

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: Rouse USX A #05-06		Date: 02/27/24					Remediation Project #: 33055		
Associated Wells: 05-123-29405		Age of Site: Years					Number of Photos Attached: 6		
Location: (GPS coordinates of wellhead or southeastern most wellhead for multiple)						40.516436, -104.575912			
Estimated Facility Size (acres): <u> </u>									
General Condition of Site: (General observations regarding housekeeping, corrosion, waste management, etc.) Good condition.									
USCS Soil Type: Clayey SAND (CL)				Estimated Depth to Groundwater: Approx. 10-20'					
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	05-123-29405								
Age	Years								
Condition of surface around wellhead	Good - Per Crew								
PID Readings	WH-N: 2.0	WH-E: 1.9	WH-S: 2.0	WH-W: 1.4					
Condition of subsurface (staining present)	Good - No odor/no staining								
PID Readings	3.3	3.4	5.6	4.5	3.7				
Sample taken? Location/Sample ID#	WH-SS-01	WH-SS-02	WH-SS-03	WH-SS-04	WH-FS-01				
Photo Number(s)	See photolog								
Other observations regarding wellheads: Well casing cut/capped following assessment.									
Summary									
Was impacted soil identified? <input checked="" type="checkbox"/> 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: 5.6				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:					
N/A				N/A					
Lateral extent:				Volume of soil removed:					
N/A				N/A					
Is additional investigation required?									
Was groundwater encountered during the investigation? <input checked="" type="checkbox"/> 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:					
N/A				N/A					
Total number of samples collected:				Total Volume of groundwater removed:					
N/A				N/A					
Total number of samples submitted to lab for analysis:									



FIGURES

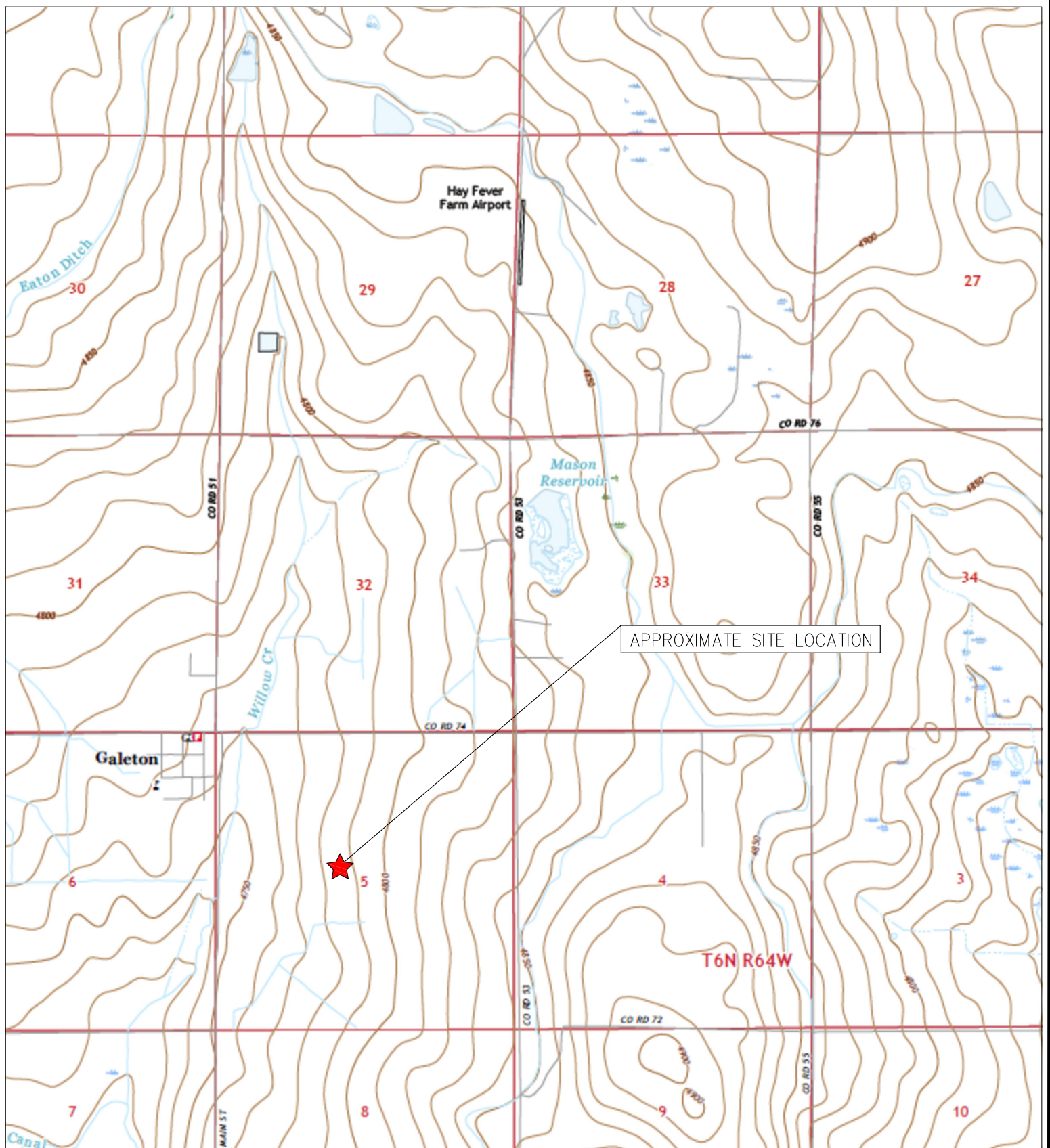
Figure 1: Topographic Site Location Map

Figure 2: Aerial Site Location Map

Figure 3: Soil Sample Location Map

Figure 4: Soil Analytical Map

Figure 5: Metals in Soil Map



TOPOGRAPHIC SITE LOCATION MAP
 ROUSE USX A #05-06
 CLOSURE ASSESSMENT
 40.516436 / -104.575912
 SE¼ NW¼ SEC.5 T6N R64W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-29405
 REMEDIATION # 33055



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 ENVIRONMENTAL
 CONSULTING, LLC

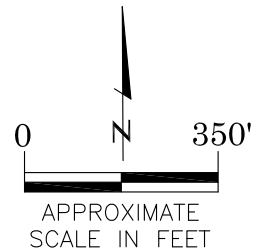
8000 W 44th Ave, Wheat Ridge, CO 80033
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LEGEND

- FORMER ROUSE USX A #05-06 WELLHEAD (PLUGGED AND ABANDONED)
- ASSOCIATED SEPARATOR
- APPROXIMATE FLOWLINE LOCATION



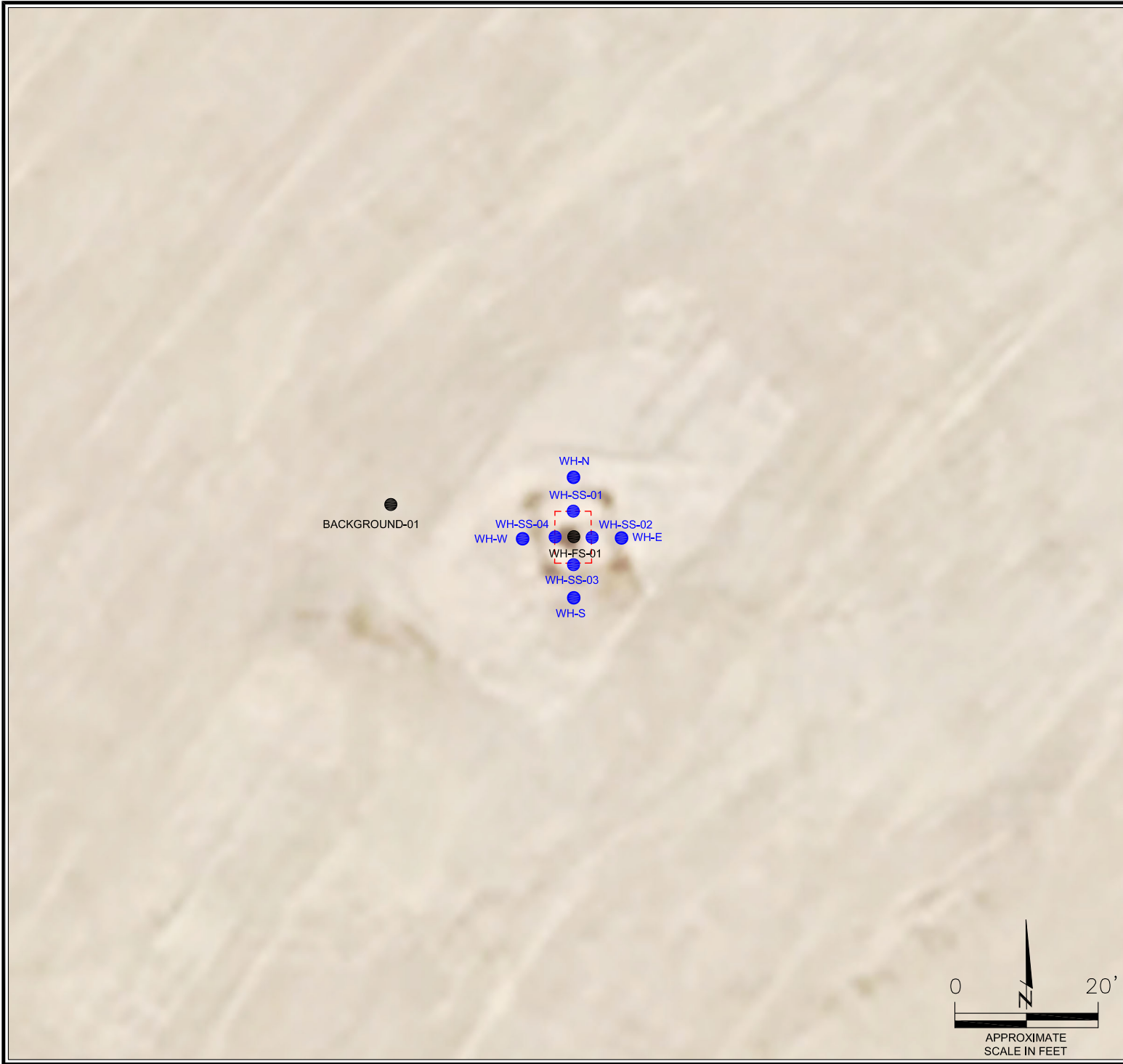
AERIAL SITE LOCATION MAP
 ROUSE USX A #05-06
 CLOSURE ASSESSMENT
 40.516436 / -104.575912
 SE¼ NW¼ SEC.5 T6N R64W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-29405
 REMEDIATION # 33055

FIGURE NO.
2

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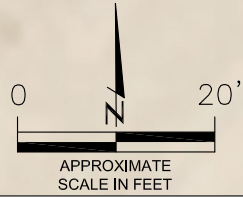


LEGEND

- - - 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

BACKGROUND-01

WH-N
 WH-SS-01
 WH-SS-02
 WH-SS-04 | WH-SS-02
 WH-W | WH-E
 WH-FS-01
 WH-SS-03
 WH-S



SOIL SAMPLE LOCATION MAP
 ROUSE USX A #05-06
 CLOSURE ASSESSMENT
 40.516436 / -104.575912
 SE¼ NW¼ SEC.5 T6N R64W 6PM
 WELD COUNTY, COLORADO
 API # 05-123-29405
 REMEDIATION # 33055

FIGURE NO.
3

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BACKGROUND-01@2'
02/27/24
2'

Brn= 0.593
EC = 0.741
SAR= 1.65
pH = 8.28

WH-FS-01@7'
02/27/24
7'

(BRL)

BACKGROUND-01

WH-SS-01
WH-SS-02
WH-SS-03
WH-SS-04
WH-FS-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 = MILLIMHOS PER CENTIMETER

(BRL) = ALL VALUES 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
ROUSE USX A #05-06
CLOSURE ASSESSMENT
40.516436 / -104.575912
SE¼ NW¼ SEC.5 T6N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-29405
REMEDATION # 33055

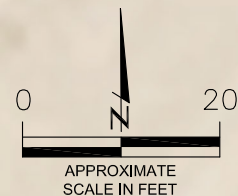


FIGURE NO.
4

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BACKGROUND-01@2'
02/27/24
2'

Arsenic = 4.47
Barium = 55.5
Cadmium = 0.176
Chromium (VI) = <0.244**
Copper = 11.1
Lead = 7.09
Nickel = 6.33
Selenium = <0.256
Silver = <0.0983
Zinc = 39.1

WH-FS-01@7'
02/27/24
7'

Arsenic = 4.48
Barium = 80.9
Cadmium = 0.224
Chromium (VI) = <0.244**
Copper = 12.1
Lead = 11.6
Nickel = 7.46
Selenium = <0.226
Silver = <0.0868
Zinc = 41.6

BACKGROUND-01

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

LEGEND

- WELLHEAD ASSESSMENT BOUNDARIES
- SS-02 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.

*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.

ECMC = ENERGY & CARBON MANAGEMENT COMMISSION

METALS IN SOIL MAP
ROUSE USX A #05-06
CLOSURE ASSESSMENT
40.516436 / -104.575912
SE¼ NW¼ SEC.5 T6N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-29405
REMEDATION # 33055

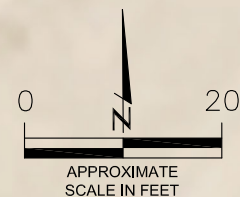


FIGURE NO.
5

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TABLES

Table 1: Photoionization Detector Reading Summary

Table 2: Soil Analytical Results Summary

TABLE 1
PHOTOIONIZATION DETECTOR READING SUMMARY
ROUSE USX A #05-06
CLOSURE ASSESSMENT
40.516436 / -104.575912
SE¼ NW¼ SEC.5 T6N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-29405
REMEDATION # 33055

Sample Location (Latitude/Longitude)	Date	Approximate Depth (feet)	PID Reading (ppm-v)	Lab Submission (Y/N)
WH-FS-01 @ 7' (40.516439 / -104.575906)	02/27/24	7	3.7	Y
WH-SS-01 @ 6' (40.516449 / -104.575907)	02/27/24	6	3.3	N
WH-SS-02 @ 6' (40.516439 / -104.575896)	02/27/24	6	3.4	N
WH-SS-03 @ 6' (40.516429 / -104.575906)	02/27/24	6	5.6	N
WH-SS-04 @ 6' (40.516439 / -104.575920)	02/27/24	6	4.5	N
WH-N @ 0.5' (40.516467 / -104.575909)	02/27/24	0.5	2.0	N
WH-E @ 0.5' (40.516439 / -104.575877)	02/27/24	0.5	1.9	N
WH-S @ 0.5' (40.516412 / -104.575905)	02/27/24	0.5	2.0	N
WH-W @ 0.5' (40.516437 / -104.575939)	02/27/24	0.5	1.4	N
Background-01 @ 2' (40.516452 / -104.575997)	02/27/24	2	2.0	Y
(Y/N) = Yes or No ppm-v = parts per million by volume PID = Photoionization Detector				



TABLE 2
SOIL ANALYTICAL RESULTS SUMMARY
ROUSE USX A #05-06
CLOSURE ASSESSMENT
40.516436 / -104.575912
SE¼ NW¼ SEC.5 T6N R64W 6PM
WELD COUNTY, COLORADO
API # 05-123-29405
REMEDATION # 33055

Sample Location		WH-FS-01 @ 7'			Background-01 @ 2'	
(Latitude / Longitude)		(40.516439 / -104.575906)			(40.516452 / -104.575997)	
Sample Date		2/27/2024			2/27/2024	
Sample Depth (feet)		7			2	
PID Reading (ppm-v)		3.7			2.0	
Regulatory Limits						
Chemical of Concern	Units	ECMC Table 915-1 RSSLs	ECMC Table 915-1 GSSLs	Local Clean-Up Level		
Volatile Organic Compounds						
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		--	--	<25.0	NA
TPH-RRO	mg/kg		--	--	<100	NA
Polycyclic Aromatics Hydrocarbons						
1-Methylnaphthalene	mg/kg	18	0.006	--	<0.002	NA
2-Methylnaphthalene	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	--	--	0.219	0.593
pH	standard unit	6-8.3	--	--	8.26	8.28
Sodium Adsorption Ratio (SAR)	--	<6	--	--	0.519	1.65
Specific Conductance (EC)	mmhos/cm	<4	--	--	0.556	0.741
Metals						
Arsenic	mg/kg	0.68	0.29	5.59	4.48	4.47
Barium	mg/kg	15000	82	--	80.9	55.5
Cadmium	mg/kg	71	0.38	--	0.224	0.176
Copper	mg/kg	3100	46	--	12.1	11.1
Lead	mg/kg	400	14	--	11.6	7.09
Nickel	mg/kg	1500	26	--	7.46	6.33
Selenium	mg/kg	390	0.26	--	<0.226	<0.256
Silver	mg/kg	390	0.8	--	<0.0868	<0.0983
Zinc	mg/kg	23000	370	--	41.6	39.1
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 NA = Not Analyzed Notes: Values presented with a less than symbol (<) did not contain concentrations at or above the laboratory reporting limit and/or minimum detection limit. Values presented in BOLD exceed ECMC Table 915-1 Regulatory Limits and applicable Local Clean-up Levels. Elevated metals are naturally occurring in Colorado. Local Clean-up Levels are 1.25*Background concentrations, where applicable. **Achievable practical quantitative limits for Hexavalent Chromium in soils is in the range of 0.1 to 1 mg/kg.						



ATTACHMENT A

Photo Log

Rouse USX A #05-06

API # 05-123-29405

Remediation # 33055

Closure Assessment

February 2024



Wellhead Excavation – 02/27/24



WH-SS-02
PID = 3.4 ppm

WH-SS-01
PID = 3.3 ppm

WH-FS-01
PID = 3.7 ppm

Looking east

No petroleum hydrocarbon staining or odor observed



WH-SS-03
PID = 5.6 ppm

WH-SS-04
PID = 4.5 ppm

Looking south

No petroleum hydrocarbon staining or odor observed

Wellhead Surface – 02/27/24



Looking north

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



Looking east

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

Wellhead Surface – 02/27/24



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