



STATE OF TENNESSEE
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

Division of Remediation, Oak Ridge Office
761 Emory Valley Road
Oak Ridge, Tennessee 37830

RECEIVED
SEP 18 2024
COUNTY MAYOR'S OFFICE

September 13, 2024

Mr. Roger Petrie
Federal Facility Agreement Manager
Oak Ridge Office of Environmental Management
U.S. Department of Energy
Post Office Box 2001
Oak Ridge, Tennessee 37831

Dear Mr. Petrie

Re: TDEC Response Letter for Addendum to the Zone 1 Groundwater Plumes Remedial Investigation Work Plan (RIWP) for the K-1085 Old Firehouse Burn Area, East Tennessee Technology Park, Oak Ridge, Tennessee (DOE/OR/01-2903&D2/A2)

The Tennessee Department of Environment and Conservation (TDEC), Division of Remediation-Oak Ridge Office (DoR-OR), received the U.S. Department of Energy (DOE) letter transmitting the above referenced document on June 18, 2024. The Federal Facility Agreement (FFA) protocol for review of this document is 90 days. The State has reviewed this document pursuant to the FFA and provides the enclosed comments.

If you have questions or comments concerning the contents of this letter, please feel free to reach out to Jared Brabazon at jared.brabazon@tn.gov or (865) 201-2407, Heather Lutz at heather.lutz@tn.gov or (865) 310-0474, or to Randy Hoffmeister at randy.hoffmeister@tn.gov or (865) 985-2513.

Sincerely

Randy Young Digitally signed by Randy Young
Date: 2024.09.13 14:33:51 -04'00'

Randy C. Young
FFA Project Manager
Division of Remediation – Oak Ridge Office

Enclosure

ec: Sam Scheffler, DOE
Joanna Hardin, DOE
Samantha Urquhart-Foster, EPA
Brian Begley, EPA
Tanya Salamacha, UCOR
Steve Conner, UCOR
Sid Garland, UCOR
Heather Lutz, TDEC
Dana Casey, TDEC
Colby Morgan, TDEC
ORSSAB
OREM Mailroom

xc: Wade Creswell, ORRCA
Amy Fitzgerald, ORRCA
Terry Frank, ORRCA
Warren Gooch, ORRCA

COPY

Enclosure - Comments

GENERAL COMMENTS

Comment 1: The Addendum to the Phased Construction Completion Report for the K-1007 Ponds Area and Powerhouse North Area in Zone 1 (DOE/OR/01-2294&D2/A1) states that the need for an additional soil remedial action for K-1085 is deferred until the Zone 1 Final ROD. All remaining work scope should be included in the background section of the RIWP addendum. While the focus of this addendum is to further delineate groundwater impacts in the K-1085 Area, future investigations should further characterize soil, identifying any threats to groundwater as well as evaluate the need for any additional soil remedial actions where appropriate.

Comment 2: The groundwater analytical suite identified in this workplan does not include the analysis of 1,4-dioxane via 8270 isotope dilution with SIM GC/MS, which allows for analysis at lower detection levels. As method 8260 will be used for volatile organic compounds, please at minimum, request that 1,4-dioxane is reported as an analyte via 8260. To manage the data gap related with the high detection limit associated with the 8260 method, TDEC requests notification of sampling events and requests the opportunity to co-sample for this alternate analysis at a few sampling locations, allowing the State to utilize the more sensitive 1,4-dioxane via 8270 isotope dilution with SIM GC/MS method.

Comment 3: Please include radionuclides (gross alpha/beta) and dioxins to the list of groundwater analytes.

Comment 4: Some text is only referenced in the attached field sampling plan while absent in the main addendum text. For the following, please include text in the main portion of the document:

- The data quality objective slides indicate that language will be included in the RIWP addendum to allow for flexibility of adding new wells. Contingent wells are identified on page B-13 in the attached field sampling plan, but no text regarding these wells is present in the main RIWP addendum text. The State requests that text regarding these contingent wells be included within the main addendum.
- The attached field sampling plan indicates that "The final boring locations will be surveyed with a global positioning system" (page B-17), the work plan is silent with respect to surveying the locations and elevations of the tops of the well and piezometer casings. Please add text to the main addendum to confirm that this survey will be completed.

Comment 5: One of the goals of this workplan is to investigate the presence of dense non-aqueous-phase liquid (DNAPL) and to identify the floor of the plume. The document as written does not include discussion of the methods to be used to understand in situ fractures in relation to the suspected DNAPL. The State recommends using appropriate methods to support this investigation (see EPA's *Site Characterization Technologies for DNAPL Investigations*, EPA 542-R-04-017, Sept 2004). Please consider options for borehole geophysical tools to better understand preferential pathways for DNAPL. Non geophysical tools such as an optical televiewer or a FLUTE liner system could also be used to help identify NAPL zones. Please include text describing DOE's identified methods to be used for the DNAPL investigation.

Enclosure - Comments

Comment 6: While noting that “fluid loss” is listed in *Table 4.4 Borehole geologic log contents*, The State would like to re-emphasize that “water quantity injected/added” versus “water quantity recovered” should be recorded during drilling and well installation activities. This information should be included in the drilling log contents as well as in the well construction records. These records are important when evaluating data with respect to well development and whether samples collected following these installations are representative of site conditions, or rather that of drilling fluids or diluted formation water.

Comment 7: Figures that identify the core of the plume and the plume movement over time are critical to adequate assessment of remedial alternatives. Please ensure that the data being collected in support of this RIWP addendum will facilitate those needed figures for the RI.

SPECIFIC COMMENTS

Comment 1: Page 4-5, 3rd paragraph references the use of “1-inch minimum” well risers for the proposed nested wells. Historically, 1-inch risers have not been conducive for providing adequate infrastructure for longer term monitoring (i.e., smaller well diameter may limit pump options, may limit available sample volumes and analyte collection, may limit surging options ultimately causing insufficient development, etc.). If these wells are to be used as part of a longer-term monitoring network, it is strongly recommended to use a more standard 2-inch well riser where possible. In addition, each well should have appropriately designed sand packs and screen slot sizes based on respective geologic formation properties.

Comment 2: Page 4-6 states that “Each soil boring location will have two soil samples collected—one above the water table and one below—using a PID to sample the core at the highest reading (if applicable).” Rather than only collecting two samples, TDEC requests that soil samples be collected, field screened, and sent off for laboratory analysis for each drill run (approximately 5 feet). This is similar to what is proposed for the well borings. As planned for the well borings, please use a PID to scan the core for each drill run, sampling at the highest reading.

In the event where PID scans are indistinguishable within a drill run, please where applicable either 1) select the sample location as close to the soil/bedrock interface if drill run is below the water table or 2) select the sample location within a few feet above the water table if drill run is above the water table.

Comment 3: Page 4-8, Section 4.3.3 of the workplan identifies that bedrock core will be collected, logged, photographed, and that RQDs will be calculated. Please clarify if bedrock core will be scanned with a PID. The State recommends scanning and recording PID readings of the recovered bedrock including fracture zones.

Comment 4: Page B-24, Section 4.1.9 identifies that well development will continue until field parameters stabilize. Please clarify the approach used for removing water during development if water was added during drilling. Per the U.S. Environmental Protection Agency’s guidance on monitoring well development, please remove two to three times the volume of water added if water was added during well construction or development.