**Department of Energy**
Savannah River Operations Office
P.O. Box A
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JAN 1 1 2018

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 Health and Environmental Control
2600 Bull Street
Columbia, South Carolina 29201

Mr. Jon Richards
Acting Savannah River Site Remedial Project Manager
Superfund 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 R-Area Groundwater (NBN) Effectiveness Monitoring Report in Support of R Area Operable Unit (U) January 2016 through December 2016 (SRNS-RP-2017-00232, Revision 0, June 2017) CERCLIS Number: 95

In accordance with the terms of the Federal Facility Agreement, the U.S. Department of Energy (DOE) is submitting the subject comment responses for your review. The South Carolina Department of Health and Environmental Control (SCDHEC) provided approval and the U.S. Environmental Protection Agency (EPA) provided comments on the Revision 0 document on October 19, 2017. This report will not be revised; however, all comment responses will be included in the next report, as applicable. The next scheduled report submittal is June 30, 2019. Please review these responses and provide your approval thirty (30) days from receipt.

The time and effort that the SCDHEC and the EPA have given on the subject operable unit are greatly appreciated. Comments or questions from your staff may be directed to me at (803) 952-8365, or the DOE Program Manager, Mr. Philip Prater, at (803) 952-9333.

Sincerely,

Brian T. Hennessey
SRS Remedial Project Manager
Infrastructure and Area Completion Division

IACD-18-119

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Enclosure:
SRS Responses to EPA comments on the R-Area Groundwater (NBN) Effectiveness Monitoring Report in Support of R Area Operable Unit (U) January 2016 through December 2016 (SRNS-RP-2017-00232, Revision 0, June 2017), CERCLIS Number: 95

cc w/o encl:
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**SRS Responses to EPA comments on the R-Area Groundwater (NBN) Effectiveness Monitoring Report in Support of R Area Operable Unit (U), January 2016 through December 2016, CERCLIS Number: 95, SRNS-RP-2017-00232, Revision 0, June 2017**
**Savannah River Site NPL Site, South Carolina**



**Received October 19, 2017**

## TECHNICAL REVIEW COMMENTS

1. The text in Section 3.3 (RAGW Compliance) states that with the approval of the Core Team, SRS may suspend monitoring on any station with stable or decreasing refined constituents of concern (RCOC) concentrations that are below maximum contaminant levels (MCLs) for six consecutive years consistent with the 2011 Environmental Monitoring Plan (EMP). However, the determination to suspend monitoring should be performed consistent with the EPA guidance document titled "Recommended Approach for Evaluating Completion of Groundwater Restoration Remedial Actions at a Groundwater Monitoring Well OSWER 9283.1-44, August 2014" (EPA Guidance). The EPA Guidance recommends groundwater monitoring well data and other related subsurface information be evaluated to make defensible conclusions during the remediation monitoring phase and the attainment monitoring phase of groundwater monitoring. This guidance recommends a minimum number of data points to evaluate each phase as follows:

   - The remediation monitoring phase is completed when monitoring well data demonstrate that the groundwater has reached the cleanup levels for all contaminants of concern (COCs) set forth in the record of decision (ROD). Since the remediation monitoring phase is not the final decision point for completing the restoration of groundwater, the EPA Guidance recommends a minimum of four data points be used for analysis during this phase.

   - The attainment monitoring phase is intended to provide data that help support a defensible determination that: a) the groundwater in the well has met the cleanup level for each COC; and b) provides assurance that the groundwater will continue to meet the COC cleanup level in the future. Since the EPA Guidance recommends that completion of the attainment monitoring phase be based on two lines of evidence, in general, a more robust data set using a visual or statistical (trend test and mean test) evaluation is typically used to make the final attainment determination.

     Therefore, consistent with the EPA Guidance, it is recommended that a minimum of eight data points be used for the attainment monitoring phase analysis. Revise the R-Area Groundwater (NBN) Effectiveness Monitoring Report in Support of R Area Operable Unit (U), January 2016 through December 2016, CERCLIS Number: 95, SRNS-RP-2017-00232, Revision 0, dated June 2017 (2016 EMR) to address this issue. Alternatively, if the 2016 EMR will not be revised based on review comments, ensure this issue is addressed in the report prepared for the 2017 monitoring period.

   **Response: Agree/Clarification.**

   **This issue will be addressed in the next monitoring report, as recommendations for discontinued monitored in some wells may be made based on the EMP criteria. SRS**

**recommends that the merits of the site specific conditions should play an important role in this decision making process. Previous estimates indicate that it may take over 100 years before all four RAOU groundwater plumes are below MCLs, so long-term monitoring will continue. No change to the 2016 Effectiveness Monitoring Report (EMR) is proposed.**

**Contact: Terry Killeen, 803-952-6850 (terry.killeen@srs.gov)**

2. The text in Section 4.1.1 (Eastern VOC Plume), Page 6 of 30 states well RAG008B is designated as a plume definition well and well RPB011B is designated as the new plume boundary well which is consistent with the information presented in Table 1 (RAGW Monitoring Stations), Page 27 of 30. However, it is noted that RAG008B is designated as a Plume Boundary Well and the new well RBP011B well is designated as a Plume Definition Well in Table A-1 (RAOU EMR Monitoring Wells, Fourth Quarter 2016), Appendix A, Page A-3 of A-4 and is not consistent with the information presented in Section 4.1.1 and Table 1. Revise the 2016 EMR to address this issue to ensure all the well use designations are presented consistently across all text figures and tables.

**Response: Agree.**

**Table A-1 will be updated to correctly list well RAG008B as a plume definition well and well RPB011B as the new plume boundary well in the 2019 R-Area Groundwater (RAGW) EMR.**

**Contact: Terry Killeen, 803-952-6850 (terry.killeen@srs.gov)**

3. In Section 6.0, SRS recommends that groundwater sampling be reduced to biennial (every two years) starting in 2018 for all locations with the exception of the new plume boundary well RBP 011B, which will continue to be sampled annually for three years. EPA supports that recommendation given that VOC and tritium concentrations fluctuate very little in the majority of monitoring wells (with the exception of RAG008B) indicating stable or decreasing trends.

**Response: Clarification/Agree.**

**The current SRS sampling and analysis schedule for the RAOU groundwater plumes is that all wells are sampled in the fourth quarter of the calendar year and the report is submitted on or before June 30 of the following year. Sampling and analyses have all been conducted for 2017 and the next complete round of sampling is scheduled for the fourth quarter of 2018 calendar year and then again in the fourth quarter of 2020 calendar year. The next full round of RAOU ISD well sampling and analyses will take place in the fourth quarter of 2022 calendar year. Surface water sampling will continue annually. The next RAGW EMR is scheduled for submittal by June 30, 2019 and successive reports submitted**

**SRS Responses to EPA comments on the R-Area Groundwater (NBN) Effectiveness Monitoring Report in Support of R Area Operable Unit (U), January 2016 through December 2016, CERCLIS Number: 95, SRNS-RP-2017-00232, Revision 0, June 2017 Savannah River Site NPL Site, South Carolina**



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**every other year (2019, 2021, 2023, …) (see attached revised Table 6 from the Effectiveness Monitoring Plan [SRNS-RP-2010-01259, Revision 1, April 2011]).**

**Contact: Terry Killeen, 803-952-6850 (terry.killeen@srs.gov)**

**Table 1. Monitoring and Reporting Schedule**

| Year | Plume Definition, Plume Boundary, & LUC Boundary Wells | Key Source Zone Wells | Other Wells [b] | Surface Water [c] | ISD Wells | Report |
|---|---|---|---|---|---|---|
| 2017 | 4th Quarter | 4th Quarter | 4th Quarter | 4th Quarter | 2nd Quarter | 2nd Quarter |
| 2018 | 4th Quarter | 4th Quarter | 4th Quarter | 4th Quarter | | |
| 2019 [a] | | | 4th Quarter | 4th Quarter | | 2nd Quarter |
| 2020 | 4th Quarter | 4th Quarter | 4th Quarter | 4th Quarter | | |
| 2021 [a] | | | 4th Quarter | 4th Quarter | | 2nd Quarter |
| 2022 | 4th Quarter | 4th Quarter | 4th Quarter | 4th Quarter | 4th Quarter | |
| 2023 [a] | | | 4th Quarter | 4th Quarter | | 2nd Quarter |
| | | | | | | |

[a] Annual sampling may be changed to biennial for specific wells and surface water stations with Core Team agreement.
[b] Other wells include RAG008B, RBP011B, RDB 1D, RDB 3D, RDB003DU, and RDB005C.
[c] Surface water stations include JBSW-01, JBSW-02, JBSW-03, MCSW-03, MCSW-04, MCSW-05, MCSW-06, PASL-01, and PASL-02.