

March 26 , 2024

SRMC-ESH-2024-00044
RSM Track #: 10667

Ms. Susan Fulmer
Federal Remediation Section
Bureau of Land and Waste Management
South Carolina Department of Health and
Environmental Control
2600 Bull Street
Columbia, South Carolina 29201-1208

Dear Ms. Fulmer:

**2023 ANNUAL GROUNDWATER MONITORING REPORT FOR THE F- AND H-AREA
RADIOACTIVE LIQUID WASTE TANK FARMS**

The Industrial Wastewater Consolidated General Closure Plan for F-Area and H-Area Waste Tank Systems (SRR-CWDA-2017-00015, Revision 1) requires the Savannah River Site to conduct groundwater monitoring during the interim period from the time the individual waste tanks are removed from service up to final closure of the F-Area and H-Area Operable Units, in accordance with the corresponding F-Area and H-Area Groundwater Sampling and Analysis Plans that have been approved by your agency. Please find the enclosed 2023 Annual Groundwater Monitoring Report for the F- and H-Area Radioactive Liquid Waste Tank Farms and the SRS responses to comments from the Environmental Protection Agency (EPA) on the 2022 Annual Groundwater Monitoring Report for the F- and H-Area Radioactive Liquid Waste Tank Farms.

If you have any questions, please contact Keith Liner of my staff at (803) 208-6466.

Sincerely,



Joel R. Cantrell, Director
Environment, Safety, Health, and Quality
Savannah River Mission Completion, LLC

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- Attachments: 1. *2023 Annual Groundwater Monitoring Report For the F-and H-Area Radioactive Liquid Waste Tank Farms (U)*, SRNS-RP-2024-00042, Revision 0, March 2024
2. SRS Responses to United States Environmental Protection Agency Comments on: *2022 Annual Groundwater Monitoring Report For the F-and H-Area Radioactive Liquid Waste Tank Farms (U)*, SRNS-RP-2022-01106, Revision 0, March 2023

c:	<p>J. Richards, EPA Region 4, Atlanta, GA R. H. Pope, Atlanta, GA J. Dawson, Atlanta, GA M.C. Reece, SCDHEC, Columbia, SC C.D. Rippey, Columbia SC J. Koon, Columbia, SC T.R. Fuss, Aiken, SC J.L. Folk Jr., DOE, 704-S A. Robinson, 704-S J.T. Maul Jr., 704-S A.G. Hammett, 730-B C.L. Bergren, SRNS, 730-4B A.J. Meyer, 730-4B T.P. Killeen, 730-4B S.L. McFalls, 730-4B L.D. Olson, SRMC, 766-H W.C. Clark Jr., 766-H R.W. Blackmon, 704-Z M.N. Borders, 766-H M.S. Barth, 992-5W T.D. Burns, 766-H L.T. Ling, 766-H</p>	<p>I.P. Amidon, 704-56H W.L. Atterberry, 704-56H K.H. Rosenberger, 766-H J.S. Kirk, 705-1C V.E. Millings III, 705-1C K.M. Garlick, 704-S F. Meyer, 992-5W P.B. Underwood, 992-5W K.K. Vaselopoulos, 992-5W C.T. Strowbridge, 730-B M. Smith, 992-5W L.B. Romanowski, 705-1C Records Administration, 773-52A DOEECAT</p>
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**SRS Responses to United States Environmental Protection Agency Comments on:
2022 ANNUAL GROUNDWATER MONITORING REPORT FOR THE F- AND H-AREA
RADIOACTIVE LIQUID WASTE TANK FARMS (U), SEMS Numbers: 23 and 89 – Aiken, South
Carolina (SRNS-RP-2022-01106, Revision 0, March 2023)
Received June 22, 2023, electronically.**

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GENERAL COMMENTS

1. The Groundwater Monitoring Report Section 3.0 (Groundwater Monitoring at F-Area Tank Farm, Nonvolatile Beta, Page 5 of 34) describes elevated nonvolatile beta, identified as attributable to Technitium-99, observed at groundwater wells FTF 28, FTF 19, and FTF 12R, with a noted increasing trend in non-volatile beta at FTF 28 over the last few years. It is also noted that Section 5.0 of the report states that the source is believed to be the FIPSL, as depicted on Figure 10 (Nonvolatile Beta Results (pCi/L) for the FTF in 2022) and Figure 11 (Nonvolatile Beta Results for General Separations Area Western Groundwater Operable Unit); however there is only one main line of the F-Area Inactive Process Sewer Line (FIPSL) depicted. If possible, please revise the report to include a figure that depicts all, or as many as possible of the FIPSL lines in order to provide additional evidence as to the source of the non-volatile beta plume at well FTF 19 as well as the detections at FTF 12R. Such additional information may also be useful in supporting the assumption that the decrease in Tc-99 at FTF 19 and simultaneous increase at FTF 28, as well as source of the recent detection of I-129 at well FTF 12R is indicative of plume migration rather than a continued release. It is understood that installation of additional wells may not be feasible due to on-going operations at the FTF however if the location of additional FIPSL lines cannot be identified, and concentrations of Tc-99 continue to increase at FTF-28 and concentrations of I-129 continue to increase at FTF-12R, additional discussion about potential action may be warranted.

Response: Agree

A better depiction of the FIPSL lines will be included in the 2024 submittal of the tank farms groundwater monitoring report on Figures 4 and 10, showing the FIPSL lines and their location relative to the wells at the FTF. The figures show there are lines in the vicinity of FTF 28, FTF 19 and FTF 12R that could be the source of nonvolatile beta at wells FTF 28 and FTF 19, as well as the I-129 detections at FTF 12R.

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SPECIFIC COMMENTS

1. **Section 3.0, Groundwater Monitoring at F-Area Tank Farm, Page 3 of 34:** Section 3.0 states, “In 2022, Savannah River Site (SRS) installed a new well (FBG002D) to monitor background water concentrations in the Upper Aquifer Zone (UAZ) at the F-Area Tank Farm (FTF);” however, this section does not describe how it was determined that GW well FBG002D will sufficiently fill the data gap from FBG001D as a background well since according to Figure 8, it is located on the opposite side of the Upper Three runs Aquifer (UTRA) Groundwater Divide compared to location of FBG001D. Please revise the text to include a discussion on how it was determined that the location of FBG002D will sufficiently fill the data gap as a background well based on the current location across the groundwater divide.

Response: Clarification

This comment appears to have been inadvertently carried over from comments on the 2021 report. The response to the comment from the 2021 report is included below.

Despite above average rainfall and an overall increasing water elevation from 2012 to 2020 the water in the UAZ, in the area of well FBG001D, is thin. Even though the well screen is located at the top of the tan clay, at the bottom of the UAZ, not enough water is present to collect for sampling. FBG001D is located on the north-west side of a groundwater divide where water flows to Upper Three Runs. On this side of the divide, the water table quickly dips below the tan clay and exists in the LAZ as you move away from the divide. FBG001D is essentially located where the water table begins to drop into the LAZ and the UAZ becomes unsaturated.

South of the groundwater divide, water flows to Fourmile Branch and the water table exists in the UAZ. FBG002D was placed on the south-west side of the FTF to monitor the FTF where the water table does exist in the UAZ.

SRS will continue to attempt to sample FBG001D in future sampling events so that we can sufficiently monitor the UAZ on the north-west side of the groundwater divide should the water elevation rise enough that there is enough water in the UAZ for well FBG001D to provide sufficient water for a sample. Otherwise, FBG001C will serve as the water table background well for the FTF.

This information will be included in the 2023 submittal of the tank farms groundwater monitoring report. No changes are proposed for the 2021 report.

Contact: Kevin Boerstler, (803) 952-6766, kevin.boerstler@srs.gov

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RADIOACTIVE LIQUID WASTE TANK FARMS (U), SEMS Numbers: 23 and 89 – Aiken, South
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2. **Section 4.0, Groundwater Monitoring at H-Area Tank Farm, Cadmium and Chromium, Page 9 of 34:** The number of cadmium results is unclear. The text in the Cadmium and Chromium subsection states, “Out of 100 samples, 97 results for cadmium were non-detect. The five remaining results were qualified as ‘J’;” however, the total number of samples do not add up to 100. As stated, if there are 100 samples and 97 are non-detect, then three samples should be remaining. Please revise this section to include the correct number of non-detect and remaining samples for cadmium results.

Response: Clarification

This comment appears to have been inadvertently carried over from comments on the 2021 report. The response to the comment from the 2021 report is included below.

The text should have stated that there were three remaining wells as opposed to five. Future submittals of this report will take care to avoid typographical errors such as this. No changes are proposed for the 2021 report.

Contact: Kevin Boerstler, (803) 952-6766, kevin.boerstler@srs.gov