OPERATOR COMMENTS

Soil Sampling Activities

On April 21, 2022, eight confirmation soil samples were collected from the excavation extent in the footprint of the former tank battery that was impacted by the recent release from the water knockout tank. The tank battery was dismantled to conduct source removal excavation and the final extent of the excavated area was approximately 25 feet by 75 feet to an approximate depth of 2 feet below ground surface (ft-bgs). Two soil samples (SS1-2 and SS2-2) were collected from the floor of the scraped area at 2 ft-bgs. Six soil samples (SS3-1 through SS8-1) were collected from the sidewalls of the excavation at 1 ft-bgs. A pothole was present to a depth of approximately 4 ft-bgs adjacent the former water knockout tank and release origin. One sample (SS9-4) was collected from the base of the pothole to assess if impacts had migrated deeper into the subsurface. Two surficial background samples (BG1-1 and BG2-1) were collected upgradient of the release to characterize naturally occurring inorganic concentrations. The confirmation soil samples were collected into laboratory provided jars, placed on ice, and transported with a completed chain-of-custody to Summit Scientific in Golden, Colorado, for analysis of the analytes listed in COGCC's Table 915-1 list. The background samples were submitted for laboratory analysis of arsenic, barium, selenium, and pH. A sample location map is provided as an attachment.

Soil Sample Analytical Results

Laboratory analytical results reported arsenic above the applicable COGCC Table 915-1 Protection of Groundwater Soil Screening Level (GWSSL) of 0.29 milligrams per kilogram (mg/kg) in all samples with concentrations ranging from 1.06 mg/kg in sample SS3-1 to 2.76 mg/kg in sample SS8-1. Barium was reported above the Table 915-1 GWSSL of 82 mg/kg in samples SS2-2, SS4-1, SS5-1, SS6-1, SS8-1, and SS9-4, with concentrations ranging from 82.7 mg/kg in SS6-1 to 89.3 mg/kg in SS4-1. Selenium was reported above the Table 915-1 GWSSL of 0.2 mg/kg in all samples with concentration ranging from 0.302 mg/kg in SS3-1 to 0.589 mg/kg in sample SS5-1. pH was reported above the Table 915-1 standard of 8.3 in samples SS1-2 (8.55), SS2-2 (8.72), SS3-1 (8.63), SS4-1 (8.57), and SS7-1 (8.83). All remaining analytical results were compliant with the applicable Table 915-1 GWSSLs. The analytical results summary table and laboratory analytical report are attached.

Discussion

The arsenic levels of the background samples were also above the Table 915-1 GWSSL with concentrations of 1.52 mg/kg in BG1-1 and 1.59 mg/kg in BG2-1. The United States Geological Survey (USGS) Scientific Investigations Report 2017-5118: (available online at https://pubs.usgs.gov/sir/2017/5118/index.html) indicates regional arsenic concentrations in the top 0 to 5 centimeters range from 2.6 mg/kg at US soil geochemical landscape site #3499 to 6.5 mg/kg at US soil geochemical landscape site #1707. This indicates that the confirmation sample arsenic levels are within the expected range of natural levels. A map showing the USGS sample site locations and arsenic results is attached. The barium and selenium levels in the confirmation samples are very near the Table 915-1 standards and are interpreted as being within the expected range of natural levels.

The confirmation soil samples collected from the footprint of the former tank battery, except for pH, are compliant with Table 915-1 or consistent with natural background levels. The remaining pH impacts will be addressed as discussed in the "Remediation Summary" section. Additionally, soil sample SS9-4,

collected at 4 ft-bgs immediately adjacent the recent release point, was compliant with Table 915-1 GWSSLs or had inorganic concentrations consistent with natural levels, which indicates that the release did not migrate to groundwater.

Additional excavation is being conducted south and west of the tank battery to remove remaining impacts. Based on the results of the confirmation samples collected to date at the tank battery, Western Operating requests that a reduced analyte suite be allowed for the remaining confirmation samples at the site consisting of benzene, toluene, ethylbenzene, total xylenes, total petroleum hydrocarbons (C6-C36), electrical conductivity, sodium adsorption ratio, pH, and hot water soluble boron.