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

Dec.10, 2018

Mr. Brian T. Hennessey
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EPA COMMENTS for the PERIODIC REPORT 6 FOR THE STEEL CREEK INTEGRATOR OPERABLE UNIT (IOU) (U), SEMS: 71, [SRNS-RP-2018-00809] REVISION 0, DATED Sept 2018, Savannah River Site, Aiken, South Carolina

Dear Mr. Hennessey,

The U.S. Environmental Protection Agency, Region 4 (EPA), has reviewed the Periodic Report 6 for the Steel Creek IOU, SEMS Number: 71, SRNS-RP-2018-00809, Revision 0, Sept 2018. EPA comments are attached.

If you have any questions or require additional information, please contact me at (404) 562-8648.

Sincerely,

Jon Richards
Acting FFA Remedial Project Manager
Superfund Division

ec: C.L. Bergren, SRNS-ACP
Susan Fulmer, SCDHEC

I. GENERAL COMMENTS

1. The Executive Summary of the Periodic Report 6 for the Steel Creek Integrator Operable Unit (IOU) (U) [SC PR6 Report] appears to include ambiguous and conflicting information regarding whether the detection of mercury in sediment above the ecological screening benchmark in Meyers Branch indicates a need for further investigation. One of the data decision rules listed on page ES-3 of the Executive Summary states that as part of the human health and ecological benchmark screening, constituent levels observed within the IOU that are within background levels will not be considered unit-related and that further investigation in the IOU is not warranted. However, the discussion of Sediment data on page ES-4 in the Executive Summary states the detection of mercury in excess of the ecological benchmark for sediment requires further evaluation due to having a mean ratios >1.0, a frequency of exceedance >5%, and mean detected levels less than background. In addition, Section 2.2 (Ecological Benchmark Screening and Results) states on page 2-8 that one detection of mercury at the Dunbarton Rail Road Yard (DRRY) and four out of five detections of mercury in Meyers Branch exceeded the background level of 0.021 mg/kg; these results are indicated to require further evaluation as the unit approaches the Site Evaluation Report (SER) submittal date. *Please revise the SC PR6 Report to correct the Executive Summary discussion on Sediment data and Section 2.2 of the SC PR6 Report to provide consistent information.*

2. The current screening analysis uses information on background concentrations to evaluate retention of analytes that exceed screening thresholds. The analysis compares mean concentrations of analytes in site samples to maximum levels in background samples. This is not consistent with typical screening analyses and is not representative of a conservative screening-level approach. *Revise the SC PR6 Report to compare the average site sample concentrations to average background concentrations.*

3. Section 2.2, Ecological Benchmark Screening and Results, describes the screening analysis for radionuclides. However, ecological screening analysis results do not include radionuclide screening outcomes. To increase transparency, it is recommended that the SC PR6 Report provide a table that contains all screening analysis results in a format similar to Table 2-3, Summary of Ecological Benchmark Exceedances for SC [Steel Creek] PR6. This will provide readers information on frequency of detections, analytical detection limits, and background exceedances. These are important pieces of information in understanding potential for risks and sensitivity of analytical methods in determining project objectives. *Revise the SC PR6 Report accordingly.*

4. The last purpose (or goal) of the current SC PR6 Report is to "Develop data needs for the ongoing monitoring and assessment of the IOU based on review of the new data and information presented in this PR." While fish tissue/passive diffusive thin film (DGT) sampling is described in Section 3.0, Data Needs and Early Actions to evaluate human health (HH)-based risks, there is no mention of what is planned to evaluate the identified ecological risks (e.g., collection of more sediment samples). *Revise the SC PR6 Report accordingly to develop this recommendation in Section 3.0 at the same level of detail as the HH fish/DGT study.*

5. Section 3.1 (Identification of Data Needs) of the SC PR6 Report does not provide sufficient information about how the data needs identified in the PR6 report will be met. Section 3.1 states the PR6 evaluation revealed a lack of recent fish data for Steel Creek/L-Lake and proposes the use of passive diffusive gradients in DGT samplers, and states supplemental data from data/tissue samples will be used to establish the comparability of the approach. However, the SC PR6 Report does not indicate additional fish will be collected. *Revise the SC PR6 Report to state whether additional fish will be collected in addition to the DGT data in order to supplement the human health and ecological evaluations in future periodic reports.*

6. Based on review of the ecological surface water benchmarks in Table 2-3, it appears that many of the benchmarks for inorganic surface water analytes were not normalized with respect to water hardness. It is noted that the values listed in Table 2-3 match those reported in the South Carolina Department of Health and Environmental Control, Priority Toxic Pollutants Appendix table. The respective benchmark footnotes state that these values were normalized using a hardness value of 25 mg CaCO3/L [calcium carbonate]; however, this may not be comparable to the hardness that occurs in sampled waters. *Revise the SC PR6 Report to clarify if hardness normalization was conducted.*

7. The SC PR6 Report does not mention if the surface water metals data represent the total or dissolved fraction. Amend the text to clarify this issue. No action would be required, beyond the requested revision, if total metals data were used in the SC PR6 Report data evaluation. *If total metals data were not used, ensure that the SC PR6 Report is revised to present the proper context for evaluating surface water risk.*

8. Figure 2-5, Location of Sediment Samples Exceeding Ecological Benchmarks for the SC IOU, includes an excessive amount of information and cannot be used to readily identify SC PR6 sampling locations. If the historical sampling locations will not be utilized in the current evaluation, *revise Figure 2-5 to show only those exceedances of sediment screening criteria in SC PR6 samples.*

Specific Comments

1. **Executive Summary, Page ES-4 of ES-6:**
The last paragraph on this page states, "For the Meyers Branch subunit, dichlorodiphenyltrichloroethane, dichlorodiphenyldichloroethylene, dichlorodiphenyldichloroethane, and mercury require further evaluation (with mean ratios >1.0, a frequency of exceedance >5%, and mean detected levels less than background)." It appears that this sentence contains a typographical error, as it should indicate if the mean detected levels are above background. *Revise the SC PR6 Report to address this apparent discrepancy.*

2. **Section 2.2, Ecological Benchmark Screening and Results, Page 2-8 of 2-34:**
The second full paragraph on page 2-8 indicates that the mean ratio for mercury in the Lower subunit is 4.7 mg/kg. However, this mean ratio is inconsistent with the value listed on Table 2-3, Summary of Ecological Benchmark Exceedances for SC PR6. *Revise the SC PR6*

Report to ensure that the mercury mean ratio listed on page 2-8 is consistent with the mean ratio listed on Table 2-3.

3. **Section 2.2, Ecological Benchmark Screening and Results, SW subsection, pages 2-8 and 2-9 of 2-34:**
   The text provides benchmarks when describing contaminants detected in excess of screening criteria. Reporting benchmarks does not provide information on the magnitude of respective exceedances. *To increase transparency, revise Section 2.2 to report mean ratios.*

4. **Table 2-3, Summary of Ecological Benchmark Exceedances for SC PR6, Page 2-33 of 2-34:**
   This table contains highlighted text and acronyms; however, none of these are sufficiently defined (e.g., as footnotes) on Table 2-3 to fully convey their meaning. *To increase transparency, ensure all elements identified on Table 2-3 are sufficiently detailed.*