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FILE ACT/007/001

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

Copy to SLC Planning

DEC 20 1983

MB 12/28/83

Mr. Trevor Whiteside
Chief Engineer
Valley Camp of Utah, Inc.
Helper, Utah 84526

Dear Mr. Whiteside:

Enclosed is a compilation of remaining deficiencies identified during our Determination of Adequacy (DOA) of the Belina Mines Complex permit application package. The DOA includes: 1) a review of your November 18, 1983 submittal; 2) the identification of deficiencies based on the Office of Surface Mining's (OSM) technical analysis of the permit application (identified by an asterisk); and, 3) revisions to the November 29, 1983 draft deficiency document based upon our meeting with you on December 1, 1983.

The final permit decision document is scheduled to be completed on January 31, 1984. Therefore, your response to the remainder of the identified deficiencies must be received by OSM no later than January 6, 1984. The responses should be submitted as they are produced, and be in the form of numbered and dated replacement pages or maps. If you cannot respond to a particular section within this timeframe, OSM should be contacted immediately.

If you have any questions, please contact Sarah Bransom or Walter Swain at (303) 837-3806.

Sincerely,

Allen D. Klein

Allen D. Klein
Administrator
Western Technical Center

Enclosure

cc: Dianne Nielson, UDOGM
Jim Smith, UDOGM

FINAL DETERMINATION OF ADEQUACY (DOA)

VALLEY CAMP

BELINA MINES COMPLEX

UMC 783.19 Vegetation

The applicant's response is deficient; the applicant still has not provided the requested data that demonstrates that sample adequacy has been achieved or that the maximum number of required samples has been taken. Consequently, the applicant has not shown that the baseline vegetation data is equivalent to actual field conditions and cannot contend that the data are representative of vegetative conditions in the mine permit area. The data provided as page 783.19-3 dated 16 November 1983 by the applicant demonstrates that more sample plots are required. The applicant has not combined the results of the reference and validation areas for 3 out of 4 locations.

Therefore, the applicant must respond to the following inadequacy originally identified in the DOA dated October 14, 1983 from OSM to Valley Camp. The inadequacy is repeated in its entirety:

The applicant's September 16, 1983 response to this section addressed the August 9, 1983 draft version of the Determination of Adequacy (DOA) letter and not the August 24, 1983 final version that was transmitted to the applicant on August 26, 1983. The August 24, 1983 DOA includes the following clarifications to the earlier draft:

1. Provide a statistical summary of the reference area and validation area combined data (i.e., means, standard deviation, and sample size) for cover, production, and woody plant density for each vegetation type.

2. Provide sample adequacy tests for each vegetation type using the combined reference area and validation area data for cover, production and woody plant density.

Note: The applicant should understand that the combined reference area and validation area data are generated by adding means and sample sizes of the same vegetation type and calculating new standard deviations. The applicant must not add the standard deviations to calculate the average standard deviation.

UMC 761.11(a)(3), 783.12 (b) and 784.17 Cultural and Historic Resources

The operator has committed in the November 16, 1983 submittal to conduct a 100 percent pedestrian inventory of the areas that have been selected by OSM and indicated to the applicant on ACR Map D5-0063 in OSM's 14 October 1983 Determination of Adequacy.

An acceptable cultural resources inventory report shall be submitted to the Division of Oil, Gas, and Mining, the Utah SHPO, the BLM, Manti-LaSal National Forest and OSM prior to 31 December 1984. The report shall contain a fully justified recommendation of each resource's eligibility or ineligibility for nomination to the NRHP.

If sites which may be sensitive to the adverse effects of subsidence, e.g., historic and prehistoric structures and/or structural remains, rock shelters, rock art sites, etc., are located, additional survey may be required.

If sites which may be sensitive to subsidence are located, the operator must commit to consult with the regulatory authority to determine whether mitigation measures or subsidence monitoring are necessary to either avoid adverse impacts or determine whether the sites will be impacted by subsidence.

UMC 784.13(b)(3) Reclamation Plan: General Requirements

Because terrace slopes adjacent to the Belina portals exceed the allowable 2H:1v and the slopes surrounding the portals have existing stability problems, it is necessary that the applicant perform the slope corrections to bring these structures into compliance with this section. The applicant must commit to perform the recommendations presented in Appendix L of the PAP or other appropriate means to correct the slopes.

* The applicant must commit to provide a plan that brings the terrace slopes adjacent to the Belina portals into compliance with this section. A schedule to correct these slopes must also be provided.

UMC 784.13(b)(4) Topsoil

The applicant has identified a potential source of substitute topsoil material in both the Belina mines area and the Utah No. 2 loadout and yard area. Drawings A5-0075 and A5-0076 in Appendix P of Volume VI presents the location of the substitute topsoil material on a topographic base (scale 1 in. = 100 ft.). To aid in the evaluation of its proposed source of substitute topsoil in terms of suitability in compliance with UMC 817.22(e), the applicant must provide the following information:

Drawings

1. Drawing A5-0075 lacks the locations of the three sampling sites within the substitute topsoil storage area. These sample locations must be provided on Map A5-0075 with a symbol/notation that corresponds with the tables of laboratory results found in Appendix P.

2. Drawing A5-0076 lacks cross sections for the topographic features comprising the topsoil substitute resource. The applicant must provide three cross sections of the substitute material. These cross sections should be perpendicular to the slope and located at each of the three sample sites.

3. Drawing A5-0076 shows the locations of three sample sites at the Utah No. 2 facilities. However, the applicant has failed to correlate the sample location with the laboratory results. The applicant must identify sample sites by different symbols/notations to facilitate the correlation of laboratory results with the three sampling site locations.

Laboratory Results

4. Laboratory results, as noted above in numbers 1 and 4, must clearly correspond to a specific sampling sites on drawings A5-0075 and A5-0076.

5. The applicant must clarify the reason for conducting one set of analyses for samples collected at the Belina mines (Appendix P) and a second set of analyses for samples collected at the Utah No. 2 loadout and yard area. For example, the samples for the Belina mine area were analyzed for total concentration, whereas the materials at the Utah No. 2 loadout area were analyzed using DTPA extractable methods.

6. The applicant must describe the process by which each sample was evaluated for suitability including evaluations of results for each test conducted to characterize the sample. Suitablity criteria including references must be provided for review. The applicant must further clarify the determination of suitability as affected by the use of two distinct sets of analyses used to determine the quality of the two potential sources of substitute topsoil material.

7. The applicant has stated on page 784.13(b)(4)-2 (16 November 1983) that "Boron, selenium, and molybdenum are not present at critical levels." However, the laboratory results have not shown these elements as part of the analysis for the Belina portal area and selenium was not in the Utah No. 2 analysis. The applicant must provide supportive documentation for their conclusion made on page 784.13(b)(4)-2.

8. The applicant must identify the criteria used to assess the status of plant nutrients as being present at moderate levels and also describe the application methods and rates for any proposed soil amendments (i.e., N, P, K, Organic Matter) the applicant will add to the substitute topsoil material to enhance the feasiblilty of revegetation.

9. The applicant must provide specific field trial designs identifying the purpose, scope, methodologies and schedule to conduct monitoring, field-site trials (revegetation plot studies testing the response of plants to the substitute topsoil materials) to document the suitability of the substitute topsoil material for use as reclamation topsoil.

10. After the review of results of analyses and trials, the applicant will provide a volumetric estimation (cubic feet) of suitable substitute topsoil materials. Quantity as expressed in weight does not provide the spacial description of volume which is necessary to assess the amount of material available to be spread over the disturbed area at the approved thickness.

UMC 784.14 Reclamation Plan: Protection of the Hydrologic Balance

Valley Camp proposed a change in their surface water monitoring program in the "Hydrologic Inventory and Baseline Study of the Valley Camp Lease Area, Carbon and Emery Counties, Utah" (Vaughn Hansen Associates, January 1980). However, neither DOGM or OSM has acted on the proposed change. The discussion below summarizes the review of the proposed surface water monitoring program.

Valley Camp proposes to replace VC-7 and VC-8 (Boardinghouse Canyon and Mud Creek above Boardinghouse Canyon) with stations VC-11, VC-12, and VC-13 (Long Canyon, Finn Canyon, and Boardinghouse Canyon, respectively). Valley Camp also proposed to delete stations VC-6, VC-7, UPL-3, UPL-10, VC-9, and CS-1. Valley Camp argues (page 49) that these stations monitor the effects of mining activities by Coastal States Energy Company's Skyline Mines (immediately west of the Belina Mines) and not those of Valley Camp. With the exception of VC-6 (Eccles Canyon above South Fork) and VC-9 (Eccles Canyon near Mud Creek), this request is acceptable. Station VC-6 is needed to determine the impact of the haulroad on Eccles Creek, and station VC-9 is needed to monitor the mouth of Eccles Creek. Therefore, Valley Camp's request to abandon stations VC-6 and VC-9 will be denied. The Regulatory Authority will reconsider Valley Camp's request to abandon station VC-9 if the company demonstrates that an already existing station is an acceptable alternative.

Valley Camp proposes to monitor stations VC-1, VC-2, VC-4, VC-5, and VC-10 on a comprehensive schedule (table 4) during the month of August each year and to monitor these stations on an abbreviated schedule (table 9) each spring and fall. Analysis of the data shows that August is the appropriate time for the comprehensive schedule and that one annual comprehensive schedule is sufficient. Valley Camp's request for monitoring stations VC-1, VC-2, VC-4, VC-5, and VC-10 on a comprehensive schedule during the month of August will be approved.

Analysis of the data also showed that additional monitoring only during the fall and spring is insufficient and show seasonal variation for total suspended solids (TSS). TSS is directly related to flow rates. The analysis in OSM's Cumulative Hydrologic Impact Assessment shows that TSS is increased due to mining activities. Therefore, Valley Camp's request for a reduced monitoring frequency will be denied. The company must modify their surface water monitoring program so that monitoring is conducted monthly for the months of March, April, May, and June, and bi-monthly for the other months. Monitoring may be by the abbreviated schedule (Table 9).

Valley Camp further proposes to suspend the monitoring on stations VC-11, VC-12, VC-13 until one year prior to any potential underground impact. Valley Camp's request to suspend monitoring on stations VC-11 (Long Canyon) and VC-12 (Finn Canyon) will be approved. The drainages above these two stations are outside of the five-year permit area. However, station VC-13 (Boardinghouse Canyon) has contributing area in the five-year permit area, and monitoring should continue at this station. When monitoring is restarted on stations VC-11 and VC-12 Valley Camp should follow the same schedule and frequency as the other surface water monitoring stations.

In summary, Valley Camp's request to abandon stations CS-1, VC-7, UPL-3, and UPL-10 will be approved. Valley Camp's request to abandon stations VC-6 and VC-9 will be denied. Stations VC-7 and VC-8 should be replaced by stations VC-11, VC-12, and VC-13. Monitoring at stations VC-11 and VC-12 can be suspended for mining within the proposed five-year permit area.

Frequency of monitoring should be monthly for the months of March, April, May, and June and bi-monthly for all other times. The abbreviated schedule for water quality parameters will be approved for use except in the month of August when the comprehensive schedule will be used.

* The applicant must commit to correct the surface water monitoring plan to incorporate the changes described above. If these changes are not incorporated into the PAP, the approved monitoring program will be a condition of the permit.

UMC 784.14 Reclamation Plan: Protection of the Hydrologic Balance (Ground Water)

Under standard operating procedures, ground water intercepted in the Belina Mines will be pumped from the mines and will be discharged from sediment ponds to Eccles Creek via Whiskey Canyon. This intercepted ground water is also the recharge to the local ground water system. More specifically, ground water flow via the O'Connor Fault (i.e., 200 gallons per minute) to Eccles Creek provides the principle baseflow to Eccles Creek. The Belina Mines will intercept almost all of the recharge to the O'Connor Fault zone and therefore, will cause declines in the discharge of ground water to Eccles Creek along the declines in the discharge of ground water to Eccles Creek along the O'Connor Fault. During mining, the stream flow of Eccles Creek would be augmented by discharges of mine waters from sedimentation ponds. However, the normally constant discharge of 200 gallons per minute from the O'Connor Fault would be replaced by erratic discharges of water from the sedimentation ponds. This change in flow regime may affect aquatic organisms in Eccles Creek and may cause irregular flows for downstream irrigators in Pleasant Valley. The effect of ground water interception in the Belina Mines will be most pronounced with respect to Eccles Creek after mining ceases and the dewatered strata resaturate prior to the reestablishment of ground water discharge from the fault zone. During this time (i.e., for an undetermined period following mining cessation) OSM's technical analyses has determined that ground water flow from the fault zone to Eccles Creek may be diminished by a maximum of 200 gallons per minute. This amount of baseflow loss constitutes approximately 33 to 44 percent of the low flow in Eccles Creek at the mouth during August through February. Because of the wildlife concerns regarding the decrease in lowflow in Eccles Creek and concern for irrigation water rights downstream the following information must be provided by the applicant for the PAP to be in compliance with UMC 784.14.

* The applicant must evaluate alternatives and present a plan to the RA to maintain baseflow to Eccles Creek during and after mining. Valley Camp must include in their evaluation the potential to maintain ground water flows along the O'Connor Fault zone to Eccles Creek by collecting ground water in the mines along the O'Connor Fault zone.

UMC784.15 Post Mining Land Use

OSM is currently consulting with the landowners in accordance with UMC 817.133(c) and will independently assess the long-term stability of the haulroad and its compatibility with the proposed post-mining land use.

UMC 784.20 Subsidence Control Plan

The applicant has adequately responded to the request for a detailed subsidence monitoring plan by committing to an annual survey of subsidence by a registered land surveyor. However, the applicant did not acknowledge the concern with regard to subsidence control and the erosional stability of streams. Valley Camp's response to this concern was, "In the narrow canyons with steep side slopes where barrier pillars will be left along perennial streams there is no likelihood that subsidence will create a pedestal effect causing serious instability in the streams. The barrier pillars are being left to eliminate differential settlement along and adjacent to the stream."

The response provided above does not adequately address the original concern expressed in the 14 October 1983 letter. The remaining concern expressed in the 14 October 1983 letter is:

> The erosional stability of unconsolicated valley fills along perennial streams may be seriously altered because the streams may actually be higher than adjacent subsided areas (i.e., as on a pedestal). Valley Camp committed (December 1, 1983, meeting in Denver) to provide a narrative and graph of overburden depth versus width of pillars to be left under perennial streams that would demonstrate that unconsolidated valley fills along perennial streams were being protected from subsidence.

UMC 784.21 Fish and Wildlife Plan

The applicant has not provided the requested data for the inadequacies numbered 1, 2, and 3 in the 14 October 1983 DOA. Item No. 1 requested the specific species composition of trees and shrubs that would be used in revegetating the riparian habitat. The information was not provided. Item No. 2 requested the proposed planting density of each species of tree and shrub proposed for planting the riparian zone. A density figure was provided but not by species. Item No. 3 requested the proposed tree and shrub planting density for the future wildlife habitat plots. The information was not provided.

Therefore the applicant must respond to the following inadequacies originally identified in the October 14, 1983 DOA:
The applicant does not provide some key information on the revegetation/restoration of riparian habitat. The applicant commits to developing riparian habitat in accordance with details provided in Appendix B, Vol. III (see statement: Response to UMC 784.15 dated September 13, 1983, p. 4). However, this information does not address specific plant composition of trees/shrubs or the proposed planting density of trees/shrubs that will actually be used in the revegetation efforts. A wide variety of options are possible. Based on the technical analysis, it appears that the applicant has proposed to develop riparian habitat along the same areas of Whiskey Gulch which are also proposed to receive stone riprap to stabilize the post-mining stream channel. Stone riprap will preclude the successful establishment of the riparian zone. The applicant must provide the following.

1. The specific percent composition by species of trees and/or shrubs that will be used in developing the riparian habitat. Such information was provided for revegetating north and south-facing slopes (Appendix M, p.5, dated September 14, 1983). Equivalent information for the riparian habitat must be included.

2. The proposed density of tree and shrub plantings by species that will be used in riparian areas. Density should be expressed in units that represent a typical planting site (i.e., number of trees per 100 ft^2).

3. The tree and shrub density of a typical wildlife habitat planting site for both north-facing and south-facing slopes.

* 4. A description with accompanying drawings of how riparian habitat will be established along Whiskey Gulch. The description and drawings must explain the relationships between the riparian zone and the stone riprap sufficiently to demonstrate that the successful establishment of the riparian zone is feasible.

* 5. On a map of the mine permit area, locate the proposed riparian zone reference area and describe the dimensions of the reference area (i.e., length, width, and distance from the stream bank).

UMC 817.46 Hydrologic Balance: Sedimentation Ponds

* Valley Camp proposes to rebuild Pond No. 3. The plans for the new pond show a designed side slope of 1.8h:1v which is steeper than allowed for in UMC 817.46(n). Valley Camp must commit to submitting plans prior to construction that show side slopes of 2h:1v or less or demonstrate that the embankments will be stable when the pond is full of water.

* With the recent addition of the truck loadout scales, Pond No. 2 is too small to provide proper containment and/or detention time as demonstrated by "Office of Surface Mining Reclamation and Enforcement Compliance Survey in Clear Creek, Utah Area" (Vaugh Hansen Associates, October 1978). Valley Camp must demonstrate that the current design is adequate or submit plans for review that bring the pond into compliance with this section. The plan may include measures to enlarge Pond No. 2 to either totally contain the runoff resulting from the 10-year, 24-hour precipitation event or to have a minimum of 24-hour detention time. Design plans for the pond must provide hydrologic calculations. Cross-section(s), riprap sizing (for inlet, outlet, and embankment protection), and all other information necessary to show compliance with UMC 817.46. The design must take into account increasing the size of the disturbed area with construction of the truck loadout scales.

UMC 817.52 Ground Water Monitoring

Ground water inflow information is considered important to document mining impacts on ground water resources. More importantly, monitoring of ground water inflow to the Belina Mines would also document if a significant water bearing zone had been encounted that may require some mitigating measure. Therefore, in order for the PAP to be in compliance with UMC 817.52 the following commitment is necessary.

* The applicant must develop and implement an in-mine ground-water monitoring program. This monitoring program will be submitted for approval by the regulatory agency. The in-mine ground water monitoring plan must include a map of all ground water seepage points in the mine. Monthly measurements (weather permitting) of flow and field quality (i.e., specific conductance, temperature, and pH) must be taken of all seepage into the mine that occurs at flow rates greater than 1 gallon per minute. If the number of leakers flowing greater than 1 gpm becomes excessive, negotiations with the regulatory authority may allow Valley Camp of Utah, Inc. to limit the number of monitoring points. For seepage zones with flows less than 1 gallon per minute, monthly measurements of field water quality parameters are sufficient. Quarterly, water quality samples must be taken from areas with inflow rates greater than 1 gallon per minute and analyzed for the complete suite of parameters listed in the UDOGM guidelines for establishment of surface and ground water monitoring programs. Valley Camp of Utah, Inc. shall notify the regulatory agency as soon as possible upon encountering a source of ground water inflow greater than 50 gallons per minute. This flow and quality monitoring data should be submitted to the regulatory agency on a quarterly basis. In addition, Valley Camp must account for all ground water consumption in the mine (i.e., used in mining or consumed by evaporation) and all ground water pumped out of the mine. The map locating all ground water seepage points should also locate all sumps used to collect ground water in the mine.

UMC 817.53 and 817.54 Water Rights and Replacement

The applicant has identified and evaluated the probable impact of mining operations on existing ground water and surface water rights. The applicant must provide a commitment that any interference with existing water rights will be compensated. They must also describe, in detail, how this will be accomplished. A specific plan to provide replacement water for those springs that the applicant predicts will be affected by future subsidence must also be provided (see Volume VI, pages 24 to 30 and Plate 4 of the permit application). These springs include 91-1643 and 91-3499. Therefore, the following commitments and information must be provided.

* The applicant has verbally committed (December 1, 1983, meeting in Denver) to using their available water rights to replace water sources potentially affected by the Belina Mines Complex. In addition, the applicant must present a plan to replace water for springs 91-1643, 91-3499, and 91-3500. Both of these commitments should be submitted in writing and incorporated into the PAP.

UMC 817.97 Protection of Fish, Wildlife.....Values

Except for one item, the applicant has satisfied the previously inadequacies identified during the DOA process. Item No. 2 requested the supporting assumptions and calculations used by the applicant to determine that approximately 15,000 ft^2 of riparian habitat will be produced as a consequence of wildlife mitigation activities. The data were requested because the quantities provided in Volume VI, Appendix M, Attachment 1, do not support the estimated increase of 15,000 ft^2 of riparian habitat. The applicant has not provided the supporting calculations or assumptions, nor have the apparent errors in Attachment 1 been addressed.

Therefore, the applicant must respond to the inadequacy originally identified in the 14 October 1983 DOA.
The following inadequacy is repeated in its entirety:

1. Item Nos. 4 and 5 of the final DOA letter have not been addressed in a manner facilitating analysis. The rationale, assumptions, and basis for concluding that a net gain of about 15,000 ft^2 of riparian habitat will be produced is not clear. The narrative description (Appendix M, Attachment 1) implies a continuous belt of riparian habitat development, while Reclamation Map D-1 implies small islands of riparian habitat. The applicant must provide the calculations and assumptions that clearly show in a logical progression how the specified net gain in riparian habitat acreage was determined.

During the Technical Analysis of the PAP, a new issue became apparent that required information which was not provided in the PAP. The new issue involved the potential secondary adverse effects of reductions of spring and seepage flows on the wildlife and wetland resources associated with the springs and seeps. This issue had not been previously identified as a potential problem because the original PAP materials indicated no potential effects of mine-related subsidence on spring and seepage flows. Subsequent hydrological information provided by the applicant contradicted the original information, thereby necessitating additional wildlife and wetland data requests to evaluate the potential impacts. Therefore, the applicant must incorporate the following commitment in the PAP:

2. The applicant must develop and submit for approval to the RA a plan to monitor those springs and seeps identified on Plate 1, Volume VI, "Identified Seeps and Springs," which occur within the area of potential subsidence as identified on Plate 4, Volume VI, "Potential Subsidence Areas within the Valley Camp Lease Area." The monitoring plan must include: a) seasonal flow data, and b) documentation of wildlife utilization of free water and vegetation. The applicant must provide a mitigation plan that compensates for loss of perennial springs found to be important to wildlife as confirmed by the applicant's monitoring plan.