



**Department of Energy**  
Savannah River Operations Office  
P.O. Box A  
Aiken, South Carolina 29802

**JAN 16 2025**

Ms. Susan B. Fulmer, P. G., Manager  
Federal Remediation Section  
Division of Site Assessment, Remediation and Revitalization  
Bureau of Land and Waste Management  
South Carolina Department of Environmental Services  
2600 Bull Street  
Columbia, South Carolina 29201

Mr. Jon Richards  
Savannah River Site Remedial Project Manager  
Superfund and Emergency Management Division  
U. S. Environmental Protection Agency, Region 4  
61 Forsyth Street, SW  
Atlanta, Georgia 30303

Dear Ms. Fulmer and Mr. Richards:

**SUBJECT:** Savannah River Site's Responses to the Regulatory Comments on the Groundwater Mixing Zone Sampling Summary Report for the R-Area Reactor Seepage Basins/108-4R Overflow Basin Operable Unit 2023, SEMS Number: 25

In accordance with the terms of the Federal Facility Agreement (FFA), the U.S. Department of Energy (DOE) is submitting the subject comment responses for your review. The U.S. Environmental Protection Agency's (EPA) and South Carolina Department of Environmental Services' (SCDES) comments were received on October 11, 2024, and October 18, 2024, respectively. This report will not be revised; however, all comment responses will be included in the next report, as applicable.

In the Recommendations section of the June 24, 2024, submittal of the Groundwater Mixing Zone Sampling Summary Report for the R-Area Reactor Seepage Basins (RRSB)/108-4R Overflow Basin Operable Unit 2023 (RDDD-24-141), Savannah River Site (SRS) proposed to combine RRSB and R Area Operable Unit (RAOU) groundwater reports into one report. The proposed RRSB OU and RAOU letter report would be due in August 2026 and a full report due in August 2028 to support the December 2029 Eighth Five-Year Remedy Review Report for SRS OUs with Groundwater Remedies submittal. SRS proposes biennial monitored natural attenuation sampling for the RAOU starting in 2025 to match the RRSB OU sampling schedule and to support a combined letter report for both the RRSB OU and the RAOU due on the proposed date of August 31, 2026. RAOU full in-situ decommissioning monitoring would continue a 5-year sampling period starting in 2027 to support the five-year remedy review report submittal. Once this recommendation is approved, the FFA Appendices D and E, as applicable, will be updated to remove the individual report submittals and add the combined report submittals.

Please review the enclosures and provide your approval within thirty (30) days from receipt. The effort and time that the EPA and the SCDES have provided on this operable unit are greatly appreciated.

JAN 16 2025

Ms. Susan Fulmer  
Mr. Jon Richards

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Questions from you or your staff may be directed to me at (803) 952-7805, or the DOE Operable Unit Manager, Phillip Prater, at (803) 952-9333.

Sincerely,

AVERY  
HAMMETT

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HAMMETT  
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Avery G. Hammett  
FFA Project Manager, DOE-Savannah River Operations Office  
Remediation, Deactivation, and Decommissioning Division

RDDD-25-116

Enclosures:

1. SRS Responses to the South Carolina Department of Environmental Services' Comment on the Groundwater Mixing Zone Sampling Summary Report for the R-Area Reactor Seepage Basins/108-4R Overflow Basin Operable Unit 2023, SEMS Number: 25
2. SRS Responses to the U.S. Environmental Protection Agency's Comments on the Groundwater Mixing Zone Sampling Summary Report for the R-Area Reactor Seepage Basins/108-4R Overflow Basin Operable Unit 2023, SEMS Number: 25

cc w/o encl:

M. Reece, SCDES-Columbia  
H. J. Porter, SCDES-Columbia  
J. Blalock, SCDES-Columbia  
S. French, SCDES-Columbia  
R. G. Stewart, SCDES-Columbia  
G. K. Taylor, SCDES-Columbia  
T. G. Corley, SCDES-Midlands Aiken Environmental Affairs Office  
G. O'Quinn, SCDES-Midlands Aiken Environmental Affairs Office  
E. G. Downing, SCDES-Midlands Aiken Environmental Affairs Office  
H. L. Herlong, SCDES-Midlands Aiken Environmental Affairs Office

cc w/encl:

H. Cathcart, SCDES-Columbia  
M. McRae, TechLaw, Inc.

**SRS Responses to SCDES Comments on the R-Area Reactor Seepage Basins/108-4R  
Overflow Basin Operable Unit (U) 2023, SEMS Number: 25, SRNS-J2000-2024-00461,  
Revision 0, Dated June 2024  
Savannah River Site, Aiken, South Carolina**

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**Comments Received October 18, 2024**

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**SPECIFIC COMMENTS**

1. Recommendations, page 4. SRS proposes biennial sampling for the RAOU monitoring network in order to match the sampling schedule for RRSB OU. Recently, the 2024 RAGW Biennial EMR in Support of the RAOU Rev. 1 was approved by SCDES, in which biennial sampling was proposed for all wells except for RAG008B, RAG008BL, and RBP011B, which would remain on an annual sampling schedule. *Please verify that these three wells will continue to be sampled annually as per the approved RAGW Biennial EMR.*

**Response: Agree.**

**Wells RAG008B, RAG008BL, and RAG011B will continue to be sampled annually per the approved RAGW Biennial EMR.**

**No change to the current document is proposed.**

**Responsible Party: Justin Steadman, (803) 952-7346, [justin.steadman@srs.gov](mailto:justin.steadman@srs.gov)**

SRS Responses to USEPA Comments on the R-Area Reactor Seepage Basins/108-4R  
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Comments Received October 11, 2024

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**GENERAL COMMENT**

1. The fourth quarter 2023 (4Q23) Strontium-90 (Sr-90) sampling result at well RSE 1A is 167 picocuries per liter (pCi/L); however, there is no discussion about the historical Sr-90 results or trends, or the suspected cause of the 4Q23 high concentration at this well. *Please revise the text to include a discussion about the Sr-90 concentration history, and suspected cause of high 4Q23 Sr-90, at well RSE 1A.*

**Response: Clarification.**

The result in auxiliary well RSE 1A was 3.97 pCi/L. The result of 167 pCi/L referred to in General Comment #1 occurred in plume/intermediate well RSE 10. Well RSE 10 has been the most contaminated well in the groundwater mixing zone (GWMZ) since monitoring of the application began in 2007. Often well RSE 10 is dry and the alternate plume/intermediate well, RSE010DU is sampled. The last time well RSE 10 was sampled was in the fourth quarter of 2019 with a result of 135 pCi/L. The 2023 result in well RSE 10 is consistent with the stable trend that has been present since 2009.

The purpose of the supplemental sampling summary is to provide the data results of the most recent reporting period. The full GWMZ report provides a more robust discussion of the history, nature and extent of contamination, and contaminant trends. The last full report, *2021 Groundwater Mixing Zone Report for the R-Area Reactor Seepage Basins/108-4R Overflow Basin Operable Unit (SRNS-RP-2022-00212)*, was submitted in June of 2022. A reference to the full report will be made in future summary letters as a means to provide the reader with supporting historical information.

No change to the current document is proposed.

Responsible Party: Justin Steadman, (803) 952-7346, [justin.steadman@srs.gov](mailto:justin.steadman@srs.gov)

**SPECIFIC COMMENTS**

1. **Water Elevations, Page 2 of 10, Figure 2, 4Q23 Water Elevation of the A/AA Horizon in the UAZ, Page 7 and Figure 3, 4Q23 Water Elevation of the TZ in the UAZ, Page 8:**  
The text states that since the potentiometric heads in the A/AA horizon are generally about 2 feet to 8 feet higher than corresponding heads in the transmissive zone (TZ) no groundwater flow direction is drawn; however, while the groundwater elevations indicate that downward vertical gradient exists between A/AA and TZ, flow direction arrows should be drawn on the potentiometric surface contours of the A/AA in Figure 2 and the TZ, in Table 3. *Please revise the Report to include this information.*

**Response: Agree with Clarification.**

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Due to the fact that localized groundwater flow is generally downward, use of regional groundwater data to determine flow direction in the UAZ will be used to generate a separate figure for the in future reports as shown in Figure CR-1 below.

No change to the current document is proposed.

Responsible Party: Justin Steadman, (803) 952-7346, [justin.steadman@srs.gov](mailto:justin.steadman@srs.gov)

2. **RRSB OU Strontium-90, Page 3:** The text states that since no concentrations exceeded the maximum contaminant level (MCL) in the TZ wells a concentration map was not drawn; however, since there were J qualified detections and the estimated quantitation limit (EQL) varied between sample results, a figure showing the Sr-90 concentrations detected in the TZ should be presented. *Please revise the Report to present a figure showing Sr-90 concentrations in the TZ.*

**Response: Clarification.**

Concentration plume maps are only drawn for aquifers with wells exceeding the MCL. Since no wells exceeded the MCL within the TZ, a concentration map was not drawn. All J qualified detections were also less than the MCL as indicated by the results in Table 1. If future J qualified detections are greater than the MCL, a concentration plume map will be provided.

No change to the current document is proposed.

Responsible Party: Justin Steadman, (803) 952-7346, [justin.steadman@srs.gov](mailto:justin.steadman@srs.gov)

SRS Responses to USEPA Comments on the R-Area Reactor Seepage Basins/108-4R  
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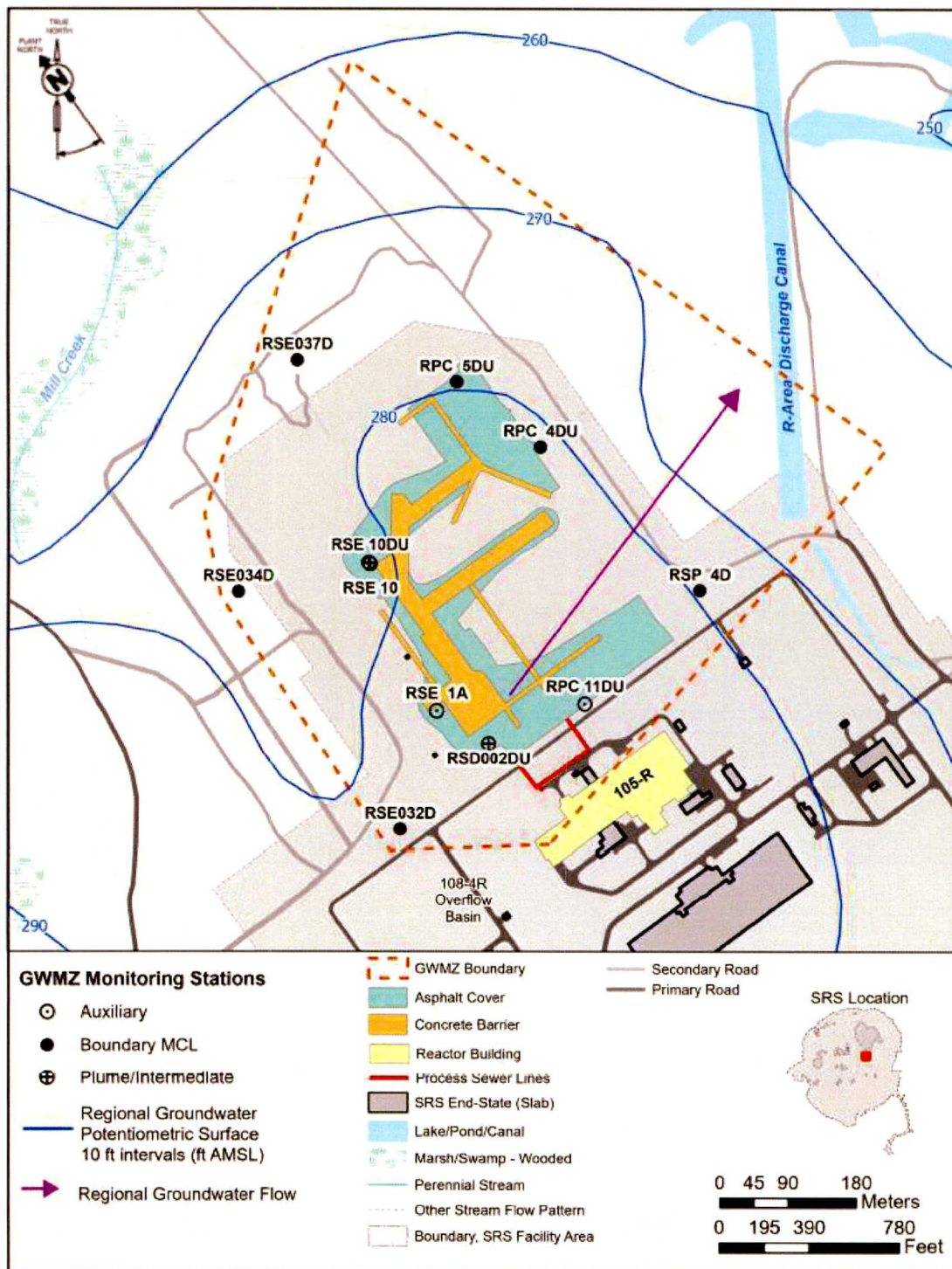


Figure CR-1. Regional Groundwater Flow within the UAZ of the UTRA.