Responses to USEPA Comments on the
Remedial Investigation for OU-4
Anniston PCB Site, Anniston, Alabama

COMMENTS:	Response:
1. **Section 1.2 Background, end of second paragraph:** Include a statement that additional investigation of the Coosa River System downstream of OU4 is also under consideration by the EPA.	The following sentence was added at the end of the second paragraph in Section 1.2 of the Operable Unit 4 Remedial Investigation (OU-4 RI): “USEPA will evaluate whether additional investigations are necessary in areas located downstream of OU-4.”
2. **Section 1.2 Background, last paragraph** - Make clear that the phrase "the associated release mechanism was overland surface water runoff" was related to OU4. Other mechanisms were identified for OU1/OU2 and OU3. Include a list of the chemicals associated with operations at the Site.	The third and fourth sentences in the last paragraph of Section 1.2 of the OU-4 RI were deleted and replaced with the following sentence: ”Overland surface water runoff from OU-3 and OU-1/OU-2 and subsequent downstream transport along the 11th Street Ditch and Snow Creek were the primary release mechanisms for PCBs and other constituents from the Facility (OU-3) to OU-4 during and following periods of heavy precipitation.” Text was added to Section 1.2 that includes the list of constituents of potential concern (COPCs) that were associated with operations at the Facility (OU-3).
3. **Section 1.4.2 CERCLA, end of last paragraph** - Include a statement that additional investigation of the Coosa River System downstream of OU4 is also under consideration by the EPA.	A sentence was added to the end of the last paragraph of Section 1.4.2 indicating “USEPA will also evaluate whether additional investigations are necessary in areas located downstream of OU-4.”
4. **Section 2.2.3 Surface Water Features of Study Area -** Clarify that the 100-year floodplain in the RI is not referring to the FEMA 100-year floodplain.	Additional text was added to Section 2.2.3 to clarify that the lateral extent of 100-year floodplain presented in the OU-4 RI was developed as part of the investigations conducted for this OU and is not referring to the 100-year floodplain developed by the Federal Emergency Management Agency (FEMA) for the general area.
5. **Section 2.9.2 Benthic Invertebrate and Fish Observations -** Please mention all fish observed in Choccolocco Creek or note that the Habitat Survey was only conducted to look for ecological food web receptors, if that is the case.	Section 2.9.2 describes the fish that were observed during field studies conducted in support of the OU-4 Baseline Ecological Risk Assessment (OU-4 BERA) including the development of the food web to support biological modeling efforts.

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	Section 2.9 was revised to reflect the presence of a wide range of fish species in addition to ecological forage species.
6. Section 3.1.2 Residential Removal Actions, last paragraph - This section should not include language more appropriate to the feasibility study. It should describe the PCBs that remain. If needed include a footnote such as: The residential removal actions in OU-4 are complete with removals conducted for 19 of the 20 properties. Access was denied for one property that will be managed through long-term soil management support. Five OU-4 residential properties where residuals at depth are present (i.e., PCB concentrations less than 10 mg/kg).[1] [1] Management of residual PCBs in residential soils in OU4 will be discussed further in the FS and will likely be managed the same way as residential properties in OU I /OU2.	A change was made to Section 3.1.2 of the OU-4 RI where the footnote was revised to incorporate the intent of the comment inclusive of the five residential properties with residuals at depth. This footnote is as follows: "Management of residual PCBs in residential soils in OU-4, including the five residential use areas with residuals at depth and the property where access was denied, will be discussed further in the OU-4 FS and will likely be managed the same way as residential properties in OU-1/OU-2."
7. Section 3.2.1 Oxford Lake Park – P/S should state that Figures 3-2a, 3-2b, and 3-2c show only the PCB concentrations that remain where the IM is installed, if that is the case. Note for the reader that the rest of the samples in the park are used in a nonresidential floodplain soil evaluation in Section 4 (Figure 4-2b). Some sample locations on Figure 3-2a look the same as on Figure 4-2b; please make sure they are not duplicated. Please provide the number of samples, frequency of PCB detections, range of detections beneath the IMs. Show excavation depths (12", 3", etc.) on a figure, geotextile location (if not over whole IM), and confirmation sample locations and identifications on a figure. Can you provide any information about the clean fill (e.g., source)? Use cross-hatching to distinguish between the different types of caps, if possible?	The notes on the Oxford Lake Park figures (Figures 3-2a, 3-2b, and 3-2c) presented in the December 2018 version of the OU-4 RI are consistent with USEPA's request. Notes 1 and 4 on Figure 3-2a indicate the following: "1. Figure presents available PCB data in the interim measure area…" "4. PCB data for areas outside of the interim measure cover are not shown on this figure." The two notes presented above are also included on Figures 3-2b and 3-2c as Note 1 and Note 3. The sample locations shown on Figure 3-2a are not duplicated on Figure 4-2b. Statistics regarding the frequency of PCB detection and the range of PCB concentrations detected were added to the text of the OU-4 RI. Analytical chemistry documentation for

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	the clean fill materials that were used to backfill the excavated areas is provided in Appendix A-22 to the OU-4 RI. The documentation includes an initial borrow source evaluation and periodic testing results for the fill materials as they were brought to the project site. This information is provided in Table 4 of Appendix A to the May 2004 Oxford Lake Softball Complex Report (which is Appendix A-22 to the OU-4 RI). The depths of excavation for the softball fields and the locations where geotextiles were placed following excavation are now shown on Figure 3-2b.
8. **Section 3.2.2 Choccolocco Creek Dredge Spoil Areas** - Please discuss why only 6 of the dredge spoil areas were sampled. Are all piles in the conservation corridor? Are all the piles in the upper ten-miles of the floodplain? Are the low areas that were filled the same as the fluvial features previously described? How were any issues found handled in 1999? How was the issue identified in 2012 in Area 26 addressed by the Alabama Land Trust? How will the trust work to prevent exposure to PCB and mercury contamination in the piles in the future? Are the property owners aware of the piles?	The sampling to characterize the dredge spoil piles was approved under the RCRA program, and the 6 locations were viewed to be representative of the 19 locations. The PCB results from the six dredge soil piles sampled are generally consistent with the PCB concentrations in the surrounding floodplain soils. The surrounding floodplain soils were also not identified in the OU-4 HHRA as having unacceptable risks. Fifteen of the 19 dredge spoil piles are located in the protective confines of the Conservation Corridor. One of the remaining four dredge spoil piles (CC-18) is located on a fenced property controlled by the Anniston Airport. The other three dredge spoil piles (CC-1, CC-15, and CC-16) are located on private property with limited access and are away from the creek banks. The dredge spoil piles are in the upper 10 miles of the floodplain and are not associated with the fluvial features that are discussed elsewhere in the OU-4 RI. There were no issues with the dredge spoil piles in 1999 that required resolution, and all property owners have been made aware of the dredge spoils including an access outreach process that was conducted prior to the 2012 evaluation.

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	The concern identified for dredge spoil pile CC-26 in the 2012 evaluation report was identified during the field phase of the assessment. The concern was subsequently resolved through outreach between the Georgia-Alabama Land Trust and the property owner. This area, as are other portions of the Conservation Corridor, is inspected periodically as part of the Conservation Corridor's Stewardship program. The conservation easements on these properties prohibit the future development in perpetuity, thus limiting the potential for exposure.
9. **Section 3.3 Infrastructure Improvement Support Projects -** There is no approved soil management program. The information in the last sentence should be deferred to the FS. Change to: "These projects are representative of anticipated future infrastructure support projects that will need to be addressed by the remedies presented in the FS."	The last sentence in Section 3.3 of the OU-4 RI was revised as requested.
10. **Section 3.3.1 Oxford Lake Softball Complex Field Lighting and Drainage Upgrades -** Please clarify that soil was sampled before excavation to determine disposal requirements. If that is not the case, please explain. What were the number of samples and range of concentrations in soil removed from the field? Please provide a figure.	A new figure was added (Figure 3-4) to the OU-4 RI showing locations for the lighting poles and associated electrical trenches. As described in Appendix A-29, PCB results associated with the Oxford Lake Softball Complex IM were used to guide soil management decisions for the lighting poles and electrical trenches. The text of the OU-4 RI was revised to clarify the PCB results for conditions that remained following implementation of the IM that removed soils from a portion of the ballfield areas. The PCB results indicated that all soils being removed to support lighting upgrades could be disposed of at an off-site facility permitted to accept materials with PCB concentrations less than 50 mg/kg. Disposal of the soil generated during infrastructure upgrades to improve drainage was guided by the analytical chemistry results for samples collected from the seven roll-off containers with the excavated soils. The soils were analyzed for PCBs, and the concentrations ranged from

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	3.9 to 14.4 mg/kg. Based on these results, the soils were disposed of at an off-site facility permitted to accept materials with PCB concentrations less than 50 mg/kg.
11. **Section 3.3.3 Choccolocco Creek Wastewater Treatment Plant -** Please identify which of these activities were conducted under RCRA authority and which were conducted under CERCLA authority. Identify samples and locations. Provide sampling statistics, such as, analytes, frequency of detections, range of detections. This section seems to mix work done as part of the final RCRA corrective measure for the soil stockpile and other work overseen by CERCLA at the WWTP. To assess whether there is a need for additional work in the FS, or to assess what needs to be managed in the future, more detailed information about what contamination is remaining on the property is needed. Confirmation sampling results where soil was excavated should be shown on Figures 3-4a through 3-4f. For the work that has not taken place, a final approval cannot be made.	Excavation of soil and backfill for the Choccolocco Creek Wastewater Treatment Plant (WWTP) were conducted under the RCRA and CERCLA programs. The work also spanned a period when regulatory overall authority for the Site was being transitioned from the Alabama Department of Environmental Management (ADEM) to USEPA. Work conducted at the soil stockpile is described in Section 3.4 of the OU-4 RI as a final corrective measure under the RCRA program along with the TSCA-related risk-based approvals from USEPA. The effectiveness of this final corrective measure implemented under the RCRA program will be evaluated in the OU-4 FS. Summary-level statistics for the soils that remain in the WWTP infrastructure area are provided in the revised OU-4 RI. Soils that were removed as part of infrastructure support activities are not included with the summary statistics because they do not reflect current conditions. Figures 3-4a through 3-4f (which are now Figures 3-5a through 3-5f) were updated with recent results from sampling conducted during 2017. While the infrastructure support work may have been conducted at the WWTP under work plans that were titled as interim measure documents, the sampling and soil management support actions were taken to facilitate infrastructure improvements at the WWTP and not as interim remedial measures. Because these are infrastructure support projects for an active WWTP, P/S will not be seeking final approval of this project, the other infrastructure support projects described in Section 3.3 of the OU-4 RI, or future infrastructure support projects as remedies. Rather, the information is being presented to

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	document the soil management support activities, including appropriate off-site disposal for those cases where the materials must be removed to facilitate implementation of the infrastructure improvement/repairs, or due to regulatory requirements (e.g., excavated materials with PCB concentrations greater than or equal to 50 mg/kg). Continued infrastructure expansion and repair at this WWTP is expected, and the information regarding PCB concentrations that remain at the WWTP can be used to support these future projects. Sample results are available for areas outside of the WWTP infrastructure area. These results are shown on the Figure 4-3c. The results were used to support the OU-4 HHRA, OU-4 BERA, and OU-4 BERA Addendum and for assessing the nature and extent of contamination.
12. **Section 3.3.5 Interstate 20 (I-20) -** Please show the different types of soil/geotextile covers on Figure 3-6. What are the concentrations in soil beneath soil and geotextile covers in the bridge area?	Figure 3-6 was updated to include Figures 3-7a and 3-7b. The different soil/geotextile covers used on this infrastructure support project are shown on Figure 3-7b. The concentration ranges for the PCB results, including screening and analytical chemistry results, are shown on Figure 3-6 (which is now Figure 3-7a). The sample numbers are also provided so that the reader can obtain the actual concentration value from Table 3-6.
13. **Section 3.3.6 Former Holiday Inn Redevelopment Support -** Ensure all PCB sampling results beneath caps and covers and at the bottom of excavations in this area are provided.	Figure 3-7 (which is now Figure 3-8) was revised to identify the locations where soil was removed and placed for soil management purposes, including the location of geotextile marker layers. The locations where PCB results are available beneath infrastructure improvements were already shown on this figure. There were no caps or covers constructed as part of this infrastructure support project that would require regular inspection and/or long-term operation and maintenance (O&M).

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14. **Section 3.3.7 Parcel Improvement for the City of Oxford's Maintenance Garage -** Show areas of excavation and area of fill placement on Figure 3-8. Show all PCB concentrations remaining beneath the geotextile marker layers and clean fill, including the base of trenches.	Figure 3-8 (which is now Figure 3-9) was updated to clarify the areas of excavation and fill placement. PCB results reflecting conditions at the base of the utility trench/connection excavations are also included on the revised figure.
15. **Section 3.4 Final** Corrective **Measures, first paragraph -** Reference to Figures 3-8 and 3-9 should be Figures 3-9 and 3-10.	The identified change was made in the OU-4 RI, recognizing that these are now be Figures 3-11 and 3-12.
16. **Section 3.4.1 Highway 21 Bridge at Choccolocco Creek- Section should reference Figure 3-9.** Why does Figure 3-9 shows a "temporary" PCB impacted soil stockpile if the soil was compacted and permanently entombed in the embankment? Can you show on the figure where a geotextile marker layer is in place? Where was the 1-foot of cover soil placed for a working surface? The statistics on soil sample results are informative, but what are the concentrations in place that were not excavated and entombed or disposed of offsite? Show any sample locations and concentrations for what currently exists beneath the final measure. Is the sentence in the second paragraph "PCB-containing soils were generally encountered at depths ranging from 0 to 4 feet, although impacted depths extended to 6 feet in isolated areas" true for the floodplain or just the banks in this area?	Figure 3-9 (which is now Figure 3-10) was revised to eliminate the note to the stockpile being temporary. Soils were initially placed on a geotextile layer, subsequently compacted, and then covered with a foot of clean soil and a second geotextile layer. The plan view figure was also updated to show where geotextile marker layers were placed and where PCB results are available that reflect in-place post-construction conditions. The depth of PCBs that were identified for this project is uncharacteristic of the results collected for the surrounding floodplain areas.
17. **Section 3.4.2 Choccolocco Creek Wastewater Treatment Plant - Excavated Soil Pile -** Section should reference Figure 3-10. This section is confusing. Why is the work done in the WWTP discussed here and in Section 3.3.3? Was the sampling done before the contractor started excavating or after? Please be more transparent about the sequence of events. If this section is only about the capping of the stockpile, the plant sampling discussion might be better in Section 3.3.3. What were the concentrations in this area before the stockpile was put in place. Note for the reader that samples outside the stockpile are discussed and addressed in Section 4 and Figure 4-2. Can you explain why PCBs were found up to 12 feet bgs or is that expected throughout OU4?	The changes were made in multiple locations of Section 3.4.2 to refer to the correct figure for the CCWWTP Soil Pile. The sampling work conducted at the CCWWTP that was discussed in Section 3.3.3 was not be repeated in this section. The mention of PCB-containing soils is associated with the work conducted at the CCWWTP itself and was deleted from this section. It is likely that the presence of PCBs at 12 feet bgs is from historical soil excavation and placement activities associated with multiple infrastructure improvement/repair projects that have been conducted at this facility over the past three to four decades. There are no pre-construction PCB results available for the area where the soil pile was constructed. The available PCB results for the five samples immediately surrounding the soil pile range from 0.044 to 16 mg/kg and average

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	approximately 4 mg/kg. The text was also revised to reflect that PCB results for the areas surrounding the soil pile are shown on Figure 4-3c.
18. **Section 4.0 OU4 Investigations -** In some sections, the data results from a specific sampling event are discussed (range of detections, number of samples, frequency of detections, etc.). Please be consistent and discuss the results from each event.	Information regarding the number of samples, frequency of detection, and ranges of detected values was added to the discussion of each investigation.
19. **Section 4.1 Floodplain Soil Investigations -** Please provide tables and figures showing: Table with Surface soil (< 12" bgs) - analytes, number samples, frequency detections, range of detects; Table with Subsurface Soil (> 12" bgs)- analytes, number samples, frequency detections, range of detects; Figure and Table with PCDD/PCDF/DL-PCB (TEQ) sample results (include co-located total PCBs and mercury results on Figure where available).	The requested change regarding definition for subsurface soils (i.e., subsurface soils are now defined as being below 12 inches) was made, and the tables and figures were updated accordingly. Summary statistics were also provided for the various investigations. Table 4-1 was revised to include mercury and toxic equivalent (TEQ) results for soils, where applicable, with TEQ concentrations reflecting the combination of polychlorinated dibenzo-p-dioxin/dibenzofurans (PCDD/DFs) and dioxin-like PCBs (DL-PCBs). Table 4-6 was revised to include mercury and TEQ results for sediment, where applicable, with TEQ concentrations reflecting the combination of PCDD/DFs and DL-PCBs. Figures showing the co-located results for PCBs and mercury, and PCBs and TEQ were added to Section 5 to support the nature and extent of contamination discussions (Figures 5-6, 5-7, 5-15, 5-21). The additional figures for Section 5 are as follow: • Two figures presenting collocated PCB and mercury results in soils were added to the OU-4 RI. One figure (Figure 5-14) presents the concentration results for these two constituents based on distance from where the samples were collected to Lake Logan Martin, and the second figure (Figure 5-15) presents the results based on the distance from the creek bank. A figure for

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	collocated PCB and mercury results in sediment was also added to the Section 5 figures (Figure 5-26) based on the distance from where the samples were collected to Lake Logan Martin. • Two figures presenting collocated PCB and TEQ results in soils were added to the OU-4 RI. One figure (Figure 5-6) presents the concentration results for these two constituents based on distance from where the samples were collected to Lake Logan Martin, and the second figure (Figure 5-7) presents the results based on the distance from the creek bank. A figure for collocated PCB and TEQ results in sediment (Figure 5-21) was also added to the Section 5 figures based on the distance from where the samples were collected to Lake Logan Martin.
20. **Section 4.1.1.1 Top of Bank Sampling -** How can the reader identify top of bank samples in Table 4-1? Should the results be grouped together on the table?	Top-of-bank samples are grouped together (page 15 and 16 of Table 4-1) and are marked "RFI Soil -Top of Bank" in the first column, which is entitled "Dataset."
21. **Section 4.1.1.2 Nature and Extent Transect Sampling-** Please include a reference for the report that summarizes the transect sampling results (March 2003). Provide information on number of samples collected, and range and frequency of detections for each depth interval for PCBs and mercury during this sampling event.	Two sentences were added to the end of Section 4.1.1 indicating, "The floodplain soil transect sampling conducted under the RCRA program was reported to USEPA in the 2003 *Data Summary Report for Operable Unit 4* (OU-4 DSR; BBL 2005a). The OU-4 DSR also reported the top-of-bank sampling results that were previously reported to ADEM in the Off-Site RFI Report (BBL 2000a)." Summary-level statistics regarding the sampling, depth intervals, frequency of detection, and range of measured concentrations for PCBs and mercury were added to the OU-4 RI.
22. **Section 4.1.2.1 Nature and Extent Sampling (Sampling Design)-** How many samples were collected in each phase? What were the ranges of analytes (or at least PCBs and mercury) detected? So even though only 10% of samples were analyzed for a wider range of	Summary level statistics were added to applicable portions of Section 4 indicating how many samples were analyzed for PCBs, mercury, and the other chemicals identified on the wider list of constituents in various phases of floodplain soil sampling. The overall process for evaluating the range

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constituents, we didn't get 10% analyzed. Please explain the phased sampling and elimination of constituents.	of chemicals that could be present in OU-4 is described in Section 4.1.2.1 of the OU-4 RI to assist in clarifying this process.
23. **Section 4.1.2.1 Nature and Extent Sampling (Development of Characterization Areas/Exposure Units) C1-EU1 -** Make clear that this area was sampled outside of the floodplain soil sampling program, but only portions (25 acres out of 71 total acres) were addressed by interim corrective measures or removal actions. Refer to Sections 3.2.1, 3.3.1, 3.3.2, and 3.3.7 for details about the interim measures/infrastructure support efforts.	The discussion of C1 that was presented in the first bullet of page 4-7 has been deleted and replaced with the following: “C1 includes the area of the Snow Creek floodplain downstream of Highway 78 to I-20. The overall C1 area is approximately 71 acres and includes C1-EU1, located east of Snow Creek, and C1-EU2, located west of Snow Creek. Several IMs and infrastructure support projects were conducted across portions of C1-EU1, and sampling conducted for these IM/infrastructure support efforts was conducted outside the floodplain soil sampling conducted under the CERCLA program. The IMs are described in Section 3.2.1, and the infrastructure support projects are described in Sections 3.3.1, 3.3.2, and 3.3.7.”
24. **Section 4.1.2.2 CERCLA Residential Soil Investigation** - The reference to Section 2 should be changed to Section 3.1. On Figure 4-5 series, identify which properties required cleanup. Clarify if these samples are being used in the CA exposure calculations.	The reference to Section 2 was changed to Section 2.7 because the initial sentence of Section 4.1.2.2 was included to highlight the lower density of residential land use in OU-4 as compared to OU-1/OU-2. The Figure 4-5 series was updated to identify the properties where removal actions were conducted. Section 4.1.2.2 was revised to reflect that samples collected as part of the residential removal program were not used in developing exposure concentrations for the broader Characterization Areas (CAs).
25. **Section 4.1.2.3 Ecological Risk Assessment -** Are the 68 samples mentioned here the same as the 68 samples in Section 4.1.2.1, page 4-8? Why are we discussing it again?	The 68 samples mentioned in Section 4.1.2.3 are the same 68 samples mentioned in Section 4.1.2.1. In the revised OU-4 RI,Section 4.1.2.3 has been deleted, and the relevant information regarding this sampling has been included in the CERCLA Sampling Design and reflects that,

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	”The data for the ecological risk assessment included 68 samples collected from the 0–6-inch horizon in the general areas where biological samples were collected.”
26. **Section 4.1.3 Other Floodplain Soil Programs -** This section is not needed. Delete the first sentence, move the second sentence to the end of Section 4.1.2.2 and move the last sentence to the end paragraph under Section 4.1.2.	Section 4.1.3 had four sentences. The first one was deleted, the last two sentences have been moved to the end of the first paragraph of Section 4.1.2, and the second sentence was moved to the end of Section 4.1.2.2.
27. **Section 4.2 Sediment Investigations, Figure 4-3k-** Please show the downstream boundary of OU4 on the appropriate Figures. Please provide Figure and Table with PCDD/PCDF/DL-PCB (TEQ) sample results (include co-located total PCBs and mercury results on Figure where available).	The downstream boundary for OU-4 has been added to Figure 4-3l and other relevant figures. As described in Response #19, mercury and PCDD/DF results were added to Table 4-1 for soil and Table 4-6 for sediment. Figures showing the co-located results for PCBs and mercury, and PCBs and TEQ were added to Section 5 to support the nature and extent of contamination discussions.
28. **Section 4.2-Sediment Investigation, Table 4-6 -** The Total PCB column identifies two footnotes that are not provided.	The footnotes in this table have now been provided.
29. **Section 4.2.1 RCRA Program Sediment Sampling -** Delete or label any information about sediment downstream of Highway 77 to establish that it is not part of OU4 or is part of C-10. Is the discussion about "sediment cores were recovered at 580 of the 796 locations attempted" about the RCRA program or the RCRA and CERCLA program?	Sediment located downstream of Highway 77 is part of OU-4 (C-10), and the report figures have been updated accordingly. The 580 cores referred to in this section (Section 4.2.1 RCRA Program Sediment Sampling) were collected from Choccolocco Creek under the RCRA program in 1999. This was clarified in the text; notes were added to Tables 4-9 through 4-21 indicating these data were collected as part of the RCRA Off-Site Facility Investigation.
30. **Section 4.2.1.3 Wet Sieve Analysis -** Where are these cores on a map? It is not clear how "These data confirm the premise behind the stratified sampling approach, which predicts that higher and more variable PCB concentrations are expected to be found in the finer-grained sediments throughout the system".	The text was revised to identify the transect locations where the samples were collected for the wet sieve evaluation. Figure 4-2 was also revised to show the transect locations. The last sentence of the first paragraph was replaced with the following sentence: ”Cores for this evaluation were collected from individual cores from eight RCRA program transects: three transects with fine-grained

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	sediment (C-U2, C-134, and C-180) and five transects with coarse-grained sediment (C-011, C-022, C-100, C-101, and C-138). The locations of these eight transects are presented on the Figure 4-2 series, and the associated PCB results for the samples are presented on Figure 4-16 and included in Table 4-18. The PCB concentrations on Figure 4-16 are presented based on the materials retained on the different size sieves and for the materials that passed through the No. 200 sieve (i.e., silts and clays). The results indicate that the majority of PCBs are associated with the finer-grained materials, including the sediment retained on No.100 and No. 200 sieves (fine sand) and sediment passing the No. 200 sieve (silts and clays)."
31. **Section 4.2.1.4 Fish Tissue Collection Areas -** More than three RFI stations are show *(sic)* on Figure 4-17 and Figure 4-13. Figure 4-4 does not distinguish between program data. Distinguish three sediment samples from the RFI Fish tissue program on Figure 4-14.	Figure 4-17 was revised to clarify that sample locations 43, 44, and 35 were associated with the RCRA Program sampling efforts, that sample locations from the CERCLA Program include stations HHFL01 through HHFL-09, and that CHOC 1, CHOC 4, CHOC 7, and Station 42 are IDs for sampling that had historically been used by ADEM for their fish tissue collection efforts.
32. **Section 4.2.2 CERCLA Program -** Change label to "CERCLA Program Sediment Sampling". When RCRA and CERCLA data are combined on the figures and Table, there should be a date or something to distinguish the data; it is hard to follow the written discussion and review figures and tables.	The title of this section was changed to "CERCLA Program Sediment Sampling." The tables for soil (Table 4-1) and sediment (Table 4-6) specifically refer to the RCRA dataset as "RFI" samples, and samples collected under the CERCLA program in these two tables are identified as "RI/FS" or "Phase 2 Eco."
33. **Section 4.2.2.4 Samples Collected for Sediment Toxicity and Bioaccumulation Studies -** Please clarify why PCB results are not being used for nature and extent delineation. The samples at depth may not be available for exposure, but they do help show nature and extent. There is no holding time issue for PCBs.	The sediments collected for the sediment toxicity testing program were not required to define the nature and extent of contamination in OU-4. The sediments for the toxicity testing program were harvested from areas with known PCB concentrations based on the results of prior sampling events. The sediments collected for the toxicity testing program were also not representative of in-place conditions as they

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	were physically modified before being analyzed for PCBs and other constituents. Post-collection processing of these sediments included actively sieving the materials on a 2-millimeter screen to remove the larger particles. The smaller materials that passed through the screen were then analyzed for PCBs and other constituents as the overall objective of the sediment toxicity testing program was developing relationships between the constituent concentrations and the associated biological responses.
34. **Section 4.2.2.5 Geochronological Investigations-** Where is CU-GEO-01? Can it be shown on Figure 4-19 and noted that no Cs-137 was detected. Provide a figure showing Pb-210 results for both samples. The PCB concentration data for both CU-GEO-01 and CU-GEO-02 are not included in Table 4-17, contrary to what is stated.	Figure 4-19a shows the location of CU-GEO-01 and CU-GEO-02. The PCB, pb-210, and Cs-137 results for the samples collected at these two locations are also presented on Figure 4-19a. The geochronology evaluation results for CU-GEO-02 based on the Cs-137 results is presented on Figure 4-19b. The information presented on Figure 4-19b was originally presented as Figure 4-19 in the December 2018 version of the OU-4 RI. The PCB results for CU-GEO-01 and CU-GEO-2 were added to Table 4-17.
35. **Section 4.5.1.1 Initial Sampling** - Delete last sentence in this paragraph. That statement may have been what P/S proposed in the Site Characterization report, but the EPA required additional groundwater investigation.	The requested changes were made to the OU-4 RI.
36. **Section 4.5.2 Oxford Lake Park Investigation -** The last paragraph in this section on page 4-31 does not resolve why T-17 results are being discussed but not T-16 results. The previous bullets introduced both wells. Please include language to explain the result for samples collected at T-16.	The text at the end of Section 4.5.2 clarifies that T-17 was the only groundwater well installed in the OU-4 portion of the Site. The earlier portions of the paragraph mention both T-16 and T-17 as both wells were installed and sampled as part of the same investigative effort.
37. **Section 4.5.3 Residential Well Identification and Sampling -** Delete the last sentence. T-17 is not relevant to this section.	The last sentence in Section 4.5.3 was deleted from the OU-4 RI.
38. **Section 4.6 Quality Assurance and Quality Control -** Why is a section on QA/QC located here and not at the end of Section 4.0? Was there no quality assurance associated with biological sampling?	There were quality assurance/quality control measures associated with the biological sampling and the order of Sections 4.6 and 4.7 have been switched to reflect this.

COMMENTS:	Response:
39. **Section 4.7 Ecological Investigations -** Thirty (30) pages on habitat surveys seems excessive since there is already a 5-page discussion in Section 2.9. It is also discussed in the BERA. Why is any more on habitat needed? The shear amount of information dedicated to habitat surveys and metrics in this document appears to be intended to mislead the reader into believing there is no substantial impact to the environment. The real issue is whether contaminants of potential concern are found in biota as well as soil/sediment/surface water.	The length of this section has been shortened as requested recognizing that these studies are described in detail in the OU-4 BERA which is an electronic attachment to the OU-4 RI.
40. **Section 4.7.1.3 Off-Site RFI Phase 2 Floodplain Surveys, page 4-43 -** In first full paragraph below the bullets, the second word should be "areal" rather than "aerial".	This paragraph has been removed during revisions to streamline the discussion of habitat consistent with comment #39.
41. **Section 4.7.1.4 Phase I Ecological Survey** - A habitat survey was not identified by EPA as a data gap. P/S requested to conduct a habitat survey. The EPA clearly stated that it was not necessary for the ecological risk assessment, but that if it was conducted it would be at most a secondary line of evidence.	The specific text in question has been deleted as part of streamlining the habitat discussion (in response to comment #39). In multiple locations in the OU-4 RI (including Sections 4.6.2.1, 5.5, 8.1.2, 8.3.2, and 8.4) text has been revised to reflect qualitative observations of conditions, community structure, and suitability, as a secondary line of evidence (LOE).
42. **Section 4.7.1.5 Summary of Habitat and Population/Community Assessments -** In the last paragraph, include "industrial pollution (including PCBs) in the list of impacts on OU4. Also, note that the presence of "valuable aquatic and riparian habitat" does not mean that contaminants have had no effect on the habitat.	The last paragraph of this section (which is now 4.6.1.2 due to response to question 38) was deleted and replaced with the following: ”Based on these observations within the OU-4 portions of Choccolocco Creek and Snow Creek, habitat quality and the ecology have been impacted by human activities, including urbanization, agriculture, silviculture, grazing, and industrial pollution. The potential sources of pollution include a wide range of industries located within, upstream, and upwind of OU-4 that may have contributed contaminants, including PCBs, mercury, PCDD/DFs, and multiple metals other than mercury, to OU-4. Despite the impacts associated with human activities, including industrial pollution, there are portions of OU-4 that have valuable aquatic and riparian habitat; nevertheless, the presence of valuable habitat does not mean that contaminants have had no effect on the habitat.”
43. **Section 4.7.2 RI/FS Phase 2 Biological Sampling-** The name of this section implies that there are two phases of biological sampling.	This section (now 4.6.2) of the OU-4 RI was clarified to reflect that Phase 1 investigation activities were focused on

COMMENTS:	Response:
	identifying specific ecological receptors that were present in OU-4 along the respective habitat conditions.
44. **Section 4.7.2.1 Refinement of the CSM and Initial Assessment and Measurement Endpoints -** The agreed-to receptor groups, exposure pathways, AEs and MEs to be evaluated in the BERA were those in the approved 2006 BPF for OU-4 (BBL 2006). Table 4-53 should footnote AEs or MEs that were not part of the original OU-4 BPF. Pharmacia LLC and Solutia Inc. (P/S) added measurement endpoints (MEs) comparing species counts in OU-4 to species counts in the reference areas to the approved 2006 Baseline Problem Formulation (BPF) for OU-4 (BBL 2006). The RI should explain that the community data was a later addition to the BPF and note that the ecological community data is a secondary line of evidence (LOE). It should also note that the "presence" of species does not demonstrate that those species are healthy.	The words “as a secondary LOE” were added to the third bullet that is located just above the last paragraph of Section 4.6.2.1. The last paragraph of this section was deleted and replaced with the following: “Individual risk questions (as testable hypotheses) and associated measures of effect for each AE from the *OU-4 Baseline Problem Formulation* (BBL 2006c) were further refined following submittal of the baseline problem formulation, including the use of community data proposed by P/S as a secondary LOE recognizing that the presence of species does not demonstrate that those species are healthy.” Table 4-29 (which was originally Table 4-53) was updated to highlight assessment and measurement endpoints that were added following preparation of the baseline problem formulation.
45. **Section 4.9.1 CERCLA Creek Bank Survey, Page 4-92** - The last sentence of Section 4.9.1 ends with a colon. It appears something is missing.	Missing text has been inserted into the document. The end now reads as follows: “Areas of interest were identified based on meeting one or more of the following criteria: • Identified in previous study as having active bank erosion • Identified in aerial photo review as having potential for erosion • Considered to be representative of a reach • Considered to be representative of a class of erosion
46. **Section 5.1 Floodplain Soil -** The most important point is that floodplain soil was sampled to define nature and extent. The depth and frequency were described in Section 4. Explain why that was enough to determine nature and extent of contamination. What percent of subsurface samples contained PCB concentrations greater than 1 mg/kg? How far from the creek were samples collected with PCBs less	As described in Response #19, the subsurface soil results discussed in Sections 4 and 5 are now presented as all depth intervals below 12 inches. The percentage of subsurface sample locations where the PCB result was greater than 1 mg/kg is 83%, recognizing that the subsurface collection process was biased to locations

COMMENTS:	Response:
than 1 mg/kg? Did we sample in surface and subsurface to 1 mg/kg? The discussion about how the concentrations were analyzed for the risk assessment should be in Section 7, not in the description of nature and extent. Other COPCs should be discussed the same way. The risk assessment was not even complete when the decision was made that nature and extent was complete; it should not be used to justify nature and extent of sampling.	where elevated PCBs at depth were expected or previously documented to be present. As shown on the Figure 5-1 series and on Figures 5-2 and 5-3, locations with elevated subsurface (and surface) PCB concentrations are largely found in the upstream portion of OU-4 and are generally associated near bank areas, the filling of low-lying areas (e.g., Oxford Lake Park), or former geomorphological features, such as the former oxbows, that were sampled during the RCRA program. The process to refine the nature and extent of PCBs in the floodplain included three separate phases of soil sampling that are described in Section 4.1.2.1 of the OU-4 RI. The iterative sampling program successfully defined the downstream and outer edges of PCBs in floodplain soil to 1 mg/kg, and PCBs concentrations were generally below 1 mg/kg at distances ranging from 500 to 1,000 feet from the creek bank. Regarding other COPCs and as noted in Response to Comment #19, figures showing the collocated results for PCBs and mercury, and PCBs and TEQ were added to Section 5 to support the nature and extent of contamination discussions. The additional figures for Section 5 are described below: • Two figures presenting collocated PCB and mercury results in soils were added to the OU-4 RI. Figure 5-14 presents the concentration results for these two constituents based on distance from where the samples were collected to Lake Logan Martin, and Figure 5-15 presents the results based on the distance from the creek bank. Figure 5-26 was also added to the OU-4 RI and presents collocated PCB and mercury results in sediment based on the distance from where the samples were collected to Lake Logan Martin.

COMMENTS:	Response:
	• Two figures presenting collocated PCB and TEQ results in soils were added to the OU-4 RI. Figure 5-6 presents the concentration results for these two constituents based on distance from where the samples were collected to Lake Logan Martin, and Figure 5-7 presents the results based on the distance from the creek bank. Figure 5-21 was also added to the OU-4 RI and presents collocated PCB and TEQ results in sediment based on the distance from where the samples were collected to Lake Logan Martin.
47. **Section 5.1.2.1 PCDD/DFs in Soil, Page 5-4 -** Figure 5-5 presented the total of PCDD/DFs with distance from the creek bank. Text in Section 5.1.2.1 indicated that the concentration of total PCDD/DFs decreased with distance downstream and decreased with distance from the creek. The total of PCDD/DFs, however, is dominated by octachloro dibenzodioxins and octachloro dibenzofurans, which have comparatively low toxicity and are likely from ubiquitous background sources. By only looking at the total and not looking at the polychlorinated dibenzofurans (PCDFs) associated with PCBs, the analysis is skewed toward a conclusion that all PCDD/DFs are from ubiquitous background sources, when this might not be the case for PCB-related PCDFs and dioxin-like PCBs. Text in this section emphasizes the potential sources upwind but does not mention the release of PCBs from the plant as a potential source of PCDD/DFs and dioxin-like PCBs. PCDFs associated with the release of PCBs to the environment and dioxin-like PCBs should be evaluated separately from ubiquitous octachloro dibenzofurans and octachloro dibenzodioxins when describing background. Figure 8-4 is helpful in that it shows HQs for PCDD/DFs and dioxin-like PCBs in biota; however, a similar figure for PCDD/DFs and dioxin-like PCBs in floodplain soils was not provided.	Figure 5-5 was based on the total quantity of PCDD/DFs that are present in floodplain soils and is consistent with defining the nature and extent of contamination. By design, Figure 5-5 does not address toxicity or risk. A figure similar to Figure 5-5 (see response to comment #20) was developed for TEQ concentration values for PCDD/DFs and DL-PCB. In reviewing the TEQ results, it is important to recognize that the OU-4 HHRA concluded that risks for the OU were driven by total PCBs and not PCDD/DFs or DL-PCBs. The text of Section 5.1.2.1 was updated to reflect that the Facility is a potential source of PCDD/DFs and DL-PCBs. With regards to Figure 8-4, this graphic was developed to present calculated hazard quotients (HQs) for ecological risks in the OU-4 baseline ecological risk assessment (OU-4 BERA). The figure presents HQ values for a range of species that may be located in three geographic portions of the OU (the upper, middle, and lower assessment areas). Consistent with the findings of the OU-4 HHRA, the ecological risks are driven by the presence of total PCBs and not TEQ for PCDD/DFs or DL-PCBs.
48. **Section 5.1.2.4 Mercury in Soil, Page 5-5 –** Discussions of mercury in site media stress potential background or atmospheric sources but do not mention the former mercury cell process used at the facility to	The second to last sentence of the first paragraph of Section 5.1.2.4 was revised as follows: “Potential mercury sources include the mercury cell process that operated at

COMMENTS:	Response:
produce chlorine. This section should refer to the introduction's description of the waste generating processes which contributed contamination to OU-4. The conceptual site model should include mercury as a hazardous substance released from the plant.	the Facility and a range of nearby atmospheric sources. A mercury cell process was operated at the Facility from 1952 to 1969 for the sole purpose of generating chlorine that was reacted with biphenyl to manufacture PCBs. A wide range of other industries located upwind of OU-4 are potential atmospheric mercury sources. These industries include hospitals with incinerators and coal-fired plants, including multiple power generation plants that are located upwind in the Birmingham, Alabama, area."
49. Section 5.2 Sediment - Please explain whether all sediment deposits were sampled. On Figure 5-15, label y-axis or add footnote Spatially Weighted Average Surface Sediment Concentrations for Choccolocco Creek.	The words "Spatially Weighted Average Surface Sediment Concentrations for Choccolocco Creek" were added to the y-axis for Figure 5-15 (which is now Figure 5-19). There were 250 individual PCB results for surface sediment in Choccolocco Creek that were used to develop the spatially weighted average concentration (SWAC) values presented on Figure 5-19. The geographic distribution of these samples on a per reach and sediment texture basis (fine, coarse, and gravel) is presented in Table 5-6. Sediment was not available for sampling in approximately 15% of Choccolocco Creek due to the presence of bedrock or boulders. In these areas, the nondetect reporting limit for PCBs in sediment (0.05 mg/kg) was used for to develop the SWAC values for each reach. The summary-level statistics provided above were added to the first paragraph summary of Section 5.2.
50. Section 5.2.2.5 Mercury in Sediment – The EPA agrees that there may be ambient and atmospheric sources of mercury in the area, but the mercury concentrations in sediment in Choccolocco Creek may be attributed to other sources including P/S.	The last two sentences of the first paragraph of Section 5.2.2.5 were revised as follows: "Potential atmospheric mercury sources include local hospitals with incinerators and industries with coal-fired plants, including the power generation plants located upwind of OU-4 in the Birmingham, Alabama, area. One power plant located in Jefferson County reportedly released over 1,000 pounds of mercury to the atmosphere in 2010 (Environment America Research & Policy Center 2011). Other potential mercury sources to OU-4 included a mercury cell process that

COMMENTS:	Response:
	operated at the Facility from 1952 to 1969 for the sole purpose of generating chlorine that was reacted with biphenyl to manufacture PCBs."
51. **Section 5.4 Fish Tissue, last paragraph -** Include a sentence that Mercury may also have been released from the facility when chlorine was produced using a mercury cell process.	The following sentence was added to the end of Section 5.4: "Other potential mercury sources to OU-4 included a mercury cell process that operated at the Facility from 1952 to 1969 for the sole purpose of generating chlorine that was reacted with biphenyl to manufacture PCBs."
52. **Section 5.5, Ecological Species, Page 5-10.** Last sentence on Page 5-10 indicated that the ecological community data was part of the complete data set used to prepare the OU-4 Baseline Ecological Risk Assessment (BERA). However, the ecological community data was only necessary to support the BERA because Pharmacia LLC and Solutia Inc. (P/S) added measurement endpoints (MEs) comparing species counts in OU-4 to species counts in the reference areas to the approved 2006 Baseline Problem Formulation (BPF) for OU-4 (BBL 2006). The RI should explain that the community data was a later addition to the BPF. The ecological community data is a secondary line of evidence (LOE).	The following sentence was added to the end of Section 5.5: "Community data and the associated comparisons to reference areas were added to the OU-4 BERA as a secondary LOE following preparation of the baseline problem formulation in 2006."
53. **Section 5.6 Groundwater -** The statement that the IMs are protecting groundwater needs to be removed. The IMs are preventing direct contact with PCBs in soil and providing a marker layer between clean and PCB impacted or native soil, not preventing infiltration of precipitation. Simplify this section. Are there any PCB concentrations in OU4 that have lower chlorinated congeners similar to those found at T-11 that might indicate the potential for groundwater impacts? If not, make that statement or justify why additional work was not required.	The first bullet in Section 5.6 was deleted from the OU-4 RI. The end of Section 5.6 was revised in the following manner: "A thorough evaluation was conducted to assess whether the conditions associated with groundwater well T-11, located in OU-1/OU-2 portion of the Site, were present in OU-4. The combination of conditions at groundwater well T-11 included a significant presence of lower chlorinated Aroclor mixtures (e.g., Aroclor 1232), elevated total PCB concentrations, and close proximity to the groundwater table. This evaluation revealed that the lower chlorinated PCB mixtures were generally not present in OU-4. There was one sample collected in OU-4 from the 0–6-inch horizon (sample C70247) where the Aroclor 1232 concentration was 0.48 mg/kg and the total PCB concentration for the sample was 1.8 mg/kg. The OU-4

COMMENTS:	Response:
	dataset also did not include detections of Aroclor 1221 or Aroclor 1016; thus, the decision was reached in consultation with USEPA to install groundwater well T-17 in an area with high-concentration PCB soils in close proximity to the groundwater table and Snow Creek. The PCB homolog results for OU-4 soils also indicated that lower chlorinated PCBs were not present at elevated concentrations. Mono, di, or tri chlorinated PCB homologs were only detected in five soil samples with PCB concentrations ranging from 0.0079 to 0.1 mg/kg. The detected concentrations of lower chlorinated PCBs in OU-4 soils are not expected to impact groundwater at concentrations above the MCL."
54. Section 5.8 Nature and Extent-This section just repeats each previous section. It seems unnecessary and should be deleted.	Section 5.8 was deleted in its entirety from the OU-4 RI.
55. Section 6.0 Contaminant Fate and Transport - Can the fate and transport evaluation for chemicals causing unacceptable risks be expanded? The discussions were limited to total polychlorinated biphenyls (PCBs) or total polychlorinated dibenzo-p-dioxins and dibenzofurans (PCDDs/DFs) and did not consider the fate of the chemicals most likely to cause unacceptable risks, such as lower chlorinated PCBs and dioxin-like PCBs, which were not discussed. Additional analysis could help inform remedy selection in the FS.	The fate and transport section of the OU-4 RI (Section 6) was updated to reflect COPCs in addition to total PCBs and total PCDD/DFs. The revised fate and transport discussions include the TEQ results presented in the nature and extent of contamination portion of the OU-4 RI (Section 5) and relate to contaminant toxicity/risk in contrast to bulk concentrations of the contaminants. The TEQ results are also inclusive of PCDD/DFs and D-L PCBs. Text was also added to Section 6 for the fate and transport of metals (including mercury) that were discussed in the nature and extent of contamination. While the ultimate fate and transport behavior for many of these constituents may be similar to PCBs given their affinity for fine-grained particles, it may be different in some cases due to the constituents being naturally occurring or reflecting a combination of natural and/or anthropogenic sources.

COMMENTS:	Response:
56. **Section 6.1 Source Areas, first paragraph -** Change last sentence to reflect that OU-3 no longer serves as a "significant" source of PCBs. It may still be a small source; not all surface concentrations were removed.	The text revision has been made as requested.
57. **Section 6.1 Source Areas, last sentence page 6-2 that continues 6-3 -** Specify the media (sediment and surface water?) where temporary increases in concentrations are expected to occur.	The last sentence of the third paragraph of Section 6.1 has been revised to read as follows: “The OU-4 FS and its associated objectives and any predictive modeling should consider the likelihood of temporary increases in PCB concentrations for surface water and fish and/or other biota before the expected decreases are observed.”
58. **Section 6.2 Potential Routes of Migration, second paragraph -** Add footnote to first sentence that describes other migration pathways for OU3.	Text in Section 6.2 was revised to address this comment. A new sentence was added as the second sentence in the second paragraph. The sentence added is as follows: “Secondary release mechanisms from OU-3 were groundwater and air.”
59. **Section 6.2.1 Surface Water and Sediment -** PCBs in surface water are a source of contamination to benthic invertebrates and fishes, causing them to exceed tissue concentrations safe for consumption by wildlife. Once the contamination gets into the surface water, it flows downstream and results in aquatic organisms throughout the system absorbing contamination into their bodies. Identifying the sources of PCBs entering the surface water is important when designing or selecting a remedy. A better explanation of the surface water data results and interpretation is requested with expanded discussion of fate and transport. Also, change the "may have" in the third sentence to "have", because sediments have moved downstream.	The text in the third sentence of section 6.2.1 has been revised from “may have” to “have” as requested. Additionally, a new paragraph has been added at the end of Section 6.2.1 that states, “A potential source of PCBs to surface water and sediment is eroding creek bank areas with elevated PCB concentrations. The Figure 4-37 series and Figure 6-3 show that the creek bank erosion is more prevalent along the upper 10 miles of OU-4. This portion of the creek is also where elevated PCB concentrations (Figure 5-2) are present, and the highest PCB concentrations are closest to the creek banks (Figure 5-3). Eroding creek banks as a potential source to surface water and sediment is congruous with the consistency between the average surface water PCB concentrations measured along the length of OU-4 downstream of the backwater area despite declining PCB concentrations in sediment (Figure 5-14). The average surface water PCB concentrations for the upper, middle, and lower portions of Choccolocco Creek downstream of the backwater area are 0.068 µg/L, 0.087 µg/L, and 0.073 µg/L, respectively. A similar trend is evident in the fish tissue where the average

COMMENTS:	Response:
	PCB results are highest (Figure 4-26) in portions of Choccolocco Creek located downstream of areas with creek bank erosion. The potential for eroding creek bank areas in the upstream portion of OU-4 to be PCB (and mecury) sources to surface water, creek bed sediment, or water bodies located downstream of OU-4 will be further evaluated in the OU-4 FS. This evaluation is important from an FS perspective as USEPA's first principal for managing contaminated sediment is focused on controlling sources early (USEPA 2002a)."
60. **Section 6.2.2, Floodplain Soil, Page 6-4. -** Are there any locations where lower chlorinated Aroclors were found at depth in OU4?	Consistent with response to comment #53, a thorough evaluation was conducted during the OU-4 groundwater investigations to assess if the conditions associated with groundwater well T-11, including the presence of lower chlorinated PCBs, were present in floodplain soils. The resulting evaluation indicated that these conditions did not exist in OU-4, as documented in Sections 4.5.1.3 and 5.6 of the OU-4 RI. As part of preparing this RTC matrix, an additional evaluation was conducted where the available PCB homolog data for OU-4 soils were reviewed. The results of this review indicated that mono, di, or tri chlorinated PCB homologs were only detected in five soil samples with PCB concentrations ranging from 0.0079 to 0.1 mg/kg. This evaluation confirms that lower chlorinated PCBs are generally not present in OU-4 soils and for those limited number of locations where they are present, the PCB concentrations are low and not a potential source to groundwater. Text was added to Section 5.6 of the OU-4 to reflect the evaluation of PCB homologs in soil (see response to comment # 53).
61. **Section 6.2.4 Volatilization/Fugitive Dust -** Change to reflect that: the air data collected for OU-3 and OU-1/OU-2 show that the further away samples are collected from the source (OU3), the lower the concentrations are expected to be. OU-4 is not expected to be a source from a concentration or migration pathway perspective.	The second sentence of this section was deleted and replaced with "The air data collected for OU-3 and OU-1/OU-2 show that the farther away samples are collected from the source (OU-3), the lower the concentrations are expected to be. Based on air data collected for these other

COMMENTS:	Response:
	OUs, PCBs in OU-4 air are not expected to be a source from a concentration or migration pathway perspective"
62. Section 6.4.1 Sediment - When Appendix H is opened, the enclosed document is labeled Appendix K. It is confusing, as is.	This appendix file name has been revised to reflect that it is Appendix H.
63. Section 7.0 Baseline Human Health Risk Assessment- Discuss sediment, surface water, and air pathways that are complete but minimal relative to primary pathways. (See comment on Section 9.5.1.1)	The following text was added to become the second to last paragraph in Section 7.1 based on the information provided by USEPA in comment #68: "Other complete exposure pathways for OU-4, including sediment, surface water, and air, were evaluated in the OU-4 HHRA. Creek sediment was not quantitatively evaluated for direct contact risks in accordance with USEPA Region 4 guidance, which recommends sediment that is covered by water is generally not contacted and/or incidentally ingested to any significant extent by human receptors. Contaminants in sediment are relevant to the fish ingestion pathway for humans. The available surface water data were screened in the OU-4 HHRA, and it was determined that the detected surface water contaminants were at sufficiently low concentrations such that quantitative assessment of risks from human direct contact was not warranted. Contaminants in surface water are relevant to the fish ingestion pathway for humans. Air PCB data have been previously quantitatively assessed for risks to residents based on air samples collected at the property boundary (fence line) between the Facility (OU-3) and the adjacent residential areas and portions of OU-1/OU-2 with the highest PCB concentrations in soils. Since the health risks from these measured airborne concentrations were within USEPA's target risk range for the nearby residents, no further quantitative assessment of

COMMENTS:	Response:
	human risks from exposure via the air pathway was warranted for OU-4."
64. Section 8.0, Ecological Risk Assessment - Streamline the Ecological risk assessment section to provide an overall understanding of the risk assessment and the conclusion, instead of discussing the BERA and BERA addendum in more detail.	The ecological risk assessment summary was streamlined to provide an overall understanding of the process and conclusions recognizing that the OU-4 BERA and OU-4 BERA Addendum are electronic attachments to the OU-4 RI and include all of the relevant details.
65. Tables 8-3 and 9-1 - The surrogate receptor representative of piscivorous birds was the belted kingfisher, not the heron.	Table 8-3 is no longer in the document. Table 9-1 (which is now Table 8-1) was revised to reflect the appropriate surrogate for piscivorous birds (i.e., belted kingfisher).
66. Table 8-19 - If this table is included in the revised Section 8, please change the reference to USEPA 2016c. There is no USEPA 2016c in the references. If it is supposed to reference USEPA 2016b, please change it to NRWQC and define this acronym at the bottom of the table.	Table 8-19 was not included in the revised ecological risk assessment summary, and reference USEPA 2016b is no longer applicable.
67. Tables 8-48 to 8-50 - The risk cells in these Tables are shaded different from the shading in Tables 8-2 to 8-4. On Tables 8-48 to 8-50, highly unacceptable risk cells are shaded green, very similar to the acceptable risk cells. This is misleading to the reader. The highly unacceptable HQ results should be shaded red (or any color other than green) as in Table 8-2 to 8-4.	These tables are not included in the revised OU-4 RI.
68. Section 9.5.1.1 (and Executive Summary) - If risks were not quantitatively evaluated, comparison to the risk range would not be possible; the statement about direct contact with sediment, surface water, and air as written is illogical. Exposure to sediments, surface water, and air were not assessed for quantitative risk in the HHRA, but there should be separate rationale for each of the media: "Creek sediment was not quantitatively evaluated for direct contact risks in the HHRA. The HHRA followed the EPA Region 4 guidance which recommends that sediment that is covered by water are generally not incidentally ingested to any significant extent by human receptors and therefore, this pathway does not need to be quantified. Contaminant levels in sediment, however, are relevant to the fish ingestion pathway for humans.	The recommended text for sediment, surface water, and exposure was added to Section 9.5.1.1 of the OU-4 RI consistent with comment and response #63. Similar changes were also made to the OU-4 RI Executive Summary.

COMMENTS:	Response:
The available surface water data was screened in the HHRA, and it was determined that the detected surface water contaminants were at sufficiently low concentrations such that quantitative assessment of risks from human direct contact was not warranted. Contaminant levels in surface water, however, may be relevant to the fish ingestion pathway for humans. Air PCB data have been previously quantitatively assessed for risks to residents based on air samples collected at the property boundary ("fence line") between the industrial facility (nearest to the _ contaminant source areas) and the adjacent residential area, as well as downstream near the end of OU1/OU2. Since the health risks from these measured airborne concentrations were within the EPA target risk range for the nearby residents, no further quantitative assessment of human risks from exposure via the air pathway was warranted for OU4."	
69. Section 9.5.1.2, pg 9-6 - Add "that was modeled in the HHRA" to the end of the statement that "site-specific data should be collected prior to implementing remediation based on the hypothetical agricultural product(s) scenario."	The requested change was made to Section 9.5.1.2 of the OU-4 RI.