



PDC Energy, Inc.
Third Quarter 2024 Groundwater Monitoring Summary

October 21, 2024

Former Churchill 5 Wellhead
NWNW Section 28 T5N R64W
Remediation # 20066

This groundwater monitoring summary has been prepared by Tasman, Inc. for the former Churchill 5 Wellhead location.

Site History and Background

On October 10, 2021, groundwater was encountered within the former wellhead excavation at approximately 6 feet below ground surface (bgs) during wellhead decommissioning activities. Analytical results received from the groundwater sample (GW05) collected from the base of the excavation indicated that the benzene concentration was in exceedance of the applicable ECMC Table 915-1 regulatory standards. No impacted soil was identified or removed during decommissioning activities. On August 12, 2022, five monitoring wells (BH01 – BH05) were installed to delineate dissolved-phase hydrocarbon impacts within and adjacent to the former excavation extent (Figure 1). Per the approved Supplemental Form 27 (Document No. 403540311), total dissolved solids (TDS), chloride, and sulfate were removed from the quarterly sampling and analysis plan following the third quarter 2023.

Groundwater Monitoring Activities

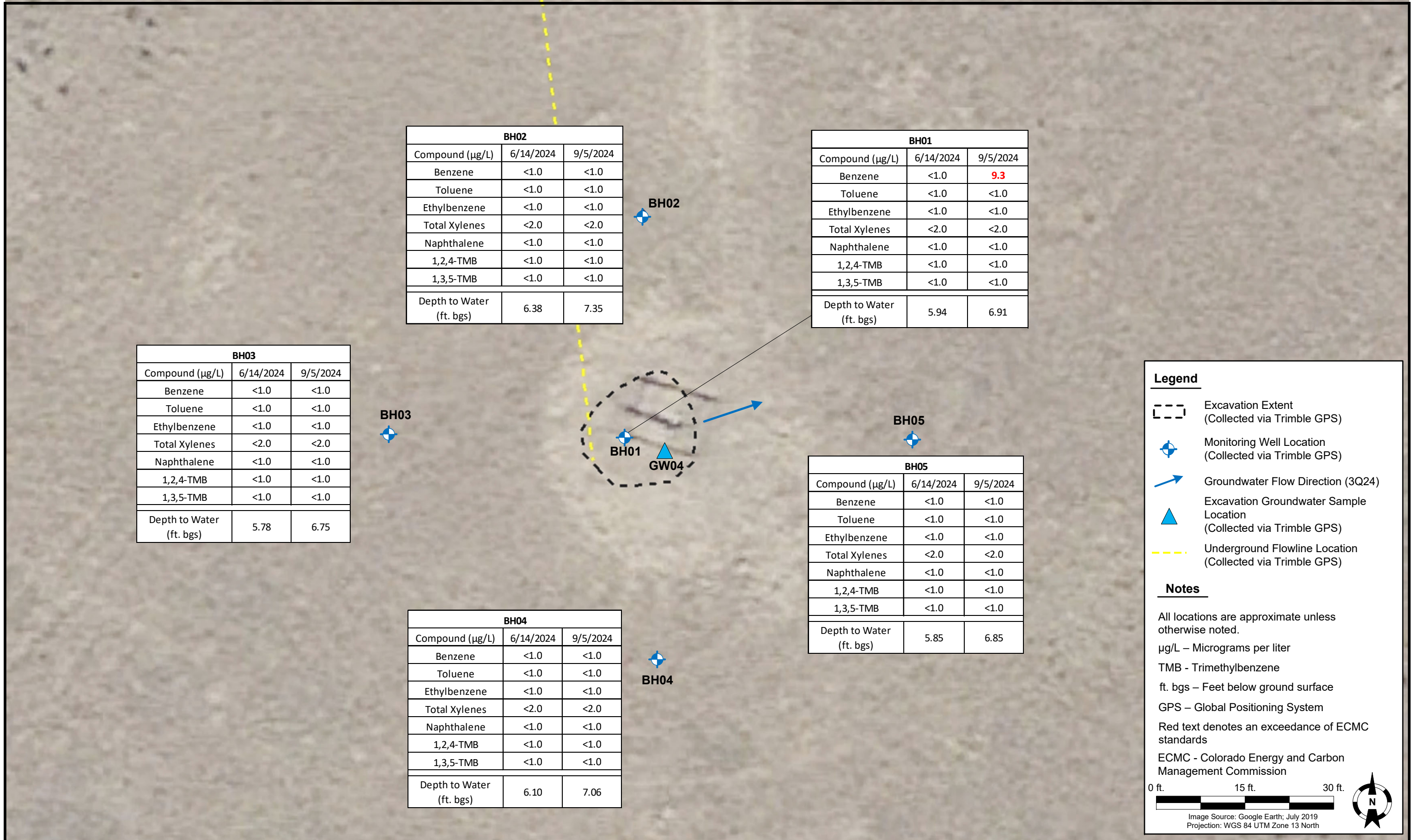
On September 5, 2024, groundwater monitoring was conducted at all five monitoring wells (BH01 – BH05). Five groundwater samples were submitted to Summit Scientific Laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB by EPA Method 8260B in accordance with Table 915-1 standards.

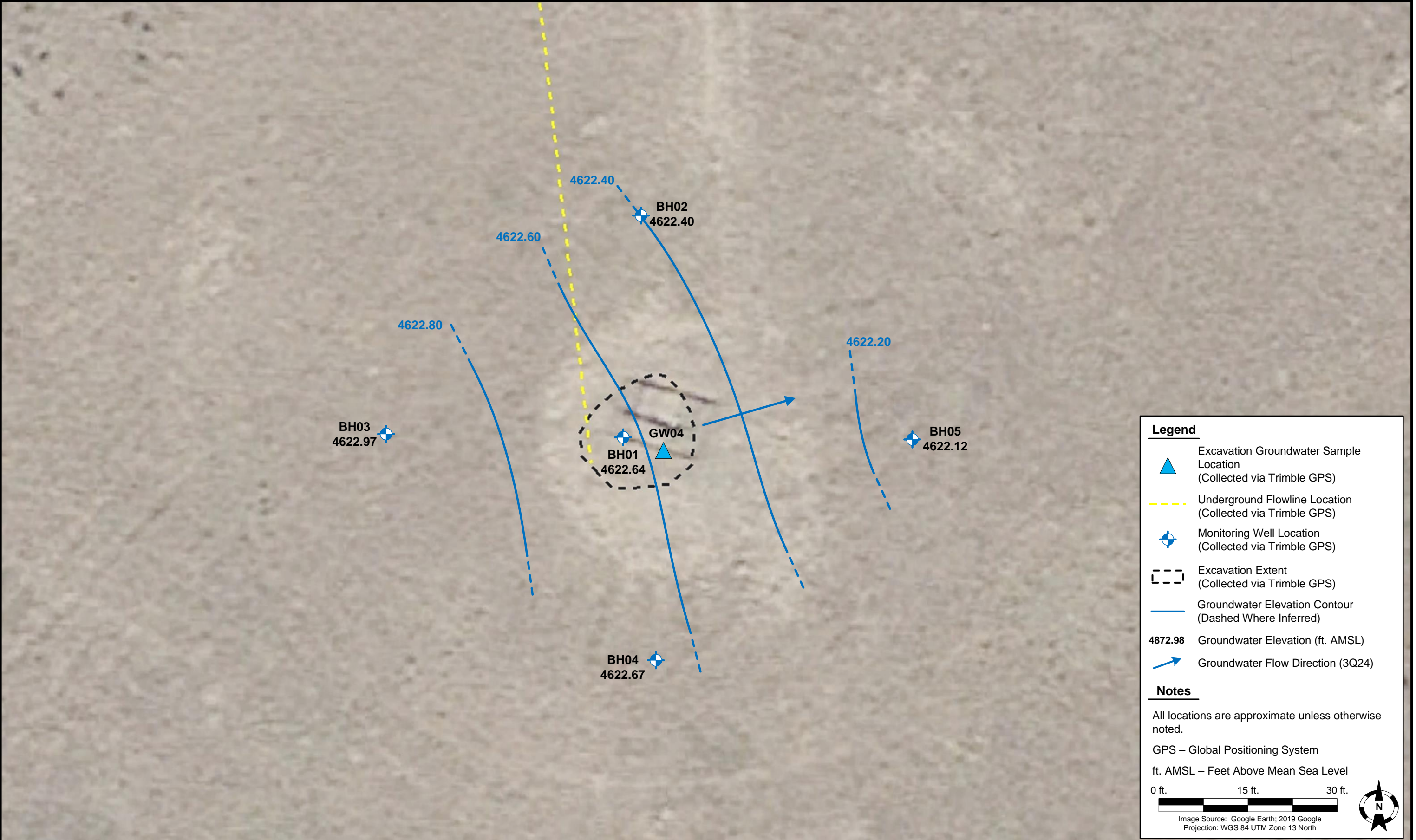
Third quarter 2024 analytical results indicated that organic compound concentrations were in compliance with the applicable regulatory standards in four of the five monitoring well locations, with monitoring well BH01 having Benzene concentrations above ECMC standards. Sample locations and corresponding analytical results are illustrated on Figure 1. Groundwater elevation data is illustrated on Figure 2. Groundwater analytical results are summarized in Table 1. The laboratory analytical report will be included with the associated Form 27 Supplemental submittal.

Current Remediation Activities and Path Forward

Monitored natural attenuation (MNA) was selected as the remediation strategy for this site during the third quarter 2022 and will remain the selected remediation strategy through the fourth quarter 2024.

Fourth quarter 2024 groundwater sampling will be conducted in December 2024.





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Former Churchill 5 Wellhead
NWNW, Section 28, Township 5 North, Range 64 West
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**GROUNDWATER
ELEVATION CONTOUR
MAP (09/05/2024)**

**FIGURE
2**

TABLE 1
FORMER CHURCHILL 5 WELLHEAD
GROUNDWATER ANALYTICAL RESULTS SUMMARY TABLE
ORGANIC COMPOUNDS

Sample ID	Date Sampled	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Naphthalene (µg/L)	1,2,4-TMB (µg/L)	1,3,5-TMB (µg/L)	Depth to Water ⁽²⁾ (ft.)	Groundwater Elevation (ft. AMSL)
ECMC Table 915-1 Groundwater Standard (µg/L) ⁽¹⁾		5	560	700	1,400	140	67	67	-	-
GW04	10/19/2021	7.1	13	<1.0	11	<1.0	1.3	<1.0	6	NA
BH01	9/14/2022	2.5	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.93	4622.62
BH01	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.70	4622.85
BH01	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.43	4623.12
BH01	6/1/2023	18	44	<1.0	6.6	<1.0	<1.0	<1.0	4.04	4625.51
BH01	9/5/2023	1.8	4.5	<1.0	<2.0	<1.0	<1.0	<1.0	5.34	4624.21
BH01	12/28/2023	44	<1.0	<1.0	5.5	<1.0	<1.0	<1.0	5.59	4623.96
BH01	3/13/2024	8.4	<1.0	<1.0	2.1	<1.0	<1.0	<1.0	5.59	4623.73
BH01	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.94	4623.61
BH01	9/5/2024	9.3	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.91	4622.64
BH02	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.39	4622.36
BH02	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.14	4622.61
BH02	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.85	4622.90
BH02	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.45	4625.30
BH02	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.76	4623.99
BH02	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.61	4624.14
BH02	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.76	4623.99
BH02	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.38	4623.37
BH02	9/5/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.35	4622.40
BH03	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.76	4622.96
BH03	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.58	4623.14
BH03	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.25	4623.47
BH03	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.87	4625.85
BH03	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.17	4624.55
BH03	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.13	4624.59
BH03	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.33	4624.39
BH03	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.78	4623.94
BH03	9/5/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.75	4622.97
BH04	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.06	4622.67
BH04	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.77	4622.96
BH04	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.50	4623.23
BH04	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	4.16	4625.57
BH04	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.52	4624.21
BH04	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.48	4624.25
BH04	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.62	4624.11
BH04	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.10	4623.63
BH04	9/5/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	7.06	4622.67
BH05	9/14/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.85	4622.12
BH05	12/28/2022	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.56	4622.41
BH05	3/3/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.30	4622.67
BH05	6/1/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	3.94	4625.03
BH05	9/5/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.28	4623.69
BH05	12/28/2023	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.22	4623.75
BH05	3/13/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.36	4623.61
BH05	6/14/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	5.85	4623.12
BH05	9/5/2024	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<1.0	6.85	4622.12

Notes:

- Groundwater standards referenced from 2 CCR 404-1, Table 915-1, January 15, 2021.
 - Depth to water measurements were measured from ground surface for excavation samples. Monitoring well measurements were collected from top of casing and adjusted using survey data to reflect depth of water from ground surface.
- TMB = Trimethylbenzene
ECMC = Energy and Carbon Management Commission
µg/L = Micrograms per liter
(<) = Analytical result is less than the indicated laboratory reporting limit.
ft. = Feet
AMSL = Above Mean Sea Level
NA = Not applicable
BOLD = Analytical result in exceedance of applicable ECMC standards