

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>
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Site Name & COGCC Facility Number: UPV #5-5H3	Date: 02/07/24	Remediation Project #: 30272
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Associated Wells: 05-123-18860	Age of Site: years	Number of Photos Attached: 2
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Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple) 40.429766 / -104.467816	Estimated Facility Size (acres): <u> </u>
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General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.)

Good condition

USCS Soil Type: Clayey SAND	Estimated Depth to Groundwater: ~20-30'
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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	05-123-18860				
Age	years				
Condition of surface around wellhead	Good - No odor/no staining				
PID Readings	WH-N: 0.3	WH-E: 0.6	WH-S: 0.5	WH-W: 0.6	
Condition of subsurface (staining present)	Good - No odor/no staining				
PID Readings	9.0	2.8	9.8	2.3	10.2
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? 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
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Highest PID Reading: 10.2	Total number of samples submitted to lab for analysis: 1
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If more than 10 cubic yards of impacted soil were observed:

Vertical extent:	Estimated spill volume:
N/A	
Lateral extent:	Volume of soil removed:

Is 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
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Date Groundwater was encountered:	Commencement date of removal:
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Sheen on groundwater? Yes No	Volume of groundwater removed prior to sampling:
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Free product observed? Yes No	Volume of groundwater removed post sampling:
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Total number of samples collected:	Total Volume of groundwater removed:
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Total number of samples submitted to lab for analysis:	
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FIGURES

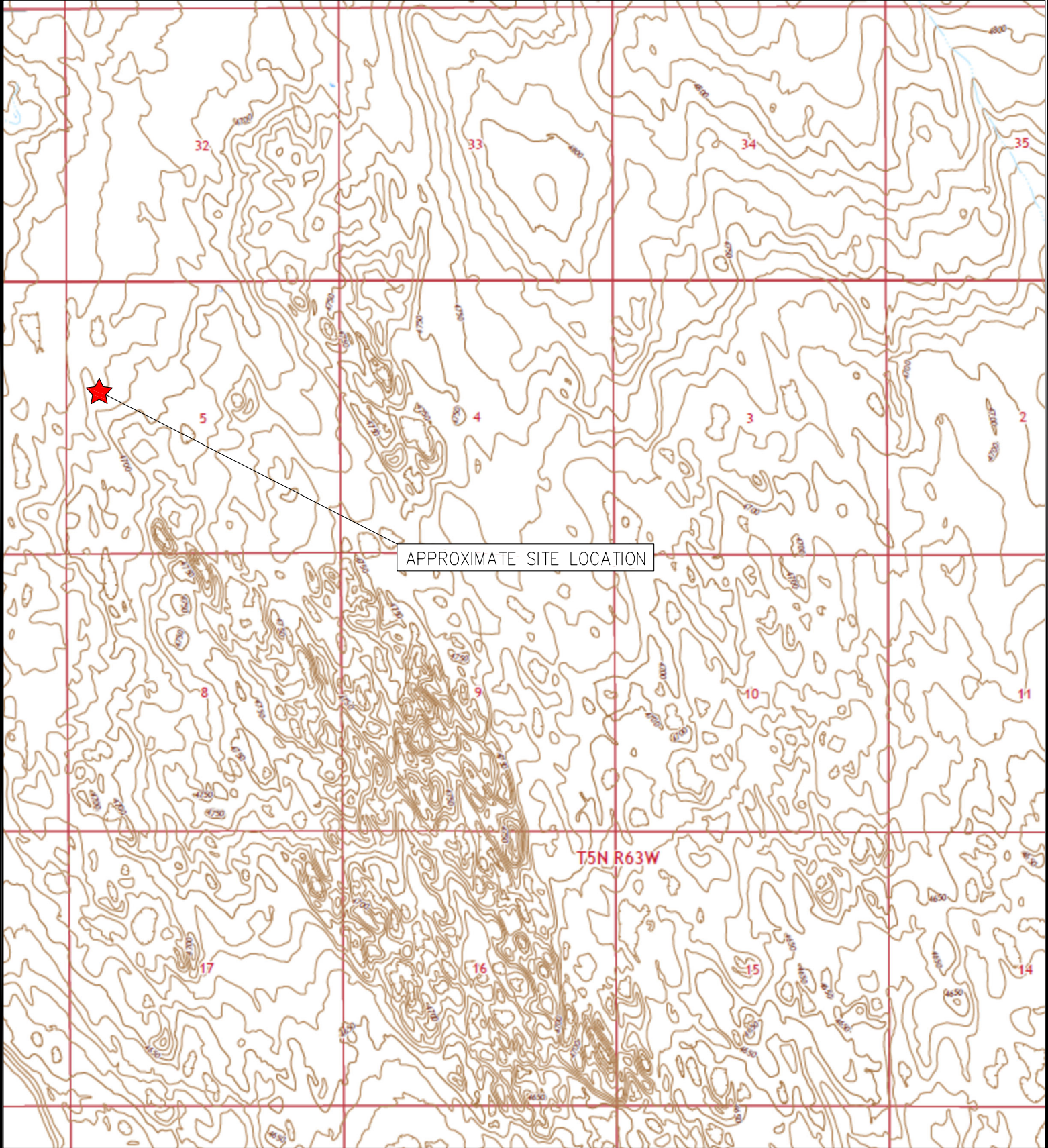
Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Sample Location Map

Figure 4: Soil Analytical Map

Figure 5: Metals in Soil Map



APPROXIMATE SITE LOCATION

T5N R63W

TOPOGRAPHIC SITE LOCATION MAP
 UPV #5-5H3
 CLOSURE ASSESSMENT
 40.429766 / -104.467816
 SW¼ NW¼ SEC.5 T5N R63W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-18860
 REMEDIATION # 30272



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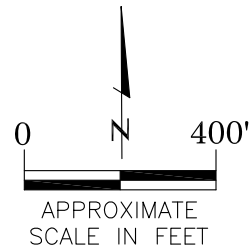
8000 W 44th Ave, Wheat Ridge, CO 80033
 Ph: 303-433-0479 • F: 303-325-5449





LEGEND

- FORMER UPV #5-5H3 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



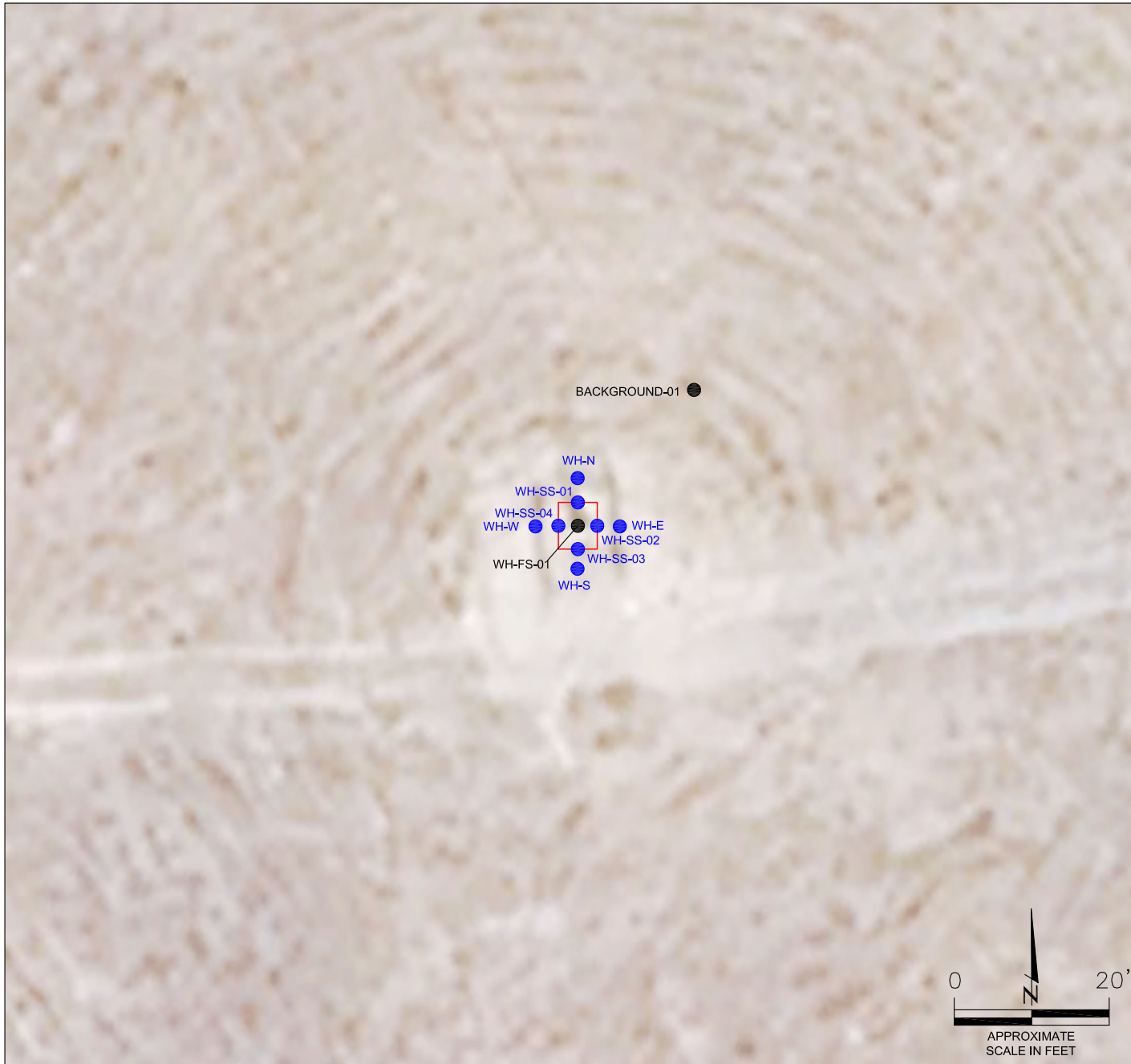
AERIAL SITE LOCATION MAP
 UPV #5-5H3
 CLOSURE ASSESSMENT
 40.429766 / -104.467816
 SW¼ NW¼ SEC.5 T5N R63W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-18860
 REMEDIATION # 30272

FIGURE NO.
2

DRAWN BY:
RS

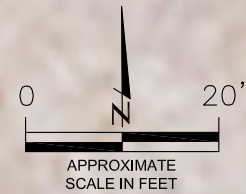


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LEGEND

- - - 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



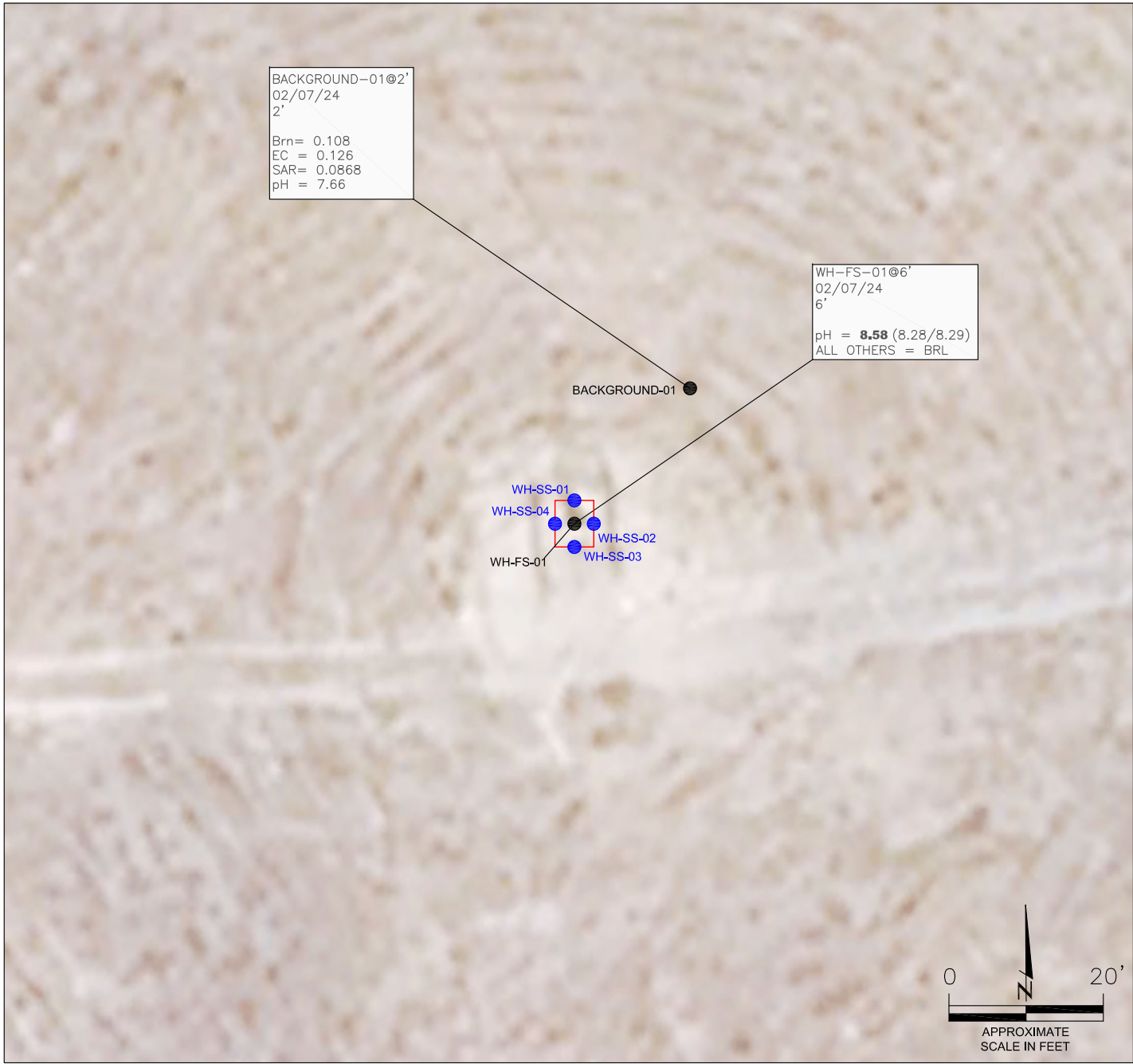
SAMPLE LOCATION MAP
 UPV #5-5H3
 CLOSURE ASSESSMENT
 40.429766 / -104.467816
 SW¼ NW¼ SEC.5 T5N R63W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-18860
 REMEDIATION # 30272

FIGURE NO.
3

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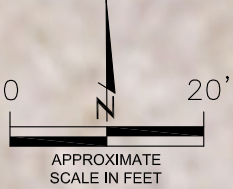
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BACKGROUND-01@2'
02/07/24
2'
Brn = 0.108
EC = 0.126
SAR = 0.0868
pH = 7.66

WH-FS-01@6'
02/07/24
6'
pH = **8.58** (8.28/8.29)
ALL OTHERS = BRL

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



LEGEND

- - - WELLHEAD ASSESSMENT BOUNDARIES
- APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- 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 = MILLIMHOS PER CENTIMETER

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:
LABORATORY RERUNS WERE COMPLETED AS APPLICABLE ON SAMPLES WITH pH VALUES OUTSIDE OF ECMC TABLE 915-1 REGULATORY RANGE. RESULTS OF THE RERUNS ARE PRESENTED IN PARENTHESSES.

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

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

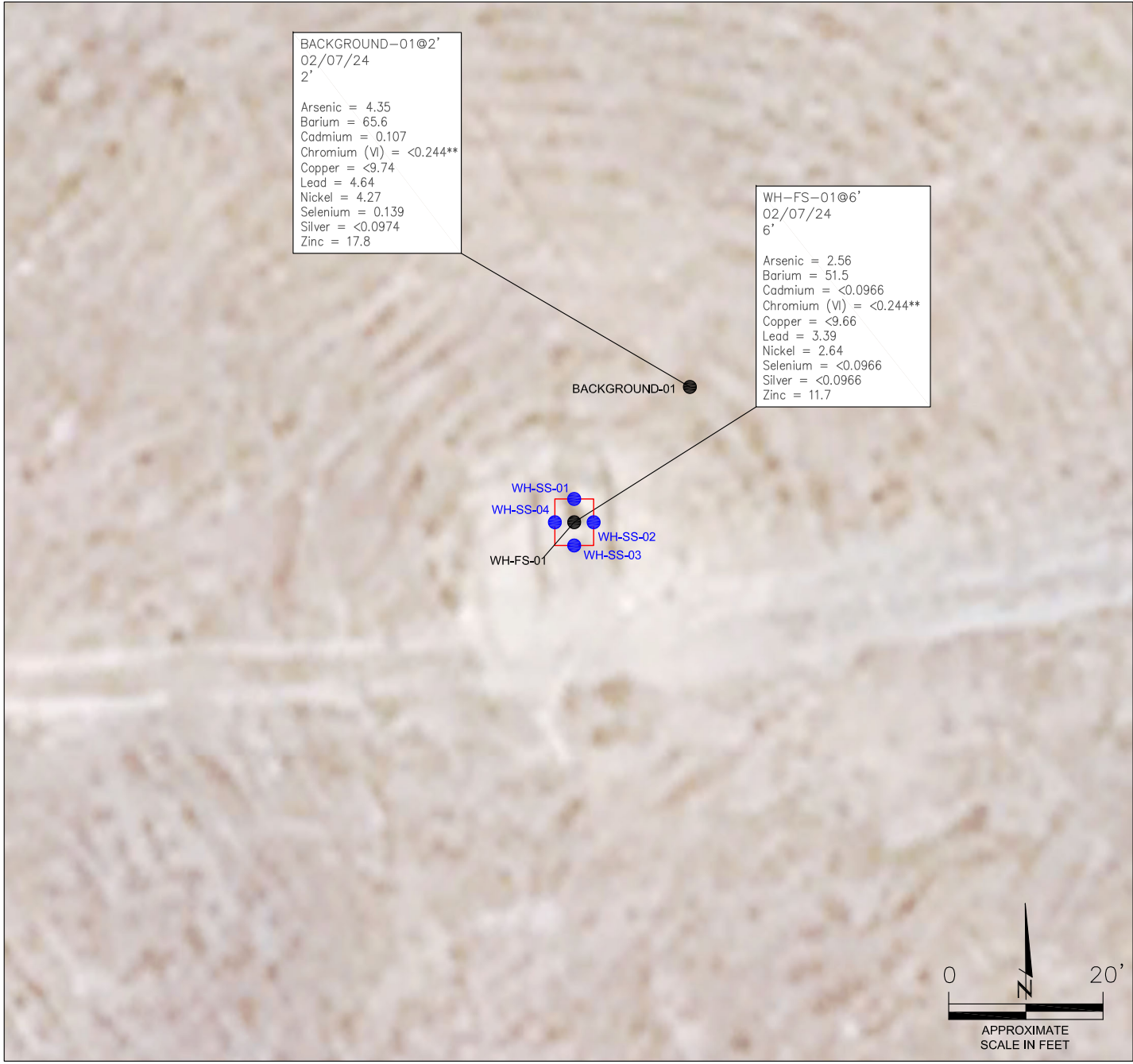
SOIL ANALYTICAL MAP
UPV #5-5H3
CLOSURE ASSESSMENT
40.429766 / -104.467816
SW¼ NW¼ SEC.5 T5N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-18860
REMEDATION # 30272

FIGURE NO.
4

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BACKGROUND-01@2'
02/07/24
2'

Arsenic = 4.35
Barium = 65.6
Cadmium = 0.107
Chromium (VI) = <0.244**
Copper = <9.74
Lead = 4.64
Nickel = 4.27
Selenium = 0.139
Silver = <0.0974
Zinc = 17.8

WH-FS-01@6'
02/07/24
6'

Arsenic = 2.56
Barium = 51.5
Cadmium = <0.0966
Chromium (VI) = <0.244**
Copper = <9.66
Lead = 3.39
Nickel = 2.64
Selenium = <0.0966
Silver = <0.0966
Zinc = 11.7

LEGEND

- WELLHEAD ASSESSMENT BOUNDARIES
- APPROXIMATE LOCATION OF SOIL SAMPLES FIELD SCREENED, ONLY, WITH PHOTOIONIZATION DETECTOR
- 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

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

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

VALUES PRESENTED IN **BOLD** EXCEED ECMC TABLE 915-1 REGULATORY LIMITS AND APPLICABLE LOCAL CLEAN-UP LEVELS.

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

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

METALS IN SOIL MAP
UPV #5-5H3
CLOSURE ASSESSMENT
40.429766 / -104.467816
SW¼ NW¼ SEC.5 T5N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-18860
REMEDATION # 30272

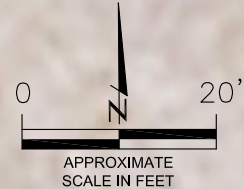


FIGURE NO.
5
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TABLES

Table 1: Photoionization Detector Reading Summary

Table 2: Soil Analytical Results Summary

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
UPV #5-5H3
CLOSURE ASSESSMENT
40.429766 / -104.467816
SW¼ NW¼ SEC.5 T5N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-18860
REMEDIATION # 30272

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-FS-01 @ 6' (40.429771 / -104.467822)	02/07/24	6	10.2	Y
WH-SS-01 @ 5' (40.429781 / -104.467822)	02/07/24	5	9.0	N
WH-SS-02 @ 5' (40.429771 / -104.467813)	02/07/24	5	2.8	N
WH-SS-03 @ 5' (40.429762 / -104.467822)	02/07/24	5	9.8	N
WH-SS-04 @ 5' (40.429771 / -104.467831)	02/07/24	5	2.3	N
WH-N @ 0.5' (40.429787 / -104.467822)	02/07/24	0.5	0.3	N
WH-E @ 0.5' (40.429771 / -104.467800)	02/07/24	0.5	0.6	N
WH-S @ 0.5' (40.429756 / -104.467822)	02/07/24	0.5	0.5	N
WH-W @ 0.5' (40.429771 / -104.467842)	02/07/24	0.5	0.6	N
Background-01 @ 2' (40.429819 / -104.467769)	02/07/24	2	1.1	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				



TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
UPV #5-5H3
CLOSURE ASSESSMENT
40.429766 / -104.467816
SW¼ NW¼ SEC.5 T5N R63W 6PM
WELD COUNTY, COLORADO
API # 05-123-18860
REMEDATION # 30272

Sample Location		WH-FS-01 @ 6'	Background-01 @ 2'			
(Latitude / Longitude)		(40.429771 / -104.467822)	(40.429819 / -104.467769)			
Sample Date		2/7/2024	2/7/2024			
Sample Depth		6'	2'			
PID Reading (ppm-v)		10.2	1.1			
Regulatory Limits						
Chemical of Concern	Units	ECMC Table 915-1 RSSLs	ECMC Table 915-1 GSSLs	Local Clean-Up Level		
VOCs						
Benzene	mg/kg	1.2	0.0026	--	<0.00200	NA
Toluene	mg/kg	490	0.69	--	<0.00200	NA
Ethylbenzene	mg/kg	5.8	0.78	--	<0.00200	NA
Total Xylenes	mg/kg	58	9.9	--	<0.00200	NA
Naphthalene	mg/kg	2	0.0038	--	<0.00380	NA
1,2,4-Trimethylbenzene	mg/kg	30	0.0081	--	<0.00200	NA
1,3,5-Trimethylbenzene	mg/kg	27	0.0087	--	<0.00200	NA
TOTAL PETROLEUM HYDROCARBONS						
TPH-GRO	mg/kg	500	--	--	<0.200	NA
TPH-DRO	mg/kg	500	--	--	<25.0	NA
TPH-RRO	mg/kg	500	--	--	<100	NA
POLYCYCLIC AROMATIC HYDROCARBONS						
1-Methyl-naphthalene	mg/kg	18	0.006	--	<0.002	NA
2-Methyl-naphthalene	mg/kg	24	0.019	--	<0.002	NA
Acenaphthene	mg/kg	360	0.55	--	<0.020	NA
Anthracene	mg/kg	1800	5.8	--	<0.020	NA
Benzo(a)-anthracene	mg/kg	1.1	0.011	--	<0.005	NA
Benzo(a)-pyrene	mg/kg	0.11	0.24	--	<0.020	NA
Benzo(b)-fluoranthene	mg/kg	1.1	0.3	--	<0.020	NA
Benzo(k)-fluoranthene	mg/kg	11	2.9	--	<0.020	NA
Chrysene	mg/kg	110	9	--	<0.020	NA
Dibenzo(a,h)-anthracene	mg/kg	0.11	0.096	--	<0.020	NA
Fluoranthene	mg/kg	240	8.9	--	<0.020	NA
Fluorene	mg/kg	240	0.54	--	<0.020	NA
Indeno(1,2,3-cd)-pyrene	mg/kg	1.1	0.98	--	<0.020	NA
Pyrene	mg/kg	180	1.3	--	<0.020	NA
SOIL SUITABILITY (Inorganics)						
Boron	mg/L	2	--	--	0.168	0.108
pH	standard unit	6-8.3	--	--	8.58 (8.28/8.29)	7.66
Sodium Adsorption Ratio (SAR)	--	<6	--	--	1.36	0.0868
Specific Conductance (EC)	mmhos/cm	<4	--	--	0.262	0.126
METALS						
Arsenic	mg/kg	0.68	0.29	5.44	2.56	4.35
Barium	mg/kg	15000	82	--	51.5	65.6
Cadmium	mg/kg	71	0.38	--	<0.0966	0.107
Copper	mg/kg	3100	46	--	<9.66	<9.74
Lead	mg/kg	400	14	--	3.39	4.64
Nickel	mg/kg	1500	26	--	2.64	4.27
Selenium	mg/kg	390	0.26	--	<0.0966	0.139
Silver	mg/kg	390	0.8	--	<0.0966	<0.0974
Zinc	mg/kg	23000	370	--	11.7	17.8
Hexavalent Chromium	mg/kg	0.3**	0.00067**	0.1 to 1.0**	<0.244**	<0.244**
ECMC = Energy & Carbon Management Commission mg/kg = milligrams per kilogram mmhos/cm = millimhos per centimeter PID = Photoionization Detector ppm-v = parts per million by volume mg/L = milligrams per liter SAR = Sodium Adsorption Ratio Notes: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit and/or minimum detection limit. Elevated metals are naturally occurring in Colorado. Local Clean-up Levels are 1.25*Background concentrations where applicable. Values presented in BOLD exceed ECMC Table 915-1 Regulatory Limits and applicable Local Clean-up Levels. Laboratory reruns were completed as applicable on samples with pH values outside ECMC Table 915-1 regulatory range. Results of the reruns are presented in parentheses. **Achievable practical quantitative limits for Hexavalent Chromium in soils is in the range of 0.1 to 1 mg/kg.						



ATTACHMENT A

Photo Log

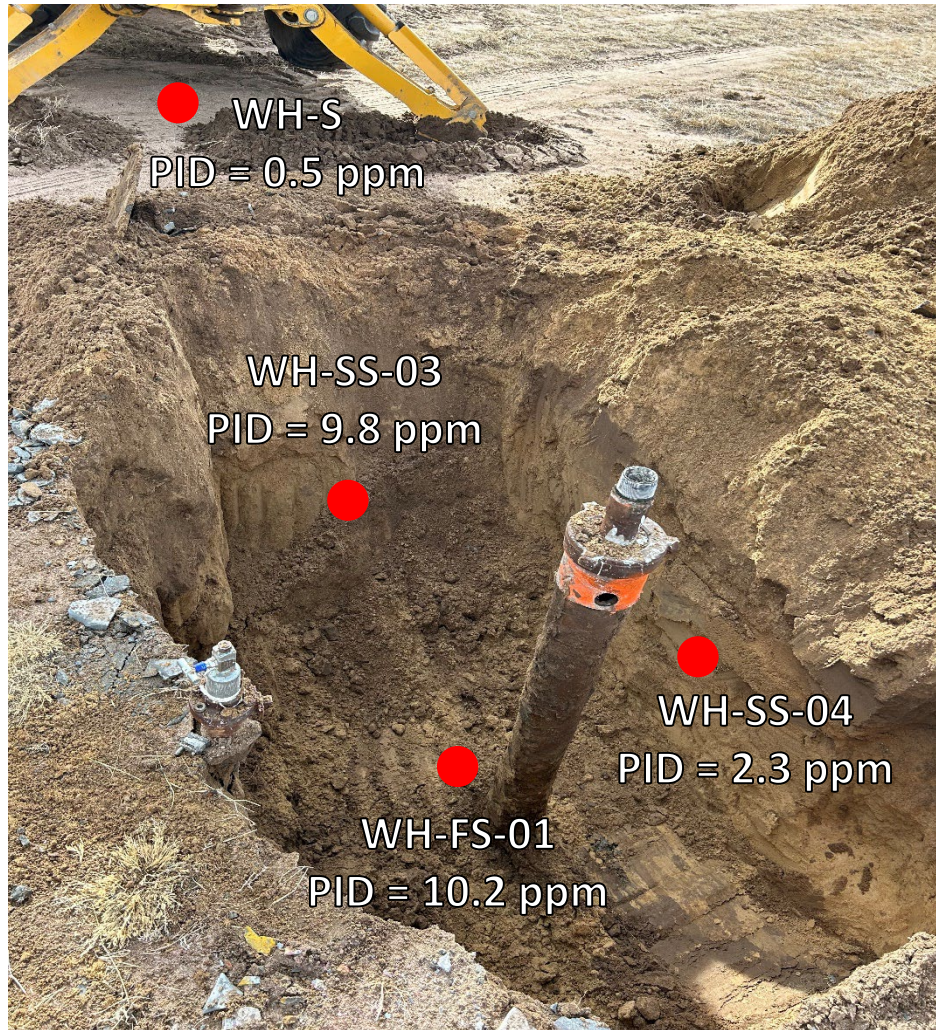
UPV #5-5H3
API # 05-123-18860
Remediation # 30272

Closure Assessment

February 2024

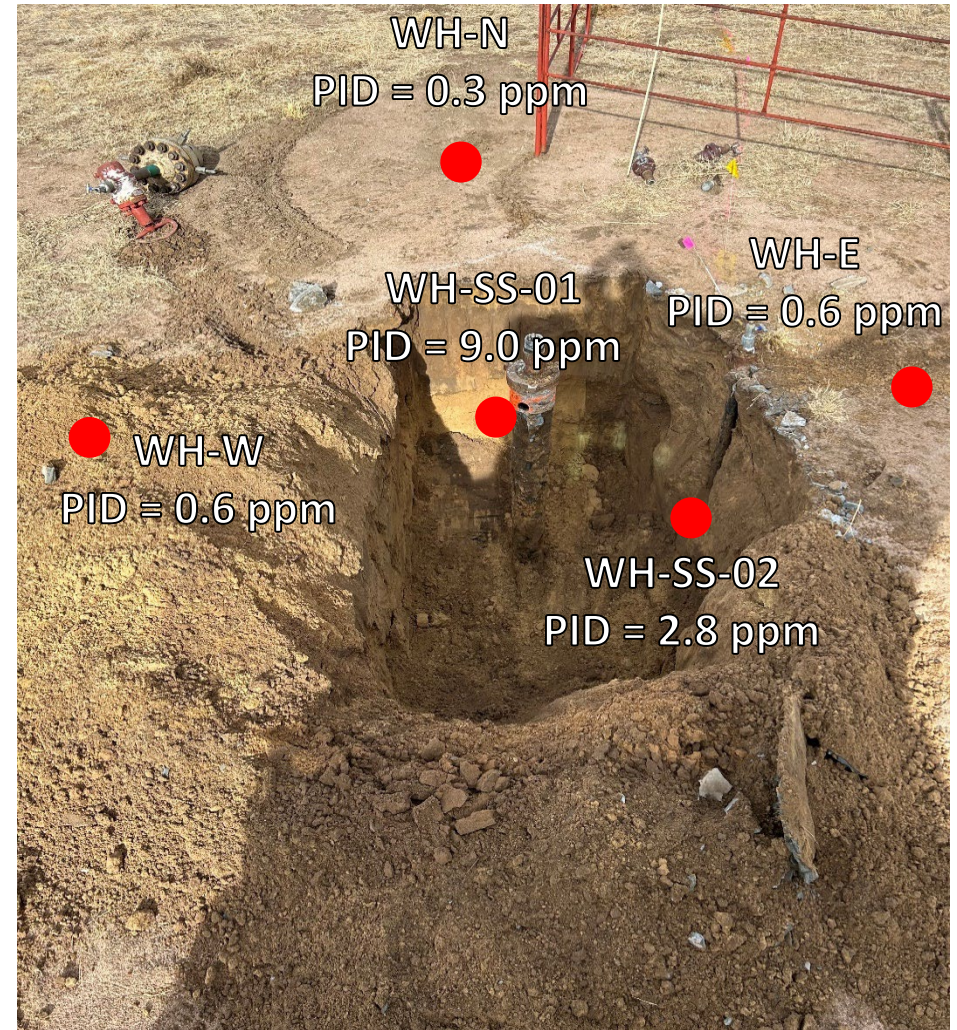


Wellhead Excavation – 02/07/24



Looking southwest

No petroleum hydrocarbon staining or odor observed



Looking north

No petroleum hydrocarbon staining or odor observed