



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 4
ATLANTA FEDERAL CENTER
61 FORSYTH STREET
ATLANTA, GEORGIA 30303-8960

January 05, 2022

ENVIRONMENTAL COMPLIANCE &

Mr. Brian Hennessey, 730-B
SRS Remedial Project Manager
Savannah River Operations Office
Area Completion Projects
Post Office Box A
Aiken, South Carolina 29802

JAN - 5 2022

AREA COMPLETION PROJECTS

Dear Mr. Hennessey:

The U.S. Environmental Protection Agency (EPA) has reviewed the Department of Energy, Savannah River Site (DOE-SRS) D Area Groundwater Operable Unit Report for Calendar Year 2020, SEMS # 63, dated July 2021.

EPA can not approve this report until the comments below have been addressed. Should you have any questions or concerns, please feel free to call me at on my cell number 404-229-9500.

Sincerely,

Diedre Lloyd

Diedre Lloyd
Remedial Project Manager
Restoration & Sustainability Branch
Superfund & Emergency Management Division
Region 4, 61 Forsyth Street
Atlanta, GA 3030

cc: Angelia Holmes, DOE-SRS, Brian Hennessey, DOE-SRS, Phil Prater, DOE-SRS, Karen Adams, DOE-SRS, Chris Bergren, SRNS-ACP (Signed Original), Susan Fulmer, SCDHEC;

**EPA COMMENTS ON THE
D-AREA GROUNDWATER OPERABLE UNIT REPORT
FOR CALENDAR YEAR 2020 DATA**

**SEMS NUMBER: 63
DATED JULY 2021**

**SAVANNAH RIVER SITE
AIKEN, SOUTH CAROLINA**

EPA GENERAL COMMENTS:

1. Sulfate, tritium, trichloroethylene (TCE), beryllium, cobalt, and iron were detected in Upper Three Runs Aquifer (UTRA) monitoring well DCB 55 above applicable Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCLs) or National Secondary Drinking Water Standards (NSDWS); however, there are no wells located to the west-northwest of DCB 55 to bound the downgradient extent of contamination. Please consider installing a monitoring well to the west-northwest of DCB 55 to bound the extent of contamination in this area and to ensure TCE and metals impacted groundwater is not migrating towards the Savannah River.
2. Aluminum was detected in monitoring wells DSWM-7, DSWM-8, DSWM-8A, DSWM-9 and DCB085A above the NSDWS, which are all clustered in the southeast area of the site; however, there are no monitoring wells to the southwest, south and southeast to bound aluminum-impacted groundwater. Please consider installing additional monitoring wells to bound aluminum impacts in groundwater in this portion of the site.

EPA SPECIFIC COMMENTS:

1. **Section 1.2, Unit History/Description, Page 2 of 26:** The text in the first paragraph states that 431-D D-Area Rubble Pit (DRP) surface unit received waste from operation of the coal-fired 484-D Powerhouse; however, the 431-D DRP unit is not previously discussed in the text. Please revise the text to provide a discussion of the 431-D DRP surface unit in the prior bulleted section.
2. **Section 1.2, Unit History/Description, Page 3 of 26:** The dates of operation and frequency of use are not included in the Fire Fighting Training Area (FFTA) discussion presented in the second paragraph. This information is important in estimating the potential quantity of Aqueous Film Forming Foam (AFFF) that has been released into the environment. Please revise the text to indicate the dates and frequency of AFFF use at the FFTA.
3. **Section 1.2, Unit History/Description, Page 3 of 26:** The FFTA discussion in the second paragraph states that this is a source of PFAS in groundwater; however, the text does not mention if the FFTA was investigated for other fuel-related contamination. Please revise the text to include a discussion if the FFTA was investigated for other fuel-related contamination.
4. **Section 1.2, Unit History/Description, Page 3 of 26:** The text in the third paragraph states 25 gallons of product was removed from beneath the tank in 1983; however, there is no discussion of

soil or groundwater sampling. Please revise the text to provide a discussion if soil and groundwater samples were collected after the product was removed.

5. **Section 2.0, Monitoring Network, Page 7 of 26:** The text in the third paragraph states groundwater sample analysis includes tritium, volatile organic compounds (VOCs), uranium, sulfate, target analyte list (TAL) metals, hexavalent chromium and per- and polyfluoroalkyl Substances (PFAS) and field parameters; however, Table B-1 (Groundwater Samples Analyte List and Sample Frequency) also lists ethene, and redox/dissolved oxygen as analytes. Please revise this section to include ethene and redox/dissolved oxygen and other field parameters in the text.
6. **Section 3.0, Monitoring Results, Page 8 of 26:** The seventh bullet states TCE in downgradient wells will be compared to 425 microgram per liter ($\mu\text{g/L}$), and source area well DRW 1 will be compared to 187.5 $\mu\text{g/L}$ threshold limits, which appears counter-intuitive. For example, it appears downgradient TCE action levels should be more conservative due to potential offsite migration of TCE to sensitive receptors. Please revise the text to include a brief discussion explaining the development of the current well specific threshold limits for source and downgradient wells.
7. **Section 3.1, Metals (Low pH Coal Leachate) Plume, Page 10 of 26:** The fourth sentence states the maximum sulfate concentration detection in the second quarter of 2020 was 1,920 milligram per liter (mg/L), collected at location DCB 22A; however, according to Table C-3, the maximum sulfate concentration was detected in the second quarter of 2020 was 1,250 mg/L , collected from DCB 70B. Please revise this sentence accordingly.
8. **Section 3.1, Metals (Low pH Coal Leachate) Plume, Page 10 of 26:** The text in the second paragraph states the lowest pH measured during the second and fourth quarters of 2019 was at 2.8 and 2.9 respectively, at locations DCB 22A and DCB 21A, respectively; however, according to Table C-1 and C-2, a pH of 2.8 was measured at surface water location DSWM-4A during the second quarter of 2019 and a pH of 2.9 was measured at surface water location DSW-4 during the fourth quarter of 2019. Please revise the text accordingly to recognize these low pH values were measured in surface water.
9. **Section 3.1, Metals (Low pH Coal Leachate) Plume, Page 10 of 26:** The text in the fourth paragraph states aluminum concentrations were detected downgradient of the 489-D Coal Pile Runoff Basin (CPRB); however, there is no discussion of the aluminum result in surface water location DSWM-10 (800 $\mu\text{g/L}$), which is located over 1,000 feet south of the aluminum plume. Please revise this section to discuss this result in the text and what may have caused this elevated result.
10. **Section 4.1.1, Water Elevation Measurements, Page 16 of 26:** In the first paragraph, the first sentence states that 82 water levels were attempted at 82 wells during 2019 and 101 wells during 101; however there is no discussion of how many attempted wells were not gauged and why. Please provide a discussion of how many wells were not gauged and the reason why not.
11. **Section 4.1.2, Horizontal Gradient Flow Rate and Direction, Page 17 of 26:** The text in the first paragraph states the flow rate for the UTRA and Gordon Aquifer (GA) were calculated to be 85.7 and 42.1 feet/year (ft/yr), respectively; however, using the hydraulic conductivity, porosity and

hydraulic gradient values provide in the text, a flow rate of 79 ft/yr and 35 ft/yr was calculated for the UTRA and GA units, respectively. Please check the calculation and revise the flow rates as appropriate.

- 12. Section 4.2, Contaminant Migration, Page 18 of 26:** The text in the second paragraph states current monitoring results for metals show a slight decrease in immobile metal concentrations; however this is not the case for beryllium in well DCB 21C. According to Figure D-34 (Time Series Plots of Threshold Limit Exceedances for 2019 and/or 2020 at DCB 21B and DCB 21C), beryllium has increased from a concentration of less than 10 µg/L in 2014 to over 90 µg/L in 2020. Please revise the text to discuss this increasing trend for beryllium in DCB 21C and provide recommendations to address this increasing trend.

- 13. Table A-1, Well Construction Summary, Pages A-3 to A-6:** It is unclear what the “Base of Well” depth is referring to in the Table A-1. Please provide an explanation/definition at the end of the table for “Base of Well” and why it is relevant.

- 14. Table B-2, Surface Water Samples Analyte List and Sample Frequency, Page B-6 of B-8:** Several abbreviations/acronyms including but not limited to TCE and TAL are not defined at the bottom of the table. Please provide a definition for these acronyms at the bottom of the table.

- 15. Table B-3, Additional Sampling Locations During 2020, Page B-7 of B-8:** Several abbreviations/acronyms are not defined at the bottom of the table. Please provide a definition for these acronyms at the bottom of the table.

- 16. Table C-1, 2Q2019 D-Area Compliance Monitoring; Table C-2, 4Q2019 D-Area Compliance Monitoring; Table C-3, 2Q2020 D-Area Compliance Monitoring; and, Table C-4, 4Q2020 D-Area Compliance Monitoring:** The acronyms are not defined at the bottom of each table. Please define the acronyms at the bottom of the tables.

- 17. Table C-5, 2020 D-Area PFAS Sampling Results, Page C-11 of C-54:** The PFAS compounds are not defined at the bottom of the table and no applicable regulatory standards are provided. Please revise the table to define all PFAS compounds at the bottom of the table and include regulatory standards.

- 18. Table C-6, 2020 Full-Suite Data Around the 484-D Powerhouse, Pages C-13 through C-49 of C-54:** No regulatory standards are provided in the table. Please include applicable regulatory standards in the table.