



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

ARF-023103

MAR -1 2021

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
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 2019 Groundwater Mixing Zone Report for the D-Area Oil Seepage Basin (631-G) (U) (SRNS-RP-2020-00362, Revision 0, July 2020) SEMS Number: 27

In accordance with the terms of the Federal Facility Agreement, the U. S. Department of Energy (DOE) is submitting the enclosed responses to the regulatory comments on the 2019 Groundwater Mixing Zone Report for the D-Area Oil Seepage Basin (631-G) (U) (SRNS-RP-2020-00362, Revision 0, July 2020) for your review. The South Carolina Department of Health and Environmental Control (SCDHEC) provided approval on November 20, 2020 and the U. S. Environmental Protection Agency (EPA) provided comments on December 7, 2020. This report will not be revised; however, all comment responses will be addressed in the next report, as applicable. Please review the responses and provide your approval within thirty (30) days of receipt.

The effort and time that the SCDHEC and the EPA have given on the subject operable unit are greatly appreciated. Questions from you or your staff may be directed to me at (803) 952-8365 or the DOE Federal Project Director, Ms. Karen Adams, at (803) 952-7871.

Sincerely,

Brian T. Hennessey

Digitally signed by Brian T.
Hennessey
Date: 2021.02.25 09:57:15 -05'00'

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

IACD-21-125

MAR -1 2021

Ms. Susan Fulmer
Mr. Jon Richards

2

Enclosure:

SRS Responses to U.S. Environmental Protection Agency Comments on the 2019 Groundwater Mixing Zone Report for the D-Area Oil Seepage Basin (631-G) (U) (SRNS-RP-2020-00362, Revision 0, July 2020) SEMS Number: 27

cc w/o encl:

J. Blalock, SCDHEC-Columbia
S. French, SCDHEC-Columbia
M. Reece, SCDHEC-Columbia
G. K. Taylor, SCDHEC-Columbia
T. Fuss, SCDHEC–Aiken Environmental Affairs Office
G. N. O’Quinn, SCDHEC - Aiken Environmental Affairs Office
B. Cameron, SCDHEC–Aiken Environmental Affairs Office
K. L. Beatty, SCDHEC – Aiken Environmental Affairs Office
R. H. Pope, EPA-Atlanta

cc w/encl:

D. Lloyd, EPA-Atlanta
M. McRae, TechLaw, Inc.

**SRS Responses to the United States Environmental Protection Agency
Comments on the
2019 D-Area Oil Seepage Basin Operable Unit (631-G) Groundwater Mixing Zone Report,
SRNS-RP-2020-00362, July 2020 SEMS NUMBER: 27
Savannah River Site, Aiken, South Carolina
Comments received December 7, 2020
Page 1 of 2**

EPA COMMENTS:

1. The Executive Summary of the 2019 Groundwater Mixing Zone Report for the D-Area Oil Seepage Basin Operable Unit (631-G), SEMS Number: 27; SRNS-RP-2020-00362, Revision 0, dated July 2020 (the Report) states the contaminant plumes continue to shrink and the concentrations of tetrachloroethylene (PCE), trichloroethylene (TCE), cis-1,2-dichloroethylene (DCE) and chloroethene (vinyl chloride) (VC) are decreasing compared to previous years, indicating plumes are shrinking and the natural attenuation remedy is effective. However, the following plume compliance wells had volatile organic compound (VOC) results above respective Maximum Contaminant Levels (MCLs) in the source zone at the D-Area Oil Seepage Basin (DOSB) Operable Unit (OU):
 - DOB15: VC at 19.1 micrograms per Liter ($\mu\text{g/L}$) [MCL of 2 $\mu\text{g/L}$]; cis-1,2-DCE at 107 $\mu\text{g/L}$ [MCL of 70 $\mu\text{g/L}$]; and TCE at 18 $\mu\text{g/L}$ [MCL of 5 $\mu\text{g/L}$]
 - DOB15A: TCE at 14.4 $\mu\text{g/L}$ [MCL of 5 $\mu\text{g/L}$]
 - DOB16: VC at 2.22 $\mu\text{g/L}$ [MCL of 2 $\mu\text{g/L}$]
 - DOL2: TCE at 6.65 $\mu\text{g/L}$ [MCL of 5 $\mu\text{g/L}$]
- a) In addition, steady contaminant concentrations greater than MCLs were noted for TCE in plume compliance well DOB15, variable and greater than MCLs at DOB15A, and variable to increasing at DOB15D. These TCE trends indicate longer than anticipated clean-up timeframes for aquifer restoration.
- b) Additionally, VC concentrations in plume compliance wells DOB15 and DOB16 are stable but greater than MCLs suggesting the projected cleanup timeframe for aquifer restoration to beneficial use is uncertain and potentially longer than anticipated. With over 22 years of groundwater monitoring data, it is of concern that the noted steady contaminant concentration trends greater than respective maximum contaminant levels (MCLs) and represent a potential problem warranting action at the source area.
- c) Natural attenuation (NA) parameters indicate that current groundwater conditions at the site are not favorable for reductive dechlorination processes; therefore, NA relies primarily on physical processes such as dispersion and dilution. Furthermore, it is noted in the Calendar Year 2018 D-Area Oil Seepage Basin Operable Unit (631-G) Groundwater Mixing Zone Letter Report, SEMS Number: 27, dated July 25, 2019 (2018 Groundwater Mixing Zone [GWMZ] Letter Report) that with respect to the dispersion/dissolution of VOCs, "it is speculated that VOCs are being retarded by the aquitard and clayey zones and/or restricted groundwater flow zones through tighter aquifer zones." As such, it is unclear if the NA/GWMZ remedy is effective and performing as designed to achieve aquifer restoration within a reasonable timeframe as compared to active remediation.
- d) Finally, Section 6.0 (Conclusions) states, "As agreed to in the comment response for the DOSB OU letter report submitted in 2019, a Core Team meeting will be held in 2020 to discuss the trends in the DOSB OU plumes, the overall effectiveness of the NA/GWMZ remedy, and whether or not conditions at the DOSB OU warrant future action." As such, please provide

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Page 2 of 2**

proposed dates for further discussion regarding site conditions and a proposed path forward for the DOSB OU.

Response: Clarification

All wells that are monitored for the DOSB are in compliance with the agreed upon remedy. The plume compliance wells listed (DOB-15, DOB-15A and DOB-15D) are below their respective approved mixing zone contaminant levels (MZCL) while all boundary compliance wells are below their respective MCL contaminant levels. Both sets of wells meet the intent of the approved remedial action.

The Core Team has agreed to have a discussion on Wednesday, May 19, 2021 as a Teams meeting. The meeting will discuss trends in the D-Area Oil Seepage Basin (DOSB) Operable Unit (OU) plumes, the effectiveness of the natural attenuation/groundwater mixing zone remedy and if conditions at the DOSB OU warrant future action.

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

2. Section 4.4.6 (Trend Analysis) states "Contaminant levels in wells downgradient of well cluster DOB 15 (wells DOB 19 and DOB 19A) display decreasing trends (Appendix D). Modeling indicated that an increase in VC may occur around 2016; however, due to trends shown in DOB 15, it appears that contaminant transport has more retardation than modeling indicated. Additionally, further downgradient boundary compliance wells (well clusters DOB 20, DOB 21, and DOB 22) and surface water concentrations continue to be below MCLs or remain non-detect; therefore, the DOSB OU GWMZ is performing adequately." While this statement is acknowledged as having merit on the basis of the contaminant transport observations, plume compliance wells DOB15, DOB15A, DOB16, and DOL2 continue to exhibit VOC concentrations that remain steady and which exceed MCLs for one or more VOCs. Please provide proposed dates for further discussion with the core team, as stated in the Report.

Response: Clarification

Please see the response to comment #1.

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