

FREMONT ENVIRONMENTAL INC.

February 23, 2023

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

Subject: **Flowline Closure Data Submittal**
Farr C 18-25
API # 05-123-23727
NESW Sec. 18, T4N, R64W
Weld County, Colorado
Fremont Project No. C022-201
Remediation # 24172

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted flowline abandonment activities for the Noble Energy Inc. (Noble) Farr C 18-25 flowline location. Details of the Farr C 18-25 flowline abandonment are documented in the attached Closure Report. Soil impacts were observed. Groundwater was not encountered.

Please contact me at (303) 956-8714 if you require any additional information. Fremont appreciates the opportunity to provide this service.

Sincerely,

FREMONT ENVIRONMENTAL INC.



Paul V. Henehan, P.E.
Senior Consultant

Attachments:

- Facility Closure Checklist
- Tables
- Figures
- Photos
- Laboratory Reports

1759 REDWING LANE, BROOMFIELD, CO 80020
(303) 956-8714 (DIRECT)

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 & COGCC Facility Number:</i> Farr C 18-25 (API: 05-123-23727)		<i>Date:</i> 12/8/22		<i>Remediation Project #:</i> 24172				
<i>Associated Wells:</i>		<i>Age of Site:</i> 2006		<i>Number of Photos Attached:</i> See Attached				

Starting point: (GPS coordinates and descriptions)
FL01 2 Ft (40.3086812 -104.5973979)

End point: (GPS coordinates and descriptions)
SEP01 SURF (40.3105920 -104.5980250)

USCS Soil Type: SP *Estimated Depth to Groundwater:* > 25 Feet

Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)
Lab analysis confirmed impacts a FL riser adjacent to former wellhead

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>	Combine fluids							
<i>Depth</i>	3 feet							
<i>Age</i>	2006							
<i>Length</i>	~744 feet							
<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: 6 *Total number of samples collected:* 6

Highest PID Reading: High @ 0.0ppm (All Samples) *Total number of samples submitted to lab for analysis:* 2

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:* Impact left in place

Is additional investigation required?
Yes excavation is 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
FARR C 18-25, WELD COUNTY, COLORADO
REM # 24172

Sample ID	Sample Date	Depth (ft)	GPS Data Latitude/Longitude		PDOP Value	VOC Concentration (ppm)
SEP01 SURF	12/08/2022	0.5 Ft	40.3105920	-104.5980250	-	0.0 ppm
FL01 2 Ft	12/8/2022	2.0 Ft	40.3086812	-104.5973979	-	0.0 ppm
FL02 2 Ft	12/8/2022	2.0 Ft	40.3088911	-104.5976863	-	0.0 ppm
FL03 2 Ft	12/8/2022	2.0 Ft	40.3095024	-104.5977525	-	0.0 ppm
FL04 2 Ft	12/8/2022	2.0 Ft	40.3100603	-104.5979625	-	0.0 ppm
FL05 2 Ft	12/8/2022	2.0 Ft	40.3104074	-104.5980305	-	0.0 ppm

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
FARR C 18-25, WELD COUNTY, COLORADO
REM # 24172

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**		
SEP01 SURF	12/08/2022	0.5 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL01 2ft	12/08/2022	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
FARR C 18-25, WELD COUNTY, COLORADO
REM # 24172

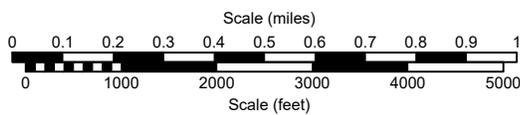
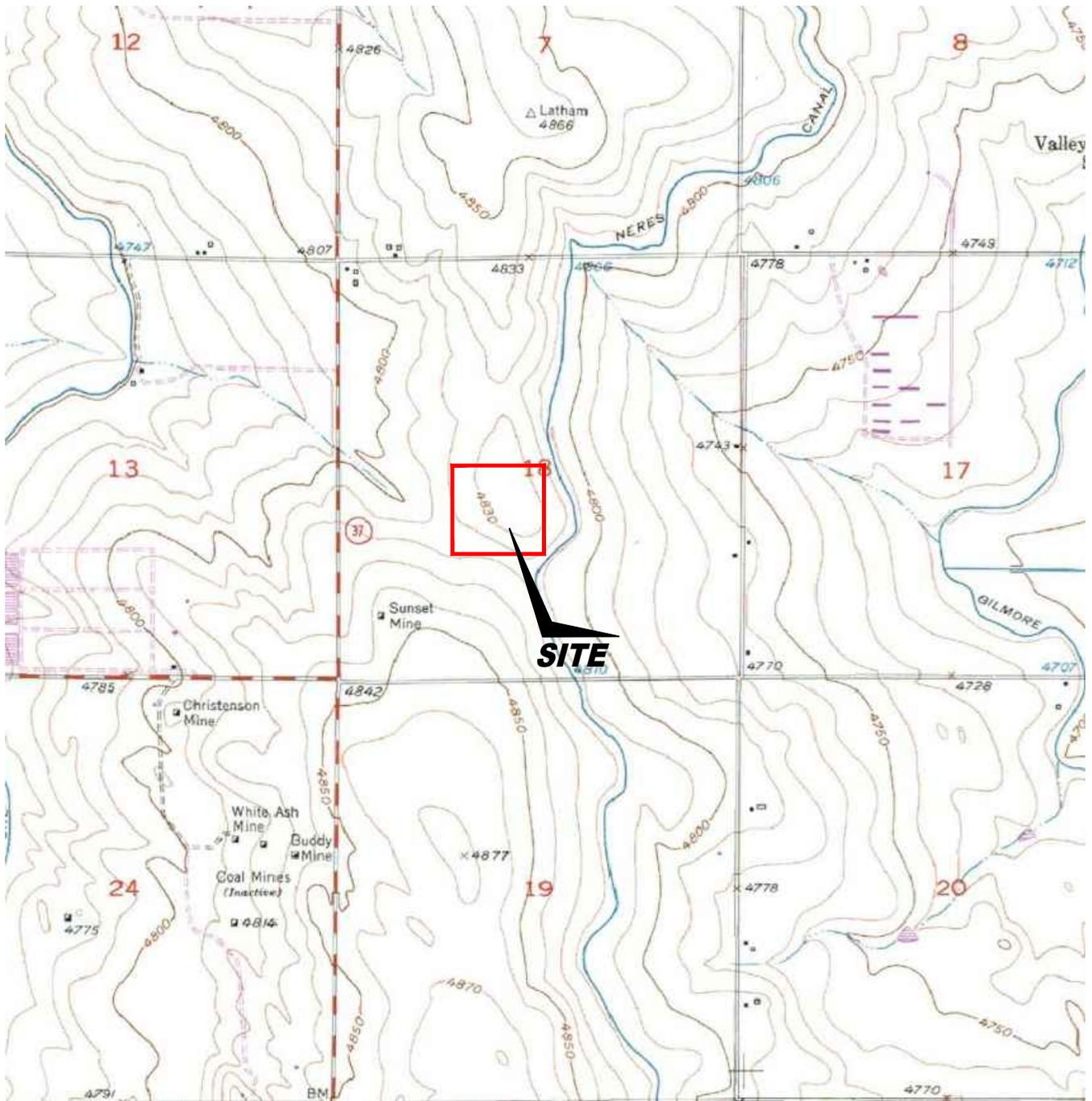
Sample ID	Sample Date	Depth (ft)	Acenaphthene (mg/kg)	Anthracene (mg/kg)	Benzo (a) Anthracene (mg/kg)	Benzo (a) Pyrene (mg/kg)	Benzo (b) Fluoranthene (mg/kg)	Benzo (k) Fluoranthene (mg/kg)	Chrysene (mg/kg)	Dibenzo (a,h) Anthracene (mg/kg)	Fluoranthene (mg/kg)	Fluorene (mg/kg)	Indeno (1,2,3-cd) Pyrene (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
SEP01 SURF	12/08/2022	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
FL01 2ft	12/08/2022	2.0 Ft	<0.00500	<0.00500	0.0170	0.0118	0.0178	0.00704	0.0179	<0.00500	0.0333	<0.00500	0.00898	0.0299	<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
FARR C 18-25, WELD COUNTY, COLORADO
REM # 24172

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
SEP01 SURF	12/08/2022	0.5 Ft	7.65	0.554	1.06	1.13
FL01 2ft	12/08/2022	2.0 Ft	8.07	0.575	0.761	0.999

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



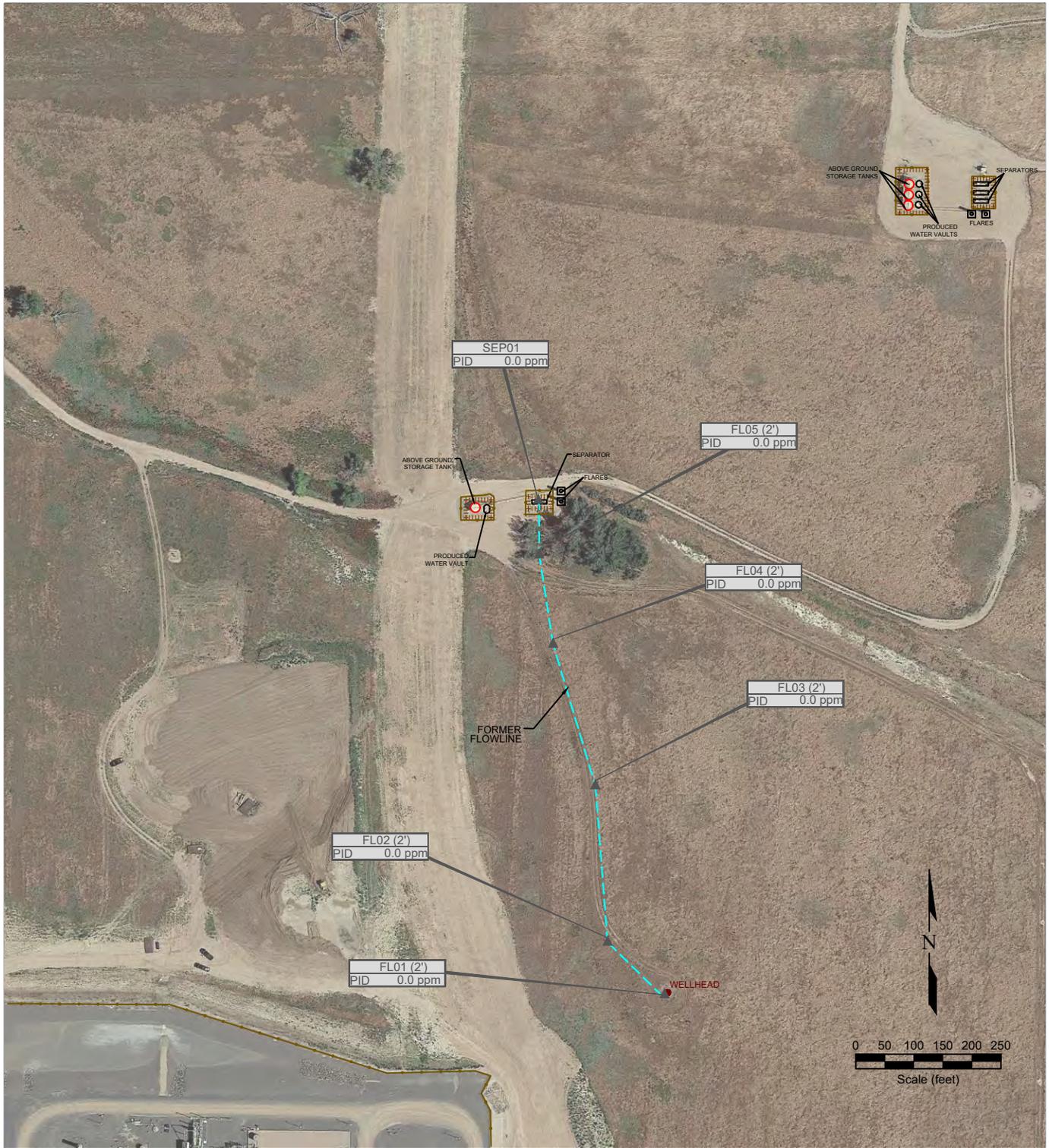
USGS 7.5 MINUTE SERIES (TOPOGRAPHIC)

Figure 1
SITE LOCATION MAP

Noble Energy, Inc. ~ Farr C 18-25
 NESW Sec. 18, T4N, R64W, 6th PM
 Weld County, Colorado
 40.308718°, -104.597412°

Project # C022-201	API # 05-123-23727	Facility # 283986
Date 7/9/25	Remediation # 24172	Filename 22201TFL





LEGEND

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

FL01 (2')
PID 0.0 ppm

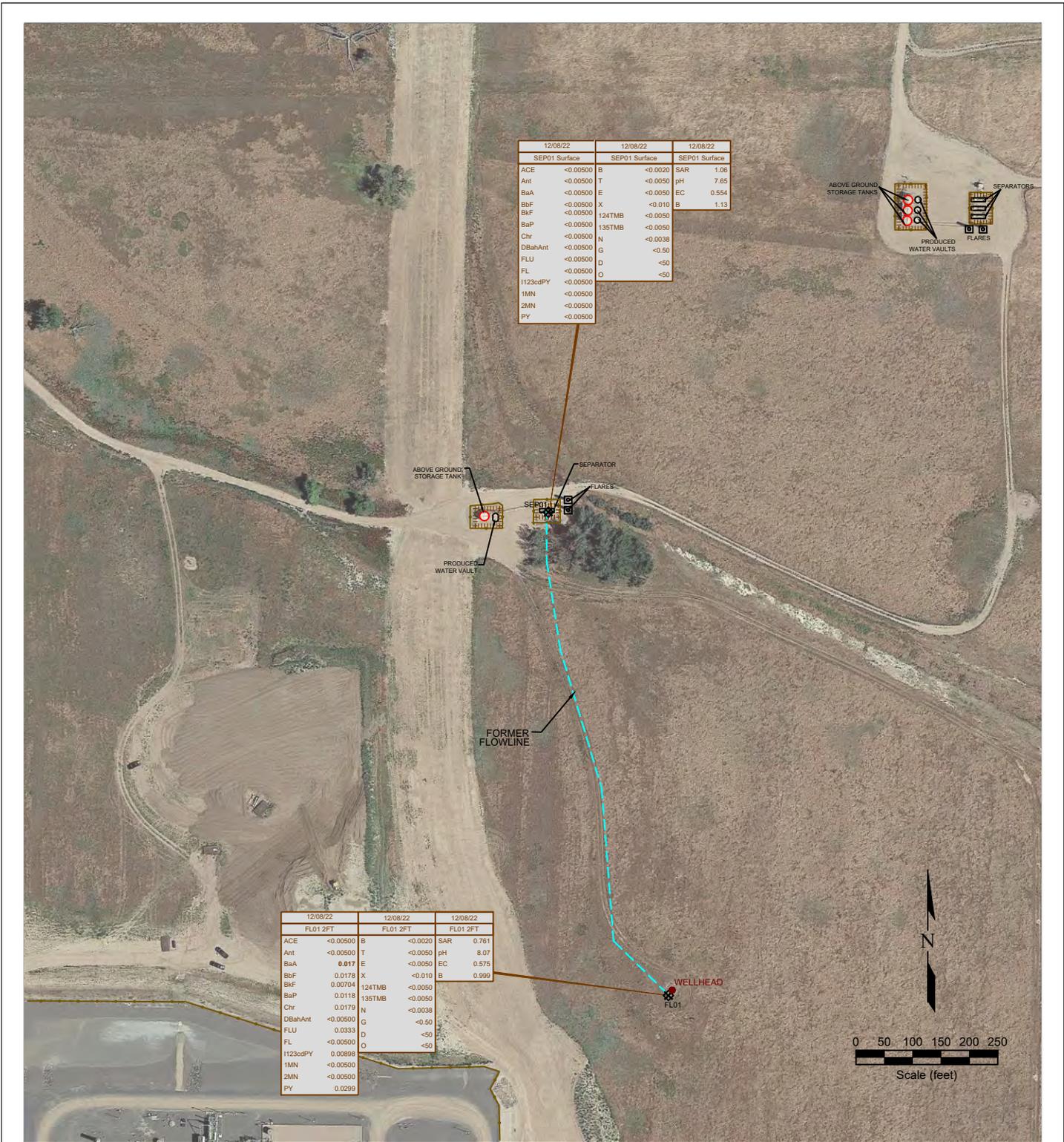
SAMPLE IDENTIFICATION AND DEPTH (ft)
PID READING PPM (parts per million)

**Figure 2
SITE MAP
NOBLE ENERGY INC ~ FARR C 18-25**

NESW Sec. 18, T4N, R64W, 6th PM
Weld County, Colorado
40.308680°, -104.597450°

Project No. C022-201	API # 05-123-23727	Facility #
Date 7/9/25	Remediation # 24172	Filename 22201Q





LEGEND

- WELL HEAD LOCATION (Red circle with 'W')
- SOIL SAMPLE LOCATION (Red circle with 'S')
- ABOVE GROUND STORAGE TANK (Red circle with 'AST')
- FORMER FACILITY (Blue dashed line)
- FLOWLINE (Red dashed line)
- FENCE LINE (Yellow dashed line)
- CONTAINMENT BERM (Dotted line)
- CONTAINMENT WALL (Red solid line)

12/08/22	DATE SAMPLED	12/08/22	DATE SAMPLED	12/08/22	DATE SAMPLED
ACE	FL01 2FT	ACE	FL01 2FT	SAR	FL01 2FT
<0.00500	SAMPLE ID and DEPTH (ft)	<0.00500	SAMPLE ID and DEPTH (ft)	0.761	SAR (units)
Ant	ACENAPHTHENE (mg/kg)	B	BENZENE (mg/kg)	8.07	pH (pH units)
<0.00500	ANTHRACENE (mg/kg)	T	TOLUENE (mg/kg)	0.575	EC (mmhos/cm)
BaA	BENZO (A) ANTHRACENE (mg/kg)	E	ETHYLBENZENE (mg/kg)	0.999	BORON (mg/L)
0.017	BENZO (B) FLUORANTHENE (mg/kg)	X	TOTAL XYLENES (mg/kg)		
<0.00500	BENZO (K) FLUORANTHENE (mg/kg)	N	1,2,4-TRIMETHYLBENZENE (mg/kg)		
0.0118	BENZO (A) PYRENE (mg/kg)	G	1,3,5-TRIMETHYLBENZENE (mg/kg)		
Chr	CHRYSENE (mg/kg)	D	NAPHTHALENE (mg/kg)		
<0.00500	DIBENZ (A,H) ANTHRACENE (mg/kg)	O	TPH-GRO (mg/kg)		
0.0333	FLUORANTHENE (mg/kg)		TPH-DRO (mg/kg)		
FLU	FLUORENE (mg/kg)				
<0.00500	INDENO (1,2,3-CD) PYRENE (mg/kg)				
0.00898	1,4-METHYLNAPHTHALENE (mg/kg)				
<0.00500	2-METHYLNAPHTHALENE (mg/kg)				
2MN	PYRENE (mg/kg)				
<0.00500					
0.0299					

Figure 3
SOIL CHEMISTRY MAP
NOBLE ENERGY INC ~ FARR C 18-25

NESW Sec. 18, T4N, R64W, 6th PM
 Weld County, Colorado
 40.308680°, -104.597450°

Project No. C022-201	API # 05-123-23727	Facility #
Date 7/9/25	Remediation # 24172	Filename 22201Q



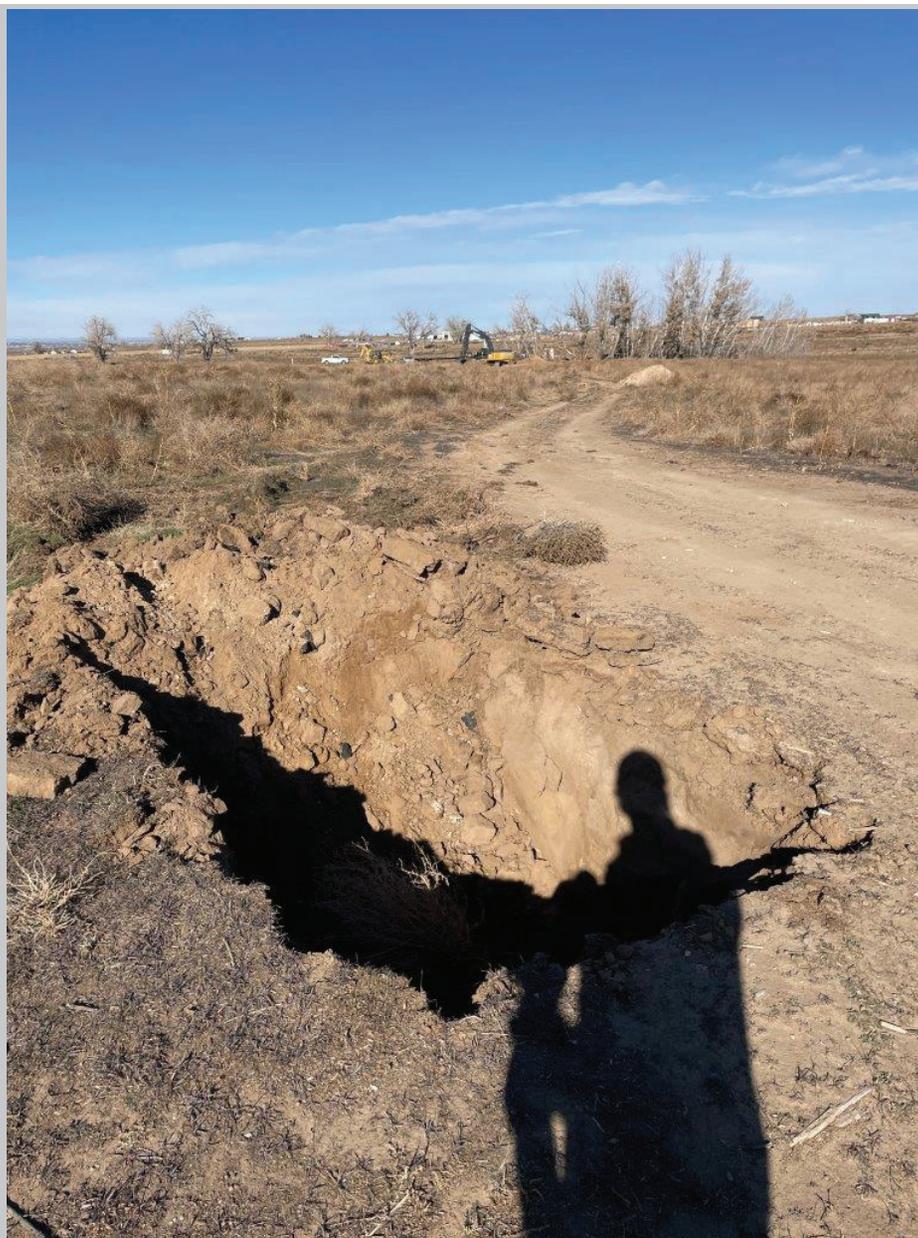
Photo Log



Description:

1 - Farr C 18-25 FL01 bellhole, looking NW

Photo Log



Description:

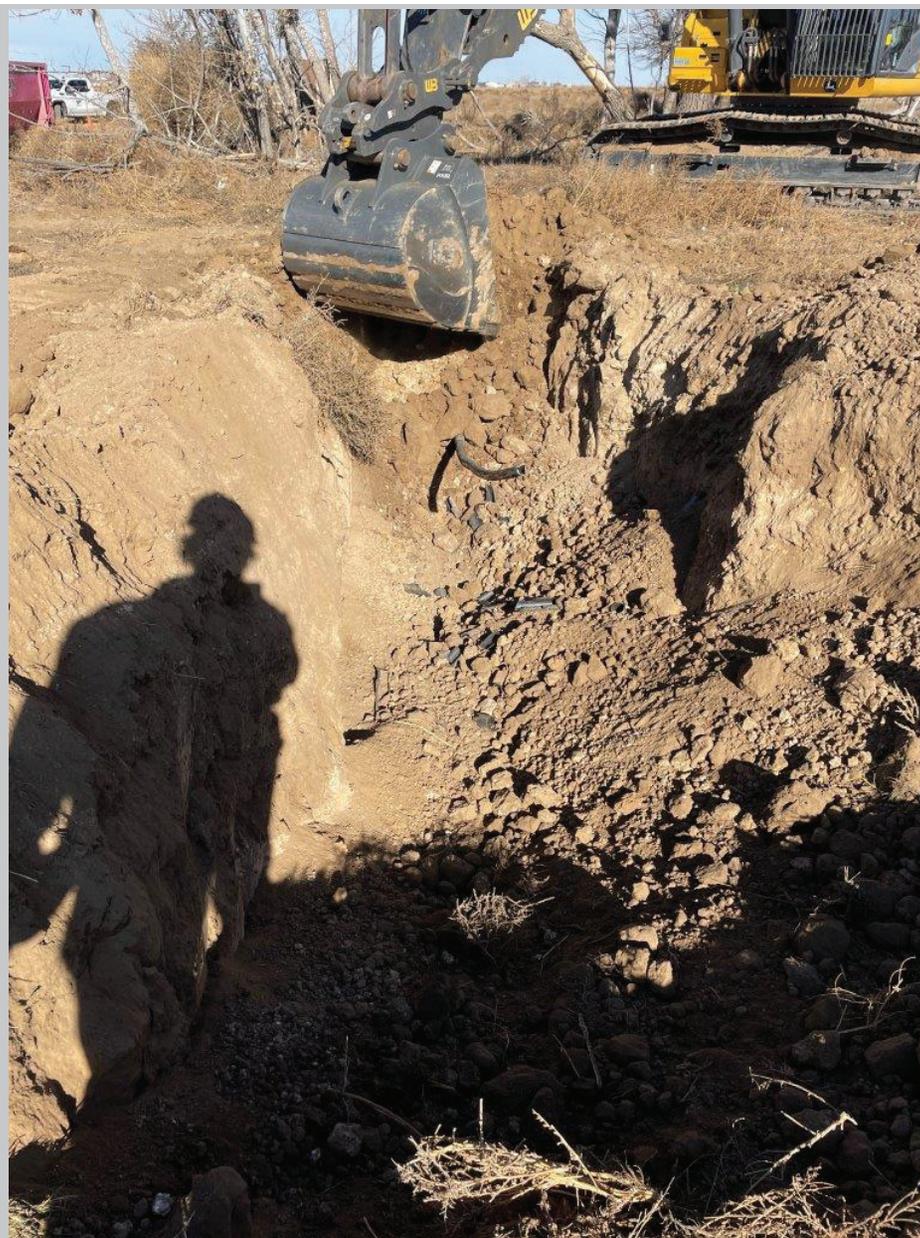
2 - Farr C 18-25 FL02 bellhole, looking N



Description:

3 - Farr C 18-25 FL03 bellhole, looking N

Photo Log



Description:

4 - Farr C 18-25 FL04 bellhole, looking N

Photo Log



Description:

5 - Farr C 18-25 FL05 bellhole, looking SW