EPA comments to the Screening Level Ecological Risk Assessment
Columbia Falls Aluminum Company NPL Site
Columbia Falls, Montana
Prepared for Columbia Falls Aluminum Company, LLC by Roux Associates, Inc.
Dated February 27, 2017

General Comments

EPA is concerned that this draft Screening Level Ecological Risk Assessment (SLERA) has used incorrect or incomplete ecological screening values throughout the document. To address this concern, an example of acceptable ecological risk screening values is attached electronically to these comments as a MS Excel workbook. Please revise the SLERA accordingly.

As noted in the General Comments to the Phase I Site Characterization Data Summary Report (DSR), it is premature to dismiss contaminants of potential concern (COPCs) from further evaluation until all four rounds of sampling specified in the Sampling and Analysis Plan (SAP) are completed.

Specific Comments

Section 3.1.1.1 (Page 16) – Additional Sampling Discussion – There is mention that based on a review of the data that "the need for pore water sampling will be evaluated in future ERA investigations if deemed necessary", however, there is no mention of potential sampling of benthic invertebrates. Will aquatic invertebrates be sampled, evaluated as a measurement endpoint? When will this subsequent ecological risk evaluation be conducted? Will this evaluation take place prior to development of the next sampling and analysis plan?

Section 3.1.2 (Page 19) – Terrestrial Pathways – Ingestion of surface water should be considered a complete pathway for terrestrial receptors. Screening of COPCs should be completed.

Section 3.3.1 (Page 21) – Persistent Bioaccumulative and Toxic Chemicals at the Site – It is unclear why the list of chemicals determined to be commonly present at the Site only includes PAHs. What is this finding based on? What about mercury? Lead?

Section 3.3.4 (Page 22) – Identified Exposure Pathways – It is suggested that a figure be created to summarize the site conceptual model for ecological exposures and how the various pathways are being evaluated. Will surface water ingestion by wildlife receptors be evaluated in future risk assessments?

Section 3.4 (Page 23) – Key Receptors – Semi-aquatic birds and mammals as well as reptiles should be included in the list of key receptors identified for the Site. These additions will impact later sections in the document as well (e.g., Section 3.5 Assessment Endpoints).

Section 3.6 (Page 24) – Refinement of COPECs – It is stated that "If necessary, further refinement of COPECs…". What will determine whether further refinement of COPECs is necessary?

Section 4.0 (Page 25) – Identification of COPECs -This evaluation should also include an evaluation of detection frequency/detection limit adequacy relative to screening values. Evaluation by area

assumes that the areas have been adequately characterized. Please provide an evaluation of data adequacy in terms of spatial and temporal representativeness of each area.

Section 4.1.2 (Page 26) – Surface Water – Were surface water samples analyzed for Biotic Ligand Model (BLM) parameters (temperature, pH, dissolved organic carbon (DOC), major cations (Ca, Mg, Na, & K), major anions (SO_4 & Cl), alkalinity, and sulfide)? What about other chemical groups that were evaluated for other media types?

Section 4.1.3 (Page 28) – ISM Sampling in the Operational Area – Please add mention of and reference to the explanation provided in the Phase I Data Summary Report regarding the field processing of samples. How was the field processing bias accounted for in the SLERA?

Section 4.2 (Page 28) – COPEC Screening Criteria – Please add criteria for evaluation of sampling adequacy. If the samples are not spatially and temporally representative of the area, it is premature to dismiss chemicals as COPECs for that area.

Section 4.3 (Page 31) – Background Analysis - Comments provided on the Phase I Data Summary Report regarding the evaluation of background data are applicable to this section. Also, please provide details for how upstream and site surface water data were compared to determine if concentrations measured in Site surface water appear to be Site-related. Chemicals should not be removed from future evaluation even if they are determined to be not Site-related. Background contribution to risk levels should be evaluated in the uncertainty assessment of a baseline risk assessment. This information is used by risk managers in risk management decision-making. It is premature to dismiss chemicals during this stage of the risk evaluation when limited data are available.

Section 4.4.1 (Page 32) – Sediment COPEC Selection - It does not appear that the lowest screening value has been selected or that all sources have been considered. To aid in the evaluation of the selected screening values, please provide a table showing screening values from all sources and the selected screening value.

Section 4.4.2 (Page 33) – Surface Water COPEC Selection – Please clarify if total or dissolved fraction was used to compare to screening levels. Were dissolved concentrations of metals compared to Montana DEQ standards? Please clarify how hardness-dependent chemicals were evaluated. Was there an assumed hardness that was used? If so, how was the value selected? Please clarify of acute or chronic screening values are being used in the COPEC selection. It does not appear that detection limit adequacy is being evaluated as outlined in the SLERA. For example, in Table 5, mercury is not being carried through as a COPEC even though results were non-detect at a level that is more than two times the screening level. Similar to sediment, it does not appear that the lowest screening value has been selected or that all sources have been considered. To aid in the evaluation of the selected screening values, please provide a table showing the values from all sources and the selected screening value.

Section 4.4.2.2 (Page 34) – Use of Background in COPEC Selection - Consider NOT screening for COPECs using background sediment and surface water concentrations from upstream sampling locations in Cedar Creek, Cedar Creek Reservoir Overflow Ditch, and Flathead River. Based on uncertainty of appropriateness of these sites as "background" and the conservative nature of

SLERAs, it may be more defensible to screen for COPECs based solely on comparison to ESVs if screening based on the limited data that are available is determined to be appropriate.

Section 4.4.3 (Page 35) – Soil COPEC Selection - Again, it does not appear that the lowest screening value has been selected or that all sources have been considered. To aid in the evaluation of the selected screening values, please provide a table showing the values from all sources and the selected screening value. Some of the soil tables do not result in a COPEC selection (e.g., Table 19). It is unclear what the potential COPECs are without doing a visual scan of the table of results and the screening values,

Section 5.3 (Page 43) – Uncertainties in the Effects Assessment (Discussion of use of the Maximum Concentration) - While the use of the maximum concentration may overestimate potential risks, it also has the possibility to underestimate the level of risk if the dataset is highly variable and sampling of the Site in not adequate. This should be noted in the text.

Section 5.5 (Page 44) – Background Uncertainty - Consider adding in a discussion of uncertainty associated with background surface water and sediment samples/locations. A map with sample names/IDs and the location of background surface water and sediment samples would be helpful to add. The use of upstream samples in Cedar Creek, Cedar Creek Reservoir Overflow Ditch, and Flathead River as background for surface water and sediment is questionable. It is difficult to justify using data from one sampling event at one location to screen for COPECs in downstream samples. Background sampling locations are on site, so their use as "background" should be objectively supported. If these locations are influenced by the site, screening COPECs using these background data removes the highest concentration of that constituent from further risk evaluation (e.g., Cu in surface water in Cedar Creek).

Section 6.0 (Page 46) – Conclusions (COPEC Refinement Investigation) – As stated earlier, because collected data are limited, the dismissal of chemicals as COPECs is premature. To further refine the "selection" at this point is also not appropriate without the collection of additional data so that the Site is properly characterized given the spatial and temporal variability that may be present.

Miscellaneous Comments

It would be helpful to include an evaluation of seasonal flow data (USGS) to frame the representativeness of the surface water and sediment data upon which the SLERA is based.

Due to the known interaction of groundwater and surface water through seeps, groundwater data collected near the seeps should be screened for COPECs using the surface water screening criteria.