Montana Department of Environmental Quality Comments on the Screening Level Ecological Risk Assessment; Columbia Falls Aluminum Company; Columbia Falls, Flathead County, Montana (February 27, 2017)

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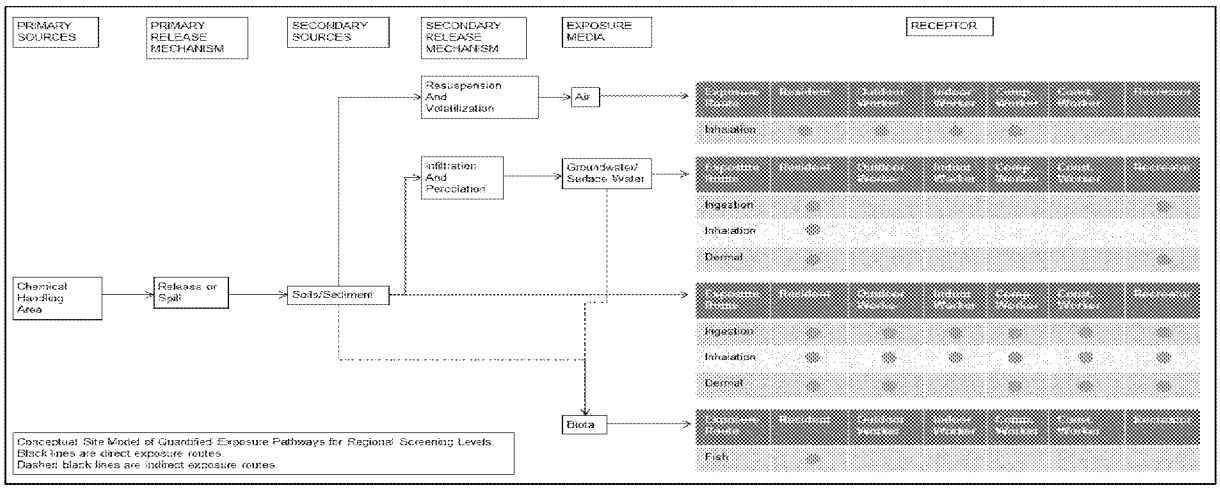
General Comments

1.) Please add a figure illustrating the Conceptual Site Model for the site. This figure should include sources, affected medium, exposure points, exposure routes, and receptors. See the example below.



2.) The samples chosen to represent background concentrations are insufficient. According to EPA's Guidance for Comparing Background and Chemical Concentrations in Soil for CERCLA Sites "the locations of the background samples must be areas that could not have received contamination from the site". The samples collected for background comparisons were collected from an area within site boundaries, and adjacent to known sources of contamination (North Percolation Pond Area & the Industrial Landfill) where wind, runoff or other activities could have had a negative impact on the area. Google earth also shows evidence of the area being used during operations (presence of a building) and previously disturbed by human activity in 2003 and 2004. Please conduct preliminary screening of metals using background concentrations provided in the DEQ Background Concentrations of Inorganic Constituents in Montana Surface Soils (http://deq.mt.gov/Portals/112/Land/StateSuperfund/Documents/InorganicBackground/BkgdInorganicsReport.pdf). A more appropriate site-specific background evaluation may be conducted at a future date if needed.

3.) While the data collected focused on investigating the historical operation areas it is important to also investigate where contamination may have come to exist in surrounding areas on the site

and ensure the data is spatially representative of the entire site. In order to refine the list of COPCs for the site a more thorough investigation should be completed to identify areas that may have been impacted beyond the operational footprint. Large portions of the site open to ecological receptors were not investigated beyond the discrete soil samples collected; this includes Areas 1, 4, and 10. At this time there is insufficient data to justify permanently removing compounds as COPCs for the site. Removing compounds prior to fully characterizing the site can lead to the elimination of potential/unknown risks. Additional investigations should be conducted within the suspected source areas until clean, non-impacted media, has been reached to ensure the highest concentrations of each contaminant is known.

Specific Comments

1.) Section 3.1, page 13: Soils at depths greater than 2ft below ground surface (bgs) should also be evaluated given the presence of burrowing animals at the site including the red fox. Please include all subsurface soil samples from 2 – 10 ft. in this Ecological Risk Assessment.

2.) Section 3.3.1, page 21, 1st paragraph on page, last sentence: SVOCs, VOCs, PCBs, and cyanide all had concentrations exceeding screening levels and are listed on the Persistent Bioaccumulative and Toxic (PBT) chemicals list. Please add these compounds to this sentence.

3.) Section 3.4, page 23: Please include reptiles, and semi-aquatic birds and mammals to the list of key receptors.

4.) Section 4.0, page 25, last sentence: It appears that Exposure Areas are based solely on the operational site history. This is especially evident for Exposure Area 6 which is located in two separate areas of the site, one being within Exposure Area 8. Please provide an explanation of exactly how the boundaries of each exposure area were chosen. Please ensure that exposure areas are based on receptor exposure and not past use of the site.

5.) Section 4.1.1, page 26, 2nd paragraph on page, last sentence: VOC data was not provided for the sediment samples, Tables 1 – 4. Please ensure <u>all</u> data collected during the Phase 1 Site Characterization is included in the Screening Level Ecological Risk Assessment and reevaluate the potential COCs.

6.) Section 4.2, page 29, 3rd paragraph, screening references: The Montana DEQ's Ecological Risk Assessment Guide (Attachment 1) provides a list of references to use for developing soil, sediment, and surface water screening levels. Please include these references, specifically the Biological Technical Assistance Group (BTAG) sediment or surface water screening benchmarks and the Oakridge National Laboratory Benchmarks for Soils to the list of sources and rescreen all compounds to ensure the most conservative value is still applied.

7.) Section 4.2, page 30, 1st paragraph, 3rd line: Please change "sediment" to "soil".

8.) Section 4.3, page 31: Please see comment 3 above regarding the background investigation previously conducted at the site.

9.) Section 4.4.1, page 32: According to the EPA Region 4 Ecological Risk Assessment Supplemental Guide (EPA, 2015) "In general, only essential nutrients present at low concentrations (i.e., only slightly elevated above background) should be eliminated to help ensure that chemicals present at potentially toxic concentrations are evaluated in the quantitative risk assessment." Please provide the background concentrations used for screening to tables 1 – 4 for the list of essential nutrients to demonstrate that the concentrations detected at the Columbia Falls Aluminum Company (CFAC) are close enough to background that toxic effects are not being overlooked. Please see comment 3 above regarding the site specific background evaluation previously conducted.

10.) Section 4.4.2.2, page 34: The elimination of copper as a COC in the upper most surface water sample is inappropriate. This water sample was collected within site boundaries adjacent to the Industrial landfill and should be listed as a COC for Cedar Creek. Please see comment 3 above regarding a more appropriate background analysis.

11.) Section 4.4.3, page 35, 1st paragraph: The SLERA should evaluate risk to a receptor for both current and future uses of the site therefore, it is inappropriate to exclude Exposure Area 8 based solely on it current status. Please include all data collected in Exposure Area 8 to show that if this space was accessed by wildlife, redeveloped, torn down, abandoned, etc. the soils or other media left in place would not pose an unacceptable risk to ecological receptors traveling across this area.

12.) Section 4.4.3, page 35, 3rd paragraph: Please note that aluminum should be carried through the screening process at this stage regardless of soil pH. Site specific pH and aluminum's toxicity can be addressed during the Baseline Risk Assessment. Also, future site uses must be evaluated when conducting a risk assessment therefore; future activities at the site that may change the soil pH will need to be thoroughly evaluated to show that soil pH will remain greater than five if elevated concentrations of aluminum are proposed to remain on site.

13.) Section 4.4.3.5, page 38: Please change "Exposure Area 5" to "Exposure Area 6".

14.) Section 4.4.3.6, page 40: Please change "Exposure area 19" to "Exposure Area 11.

15.) Tables:

a. Tables 11 – 20: Please carry aluminum through the screening process removing "Note 1".
b. The screening of essential nutrients is inconsistent throughout the tables. Tables 1-4 for sediment replace screening levels with "EN" while Tables 5-10 for surface water carry

essential nutrients through the screening process and indicate they are "Below Screening Levels (BSLs). Tables 11-20 replace the screening level with "NC" and note "EN" as the rational for COC elimination. Please provide a more consistent screening of the essential nutrients throughout each table. Please see comment 11 regarding the screening of essential nutrients.

References:

EPA Region 4. 2015. Ecological Risk Assessment Supplemental Guide Interim Draft. https://www.epa.gov/sites/production/files/2015-09/documents/r4_era_guidance_document_draft_final_8-25-2015.pdf