CDM Smith

Memorandum

To: *Mike Cirian, USEPA*

From: *Sean Coan, P.G.; Erin Formanek; Damon Repine, CSP*

Date: *June 30, 2016*

Subject: *Draft Comments – Phase 1 Site Characterization Sampling and Analysis Plan Addendum, Columbia Falls Aluminum Company, Columbia Falls, Flathead County, Montana*

CDM Federal Programs Corporation (CDM Smith) at the request of the United States Environmental Protection Agency (USEPA), has reviewed the Phase I Site Characterization Sampling and Analysis Plan Addendum (SAP Addendum), prepared by Roux Associates, Inc. (Roux) on behalf of the Columbia Falls Aluminum Company LLC (CFAC) for the Former Primary Aluminum Reduction Facility (Site), located in Columbia Falls, Montana. Comments are organized into General and Specific Comments. Specific Comments are organized by corresponding section of the document.

General Comments

1) Due to the presence of animal feces observed at many locations during the reconnaissance, please ensure that terrestrial receptors are evaluated in the ecological risk assessment.

Specific Comments

2) Page 8, Section 2.2.2.2, 2nd paragraph – Please clarify if the paragraph describes conditions at the Wet Scrubber Sludge Pond, or at a landfill. The paragraph refers to the 'landfill' throughout the paragraph.

3) Pages 19-20, Section 2.3.1 – Please revise or remove comparison of historical production well sampling data to maximum contaminant levels (MCLs). MCLs are not risk-based and comparison to them alone could be misleading in terms of actual risk due to groundwater consumption at the site. If this comparison is not removed, it should be revised to compare data to the minimum of the criteria available for screening (i.e. USEPA RSLs, DEQ-7 Human Health Standards, etc.). Also, please remove the references to 'average concentration'. The entire data range should be compared to the relevant standard. For example, for cyanide at PW-7, the sentence must be revised as follows: "The ~~average concentration of~~ ***range of concentrations*** for cyanide at PW-7 ~~was 0.028 mg/L, which~~ is below the Montana Human Health Numeric Water Quality Standard / USEPA MCL of 0.200 mg/L for Cyanide in Groundwater" (emphasis added).

4) Page 23, Section 2.5.1, bullet list – Please add data ranges for all constituents discussed in the list.

5) Page 25, Section 2.6.1 – Please provide justification for the statement "the soil gas screening results indicate landfills are not significant sources of methane or volatile organic compounds (VOCs)". Granted many of the values presented are non-detect (ND), there are several detections for VOCs. Please specify how it was determined that landfills are not significant sources of VOCs or remove the statement.

6) Page 26, Section 2.6.2 – Please present the isopleth maps for passive soil gas sampling results in the SAP Addendum. Also, if passive soil gas sample results are driving additional investigation in the drum storage and operational grid areas, please present figures showing the additional investigation locations correlated to the isopleths of the relevant constituents (e.g., a map of the drum storage area with tetrachloroethene isopleths and proposed soil boring locations).

7) Page 26, Section 2.6.1, last paragraph– Please specify under what circumstances "additional soil vapor sampling may also be warranted".

8) Page 28, Section 2.8, 1st partial paragraph; Figures 8 and 9 – Please renumber Figures 8 and 9 as Figures 9 and 8, respectively for continuity. The discussion of ground-penetrating radar appears before the discussion of additional soil borings within the former fueling area.

9) SC: Page 29, Section 3.1, 2nd paragraph; Figures 8 and 9 – Please renumber Figures 8 and 9 as Figures 9 and 8, respectively for continuity. The discussion of additional soil borings appears after the discussion of ground-penetrating radar (see Specific Comment 7 above).

10) Pages 31-32, Section 3.4: Please add a discussion of historical groundwater elevations, and how the magnitude of seasonal groundwater fluctuations has influenced monitoring well construction. The SAP states that, "The majority of the proposed Phase I monitoring wells will be installed immediately below the groundwater table." However, during field oversight activities, it has been noted that monitoring wells have been constructed with screened intervals approximately 10-12 feet below the water table. Please discuss this discrepancy in the context of historical groundwater data.

11) Page 33, Section 3.5, final two paragraphs: Please add to the section a discussion of why existing production wells cannot be sampled. The description of the wells states that the wells still have large pumps installed within them: why can't they be sampled?

12) Page 35, Section 3.7, 2nd full paragraph, last sentence: Please add provide the number for the figure that depicts channel bottom soil/sand sample locations.

13) Page 36, Section 3.7– Please clarify if the sampling design will be documented in another addendum to the SAP or a field modification. It is noted that the surface water sampling design will be reevaluated during low water conditions due to access/safety concerns. Roux will be

notifying EPA of the proposed approach in future progress reports, but any change in scope or methodology for the surface water sampling must be documented formally and not limited to a progress report.

14) Table 6 – Ecological soil screening levels (Eco-SSLs) (EPA 2016) and Oak Ridge National Laboratory (ORNL) toxicological benchmarks (Efroymson et al. 1997a,b) should be added.

15) Table 8 – Great Lake Water Quality Initiative, Tier II values from Suter and Tsao (1996) should be added.

16) Table 9 – Please confirm the reference for threshold effect level (TEL) values. These appear to Ingersoll Assessment and Remediation of Contaminated Sediment (ARCS) TEL values (Ingersoll et al. (1996a,b)).

17) Table 9 –Values based on EqP sediment guidelines (ESGs) for PAHs, dieldrin and endrin should be added (EPA 2003a,b,c).

18) Figures 8 and 9 – please renumber the figures to better reflect the progression of discussions in the text (see Specific Comments 7 and 8 above).

References

Efroymson, R.A., M.E. Will, G.W. Suter II, and A.C. Wooten. 1997a. Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Terrestrial Plants: 1997 Revision. Prepared for the U.S. Department of Energy, Office of Environmental Management by Lockheed Martin Energy Systems, Inc. managing the Oak Ridge National Laboratory (ORNL). ORNL publication. ES/ER/TM-85/R3, November 1997. http://www.esd.ornl.gov/programs/ecorisk/documents/tm85r3.pdf

Efroymson, R.A., M.E. Will and G.W. Suter II. 1997b. Toxicological Benchmarks for Contaminants of Potential Concern for Effects on Soil and Litter Invertebrates and Heterotrophic Process: 1997 Revision. Prepared for the U.S. Department of Energy, Office of Environmental Management by Lockheed Martin Energy Systems, Inc. managing the Oak Ridge National Laboratory (ORNL). ES/ER/TM-126/R2, November 1997. http://www.esd.ornl.gov/programs/ecorisk/documents/tm126r21.pdf

EPA. 2003a. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: Dieldrin. Office of Research and Development. EPA/600/R-02/010. https://www.epa.gov/nheerl/publications/files/dieldrin.pdf

EPA. 2003b. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: Endrin. Office of Research and Development. EPA/600/R-02/009. https://www.epa.gov/nheerl/publications/files/endrin.pdf

EPA. 2003c. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. Office of Research and Development. EPA/600/R-02/013. https://www.epa.gov/nheerl/publications/files/PAHESB.pdf

EPA. 2016. Ecological Soil Screening Level. https://www.epa.gov/chemical-research/ecological-soil-screening-level.

Ingersoll, C.G., P.S. Haverland, E.L. Brunson, T.J. Canfield, F.J. Dwyer, C.E. Henke, N.E. Kemble, and D.R. Mount. 1996a. Calculation and evaluation of sediment effect concentrations for the amphipod Hyalella azteca and the midge Chironomus riparius. National Biological Service Final Report for the U.S. Environmental Protection Agency, Great Lakes National Program Office, Assessment and Remediation of Contaminated Sediment (ARCS) Project. EPA/905/R-96/008. September.

Ingersoll, C.G., P.S. Haverland, E.L. Brunson, T.J. Canfield, F.J. Dwyer, C.E. Henke, N.E. Kemble, D.R. Mount, and R.G. Fox. 1996b. Calculation and evaluation of sediment effect concentrations for the amphipod Hyalella azteca and the midge Chironomus riparius. J. Great Lakes Res. 22:602-623.

Suter II, GW and CL Tsao. 1996. Toxicological Benchmarks for Screening Potential Contaminants of Concern for Effects on Aquatic Biota: 1996 Revision. Oak Ridge National Laboratory. Document ES/ER/TM-96/R2. June 1996. http://www.esd.ornl.gov/programs/ecorisk/documents/tm96r2.pdf