



Date: June 23, 2006

J. Chris Pfahl
Site Manager
ASARCO LLC
PO Box 440
Wallace, ID 83873

Dear Mr. Pfahl:

The Forest Service has reviewed the revised risk assessment portion of ASARCO's Draft Engineering Evaluation/Cost Analysis (EE/CA), Azurite Mine and Mill Site, received on May 26, 2006. Although the revised RA represents a substantial improvement over the original document, some issues remain. The following Forest Service comments are split into general, section specific and editorial categories.

Please submit written responses to these comments by July 7, 2006, prior to revising the risk assessment. To assist ASARCO, I suggest that we arrange a conference call on June 30, 2006 at 9AM PST to discuss the comments prior to the formal written response. If ASARCO has a conflict at that time, please contact me to arrange a mutually acceptable time.

General Comments:

1. **Plagiarism from Kromona Report:** There appears to be excessive borrowing of text from Kromona Mine Risk Assessment (RA) report. This revised report copied entire paragraphs from the Kromona Mine RA with either minor modifications to one sentence or no modifications. For example, Section 4.2.2 is an almost exact copy of Section 3.2.2 from the Kromona RA. This is repeated throughout the Azurite risk assessment. The Kromona documents were meant to provide an example of acceptable methodology and level of detail. In order to use their text verbatim, approval must be secured from the author of the Kromona report; else the text must be rewritten as original text.
2. **Risk from Failure of Waste Piles:** The revised report did not include an assessment of risk upon the catastrophic failure of the waste pile. As previously agreed, this is a required element.
3. **Risk Equations:** Please include all the risk equations (i.e. Average Daily Dose, Hazard Quotient, Hazard Index). These can be added as an appendix or included in the text.
4. **Number of COIs:** The report mentions 19 COIs but Table 3.1 lists 21 COIs. Please identify the correct number and change the text accordingly.



Specific Section Comments:

1. **Executive Summary**, ES-1, 4th paragraph: Please clarify whether the COPCs mentioned in the first sentence are human health or ecological COPCs.
2. **Section 1.0, Introduction and Objectives**, page 1, 1st paragraph: What do you mean by “minimum failed criteria”?
3. **Section 2.0, Streamlined Risk Assessment Data**, page 2, 1st paragraph: Remove the reference to “riparian zone and Mill Creek biota” since the risk assessment is not limited to the effects on the riparian zone or biota.
4. **Section 4.2.1.2, Identification of Potential Exposure Pathways**, page 10, top of page: What is meant by the last sentence in that paragraph?
5. **Section 4.2.3, Exposure Point Concentrations**, page 10, last sentence: What do you mean by the “basis” for the EPC?
6. **Section 4.4.1, Non-Carcinogenic Hazards**, page 14, Table 4.5: The value of the Hazard Index does not match the sum of the hazard quotients. Please check this calculation and correct.
7. **Section 5.1.2, Ecological Setting**, page 18, 1st paragraph: Please clarify what you mean by “...to evaluate the potential for transport of COPCs to RTE species, we have included plants, mammals, birds, terrestrial insects and fish in Mill Creek as representatives of RTE species.”. In particular, justify why this is an appropriate approach.
8. **Section 5.3.1.1, Soil, Wasterock, and Tailings**, page 26: The second paragraph is confusing. Are you trying to say that background concentrations often exceed TRVs? If so, perhaps you could add a column to the HQ tables showing the HQ for background samples. If this is not what you meant, please clarify.
9. **Section 5.3.1.1, Soil, Wasterock, and Tailings**, page 27: Please note that zinc is not considered an essential nutrient.
10. **Section 5.4, Summary of Ecological Risks**, page 30: Please include a summary of impacts to bull trout.
11. **Section 6.0, Conclusions and Recommendations**, page 32: This section presented conclusions but no recommendations. What are the remedial action objectives for this site based on the outcome of the risk assessment?

Editorial Comments:

12. **Typos:** Executive Summary, page ES-2: The acronym ECR is not defined. The second sentence of the third paragraph appears to be missing a word (i.e. “...may permanently associated...”).
13. **Figure Size:** Figure 2.1 and Figure 2.2 are too small to read. Please resize.
14. **Section 5.1.1, Ecological Stressors**, page 18: Did you mean to say “COIs retained...” instead of “COPCs retained...”? Also, Table 5.1 is not listed on that page but on page 21.
15. **Acronyms:** There is mixed use of COPC (contaminants of potential concern) and COPI (contaminants of potential interest). Please use just one.
16. **Table 5.4, Hazard Quotients for Surface Water**, page 24: The HI and the HQs for barium, copper and lead should be bold since the risk ratio is greater than one.
17. **Section 5.3.1.3, Pore Water**, page 28: It should say Table 5.6.
18. **Section 5.3.1.6, Analytical Data**, page 29: Change Si to SI.

Sincerely,

Cheryl Woodall
On-Scene Coordinator

cc: James Alexander-OGC
Dick Sawaya – Forest Service
Bob Fujimoto – Forest Service
Rick Roeder – Washington Department of Ecology
Tom Mullen – LFR Inc.