



Mull Drilling Company, Inc.
1700 N. Waterfront Parkway, Bld. 1200
Wichita, Kansas 67206
Tel: +1 316.264.6366
Fax: +1 316.264.6440
www.mulldrilg.com

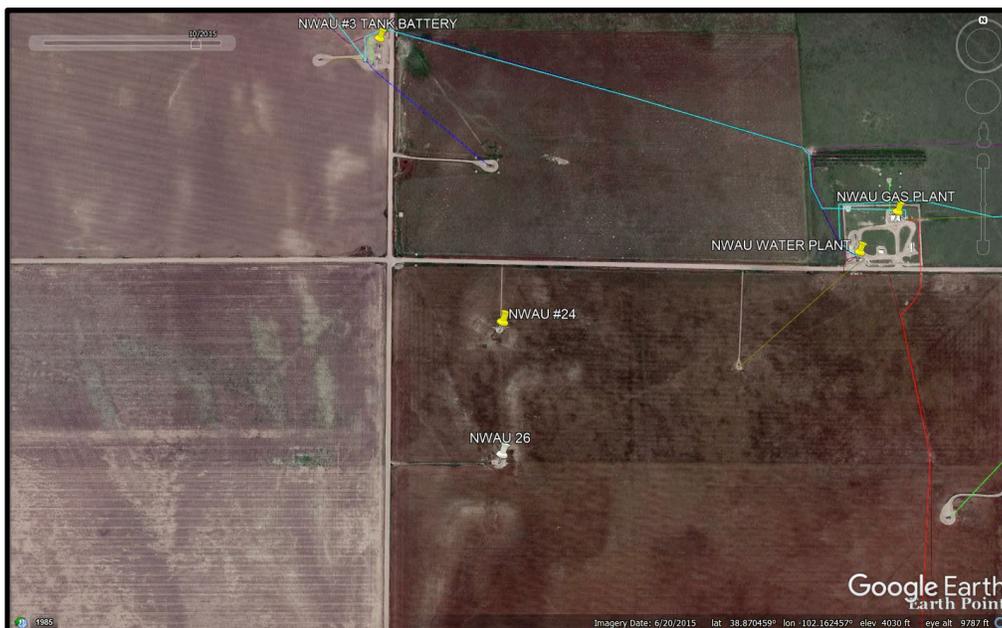
June 19, 2023

Mr. Jason Kosola, P.G.
Southeast Environmental Protection Specialist
Colorado Oil & Gas Conservation Commission
1120 Lincoln Street, Suite 801
Denver, Colorado 80203

**RE: Northwest Arapahoe Unit #24
COGCC Facility ID# 208200
Location Abandonment and Soils Investigation Results
Form 27 and Form 44 Submittal**

Mr. Kosola:

Mull Drilling Co., Inc (Mull) is providing this report to the Colorado Oil and Gas Commission (COGCC) for environmental services that occurred at Northwest Arapahoe Unit #24. The location in question was the site of an older well that underperformed and was drilled in 1990. Shortly afterwards the location was temporarily abandoned. Mull mobilized this last quarter to the site to finalize the well abandonment process by cutting and capping the original casing at an appropriate depth below grade.



Site Location

In following proper abandonment procedures Mull performed an investigation of the flowlines in the area. It was determined that the process line that was attached to the Northwest Arapahoe #24 was abandoned in place shortly after it was drilled -- 1990. Mull is attaching an abandon in place request by the landowner to this submittal. Update to Mull's existing GIS file for the flowline has already occurred with a Form 44 submittal.

On April 13, 2023 a soils investigation occurred in order to verify the presence of any soil impacts. A licensed geologist mobilized to the location to confirm the presence of any soil impacts by taking samples with a photo ionization detector for headspace analysis and by taking soil samples in areas indicative of petroleum impacted locations. All samples conformed to Table 915-1 analysis. A total of five samples were taken, including one at depth and one in the assumed background area. All collected soil samples were submitted to Pace Laboratories of Kansas for analysis following approved chain of custody protocols.

Please see **Figure I** for the sampling locations. For tabulated results please look to the attached **Table 915-1 – NWAU 24**.

Results of the investigation indicated that there were only marginal hydrocarbon impacts remaining. All samples were indicative of high Arsenic values, therefore Mull is disregarding it as a cleanup parameter. Additionally, one sample presented a slight exceedance for soils pH. However, this sample was located at a depth of four feet. Moreover, all locations sampled had elevated values. As a result, Mull will work with the landowner to apply a soil conditioner that will lower the pH of the area in question. This action will result in increased yield due to the slight lowering of soil hardness.

The field has already had the road to the wellhead removed via the landowner tilling up the area. However, it is likely in the coming weeks and months the landowner will plant a crop and completely erase any visible representation of hydrocarbon exploration in the area. Upon planting a crop, Mull will inform the division via Form 4 Sundry that reclamation is complete in the area. This Form 27 submittal serves as a request for closure of remedial services for the site.

Should there be any questions or concerns feel free to contact us,



James Beilman, PG, CPG
Director – Safety & Environmental
Tel: +1 316.264.6366 (128)
Cell: +1 316.364.9203
JBeilman@Mulldrilling.com

Attachments:

Figure 1 – Sampling Points

Table 915-1 – NWAU 24

Figure 1: Sampling Points

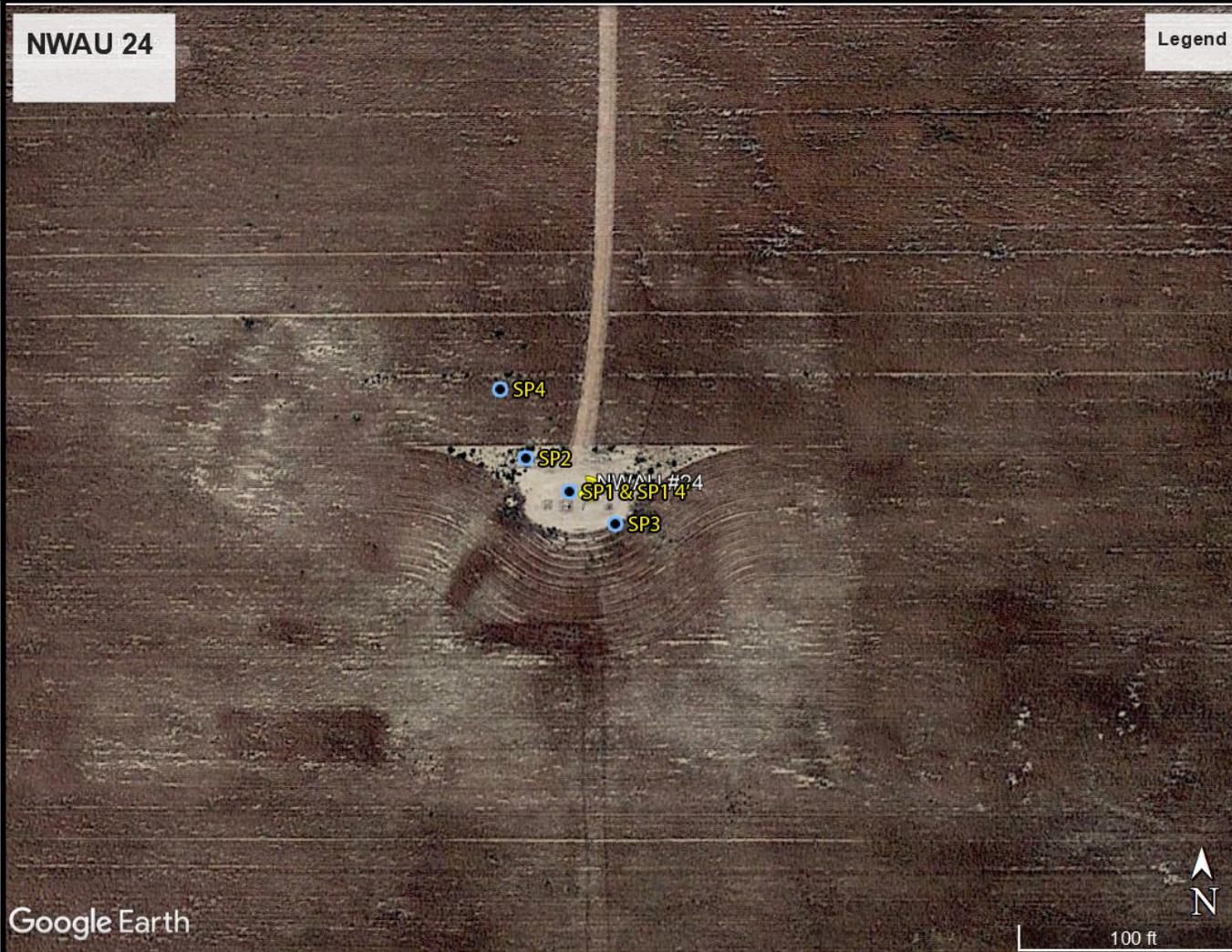
NWAU #24

NWAU 24

Legend

Legend

Highlighted Points
are sampling
locations



Regulatory Limits as COGCC
promulgated table 915-1

Location:	Latitude: 38.870270	Longitude: -102.162765	COGCC Facility #	208200
State:	Colorado			
County:	Cheyenne			



NWAU 24 Table 915-1		4/13/2023				
CLEANUP CONCENTRATIONS		SP 1	SP 1 4'	SP 2	SP 3	SP 4
Contaminant of Concern	Concentrations	38.870287; -102.162749	38.870287; -102.162749	38.870333; -102.162833	38.870252; -102.162697	38.870399; -102.162871
Soil TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons)	500mg/kg	29.8	ND	12.5	14.7	30.6
Soils and Groundwater - liquid hydrocarbons including condensate and oil	below visual detection limits	ND	ND	ND	ND	ND
Soil Suitability for Reclamation						
Electrical conductivity (EC) (by saturated paste method)	<4mmhos/cm	0.394	0.294	0.298	0.169	0.231
Sodium adsorption ratio (SAR) (by saturated paste method)	<6	0.537	1.63	0.0732	0.0681	0.0624
pH (by saturated paste method)	6-8.3	8.22	8.75	7.97	8.26	8.08
boron (hot water soluble soil extract)	2mg/l	0.27	0.211	0.293	0.154J	0.26
Organic Compounds in Groundwater						
benzene	5µg/l	NA	NA	NA	NA	NA
toluene	560 to 1,000µg/l	NA	NA	NA	NA	NA
ethylbenzene	700µg/l	NA	NA	NA	NA	NA
xylenes (sum of o-, m- and p- isomers = total xylenes)	1,400 to 10,000µg/l	NA	NA	NA	NA	NA
naphthalene	140µg/l	NA	NA	NA	NA	NA
1,2,4-trimethylbenzene	67µg/l	NA	NA	NA	NA	NA
1,3,5-trimethylbenzene	67µg/l	NA	NA	NA	NA	NA
Groundwater Inorganic Parameters						
total dissolved solids (TDS)	<1.25 X local background	NA	NA	NA	NA	NA
chloride ion	250mg/l or <1.25 X local background	NA	NA	NA	NA	NA
sulfate ion	250mg/l or <1.25 X local background	NA	NA	NA	NA	NA

Soils	Residential Soil Screening Level Concentrations (mg/kg)	Protection of Groundwater Soil Screening Level Concentrations (mg/kg)					
Organic Compounds in Soils							
benzene	1.2	0.0026 (M)	ND	ND	ND	ND	ND
toluene	490	0.69 (M)	ND	ND	ND	ND	ND
ethylbenzene	5.8	0.78 (M)	ND	ND	ND	ND	ND
xylenes (sum of o-, m- and p- isomers = total xylenes)	58	9.9 (M)	ND	ND	ND	ND	ND
1,2,4-trimethylbenzene	30	0.0081 (R)	ND	ND	ND	ND	ND
1,3,5-trimethylbenzene	27	0.0087 (R)	ND	ND	ND	ND	ND
acenaphthene	360	0.55 (R)	ND	ND	ND	ND	ND
anthracene	1800	5.8 (R)	ND	ND	ND	ND	ND
benz(a)anthracene	1.1	0.011 (R)	ND	ND	ND	ND	ND
benzo(b)fluoranthene	1.1	0.3 (R)	ND	ND	ND	ND	ND
benzo(k)fluoranthene	11	2.9 (R)	ND	ND	ND	ND	ND
benzo(a)pyrene	0.11	0.24 (M)	ND	ND	ND	ND	ND
chrysene	110	9 (R)	ND	ND	ND	ND	ND
dibenzo(a,h)anthracene	0.11	0.096 (R)	ND	ND	ND	ND	ND
fluoranthene	240	8.9 (R)	ND	ND	ND	ND	ND
fluorene	240	0.54 (R)	ND	ND	ND	ND	ND
indeno(1,2,3-cd)pyrene	1.1	0.98 (R)	ND	ND	ND	ND	ND
1-methylnaphthalene	18	0.006 (R)	ND	ND	ND	ND	ND
2-methylnaphthalene	24	0.019 (R)	ND	ND	ND	ND	ND
naphthalene	2	0.0038 (R)	ND	ND	ND	ND	ND
pyrene	180	1.3 (R)	ND	ND	ND	ND	ND
Metals in Soils							
arsenic	0.68	0.29 (M)	5.6	5.4	4.9	4.7	6.9
barium	15000	82 (M)	219	245	140	141	161
cadmium	71	0.38 (M)	0.59	0.57	0.61	0.54	0.71
chromium (VI)	0.3	0.00067 (R)	ND	ND	ND	ND	ND
copper	3100	46 (M)	10.2	10	10.5	10.7	13
lead	400	14 (M)	9.1	9.4	9.7	8.4	10.4
nickel	1500	26 (R)	10.5	10.6	11	10.5	13.5
selenium	390	0.26 (M)	ND	ND	ND	ND	ND
silver	390	0.8 (R)	ND	ND	ND	ND	ND
zinc	23000	370 (R)	37.6	34.8	41.9	34.5	42.2

The letter "(R)" following a protection of Groundwater soil screening level indicates the concentration is derived from a risk-based approach. The letter "(M)" following a protection of Groundwater soil screening level indicates the concentration is derived from the drinking water MCL.

AGREEMENT FOR IN PLACE ABANDONMENT OF FLOWLINE

WHEREAS, Mull Drilling Company, Inc. installed a flowline connecting the Northwest Arapahoe Unit #24, located in the NW/4NW/4 Section 6, Township 14 South, Range 42 West, Cheyenne County, Colorado, to a Tank Battery located in the SW/4SE/4 Section 31, Township 13 South, Range 42 West, Cheyenne County, Colorado. Said flowline is approximately 2500 feet long.

Kyle G. Gerweck is the surface owner of the NW/4 & W/2NE/4 Section 6, Township 14 South, Range 42 West, Cheyenne County, Colorado and hereby grants Mull Drilling Company, Inc. permission to abandon said flowline in place, in an attempt to minimize impact to public health, safety, welfare, the environment and wildlife resources. Said abandonment shall conform to all appropriate procedures for in-place abandonment, as dictated by the Colorado Oil and Gas Commission (Series 1100 Rules).

EXECUTED the 26th day of October, 2022.


Kyle G. Gerweck

ACKNOWLEDGMENT

STATE OF Colorado)

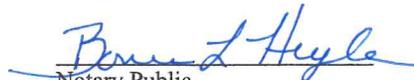
ss:

COUNTY OF Cheyenne

The foregoing instrument was subscribed and sworn before me this 26th day of October, 2022, by Kyle G. Gerweck.

Witness by hand and official seal:

11-15-2025
My Commission Expires:


Notary Public

