



COLORADO


Division of Reclamation,
Mining and Safety

Department of Natural Resources

1313 Sherman Street, Room 215
Denver, CO 80203

MEMORANDUM

To: Michael Cunningham

From: Tim Cazier, P.E. 

Date: May 23, 2014

Re: Leadville Mill – Permit No. M-1990-057 / AM-01
Third Adequacy for Stormwater

The Division of Reclamation, Mining and Safety (Division) engineering staff has reviewed the April 22, 2014 Leadville Mill; M1990-057, Response to Amendment Review No. 4 Second Adequacy for Stormwater and the Drainage Report for Union Milling Company, LLC, Union Mill, Lake County, Colorado provided in response to the Division's March 21, 2014 Third Adequacy for Stormwater Memorandum. The original comment numbers have been retained for the purpose of tracking responses.

1. Page 5, last paragraph. A CN of 79... The response to this comment is inadequate. The proposed revegetation plan for the outslope of the TSF is the standard approach and not considered aggressive. Please revise the CN to a non-vegetated condition (such as pervious, "newly graded area" HSG C; CN = 91) and revise the predicted peak flows and channel designs accordingly.
2. Page 11, Table 3. With the exception of the "Berm Contact" and "West TSF Contact" ... The response to this comment is adequate.
3. Appendix B, West Diversion, max slope. The maximum slope... The response to this comment is adequate.
4. Appendix B, General Comment. ... please revise the hydraulic analyses... The response to this comment is adequate.
5. Appendix B, South TSF Contact. The hydraulic analyses... The response to this comment is adequate.
6. Appendix B, Weir Report. It appears the weir analysis... The response to this comment is adequate.



7. Appendix B, Spillway Chute. The Division could not find... The response to this comment is adequate.

Drawing DR-1.

8. Please label the channels... The response to this comment is adequate.
9. The Division believes there is insufficient capacity for sediment retention... The response to this comment is partially adequate. The proposed silt fence will suffice as a temporary BMP. However, given the challenge in establishing vegetation at the site's high elevation and on 2H:1V slopes, the Division believes a more permanent solution may become necessary. If the Operator does not wish to provide additional sediment storage capacity at the southwest corner of the TSF at this time, they must agree to a stipulation to provide sufficient additional sediment storage if adequate vegetation is not established on the TSF slopes within two years. Please provide a written commitment to provide sufficient additional sediment storage if adequate vegetation (as determined by the Division) is not established on the TSF slopes within two years.
10. It appears from available information... The response to this comment is adequate.

Drawing DR-2

11. Open Channel Section No. 3... The response to this comment is adequate.
12. Geotextile for riprap underlayment. The response to this comment is adequate.

New Comments

13. DR-2 and Upper Diversion Channel. Analyses in Appendix B indicate the Upper Diversion needs to be two feet deep to provide adequate capacity. Drawing D-2, Upper Diversion Channel – Section No. 4 dimensions the channel to be 1.5 feet deep. Please correct the drawing to show the required two-foot depth.
14. DR-2, TSF Spillway Channel. Appendix B indicates the TSF Spillway Channel is a 2-foot deep, riprap-lined triangular channel. There is no detail on Drawing D-2 for the TSF Spillway channel. Please add a detail to Drawing D-2 and be sure the riprap called out is consistent with that sized in Appendix B.
15. Appendix B, West Diversion Channel. Appendix B still has analyses (both stability and capacity) for a maximum slope of 62.5%. Please confirm there is no longer a plan for constructing this steep of a channel and replace these two analysis sheets with the appropriate maximum slope; or if there is no longer a West Diversion proposed, confirm these analyses are no longer required.

If either you or the applicants have any questions regarding the comments above, please call me at (303) 866-3567, extension 8169.