

FREMONT ENVIRONMENTAL INC.

March 8, 2024

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

Subject: **Flowline Closure Data Submittal**
Howard A09-10
API # 05-123-24495
NESE Sec. 9, T6N, R64W
Weld County, Colorado
Fremont Project No. C024-057
Remediation # 32221

Dear Mr. Peterson:

As you requested, Fremont Environmental Inc. (Fremont) personnel conducted flowline closure activities for the Noble Energy Inc. (Noble) Howard A09-10. Impacted soil was encountered during abandonment activities. Details of the Howard A09-10 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 Otillar
Consultant

Attachments:

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

TABLE 1
FIELD DATA SUMMARY TABLE
NOBLE 100322
HOWARD USX A 9-10, WELD COUNTY, COLORADO
REM # 32221

Sample ID	Sample Date	Depth	GPS Data		PDOP Value	VOC Concentration (ppm)
			Latitude	Longitude		
FL01 2FT	03/18/2024	2.0 Ft	40.4987748	-104.5527961	0.9	0.3
FL02 2FT	03/18/2024	2.0 Ft	40.4983911	-104.5528497	1.0	0.2
FL03 2FT	03/18/2024	2.0 Ft	40.4983933	-104.5522713	0.9	0.4
FL04 2FT	03/18/2024	2.0 Ft	40.4982713	-104.5511864	0.9	0.2
FL05 2FT	03/18/2024	2.0 Ft	40.4980229	-104.5507378	0.9	0.0
FL06 2FT	03/18/2024	2.0 Ft	40.4970504	-104.5509013	0.8	0.2
FL07 2FT	03/18/2024	2.0 Ft	40.4965330	-104.5509094	0.9	0.4
BKG04 2FT	03/18/2024	2.0 Ft	40.4983806	-104.5530578	1.2	0.0
BKG05 2FT	03/18/2024	2.0 Ft	40.4981234	-104.5527878	0.9	0.0

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
HOWARD USX A 9-10, WELD COUNTY, COLORADO
REM # 32221

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	03/18/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL02 2FT	03/18/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL03 2FT	03/18/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL04 2FT	03/18/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL05 2FT	03/18/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL06 2FT	03/18/2024	2.0 Ft	<0.0020	<0.0050	<0.0050	<0.010	<0.0050	<0.0050	<0.0038	<500	<0.50	<50	<50
FL07 2FT	03/18/2024	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
- NA - Not analyzed

TABLE 3
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA
NOBLE 100322
HOWARD USX A 9-10, WELD COUNTY, COLORADO
REM # 32221

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	03/18/2024	2.0 Ft	<0.00500	0.0083	0.0196	0.0123	0.0171	<0.00500	0.0165	<0.00500	0.0463	0.00543	0.0158	0.0421	<0.00500	<0.00500
FL02 2FT	03/18/2024	2.0 Ft	0.00934	0.0181	0.0283	0.0164	0.0234	0.00689	0.0236	<0.00500	0.0696	0.012	0.0189	0.062	<0.00500	<0.00500
FL03 2FT	03/18/2024	2.0 Ft	0.00635	0.0145	0.0217	0.0134	0.0192	0.0053	0.0186	<0.00500	0.0534	0.00869	0.0158	0.0495	<0.00500	<0.00500
FL04 2FT	03/18/2024	2.0 Ft	<0.00500	0.0165	0.00608	0.00645	0.00793	<0.00500	0.00529	<0.00500	0.0156	<0.00500	<0.00500	0.0128	<0.00500	<0.00500
FL05 2FT	03/18/2024	2.0 Ft	<0.00500	0.0101	<0.00500	0.00533	<0.00500	<0.00500	<0.00500	<0.00500	0.0112	<0.00500	<0.00500	0.00841	<0.00500	<0.00500
FL06 2FT	03/18/2024	2.0 Ft	<0.00500	0.0051	0.00916	0.00755	<0.00500	0.00689	0.00748	<0.00500	0.0241	<0.00500	<0.00500	0.0216	<0.00500	<0.00500
FL07 2FT	03/18/2024	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
- NA - Not analyzed

TABLE 4
SUMMARY OF SOIL SUITABILITY FOR RECLAMATION
NOBLE 100322
HOWARD USX A 9-10, WELD COUNTY, COLORADO
REM # 32221

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	03/18/2024	2.0 Ft	8.65	0.503	0.108	<2.00
FL02 2FT	03/18/2024	2.0 Ft	8.50	0.534	0.122	<2.00
FL03 2FT	03/18/2024	2.0 Ft	8.59	0.434	0.545	<2.00
FL04 2FT	03/18/2024	2.0 Ft	8.13	1.51	1.66	<2.00
FL05 2FT	03/18/2024	2.0 Ft	8.29	1.36	1.88	<2.00
FL06 2FT	03/18/2024	2.0 Ft	8.16	1.50	1.92	<2.00
FL07 2FT	03/18/2024	2.0 Ft	8.82	0.163	0.177	<2.00
BKG04 2FT	03/18/2024	2.0 Ft	8.51	0.458	0.306	<2.00
BKG05 2FT	03/18/2024	2.0 Ft	8.45	0.484	0.592	<2.00
Maximum Root Background Concentration (0 - 3 ft)			8.51	0.484	0.592	<2.00
Average Root Background Concentration (0 - 3 ft)			8.48	0.471	0.449	<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
HOWARD USX A 9-10, WELD COUNTY, COLORADO
REM # 32221

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	03/18/2024	2.0 Ft	3.29	75.4	<0.200	<0.30	11.4	5.58	5.70	<0.260	<0.0200	27.3
FL02 2FT	03/18/2024	2.0 Ft	3.95	75.3	<0.200	<0.30	9.08	5.58	5.84	<0.260	<0.0200	25.6
FL03 2FT	03/18/2024	2.0 Ft	3.72	73.3	<0.200	<0.30	7.57	5.38	5.79	<0.260	<0.0200	22.9
FL04 2FT	03/18/2024	2.0 Ft	4.28	101	<0.200	<0.30	6.80	5.84	8.07	<0.260	<0.0200	26.3
FL05 2FT	03/18/2024	2.0 Ft	5.37	117	<0.200	<0.30	7.87	7.30	8.50	<0.260	<0.0200	30.4
FL06 2FT	03/18/2024	2.0 Ft	5.21	125	<0.200	<0.30	8.02	7.07	9.63	<0.260	<0.0200	28.9
FL07 2FT	03/18/2024	2.0 Ft	4.11	258	<0.200	<0.30	8.49	8.18	8.04	<0.260	<0.0200	33.4
BKG04 2FT	03/18/2024	2.0 Ft	3.15	88.4	<0.200	<0.30	12.3	5.60	5.89	<0.260	<0.0200	29.3
BKG05 2FT	03/18/2024	2.0 Ft	3.86	83.3	<0.181	<0.30	10.1	5.86	5.84	<0.236	<0.0181	26.3
Maximum Root Zone Background Concentration (0 - 3 ft)			3.86	88.4	<0.200	<0.30	12.3	5.86	5.89	<0.260	<0.0200	29.3
125% Average Root Zone Background Concentration (0 - 3 ft)			4.38	107	<0.200	<0.30	14.0	7.16	7.33	<0.260	<0.0200	34.8

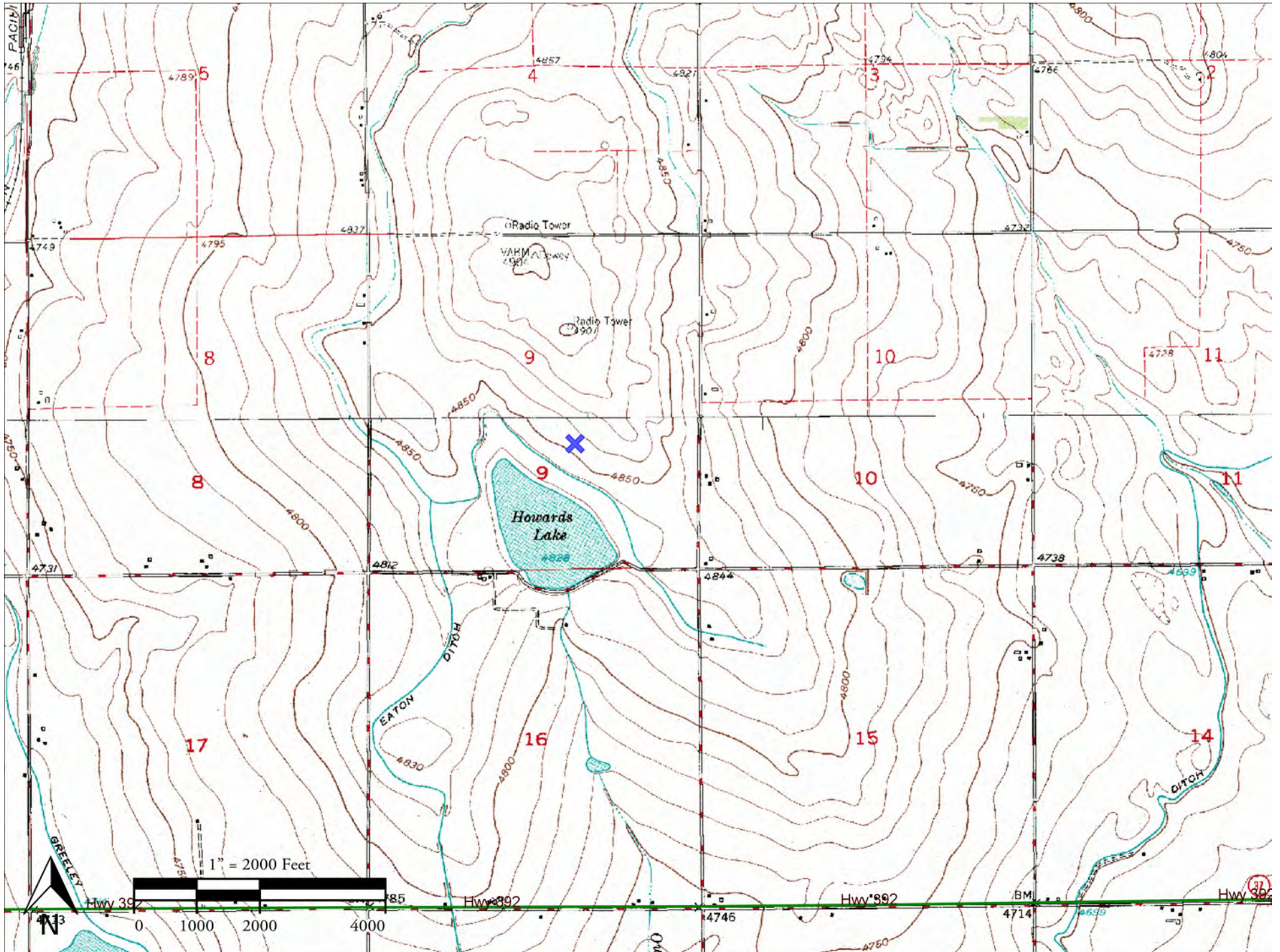
1. Bold values exceed the ECMC Table 915-1 limit(s)

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

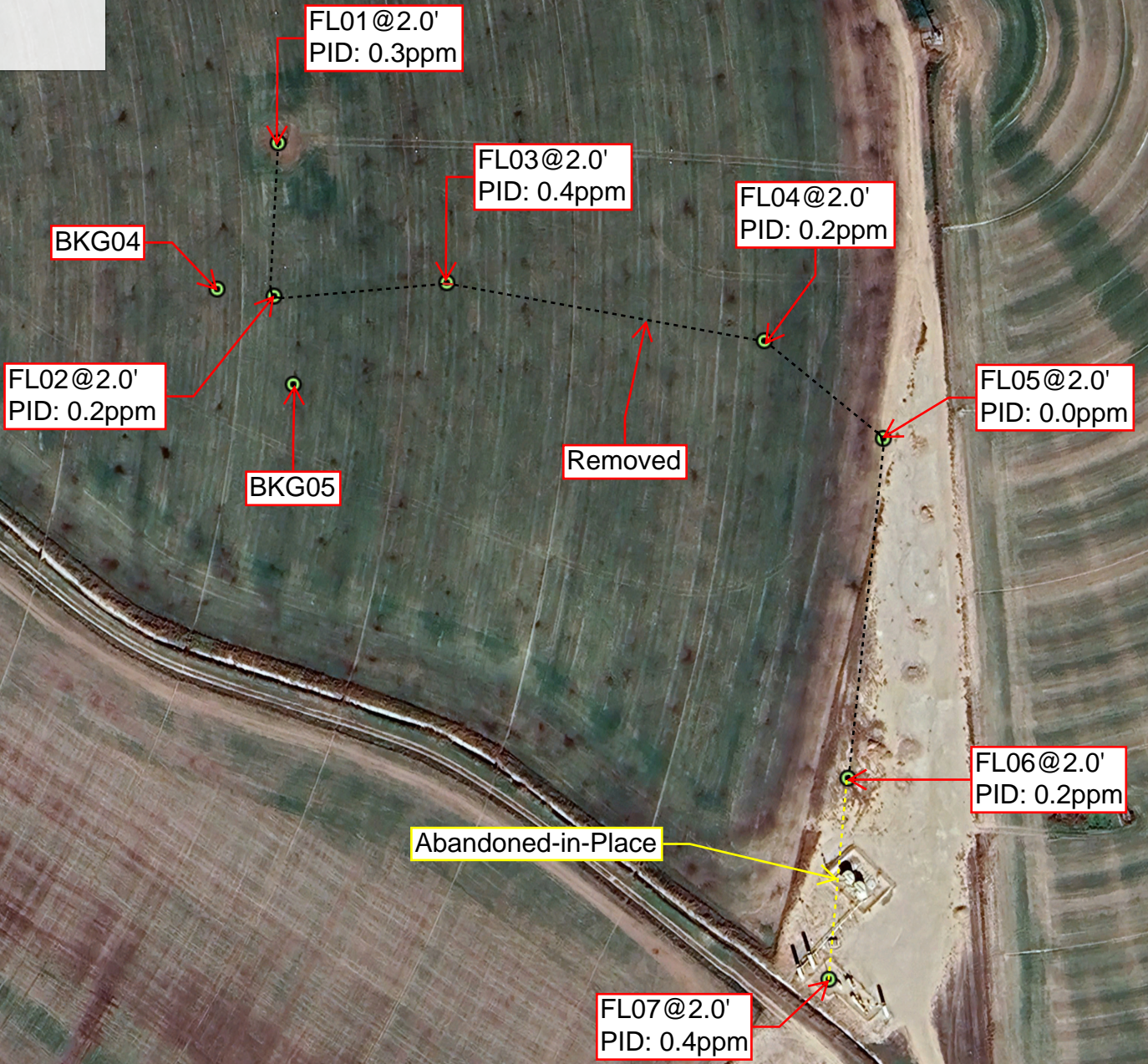
NA - Not analyzed

Howard USX A09-10 Flowline



HOWARD USX A 9-10

Remediation #: 32221
API: 05-123-24495
Facility ID: 288024
Lat/Long: 40.498780, -104.552830
NWSE Sec. 9, T6N, R64W
Fremont Proj. C024-057





Description:

#1 Howard USX A09-10 Flowline - FL01 No Visual Staining or Odor



Description:

#2 Howard USX A09-10 Flowline - FL02 2FT, No Visual Staining or Odor



Description:

#3 Howard USX A09-10 Flowline - FL03 2FT, No Visual Staining or Odor

Photo Log



Description:

#4 Howard USX A09-10 Flowline - FL04 2FT, No Visual Staining or Odor



Description:

#5 Howard USX A09-10 Flowline - FL05 2FT, No Visual Staining or Odor

Photo Log



Description:

#6 Howard USX A09-10 Flowline - FL06 2FT, No Visual Staining or Odor