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
  4. \*\* Summation of GRO+DRO+ORO must be less than 500 mg/kg
- (<) = Analytical result is less than the indicated laboratory reporting limit.  
TPH-GRO = Total petroleum hydrocarbons - gasoline range organics  
TPH-DRO = Total petroleum hydrocarbons - diesel range organics  
TPH-ORO = Total petroleum hydrocarbons - oil range organics  
mg/kg = Milligrams per kilogram  
ft. = Feet  
bgs = Below ground surface  
NA - Not analyzed

**TABLE 4**  
**SUMMARY OF SOIL SUITABILITY FOR RECLAMATION**  
**NOBLE 100322**  
**HOWARD USX A09-13, WELD COUNTY, COLORADO**  
**REM # 32969**

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
FL01 2FT	03/07/2024	2.0 Ft	<b>8.45</b>	0.818	0.608	<2.00
FL02 2FT	03/07/2024	2.0 Ft	<b>8.39</b>	3.02	1.98	<2.00
FL03 2FT	03/07/2024	2.0 Ft	<b>8.46</b>	1.12	<b>6.90</b>	<2.00
FL04 2FT	03/07/2024	2.0 Ft	8.10	0.206	1.77	<2.00
FL05 2FT	03/07/2024	2.0 Ft	<b>8.70</b>	0.603	0.83	<2.00
BKG04@0.5'	03/07/2024	0.5 Ft	8.28	0.442	1.29	<2.00
BKG05@0.5'	03/07/2024	0.5 Ft	7.88	0.582	1.37	<2.00
BKG04@2'	03/07/2024	2.0 Ft	<b>8.39</b>	0.847	2.46	<2.00
BKG05@2'	03/07/2024	2.0 Ft	8.17	0.564	2.70	<2.00
BKG04@5'	03/07/2024	5.0 Ft	8.24	0.544	1.46	<2.00
BKG05@5'	03/07/2024	5.0 Ft	<b>8.38</b>	0.670	1.45	<2.00
Maximum Background Concentration		0.5 Ft	8.28	0.582	1.37	<2.00
Maximum Background Concentration		2.0 Ft	8.39	0.847	2.70	<2.00
Maximum Background Concentration		5.0 Ft	8.38	0.670	1.46	<2.00

1. **Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within background concentrations.
2. **Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
3. Brown highlighted soil analytical values indicate a regulatory exceedance.

NA - Not analyzed/Not applicable

TABLE 5  
SUMMARY OF METALS IN SOIL CHEMISTRY DATA  
NOBLE 100322  
HOWARD USX A09-13, WELD COUNTY, COLORADO  
REM # 32969

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
FL01 2FT	03/07/2024	2.0 Ft	<b>15.3</b>	55.9	<0.200	<0.30	4.90	10.1	4.16	<0.260	0.0269	24.5
FL02 2FT	03/07/2024	2.0 Ft	<b>23.0</b>	45.7	<0.200	<0.30	4.51	7.83	3.04	<0.260	0.0224	21.4
FL03 2FT	03/07/2024	2.0 Ft	<b>7.65</b>	63.5	0.319	<0.30	10.3	<b>19.2</b>	4.81	<b>0.305</b>	0.0828	30.5
FL04 2FT	03/07/2024	2.0 Ft	<b>3.35</b>	60.6	0.259	<0.30	6.15	11.5	6.36	<0.260	0.0328	29.8
FL05 2FT	03/07/2024	2.0 Ft	<b>4.72</b>	<b>94.0</b>	0.266	<0.30	5.92	8.52	6.69	<0.260	0.0393	23.2
BKG04@0.5'	03/07/2024	0.5 Ft	<b>6.48</b>	71.2	0.308	<0.30	17.4	11.5	6.80	<0.260	0.0526	39.5
BKG05@0.5'	03/07/2024	0.5 Ft	<b>5.35</b>	80.7	0.329	<0.30	16.4	11.6	7.19	<0.260	0.0538	40.3
BKG04@2'	03/07/2024	2.0 Ft	<b>7.49</b>	31.0	0.294	<0.30	6.62	11.5	8.89	<0.260	0.0323	34.2
BKG05@2'	03/07/2024	2.0 Ft	<b>8.28</b>	33.0	0.279	<0.30	7.39	10.4	6.03	<0.260	0.0355	33.6
BKG04@5'	03/07/2024	5.0 Ft	<b>1.90</b>	24.0	<0.200	<0.30	5.07	6.51	4.95	<0.260	0.0225	29.2
BKG05@5'	03/07/2024	5.0 Ft	<b>1.95</b>	37.8	0.209	<0.30	5.02	10.2	5.99	<0.260	0.0244	31.4
1.25x Maximum Background Concentration		0.5 Ft	8.10	101	0.411	<0.30	21.8	14.5	8.99	<0.260	0.0673	50.4
1.25x Maximum Background Concentration		2.0 Ft	10.4	41.3	0.368	<0.30	9.24	14.4	11.1	<0.260	0.0444	42.8
1.25x Maximum Background Concentration		5.0 Ft	2.44	47.3	0.261	<0.30	6.34	12.8	7.49	<0.260	0.0305	39.3

- Bold** faced values exceed the ECMC Table 915-1 limit(s), but are within 1.25x background concentrations.
- Bold** faced values exceed the ECMC Table 915-1 limit(s) and native background concentrations.
- Red & blue highlighted soil analytical values indicate an exceedance of the referenced soil screening level (SSL).
- Non-detect background results accounted for in the highest background concentration by using the reporting limit.

ECMC = Energy & Carbon Management Commission

(<) = Analytical result is less than the indicated laboratory reporting limit.

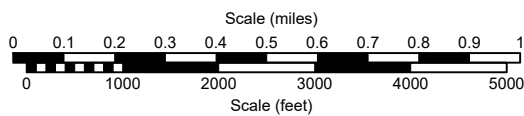
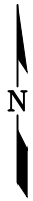
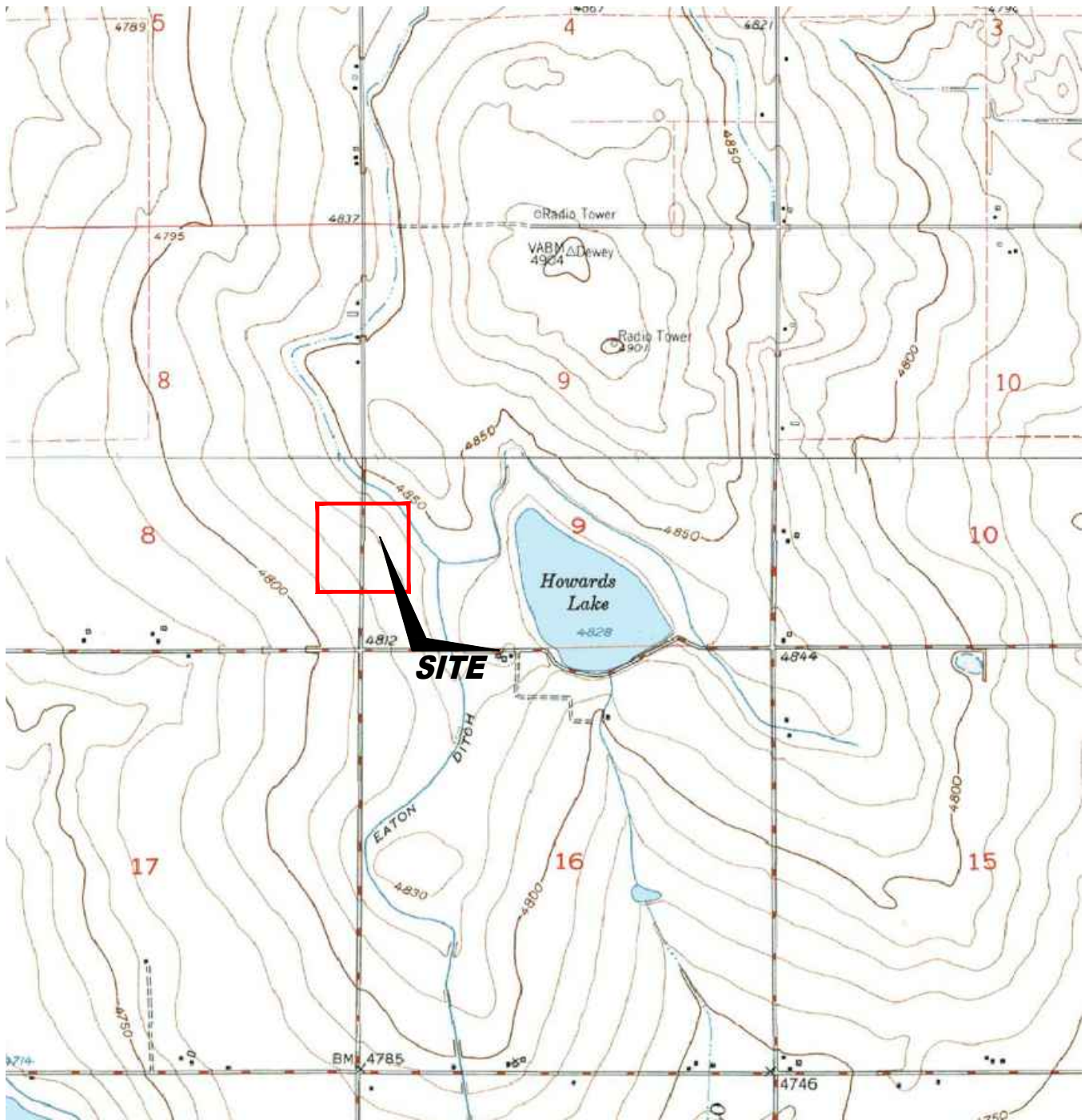
mg/kg = Milligrams per kilogram

ft. = Feet

bgs = Below ground surface

\* Indicates laboratory minimum detection limit in excess of SSL

NA - Not analyzed/Not applicable



USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1  
SITE LOCATION MAP

**Noble Energy, Inc. ~ Howard USX A 9-13**  
 SWSW Sec. 9, T6N, R64W, 6th PM  
 Weld County, Colorado  
 40.495090°, -104.562070°

Project # <b>C024-056</b>	API # <b>05-123-24494</b>	Facility #
Date <b>3/18/25</b>	Remediation # <b>32969</b>	Filename <b>24056TFL</b>





**LEGEND**

- WELL HEAD LOCATION
- ABOVE GROUND STORAGE TANK
- ▲ PID READING LOCATION
- FORMER FORMER FACILITY
- FORMER FLOW LINE
- FENCE LINE
- ||||| CONTAINMENT BERM
- CONTAINMENT WALL

**Figure 2  
SITE MAP**

**Noble Energy, Inc. ~ Howard USX A 9-13**  
 SWSW Sec. 9, T6N, R64W, 6th PM  
 Weld County, Colorado  
 40.495090°, -104.562070°

Project No. <b>C024-056</b>	API # <b>05-123-24494</b>	Facility #
Date <b>3/18/25</b>	Remediation # <b>32969</b>	Filename <b>24056QFL</b>



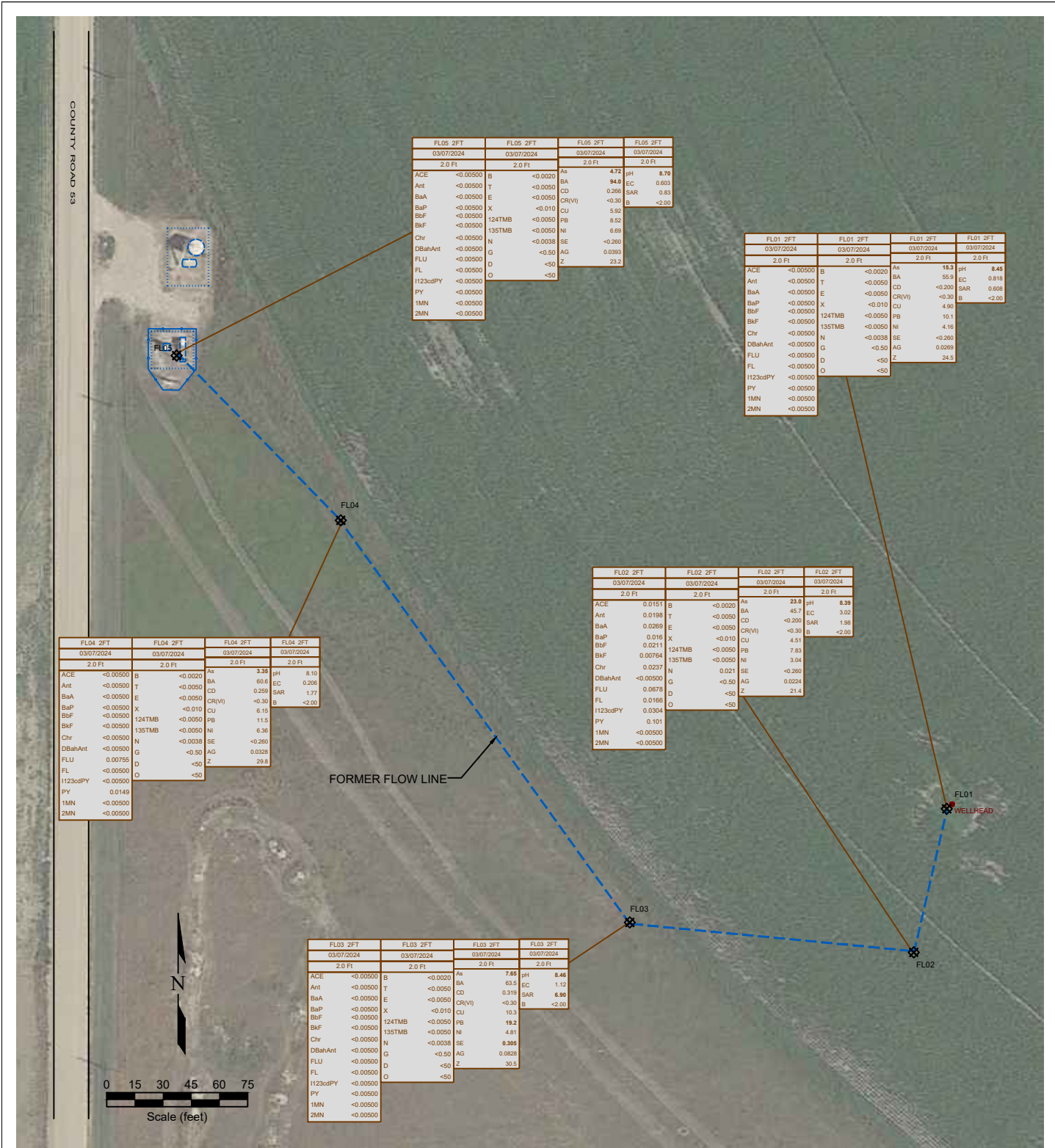


Figure 3  
SOIL CHEMISTRY MAP

Noble Energy, Inc. ~ Howard USX A 9-13  
SWSW Sec. 9, T6N, R64W, 6th PM  
Weld County, Colorado  
40.495090° , -104.562070°

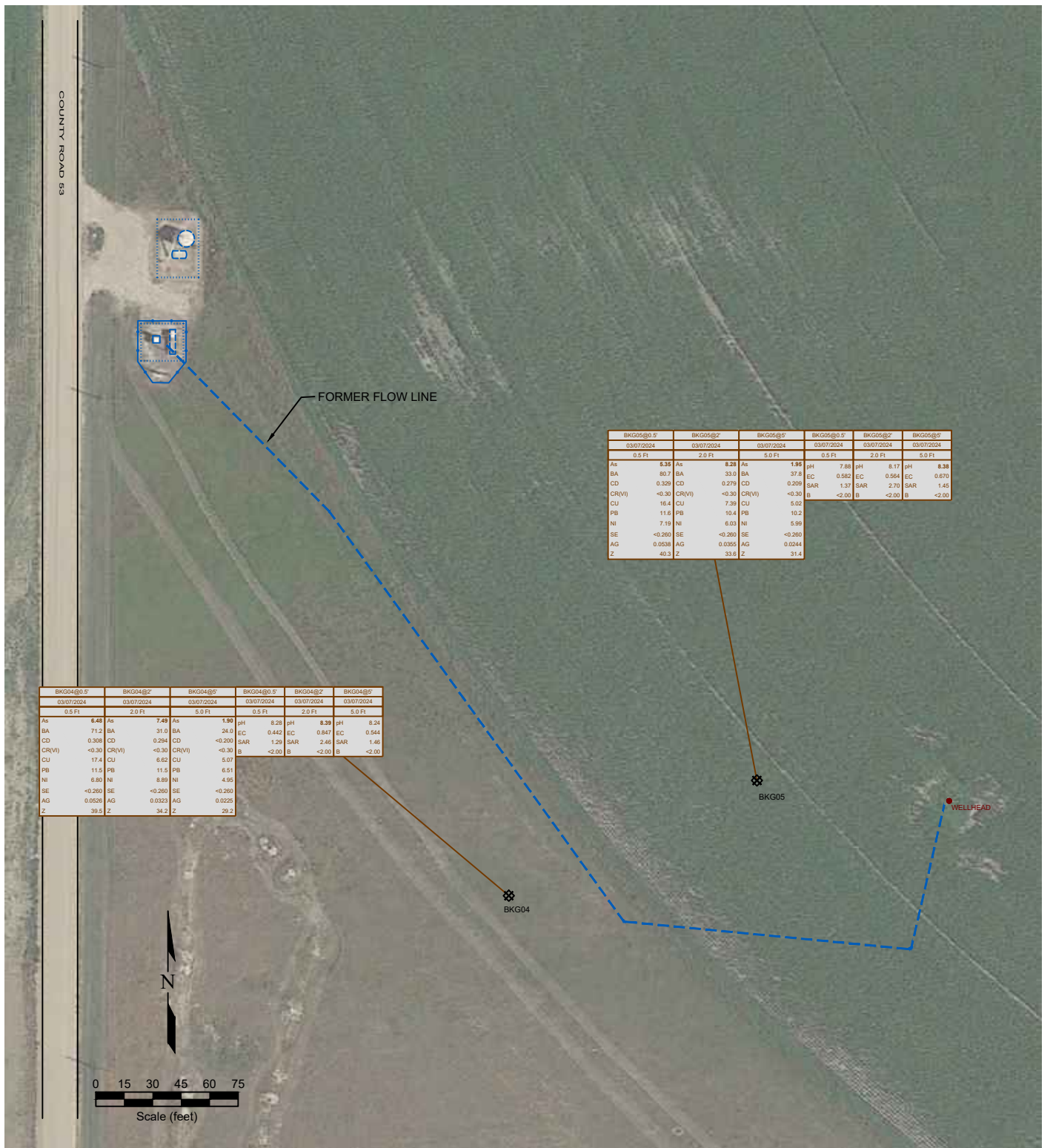
Project No. <b>C024-056</b>	API # <b>05-123-24494</b>	Facility #
Date <b>3/18/25</b>	Remediation # <b>32969</b>	Filename <b>24056QFL</b>



**LEGEND**

- WELL HEAD LOCATION
- ABOVE GROUND STORAGE TANK
- ⊛ SOIL SAMPLE LOCATION
- FORMER FLOW LINE
- FENCE LINE
- ||||| CONTAINMENT BERM
- CONTAINMENT WALL

SAMPLE ID	DATE SAMPLED	DEPTH (ft)	SAMPLE ID	DATE SAMPLED	DEPTH (ft)	SAMPLE ID	DATE SAMPLED	DEPTH (ft)	SAMPLE ID	DATE SAMPLED	DEPTH (ft)
ACE	<0.00500	B	ANTHRACENE (mg/kg)	<0.0020	As	7.68	pH	8.44			
Ant	<0.00500	T	ANTHRACENE (mg/kg)	<0.0050	BA	63.5	EC	1.12			
BaA	<0.00500	E	ANTHRACENE (mg/kg)	<0.0050	CD	0.319	SAR	6.90			
BaP	<0.00500	X	ANTHRACENE (mg/kg)	<0.0050	CR(VI)	<0.30	B	<2.00			
BbF	<0.00500	124TMB	ANTHRACENE (mg/kg)	<0.0050	CU	10.3					
BbF	<0.00500	135TMB	ANTHRACENE (mg/kg)	<0.0050	NI	19.2					
Chr	<0.00500	N	ANTHRACENE (mg/kg)	<0.0038	SE	0.306					
DBahAnt	<0.00500	G	ANTHRACENE (mg/kg)	<0.50	AG	0.0828					
FLU	<0.00500	D	ANTHRACENE (mg/kg)	<50	Z	30.5					
FL	<0.00500	O	ANTHRACENE (mg/kg)	<50							
1123cdPPY	<0.00500		ANTHRACENE (mg/kg)	<50							
PY	<0.00500		ANTHRACENE (mg/kg)	<50							
1MN	<0.00500		ANTHRACENE (mg/kg)	<50							
2MN	<0.00500		ANTHRACENE (mg/kg)	<50							



**LEGEND**

- WELL HEAD LOCATION
- ABOVE GROUND STORAGE TANK
- ⊗ SOIL SAMPLE LOCATION
- FORMER FLOW LINE
- FENCE LINE
- ||||| CONTAINMENT BERM
- CONTAINMENT WALL

SAMPLE NAME	SAMPLE ID	DATE SAMPLED	DEPTH (ft)	SAMPLE NAME	SAMPLE ID	DATE SAMPLED	DEPTH (ft)
As	<0.01	ARSENIC (mg/kg)		pH	<0.01	pH (pH units)	
BA	<0.01	BARIUM (mg/kg)		EC	7.05	EC (microhm/cm)	
CD	<0.01	CADMIUM (mg/kg)		SAR	<1	SAR (units)	
CR(VI)	<0.05	CHROMIUM (mg/kg)		B	<4	BORON (mg/L)	
CU	<0.01	COPPER (mg/kg)					
PB	<0.05	LEAD (mg/kg)					
NI	<0.05	NICKEL (mg/kg)					
SE	<0.4	SELENIUM (mg/kg)					
AG	<0.05	SILVER (mg/kg)					
Z	<0.05	ZINC (mg/kg)					

**Figure 4  
BACKGROUND SAMPLE SOIL CHEMISTRY MAP**

**Noble Energy, Inc. ~ Howard USX A 9-13**  
SWSW Sec. 9, T6N, R64W, 6th PM  
Weld County, Colorado  
40.495090°, -104.562070°

Project No. <b>C024-056</b>	API # <b>05-123-24494</b>	Facility #
Date <b>3/18/25</b>	Remediation # <b>32969</b>	Filename <b>24056QFL</b>



***Description:***

Howard A09-13 Flowline: FL05 - No Visual Staining or Odor



***Description:***

Howard A09-13 Flowline: FL01 - No Visual Staining or Odor

# Photo Log



***Description:***

Howard A09-13 Flowline: FL02 - No Visual Staining or Odor



***Description:***

Howard A09-13 Flowline: FL03 - No Visual Staining or Odor

# Photo Log



**Description:**

Howard A09-13 Flowline: FL04 - No Visual Staining or Odor