EPA Appendix F - Risk Assessment #13.

Comment:

Table 5.1: A comparison of Table 5.1 with Tables A.3-2 and A.3-5 in the BLRA shows that the exposure point concentrations for Area 1 used in the SFS are based on the 95 percent DCL of sample results from "all depths." However, Equation A.3-5, and the text in Section A.5.2.1, of the BLRA seem to indicate that "surface soil" was evaluated in the BLRA. Also, the surface soil exposure concentrations in Tables A.3-2, A.3-3, A.3-5, and A.3-6 of the BLRA are higher than those for all depths. Given this, it seems as though an evaluation of the surface "soils in the SFS would have been a more conservative approach. The SFS could benefit from some discussion as to how the exposure point concentrations were selected for evaluation.

Also, we noticed that the exposure point concentrations for Area 2 in Tables A.3-3 and A.3-6 of the BLRA are slightly different than the exposure point concentrations which appear in Table 5-1. An explanation of these differences would be helpful to the reader.

Discussion:

Data from all depths were used because it is representative of all the waste contained beneath the proposed cover. This will be clarified in the text.

The 1,000 year source term for Area 2 in Table 5-1 reflected the impact of mixing remediated material from the Crossroads property with the materials already in Area 2. The approach used to “average” the two datasets has been reviewed in response to this comment. The approach was appropriate, but introduced additional complexities and uncertainties into the inventory. Rather than expand the explanation of its derivation, the 1,000 year inventory will be calculated using the Area 2 inventory without the additional material from the Crossroads property. This will increase the risks slightly and simplify the explanation in the text.

Proposed Text Change:

Section 5.3.1.1 and Table 5-1 have been changed and now read:

"5.3.1.1 Concentrations of COCs in RIM 1 Year after Remedy

The 95% upper confidence interval (UCL) on the mean for radionuclide and chemical concentrations across all depths was used to represent RIM concentrations in Areas 1 and 2 immediately after remedy construction (Table A.3-3 and Table A.3-4 of the BRA). The two columns of values listed under the "Post-Remedy" heading of Table 5-1 present RIM concentrations in Areas 1 and 2 during and immediately after construction. These concentrations were assumed to be representative of the entire volume of RIM in the respective areas underlying the proposed cover.[1]

Table 5-1 Characterization of RIM in Areas 1 and 2, ROD Remedy

Radionuclide	Post-Remedy		1,000-year		
	Area 1 [a]	Area 2 [a]	Area 1	Area 2	Units
Uranium Series					
Uranium-238 + 2 dtrs	16.6	27.1	16.6	27.1	pCi/g
Uranium-234	16.9	46.0	16.9	46.0	pCi/g
Thorium-230	1,060	3,730	1,051	3,697	pCi/g
Radium-226 + 5 dtrs	71.6	338	417 [b]	1,523 [b]	pCi/g
Lead-210 + 2 dtrs	88.6	128	417	1,523	pCi/g
Actinium Series					
Uranium-235 + 1 dtr	0.84 [c]	1.83 [c]	0.84 [c]	1.83 [c]	pCi/g
Protactinium-231 + 8 dtrs	47.3	162	47.3	162	pCi/g
Thorium Series					
Thorium-232 + 10 dtrs	4.14	15.9	4.14	15.9	pCi/g

[a] Immediately after construction ceases. Used 95% UCL on the arithmetic mean of the RIM concentrations listed in the BRA.

[b] Includes in-growth from the decay of Th-230.

[c] Due to the uncertainty of the U-235 results, these values were calculated using the more reliable U-238 and U-234 results and the expected relative abundance of U-235 in natural uranium. "

EPA FEEDBACK:

In the restatement of EPA's comment above, "DCL" should be "UCL". EPA accepts the more conservative re-evaluation of the source term proposed in the response and the clarification of the exposure point concentration.

[1] Soil removed from the Crossroads property during an interim remedial action will be added to Area 2 during remedy construction. This material contains lower concentrations of RIM and adding it to the material in Area 2 would lower the average concentration in Area 2. Using the unmixed concentrations from Table A.3-4 of the BRA is a simplifying assumption that will increase risks slightly.