

# Wellhead Closure Checklist

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

Additional attachments (optional): <u>      </u>		Pit Closure <u>      </u>		Tank Battery Closure <u>      </u>		Flowline Closure <u>      </u>		Partially Buried Vault Closure <u>      </u>
Site Name & COGCC Facility Number: Waste Management USX Y #3-15		Date: 10/13/23					Remediation Project #: 31564	
Associated Wells: 05-123-24801		Age of Site: years					Number of Photos Attached: 6	
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)							40.162187 / -104.534507	
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)								
Good condition								
USCS Soil Type: Silty Sand					Estimated Depth to Groundwater: >20'			
Hydrocarbon Impacted Soils / Spills: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)								
None observed								
Salt Crusted Soils or Impacted Vegetation: (Note estimated size and if impact appears to be surficial or extends to an unknown depth)								
None observed								
Wellhead(s)								
Well API	05-123-24801							
Age	years							
Condition of surface around wellhead	Good - No odor/no staining							
PID Readings	WH-N: 0.4	WH-E: 0.6	WH-S: 0.2	WH-W: 0.3				
Condition of subsurface (staining present)	Good - No odor/no staining							
PID Readings	0.5	0.8	0.9	1.0	1.0			
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04	WH-FS-01			
Photo Number(s)	See photo log							
Other observations regarding wellheads:								
Well casing cut/capped following assessment.								
Summary								
Was impacted soil identified?								
<input checked="" type="radio"/> No      Yes - less than 10 cubic yards      Yes - more than 10 cubic yards								
Total number of samples field screened: 9					Total number of samples collected: 9			
Highest PID Reading: 1.0					Total number of samples submitted to lab for analysis: 1			
If more than 10 cubic yards of impacted soil were observed:								
Vertical extent:					Estimated spill volume:			
Lateral extent:					Volume of soil removed:			
Is additional investigation required?								
Was groundwater encountered during the investigation?								
<input checked="" type="radio"/> 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:								



## **FIGURES**

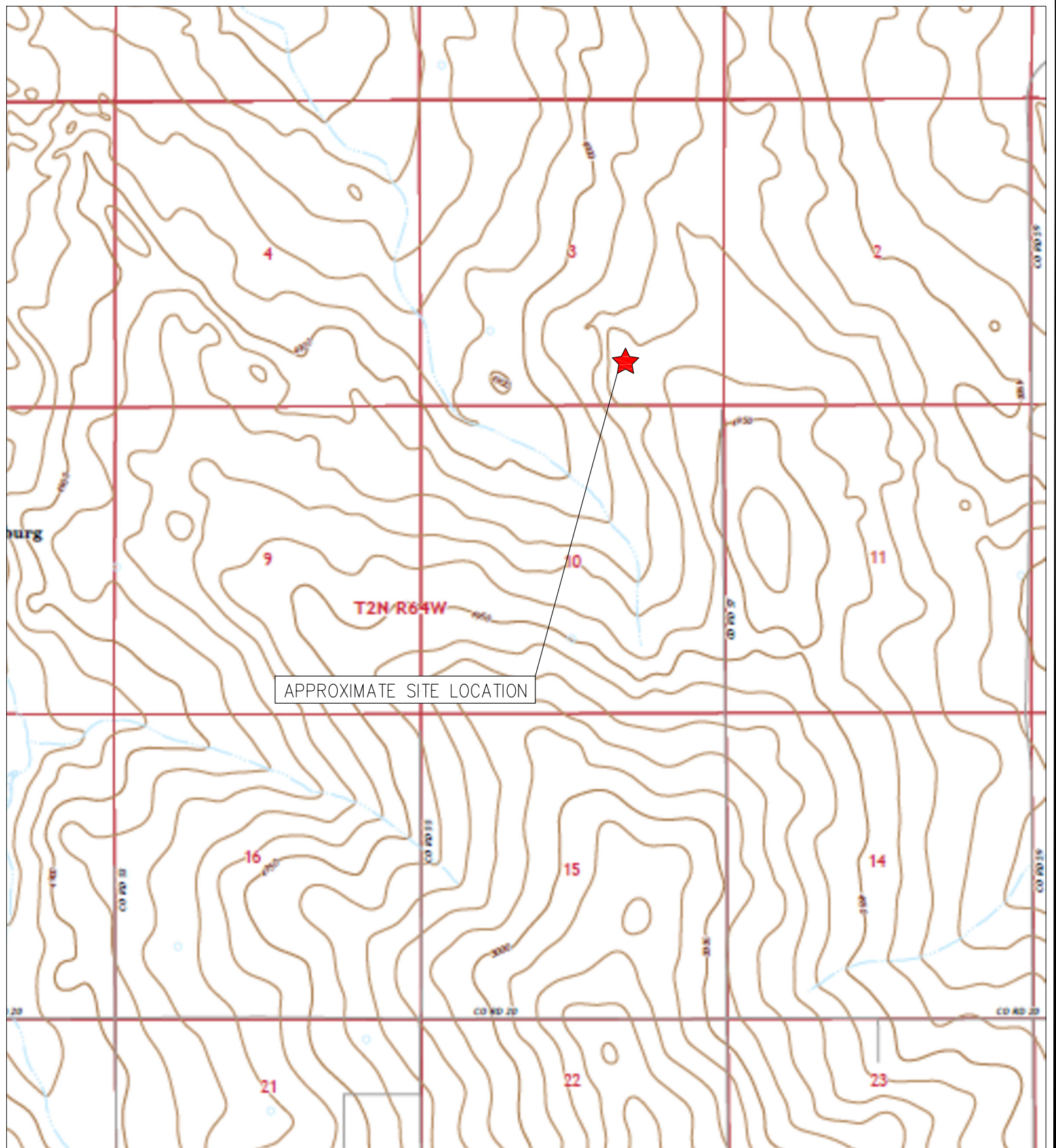
**Figure 1: Topographic Site Location Map**

**Figure 2: Aerial Site Location Map**

**Figure 3: Sample Location Map**

**Figure 4: Soil Analytical Map**

**Figure 5: Metals in Soil Map**



TOPOGRAPHIC SITE LOCATION MAP  
WASTE MANAGEMENT USX Y #3-15  
CLOSURE ASSESSMENT  
40.162187 / -104.534507  
SW¼ SE¼ SEC.3 T2N R64W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-24801  
REMEDATION # 31564



**EAGLE**  
ENVIRONMENTAL  
CONSULTING, LLC

8000 W 44th Ave, Wheat Ridge, CO 80033  
Ph: 303-433-0479 • F: 303-325-5449

SOURCE: USGS 7.5 MINUTE TOPOGRAPHIC MAP,  
KLUG RANCH, CO QUADRANGLE 2022

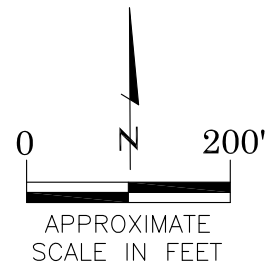
FIGURE NO. 1





# LEGEND

FORMER WASTE MANAGEMENT USX Y #3-15 WELLHEAD (PLUGGED AND ABANDONED)



AERIAL SITE LOCATION MAP  
WASTE MANAGEMENT USX Y #3-15  
CLOSURE ASSESSMENT  
40.162187 / -104.534507  
SW¼ SE¼ SEC.3 T2N R64W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-24801  
REMEDATION # 31564

FIGURE NO.

2

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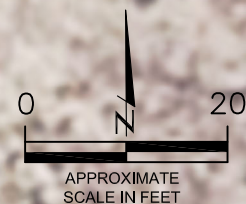
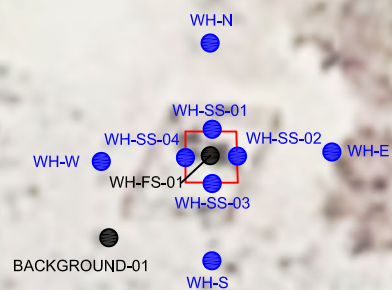
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# LEGEND

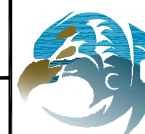
- WELLHEAD ASSESSMENT BOUNDARIES
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS



SAMPLE LOCATION MAP  
WASTE MANAGEMENT USX Y #3-15  
CLOSURE ASSESSMENT  
40.162187 / -104.534507  
SW¼ SE¼ SEC.3 T2N R64W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-24801  
REMEDATION # 31564

FIGURE NO.  
3

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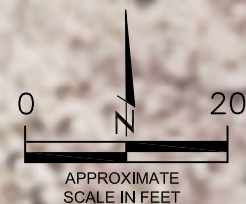


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BACKGROUND-01@4'  
10/13/23  
4'  
Brn = NA  
EC = NA  
SAR = NA  
pH = 8.08

WH-FS-01@6'  
10/13/23  
6'  
pH = **8.31**  
ALL OTHERS = BRL

WH-SS-01  
WH-SS-02  
WH-SS-03  
WH-SS-04  
WH-FS-01  
BACKGROUND-01



#### LEGEND

- WELLHEAD ASSESSMENT BOUNDARIES
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

#### PARAMETERS

SAMPLE LOCATION  
DATE  
DEPTH (FEET)  
B = BENZENE (mg/kg)  
T = TOLUENE (mg/kg)  
E = ETHYLBENZENE (mg/kg)  
X = TOTAL XYLENES (mg/kg)  
N = NAPHTHALENE (mg/kg)  
G = TPH-GRO (mg/kg)  
D = TPH-DRO (mg/kg)  
R = TPH-RRO (mg/kg)  
1,2,4-TMB = 1,2,4 TRIMETHYLBENZENE (mg/kg)  
1,3,5-TMB = 1,3,5 TRIMETHYLBENZENE (mg/kg)  
Brn= BORON (mg/L)  
EC = SPECIFIC CONDUCTANCE (mmhos/cm)  
SAR= SODIUM ADSORPTION RATIO  
pH = pH (pH UNITS)  
POLYCYCLIC AROMATIC HYDROCARBONS (PAHs) (mg/kg)

mg/kg = MILLIGRAMS PER KILOGRAM  
mg/L = MILLIGRAMS PER LITER  
mmhos/cm = MILLIHOS PER CENTIMETER

NA = NOT ANALYZED

BRL = BELOW REGULATORY LIMITS

TPH-GRO = TOTAL PETROLEUM HYDROCARBONS - GASOLINE RANGE ORGANICS  
TPH-DRO = TOTAL PETROLEUM HYDROCARBONS - DIESEL RANGE ORGANICS  
TPH-RRO = TOTAL PETROLEUM HYDROCARBONS - RESIDUAL RANGE ORGANICS

NOTES:  
VALUES PRESENTED IN **BOLD** EXCEED ECMC TABLE 915-1 REGULATORY LIMITS.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

SOIL ANALYTICAL MAP  
WASTE MANAGEMENT USX Y #3-15  
CLOSURE ASSESSMENT  
40.162187 / -104.534507  
SW¼ SE¼ SEC.3 T2N R64W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-24801  
REMEDATION # 31564

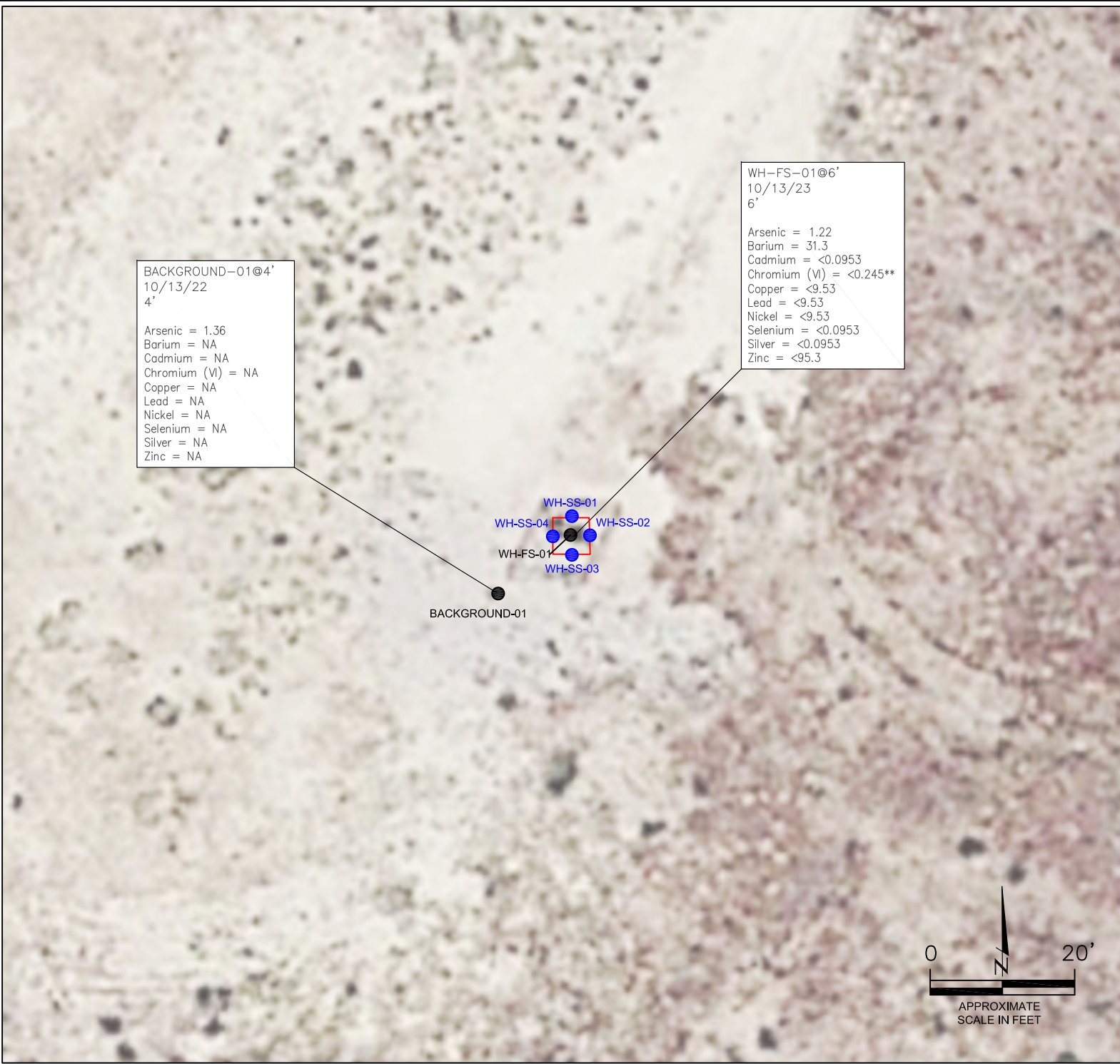
FIGURE NO.  
4

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BACKGROUND-01@4'  
10/13/22  
4'

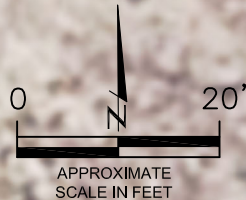
Arsenic = 1.36  
Barium = NA  
Cadmium = NA  
Chromium (VI) = NA  
Copper = NA  
Lead = NA  
Nickel = NA  
Selenium = NA  
Silver = NA  
Zinc = NA

WH-FS-01@6'  
10/13/23  
6'

Arsenic = 1.22  
Barium = 31.3  
Cadmium = <0.0953  
Chromium (VI) = <0.245\*\*  
Copper = <9.53  
Lead = <9.53  
Nickel = <9.53  
Selenium = <0.0953  
Silver = <0.0953  
Zinc = <95.3

WH-SS-01  
WH-SS-02  
WH-SS-03  
WH-SS-04  
WH-FS-01

BACKGROUND-01



LEGEND

- WELLHEAD ASSESSMENT BOUNDARIES
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- SS-02 APPROXIMATE LOCATION OF SOIL SAMPLES SUBMITTED FOR LABORATORY ANALYSIS

PARAMETERS

SAMPLE LOCATION  
DATE SAMPLE COLLECTED  
APPROXIMATE DEPTH  
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)

mg/kg = MILLIGRAMS PER KILOGRAM

NA – NOT ANALYZED

NOTES:

VALUES PRESENTED WITH A LESS THAN SYMBOL (<) DID NOT CONTAIN CONCENTRATIONS AT/OR ABOVE LABORATORY REPORTING LIMITS AND/OR MINIMUM DETECTION LIMITS.

VALUES PRESENTED IN **BOLD** EXCEED ECMC TABLE 915-1 REGULATORY LIMITS.

\*VALUES EXCEED ECMC TABLE 915-1 PROTECTION OF GROUNDWATER SOIL SCREENING LEVELS, ONLY.

\*\*ACHIEVABLE PRACTICAL QUANTITATIVE LIMITS FOR HEXAVALENT CHROMIUM (Cr VI) IN SOILS IS IN THE RANGE OF 0.1 TO 1 mg/kg.

ELEVATED METALS ARE NATURALLY OCCURRING IN COLORADO. LOCAL CLEAN-UP LEVELS ARE 1.25\*BACKGROUND WHERE APPLICABLE.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

METALS IN SOIL MAP  
WASTE MANAGEMENT USX Y #3-15  
CLOSURE ASSESSMENT  
40.162187 / -104.534507  
SW¼ SE¼ SEC.3 T2N R64W 6PM  
WELD COUNTY, COLORADO  
API # 05-123-24801  
REMEDIAL # 31564

FIGURE NO.  
5

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## **TABLES**

**Table 1: Field Data Summary Table**

**Table 2: Summary of Volatile Organic Soil Chemistry Data**

**Table 3: Summary of Polycyclic Aromatic Hydrocarbon Soil Chemistry Data**

**Table 4: Summary of Soil Suitability for Reclamation**

**Table 5: Summary of Metals in Soil Chemistry Data**



**TABLE 1**  
**FIELD DATA SUMMARY TABLE**  
**NOBLE ENERGY 100322**  
**WASTE MANAGEMENT USX Y #3-15, WELD COUNTY, COLORADO**  
**REM # 31564**

Sample ID	Sample Date	Depth	GPS Data		VOC Concentration (ppm)
			Latitude/Longitude		
WH-FS-01 @ 6'	10/13/2023	6	40.162192	-104.534517	1.0
WH-SS-01 @ 5'	10/13/2023	5	40.162198	-104.534514	0.5
WH-SS-02 @ 5'	10/13/2023	5	40.162192	-104.534506	0.8
WH-SS-03 @ 5'	10/13/2023	5	40.162185	-104.534516	0.9
WH-SS-04 @ 5'	10/13/2023	5	40.162191	-104.534524	1.0
WH-N @ 0.5'	10/13/2023	0.5	40.162221	-104.534515	0.4
WH-E @ 0.5'	10/13/2023	0.5	40.162190	-104.534473	0.6
WH-S @ 0.5'	10/13/2023	0.5	40.162162	-104.534515	0.2
WH-W @ 0.5'	10/13/2023	0.5	40.162189	-104.534553	0.3
Background-01 @ 4'	10/13/2023	4	40.162170	-104.534553	0.6

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 ENERGY 100322  
WASTE MANAGEMENT USX Y #3-15, WELD COUNTY, COLORADO  
REM # 31564

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**		
WH-FS-01 @ 6'	10/13/2023	6	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00200	<0.00380	<500	<0.200	<25.0	<100

1. Bold values are equal to or 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



TABLE 3  
SUMMARY OF POLYCYCLIC AROMATIC HYDROCARBON SOIL CHEMISTRY DATA  
NOBLE ENERGY 100322  
WASTE MANAGEMENT USX Y #3-15, WELD COUNTY, COLORADO  
REM # 31564

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
WH-FS-01 @ 6'	10/13/2023	6	<0.020	<0.020	<0.005	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.002	<0.002

1. Bold values are equal to or 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 ENERGY 100322  
WASTE MANAGEMENT USX Y #3-15, WELD COUNTY, COLORADO  
REM # 31564

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
WH-FS-01 @ 6'	10/13/2023	6	8.31	0.360	1.59	<0.100
Background-01 @ 4'	10/13/2023	4	8.08	NA	NA	NA
Maximum Background Concentration			8.08			
Average Background Concentration			8.08			

1. Bold values are equal to or 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 ENERGY 100322  
WASTE MANAGEMENT USX Y #3-15, WELD COUNTY, COLORADO  
REM # 31564

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
WH-FS-01 @ 6'	10/13/2023	6	1.22	31.3	<0.0953	<0.245	<9.53	<9.53	<9.53	<0.0953	<0.0953	<95.3
Background-01 @ 4'	10/13/2023	4	1.36	NA	NA	NA	NA	NA	NA	NA	NA	NA
Maximum Background Concentration			1.36									
125% Maximum Background Concentration			1.70									

1. Bold values are equal to or 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



## **ATTACHMENT A**

### **Photo Log**



# Waste Management USX Y #3-15

API # 05-123-24801

Remediation # 31564

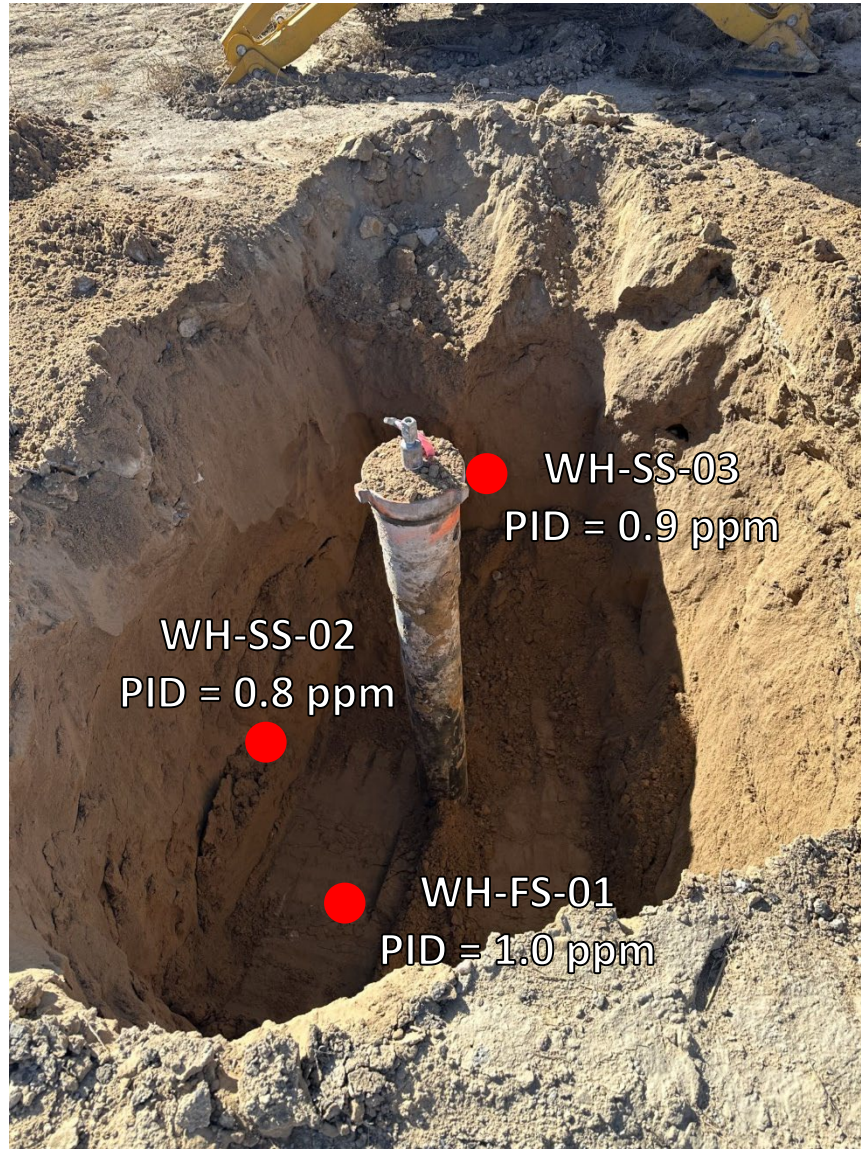
Closure Assessment

October 2023



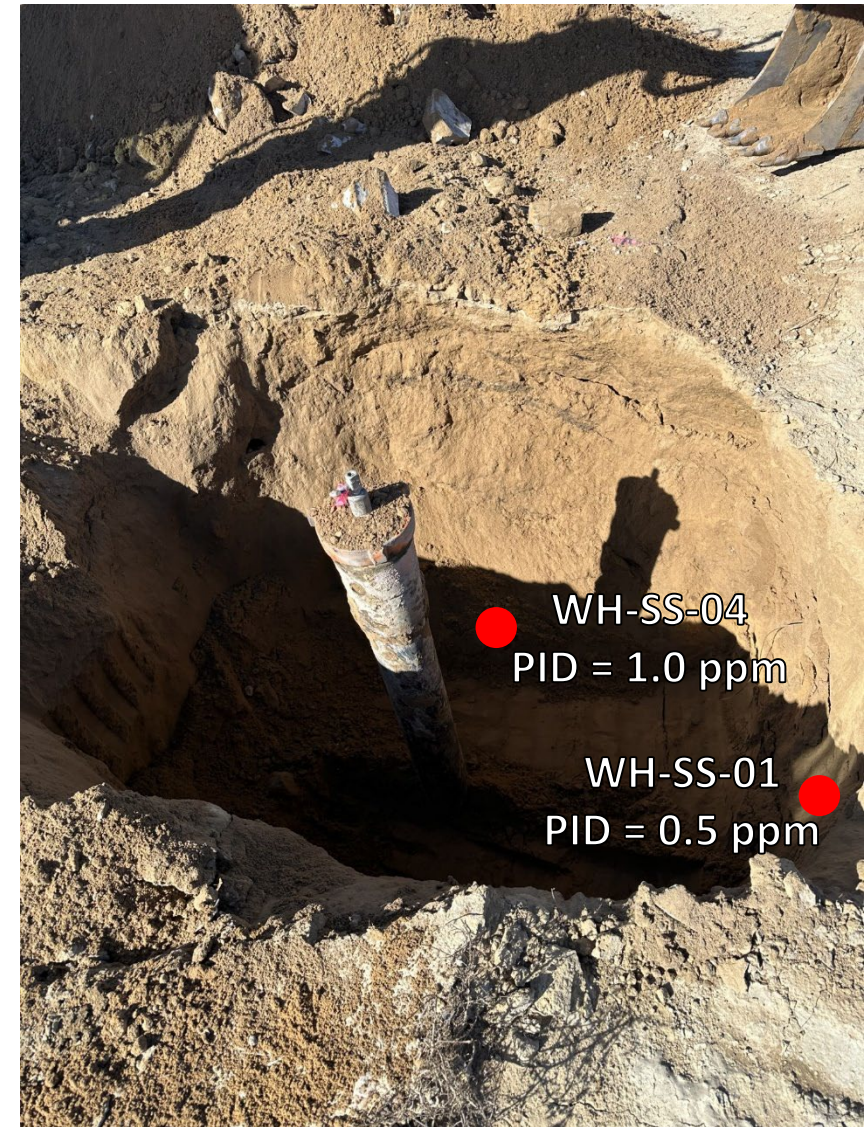


## Wellhead Excavation – 10/13/23



Looking South

No petroleum hydrocarbon staining or odor observed



Looking West

No petroleum hydrocarbon staining or odor observed



## Wellhead Surface – 10/13/23



WH-N  
PID = 0.4 ppm

Looking North

Site in good condition – no petroleum hydrocarbon staining or odor  
Observed on surface around wellhead



WH-E  
PID = 0.6 ppm

Looking East

Site in good condition – no petroleum hydrocarbon staining or odor  
Observed on surface around wellhead



## Wellhead Surface – 10/13/23



Looking South

Site in good condition – no petroleum hydrocarbon staining or odor  
Observed on surface around wellhead



Looking West

Site in good condition – no petroleum hydrocarbon staining or odor  
Observed on surface around wellhead