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March 12, 1988

TO: John Whitehead, Permit Supervisor  
FROM: Harold G. Sandbeck, Reclamation Specialist  
RE: Review of the California Portland Cement, Hidden Valley Mine MRP  
Addendums. INA/015/007-88A, Emery County, Utah.

Synopsis

On February 18, 1988, JBR Consultants Group submitted four (4) addendums for inclusion into the Hidden Valley MRP. I assessed these addendums for completeness. Following is the list of submitted addendums:

1. UMC 784.11(b) -- Operation Plan: General Requirements, page 9
2. UMC 817.101 -- Backfilling and Grading: General Requirements (1) Road, page 19
3. UMC 784.14(a)(1-4), (b)(1-2) -- Reclamation Plan: Protection of the Hydrologic Balance, page 32
4. UMC 817.114(b) -- Mulching and Other Soil Stabilizing Practices, page 66

Analysis

All four (4) addendums require an official addendum date. Following is the analysis for each addendum:

1. UMC 784.11(b) requires the page number to be changed from "9" to "9a."
2. UMC 817.101 requires the page number to be changed from "19" to "19b."
3. UMC 784.14(a)(1-4), (b)(1-2) requires the page number to be changed from "32" to "32a."
4. UMC 817.114(b) requires the page number to be changed from "66" and "67" to "59a" and "59b," respectively.

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I am concerned about the soil stability of the A and B coal seam fill slopes. Both fills have sparse cover and are susceptible to erosion. Following is the history of the A and B seam fill slopes:

4A. The May 1986 Hidden Valley MRP requires the installation of erosion control netting to hold the mulch and provide a suitable seed bed on the A and B coal seam fill slopes.

4B. On March 24, 1987, Henry P. Austin issued TDN X-87-2-116-2 TV-2. TDN 1 of 2 was issued for "failure to mulch in accordance with the provisions of UMC 817.114 and the approved reclamation plan. Mulching is inadequate throughout the entire reclaimed area including the reclaimed haul road, to stabilize the soil surface with respect to wind and water erosion."

4C. On April 6, 1987, DOGM responded to TDN X-87-2-116-2 TV-2:

TDN 1 of 2: "After careful consideration of the mulching concerns raised in the above referenced TDN, the Division does not feel it is appropriate to take enforcement action on this issue for the following reasons:

- "1. In the Hidden Valley MRP, Portland Cement (PC) committed to spreading two tons per acre of alfalfa hay over the entire site and dragging the surface with a chain incorporating the hay into the soil and covering the seed and fertilizer so that these materials would be in good contact with the soil. Incorporation of the material was intended as a soil amendment rather than as a soil covering. Alfalfa hay was specified (rather than straw) because it would deteriorate rapidly and provide organic matter to the very sandy soil material. PC committed to using erosion control netting on steep slopes in order to hold the mulch in place. During reclamation the majority of the backfill material was obtained from excavation of a bypass culvert which ran underneath the main pad area. The volume of material generated was sufficient to produce backfill slopes that were less steep than the 2:1 slopes anticipated.
- "2. The soil material was extremely loose during construction. For this reason, use of the chain to bury the mulch would have resulted in unacceptably deep burial of the seed. An on-site decision was made that use of a rubber-tired vehicle on the loose material and a track vehicle on the road, were the best ways to

incorporate the mulch without burying the seed too deeply (Phil Ralphs, DOGM inspector at the time).

- "3. The original purpose of the netting (not excelsior blanket or other mulch material) was to hold the hay in place on steep slopes where equipment could not be used to incorporate the hay. Due to the less steep slopes, equipment was able to access most slopes to incorporate the mulch. Before reclamation, verbal permission was given to PC to forego use of the netting if the original 2:1 fill slope planned for the coal seam area could be lessened and if hand-work on these slopes would sufficiently incorporate the mulch.
- "4. PC was permitted to leave the road alignment and to leave the road accessible to their use of four-wheel drive vehicles on the road. Upon inspection, DOGM feels that the road was adequately ripped, seeded, fertilized and mulched. Areas of compaction have resulted from the use of a vehicle on the road after mulching. Since a variance was granted for this use, an NOV is not justified for the main road area.

"Both DOGM and PC erred in that the MRP was not modified to reflect verbal permission and on-site modifications that were made. DOGM believes, however, that the two ton per acre application was made and that the material was sufficiently incorporated. Since no noticeable erosion has occurred on the site, DOGM does not feel that it is necessary to require additional erosion control efforts at this time. PC has committed to monitor the site monthly and will be expected to repair minor erosion as it occurs. A reevaluation will be made by DOGM and PC in early fall (after any severe summer storms are likely to have occurred) to determine if additional work is necessary to assure adequate revegetation."

4D. On April 7, 1987, DOGM notified Mr. John W. Rains, chief mining engineer for Hidden Valley Mine, of the results of TDN-X-87-2-116-2 TV-2.

"An item of additional concern is the mulching and erosion protection of the reclaimed area prior to full establishment of vegetation. The attached letter to the Office of Surface Mining substantiates the Division's position that mulching procedures used were in accord with the plan or with field-directed changes thereto. The Division does not support OSM's contention that the mulching provision of the plan is in violation. However, the following is recommended to assure that future storm events do not cause erosion possible resulting in an NOV and/or major regrading:

- "1. Monitor monthly, as committed to in the MRP. Monitor after major storm events.
- "2. Repair minor erosion as it occurs. Special attention should be given to the coal seam area east of the old sediment pond. Hand work may be necessary to create small breaks in this slope to prevent gully formation.
- "3. DOGM recommends, but will not require, immediate coverage of the coal seam areas with Excelsior or other comparable mulch matting. Immediate use of this material at the site would conserve the soil moisture currently present and promote vegetation. While the erosion netting proposed in the MRP would not have accomplished this goal and would have been very difficult to secure in the very loose soils last fall, the soil has sufficiently stabilized with winter moisture to facilitate attachment of Excelsior matting at this time."

#### Recommendations

1. The operator should provide official addendum dates for all four (4) addendums.
2. The operator should correct the page numbers for all four (4) addendums as described in the analysis section.
3. Regarding the fourth addendum, UMC 817.114(b):
  - A. The operator needs to submit data and diagrams showing that the A and B fill slopes are less steep and/or met the 2:1 slope specifications.
  - B. Soil stability of the A and B fill slopes depends greatly on the revegetation success. A good vegetative cover will likely take several years to establish. Therefore, the operator should adhere to the parts listed in the analysis section -- 4D. 1, 2, and 3.