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INTRODUCTION

**DIVISION OF  
OIL, GAS & MINING**

This document is submitted in response to the "Remaining Permit Application Package (PAP) Inadequacies" as delivered to Valley Camp on October 14, 1983.

Valley Camp's responses are presented in the same sequence as the comments in the Technical Deficiency Document were presented. The reviewer's comments are reproduced verbatim, followed by Valley Camp's responses. In some cases, Valley Camp has provided revised pages and/or maps to be substituted into the permit application documents that were submitted at an earlier date.

Appendix L of Volume VI, Geotechnical Report, is included in this submittal for insertion into that volume.

A complete listing of each section, found in the PAP, follows with comments.

761.11- - - - -No response offered at this time as per instructions.

782.13- - - - -Response submitted, substitute page 5a (782.13(c)-1) into Section 782.13 of Volume I.

782.14- - - - -Response submitted, substitute pages 14 through 16L into Section 782.14 of Volume I.

782.15- - - - -Response submitted, substitute page 782.15-2 into Section 782.15 of Volume VI.

782.17(b)- - - Response submitted, substitute Map Nos. B-2 and B-3 into Envelope Nos. 5 and 6 of Volume IV. Discard the original 200 scale maps.

Substitute pages 782.17-1 and 2 into Section 782.17 of Volume VI.

Substitute page 6 into Section 782.17, of Volume III.

782.19- - - - -Response submitted, substitute pages 4C and 4I into Section 782.19 of Volume V.

783.19- - - - -Response submitted, substitute page 783.19-3 after 783.19-2, Section 783.19 of Volume VI.

- 783.22- - - - -Response submitted.
- 784.11- - - - -Response submitted.
- 784.13- - - - -Response submitted.
- 784.13(b) (4)- -Response submitted, insert page 784.13  
(b) (4)-2 into Section 784.13 of Volume  
VI.
- 784.13(b) (5)- -Response submitted.
- 784.14- - - - -Response submitted.
- 783.15/784.14 -Response submitted, substitute Revised  
Map C-5 into Envelope 10 of Volume VI.  
Remove and discard existing C-5 map.  
Substitute page 783.15/784.14-4 into  
Section 783.15 of Volume VI.
- 784.15- - - - -Response submitted.
- 784.20- - - - -Response submitted.
- 784.21- - - - -Response submitted.
- 817.97- - - - -Response submitted.
- 784.22- - - - -Response submitted, insert Figures 3-35  
and 3-36 into Section 784.22 of Volume  
VI.  
Substitute page 784.22-2 into Section  
784.22 of Volume VI.
- 784.23- - - - -Response submitted, insert page 18 into  
Section 784.23 of Volume VI.
- 817.54- - - - -Response submitted.

Additional information included in this package are revisions for Sections 817.101 and 784.15 of Volume VI. Although not specifically requested in the PAP, these revisions were necessitated as a result of telephone conversations with OSM personnel and submittal of the Morrison-Knudsen report.

- 784.15- - - - -Substitute page 784.15-2 into Section  
784.15 of Volume VI for the existing  
page.
- 817.101- - - - -Substitute page 817.101(b) (4) (iii) into  
Section 817.101 of Volume VI for the  
existing page.

UMC 761.11 (a) (3) AREAS UNSUITABLE FOR MINING - PROTECTION OF CULTURAL RESOURCES

Substantial subsidence is anticipated within the permit area (The list of subsidence features is presented in the PAP, Plate 3). Because of the potential for such subsidence, a cultural resources inventory of the areas depicted by OSM on the attached copy of ACR Map D5-0063 must be conducted. The areas were selected in accordance with the applicant's recommendation that a survey of the ridge line be made. Approximately 700 acres of the roughly 2900-acre area over the underground workings appear conducive to cultural site location. Of this area, approximately 330 acres (11 percent) of the permit area have been selected by OSM for examination as a representative sample.

This investigation is not a prerequisite to permit approval. Rather, the inventory shall be conducted and an acceptable cultural resource inventory report shall be submitted to the UDOGM, Utah State Historic Preservation Office, OSM and the Manti-La Sal National Forest Service Office prior to December 31, 1984.

The investigation to be conducted within the designated area shall be a 100 percent pedestrian inventory designed to locate, record, and assess, in terms of eligibility for nomination to the National Register of Historic Places (NRHP), all historic and archaeological resources within the survey area. A fully justified recommendation of each resource's eligibility or ineligibility for nomination to the NRHP must be presented in the inventory report. The applicant or consultant is urged to contact the responsible agencies (noted above) to ensure that the survey and report meet all pertinent standards.

If eligibility cannot be assessed on the basis of surface data alone, a brief description of the investigations that would be necessary to determining eligibility must be prepared. It is not necessary for the applicant to conduct such investigations (e.g., controlled test excavation, extended archival research, etc.) as part of the inventory. If/when eligible sites or sites of undetermined significance are threatened with direct impacts as a result of subsidence or other types of disturbance, it may be necessary to provide additional information and/or to design and implement a data recovery program to mitigate any adverse effects to significant sites.

COMMENTS

As per reviewer's directions, the applicant will supply the required cultural resource inventory report by the deadline given.

UMC 782.13 IDENTIFICATION OF INTERESTS

(c) The name and telephone number of the Kanawha and Hocking Coal and Coke Company resident agent still has not been provided.

COMMENTS

The resident agent for Kanawha and Hocking Coal and Coke Company is:

Walter L. Wright  
Vice President  
Kanawha and Hocking Coal and Coke Company  
Scofield Route  
Helper, UT 84526  
(801) 448-9456

UMC 782.14 COMPLIANCE INFORMATION

The information required by UMC 782.14(c) remains inadequate.

Deficiencies remaining include:

1. For violations 2 of 3, and 3 of 3, (page 15 of PAP), the N.O.V. number is not listed and abatement procedures are not given.
2. Page 15a does not correlate to any of the pages that proceed it, and refers to an unspecified two-part violation.
3. Page 16 lists a 10 December, 1980 N.O.V. (No. 80-V-15-12), and states that it was vacated on 17 December, 1980, but fails to provide information as to why this N.O.V. was vacated, and whether any abatement activity was involved.
4. Pages 16 J-K discuss violation 2 of 2 for N.O.V. No. 82-1-9-2, but fail to state whether abatement had been achieved (only that the abatement period was extended).

COMMENTS

1. Page No. 14 of Volume I, describes in Section No. 1, a three (3) part violation No. 79-5-3-40. The following sections a, b, and c, on Page Nos. 14 and 15, are part of that violation. Violations 2 of 3, and 3 of 3, (page 15), are part of Notice of Violation No. 79-5-3-40 as stated on page 14.

Abatement procedures for both portions, 2 of 3, and 3 of 3, of this violation are described on page 15, Volume I.

2. The reviewers page 15a is apparently out of place. It certainly is outdated, since this entire section has been revised.

A complete revised section 782.14 is enclosed.

3. Notice of Violation No. 80-V-15-12 (page 16D) was vacated as a result of the Office of Surface Mining discovering that the applicant did indeed have mining, and related construction authorization, as a result of approval of their U.S.G.S. 211 plan. No abatement activity was associated with this N.O.V.
4. The abatement of part 2 of N.O.V. No. 82-1-9-2 had not been accomplished at the time of submittal of the applicant's permit application submittal of February 9, 1981. It has now, however, been achieved.

UMC 782.15 RIGHT OF ENTRY AND OPERATION INFORMATION

The applicant has stated on page 782.13(c)-1 of its September 16, 1983 response, that it and Kanawha and Hocking Coal and Coke Company, are separate subsidiaries of Valley Camp Coal Company. However, on pages 782.15-2 and 784.15-2 of the September 16, 1983 response, statements are made that coal (782.15-2) and surface (784.15-2) are owned by the applicant, although its sister company is shown as the owner on ownership maps. Valley Camp must clarify.

COMMENTS

Valley Camp of Utah, Inc., owns neither coal nor surface property within or contiguous to the permit area. The word "own" on page 782.15-2 was simply a poor choice. The applicant may control certain properties through lease and agreement privileges, but does not "own" any property. A revised page 782.15-2 is enclosed. The statement referenced to page 784.15-2 cannot be found but the above explanation will apply to whatever page was intended.

UMC 782.17(b) PERMIT TERM INFORMATION

To find the applicant in compliance with this rule, a schedule for five years of mining is required (Valley Camp has applied for a 5-year permit). The schedule currently provided in the application is for only two years of mining (through 1985). Valley Camp must revise the schedule accordingly.

COMMENTS

The schedule of mining has been revised and now provides for production and development through 1988.

The 5-year projections for both mines No. 1 and 2 have been revised and are now shown on revised Map Nos. B-2 and B-3, respectively. The revised maps are now on a scale of 1"=500' rather than the originally submitted 1"=200'. These maps replace those originally submitted in Volume IV, in envelope numbers 5 and 6.

The revised forecast did not extend the original 5-year permit boundary as previously shown on many maps.

Pages 782.17-1 and 782.17-2 of Volume VI have also been revised and are included as replacements for corresponding pages submitted on September 16, 1983, (Volume VI).

Page 6 of Volume III also required revision as a result of this most recent OSM concern and it, too, is submitted for replacement of the same page dated March 2, 1982.

UMC 782.19 IDENTIFICATION OF OTHER LICENSE AND PERMITS

Deficiencies remaining include: FCC license #2744-15886 (date), MSHA I. D. Numbers (dates), Utah Department of Health permits (permit numbers), State Engineer (Approval dates and I. D. numbers for Water Rights Exchange), Carbon County (building permit dates), Carbon County Business License (License number). Valley Camp must submit this information.

COMMENTS

The Federal Communication Commission license No. 23744-IS-86 (corrected number) was issued September 17, 1976.

MSHA I. D. Numbers were issued for the Utah No. 2 mine on March 29, 1974, and the Belina Nos. 1 and 2 mines on February 12, 1976.

The Utah State Department of Health issues letter approvals only.

The approval dates for Water Rights Exchange numbers 1691 and 77-17, (corrected numbers) are March 5, 1981, and March 16, 1977, respectively.

Carbon County building permits were issued on October 17, 1979, and October 15, 1979, for permit numbers 1431 and 1428 respectively.

The existing Carbon County Business License number is 0910.

Pages 4C and 4I have been revised to reflect the above information and are submitted for replacement of corresponding page numbers in Volume V.

UMC 783.19 VEGETATION INFORMATION

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) Statistical summary of the reference area and validation data combined (i.e.: means, standard deviation, and sample size for each vegetation type samples for both the reference area and validation area) for cover, production, and woody plant density samples that did not achieve sample adequacy.
- (2) Sample adequacy tests for each vegetation type using the combined reference area and validation area data for cover, production and woody plant density, samples that did not achieve sample adequacy.

For OSM to complete the technical analysis of compliance with this rule, Valley Camp must provide the information listed in 1 and 2 above.

Note: The applicant should understand that the combined reference area and validation data is generated by adding means and sample size of the same community and calculating new standard deviations. The applicant must not add the standard deviations and calculate an average standard deviation.

COMMENTS

- (1) The statistical summary for cover measurements was submitted in the September 1983 submittal. The statistical summaries for Productivity and Tree Density measurements are attached as page 783.19-3. This page should be inserted into section UMC 783.19 of Volume VI.
- (2) The information required for compilation of standard deviations and sample adequacy of the tree density measurements is unavailable at this time. This information was obtained at the time the vegetative cover surveys were conducted, but cannot at this time be located in the field notes. If this information cannot be located, field surveys will again be done to obtain it at the earliest possible date.

UMC 783.22 LAND USE INFORMATION

The applicant still has not provided documentation regarding wildlife habitat lost at the loadout facility area (only the Belina No. 1, and No. 2 portal areas are discussed in the September 16, 1983 response).

COMMENTS

The total area of disturbance affecting wildlife habitat at the loadout facility area, is sixteen (16) acres. Of this amount, approximately 4.5 acres are presently well established through interim reclamation. Refer also to Appendix A, Volume III, for additional information.

UMC 784.11 OPERATIONAL PLAN: GENERAL REQUIREMENTS

The requirements of this section remain inadequate with regards to the Utah No. 2 mine. Valley Camp, however, has indicated that they are not currently seeking authority to operate the Utah No. 2 mine. Operational plan requirements must be submitted for the Utah No. 2 mine, and approved as a permit revision, before Valley Camp can mine coal from the Utah No. 2 mine.

COMMENTS

There are no plans for re-opening the Utah No. 2 mine for purposes of access to the new federal coal leases, within this 5 year permit request. At such time as the applicant requires either re-opening the Utah No. 2 portals or development of new portals, which would allow access to these additional properties, the applicant will request authority to do so from the Division.

UMC 784.13 RECLAMATION PLAN: GENERAL REQUIREMENTS

784.13(b)(3) (Backfilling and Regrading Plan) - The Utah No. 2 surface facilities are currently used for processing and transporting coal removed from Belina No. 1; therefore, the applicant must provide backfilling and grading plans for the Utah No. 2 area as required by UMC 817.101. Also pursuant to UMC 817.133(c)(2), Valley Camp has not provided backfilling and grading plans for the proposed conveyor route. Valley Camp, however, has indicated that they do not wish to permit the proposed overland conveyor at this time. Therefore, the proposed conveyor has not been reviewed for compliance with this rule.

COMMENTS

Backfilling and grading plans for the Utah No. 2 area are shown on Map Nos. D-3 (D3-9945 Rev. 1), and D-4 and D-5 combined (D3-0047 Rev. 1), found in Volume IV. In addition, final reclaimed contours are also shown on Vegetation Map No. D3-0076 of Volume V.

UMC 784.13(b) (4) TOPSOIL

Valley Camp indicated in their September 16, 1983, submittal that the analysis of site material proposed for topsoil substitute would be submitted by October 17, 1983. In addition to this deficiency, the applicant still has not provided estimates of the amount of topsoil available for reclamation purposes, nor have they indicated exactly where within the permit area such sites are located. The applicant must provide such volume estimates and indicate on a map exactly where such re-topsoiling material is located.

COMMENTS

The estimated quantities and exact source locations of the substitute topsoil were addressed in the October 17, 1983 submittal.

Included as part of this submittal and numbered page 784.13 (b) (4)-2, is a determination of suitability, as a topsoil substitute, for the sample materials found in Appendix P of Volume VI.

This document is to be inserted into UMC 784.13, Volume VI.

UMC 784.13(b) (5) REVEGETATION

The applicant has still not adequately responded to the issue of using introduced grass species. The application indicates that Valley Camp's proposed temporary seed mixture, which contains the introduced grasses, would become part of the permanent seed mixture. Therefore, Valley Camp must either provide documentation that the introduced species comply with UMC 817.112, or withdraw these species from the temporary seed mixture and replace them with native species.

COMMENTS

The introduced grass species were selected on a number of parameters, all of which fall under the intent of UMC 817.112.

- (1) They are proven species with the USFS and BLM, commonly used throughout this portion of Utah and, although not native in climax community, are certainly endemic to those areas where reclamation activities have historically occurred.
- (2) Valley Camp is concerned with over 100 species of wildlife within the permit area. Two species of big game which Valley Camp has directed its reclamation efforts toward, with the intent of enhancement are, Mule deer and Elk. The introduced grass species, while only lightly utilized by deer, are of extreme importance to the elk herd. They provide a diverse and high nutritional base during critical periods in the elk's life span, spring and winter. The two species in question emerge earlier in the spring, providing a nutrition base prior to calving, and grow higher and produce a substantial seed head, which is more accessible during late fall and early winter when snow inundates many of the native species.
- (3) Both species have proven themselves in providing a rapid and substantial ground cover which reduces soil loss and detrimental impacts to key watersheds, thus, minimizing impacts to a variety of aquatic species.

The revegetation costs, for the purposes of calculating the reclamation bond, were, however, calculated with the anticipation that all disturbed areas would be regraded, and revegetated with the approved final seed mixture. Thus, no adjustment to the existing reclamation costs of Appendix B, Volume III, is required regardless of seed mixture.

UMC 784.14 RECLAMATION PLAN: PROTECTION OF THE HYDROLOGIC BALANCE

The final DOA requested that Valley Camp provide well completion information for the 13 wells used to construct the ground water level map (Plate 6 in the application). Valley Camp provided three logs and mentioned that the additional well completion information could be found in the Skyline mine permit application. However, the Skyline application does not provide well completion information for each well; rather, a general narrative is provided that discusses the completion techniques. According to the narrative in the Skyline plan, there was no attempt to pack off and isolate any monitoring zones, but rather it was hoped that sloughing and expansion of strata after drilling would seal around the well casing, thus leaving only the well screen open to the desired monitoring zone. This is an unacceptable completion technique that would not effectively isolate the desired monitoring zone. In order to proceed with the TA, Valley Camp must confirm whether this completion technique was used or whether other efforts were made to pack off monitoring zones.

COMMENTS

The completion technique for the Skyline wells was as reported in the narrative of the Skyline plan. Only data from the shallow Skyline wells were used to estimate the position and gradient of the water table. Thus it was not necessary nor advisable to seal around the well casing to obtain reliable data for ground water determination.

UMC 783.15/784.14 GROUND WATER INFORMATION

Valley Camp's September 16, 1983, response indicates that with this application, they are not proposing to remove coal from their Utah No. 2 operation. However, to complete the TA and the cumulative hydrologic impact assessment (CHIA) for Valley Camp's application, the applicant must indicate whether ground water is discharging from the Utah No. 2 workings, and if so, what controls are being used to control sediment.

Questions 1, 2, and 3 in the final DOA dealt with various aspects of the water yielding strata that are in hydraulic connection with the Belina Mine. One of these issues is: Are there locations along the O'Connor Fault where really extensive saturated sandstones may be offset and adjacent to the Upper or Lower O'Connor coal seams, thereby allowing significant amounts of water to move from fractured sandstones along the fault into the mine? This and several other hydrology issues were discussed at an August 31 meeting in Salt Lake City. Present at the meeting were representatives of OSM, Valley Camp of Utah, UDOGM, Engineering-Science, and Vaughn-Hansen Associates. This question should be responded to using the cross-sections discussed below.

It was agreed at the August 31, 1983, meeting that emphasis would be placed on illustrating the importance of the dike and the fault zones to ground water flow in the area. With regard to the O'Connor Fault zone, the question was raised whether a fractured sandstone that could produce high rates of flow for a long time had been offset to a location adjacent to the Upper or Lower O'Connor coal seams. The cross-sections must illustrate these concerns.

Valley Camp should also discuss with Scott Grace of OSM ((303) 837-3806) the local stratigraphy of the area in order to confirm the nature and thickness of the inter-tonguing between the Star Point Sandstone and Mancos Shale. This is necessary to fully understand the ground water system.

Question No. 7 of the final DOA concerns the importance of the andesite dike to ground water flow. At the August 31, 1983, meeting, it was revealed that the intrusive dike was encountered: (1) in the Belina Mine; (2) in a drill hole on the Skyline property; (3) along the road up Boardinghouse Creek; and (4) in Pleasant Valley near the town of Clear Creek. Valley Camp must locate the extent of the dike using the previously mentioned control points with information on the width of the dike wherever it can be observed. Also, any observation of whether the dike has been fractured along fault zones must be documented.

Question No. 4 in the final DOA asked for an evaluation of changes to ground water quality as a result of mining. Valley Camp responded by discussing water quality changes that would occur during mining. To commence with the TA, we need to know what are the expected effects of changes to post-mining ground water quality. The answer to this question may be based on whether discharge is expected at the mine portals after mining has ceased and

by discussing the discharges in terms of the quality observed at other abandoned mines in the area.

Question No. 5 in the final DOA requested drill logs of holes that extended down to the Aberdeen or Star Point Sandstone. At the August 31, 1983, meeting it was agreed that a north-south and east-west cross-section would be provided to meet this request and Valley Camp has indicated that these cross-sections will be provided by October 17, 1983.

#### COMMENTS

As previously mentioned, there is no discharge from the Utah No. 2 mine.

Valley Camp prepared the cross-sections that were used in the hydrologic response. Additional cross-section detail was requested and was used in preparing the hydrologic response to the OSM questions raised. It is our understanding that available drill hole logs did not define the exact position of the O'Connor fault and did not identify the step faults that were encountered in mining. Valley Camp test holes do not extend off their property to the west of the O'Connor fault. Certainly, as was discussed in the hydrologic response, the step faulting, as well as the O'Connor fault, have produced a fractured sandstone which could and does produce higher than normal rates of flow. The flows from this fractured zone have been estimated and reported to OSM.

Mining has gone beyond the dike and sufficient time has elapsed to determine the relative influence of this structure on water entering the mine. The report discussed the possible influence of the dike on springs and a plan was formulated for monitoring the springs to assess any impact from mining.

The applicant has only drill hole information and surface observations within the permit which relate to local stratigraphy. Certain feasibility reports have been prepared wherein the local stratigraphy has been discussed, but the most reliable information presently available would be U.S.G.S. open file report No. 81-724. This report entitled "Newly Identified Intertonguing Between the Starpoint Sandstone and the Blackhawk Formation and the Correlation of Coal Beds in the Northern Part of the Wasatch Plateau, Carbon County, Utah", was prepared by Lou Blanchard of the U.S.G.S.

Another good source of review would be AAPG Bulletin 1981, Volume 65, entitled "Stratigraphy and Intertonguing of the Blackhawk and Starpoint Sandstone, Central and Southern Wasatch Plateau Coal Fields, Utah", by Sanchez, Brown, and Muldune.

The igneous dike encountered in the Belina No. 1 mine has also been located at four (4) additional sites in or near the Mine Plan area. The five (5) locations, shown on the attached Map

No. C-5, are numbered 1 through 5 for easy reference.

Site No. 1 is drill hole No. 75-25-1, located near the Skyline Mine. In this hole, the dike was encountered at a depth of 25 feet and extended to 144 feet.

Site No. 2 is within the Belina No. 1 mine where the dike was measured at 240 feet, in the South Main entries, under approximately 950 feet of cover.

Sites No. 3 and 4 are found along the Boardinghouse Canyon Road, approximately 0.5 and 1.25 miles northwest of Clear Creek, Utah, respectively. At these two (2) locations, the road runs parallel to the dike and between these points, numerous outcrops ranging from a few inches to two (2) feet in width may be observed. These outcrops are weathered to a soft micaceous sand.

Site No. 5 is found at the old Clear Creek strip pit. Mine maps of this location indicate a series of three dikes each, approximately 10 feet in width and all located within a 300 feet distance at this site.

Post-mining discharge from the Belina Mine portals is not necessarily anticipated. Once abandoned, the portion of the Belina Mines which lie below the regional water table will gradually fill until equilibrium is established within the mine (i.e. seepage rates into the mines are equal to seepage rates out of the mines to underlying formations). The anticipated level to which the mines would fill would be equal to or slightly above the point where the mine tunnels intercepted the surface of the original water table. Since the mine entry points are located on the updip side of the mountain and lie above the piezometric surface of the original water table, discharge from the portals is not anticipated.

An exception to the above statement could occur if a "plumbing system" is intercepted or created by the mine workings such that excess pressure head acts on the water collected in the mine over and above pre-mining conditions. Such a condition could be created by subsidence cracking which intercepts the ground surface and induces additional direct recharge from surface runoff down into the mine. Impacts due to subsidence were outlined in the "Hydrology Update" prepared in September of 1983 and submitted to OSM, and will, therefore, not be reiterated herein. Subsidence cracking could create the "plumbing system" described above and during the runoff period of the year (if recharge through subsidence cracks is sufficient) mine water discharge could result. Impacts to surface water quality as a result of surface runoff being directed through subsidence cracks down into the mine are discussed on pages 28 and 29 of the above referenced report. Mine discharge resulting from a subsidence cracked "plumbing system" would be sporadic and is expected to occur only during the runoff season of abnormally wet years.

Of the abandoned mines known to be discharging at their respective portals, all are either located on the downdip side of the vein such that any water seeping into the mine would naturally

drain out, or are rock tunnels (graded down gradient from the mine to the surface) which intercept the mine workings back within the regional water table and thus create a spillway for mine water before water in the mines achieves equilibrium. Two of these mines, the Winter Quarters Mine in Winter Quarters Canyon and the Utah Fuel No. 1 and No. 2 Mines near Clear Creek, are located within the downdip side of the vein and, therefore, water would be expected to drain from their portals.

Should water be discharged from the Belina Mines, it is anticipated that the water quality would be comparable or somewhat higher in chemical constituents to that which is currently discharged from the mine. As reported on page 28 of the above referenced report, the flow weighted average TDS concentration of the discharge from the Belina No. 1 Mine during water year 1980 was approximately 325 mg/l. Water quality of water discharging from the abandoned Utah Fuel Mines near Clear Creek was monitored monthly from October 22, 1980, to December 23, 1981. Over that period of time, TDS concentrations varied from 394 mg/l to 468 mg/l. Three samples were collected in water year 1982 from waters discharging from the abandoned portal at the Winter Quarters Mine. Water quality flowing from the Winter Quarters Mine was poor for the area, with TDS varying from 910 mg/l to 1075 mg/l. Considering the quality of water currently made in the Belina Mines, it is anticipated that should water be discharged from the Belina Mines during the post-mining period (which as indicated previously is not anticipated) the TDS concentration of the discharged water would be less than 400 mg/l.

North-south and east-west cross-sections were provided in Appendix N of Volume VI.

NOTE:

The attached Page No. 783.15/784.14-4 of Section 783.15 Volume VI, has been revised to reflect the above discussion on the dike, and reference to new Map No. C-5. This page should be substituted into its proper place, and Map C-5 Rev. 1, Drawing No. C5-0035, substituted into envelope 10 of Volume V, replacing the existing Map C-5.

UMC 784.15 POST MINING LAND USE

The applicant has not stated what the postmining land use will be for the offices and warehouse portions of their permit area. This information is needed to prepare the TA for UMC 784.15 and UMC 817.133. In addition, a letter from the landowner accepting the proposed postmining land use has not been provided. (See comments under UMC 784.22).

COMMENTS

With respect to the references to inadequacies regarding landowner consent as identified in UMC 784.15 and UMC 784.22, it is submitted that such consents and letters are not required by the Act or the regulations. In support of this contention, reference is made to UMC 784.14(b) which simply requires that the description of the postmining land use should be accompanied by a copy of the comments, if any, of the landowner concerning said use. The operator has previously solicited comments from the landowners, (evidence of such solicitation is on file at applicant's office) and no comments were received. There is no requirement that the operator obtain the consent or approval of the landowner as to postmining land use. In fact, in its rulemaking proceedings, OSM expressly refused to promulgate any such requirement. In a combined reference to the provisions of § 817.133, the published preamble to § 816.133 states:

A few commentors suggested that the introductory paragraph of Section 816.133(c) be changed to require approval of the landowner rather than mere consultation. The office recognizes that regulatory authority approval for a postmining land use which is in conflict with goals of the landowner may present many problems. However, since the additional requirement of landowner approval is not authorized by the Act, these suggestions were rejected and no changes were made.

44 Federal Register, at 15243 (March 13, 1979).

UMC 784.20 SUBSIDENCE CONTROL PLAN

The applicant has not responded adequately to the request for a more detailed subsidence monitoring plan as outlined in the final DOA. The final DOA required that Valley Camp provide a physical ground survey which will document the angle of draw early in the mining sequence. The determination of this angle will establish the limits of the buffer zones necessary to avoid disturbance of the existing streams and gas pipeline. In addition, Valley Camp's subsidence control program should be presented as a separate item under Section 784.20.

Valley Camp's September 16, 1983, response indicated concern regarding potential subsidence effects to springs and streams. The company acknowledged that springs may be lost in areas where overburden was less than 400 feet and the company committed to leaving pillars under the perennial streams (i.e., under such streams where overburden is less than 400 feet). A new question is raised with respect to Valley Camp's proposal to have barrier pillars under a narrow width of valley along perennial streams: Will the erosional stability of the streams be seriously altered because the streams may actually be higher than adjacent subsided areas (i.e., as on a pedestal)? Valley Camp must respond to this concern.

COMMENTS

The annual pedestrian subsidence survey, above mined areas of the Belina Mines, was conducted in August, 1983. The results of this survey were indicated on the updated Subsidence Base Map (Plate 3), found in the Vaughn-Hansen Report submitted in Volume VI.

The annual Forest Service flight was done on September 3, 1983. The results of this flight have not been issued to the applicant at this time.

In addition to the above, a registered land surveyor was enlisted to run control and elevations to all panels mined from the First East Sub-mains. This survey was completed the last part of October. When this information is obtained, a profile of each mined-out section will be made, which will indicate possible subsidence related surface features.

As part of previous submittals, the applicant committed to submission of an annual "Subsidence Report" to the Division. This report will be comprised of information obtained from the above mentioned activities and should be submitted sometime in January of each year.

Until such time as an accurate determination of the extent of subsidence can be made, an absolute declaration as to the angle of draw, to be applied in this particular situation, cannot be made. At such time as this is accomplished, the applicant will continue to use 35 degrees as an adequate angle of draw for protection of perennial streams and gas pipelines.

This program, as outlined, should adequately delineate all mining related disturbances, as well as pre-existent surface disorders within the mine plan area.

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 erosional instability in the streams. The barrier pillars are being left to eliminate differential settlement along and adjacent to the stream.

UMC 784.21 FISH AND WILDLIFE PLAN

Significant, unanswered, wildlife issues remain with regard to the development of the proposed conveyor system; however, Valley Camp has indicated that they are not currently seeking permit authority to build the conveyor. Conveyor related wildlife inadequacies will be raised again when Valley Camp applies for a permit revision to build this structure.

Other remaining UMC 784.21 inadequacies are as follows:

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. 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 feet<sup>2</sup>).
3. The tree and shrub density of a typical planting site for both north-facing and south-facing slopes.

The applicant has not shown or described where the 40 north-facing slope and 20 south-facing slope plots will be located as requested in the final DOA.

COMMENTS

1. The riparian zone is uniform to such a degree that aspect is of no measurable significance and that the species in question are adapted to the minor variation which may occur in the microclimate and ecotone; which may occur in aspect, soil, moisture, etc.

The exact percent composition of species will be manipulated by subsequent plantings and/or thinning to gain a satisfactory correlation to the reference area.

2. Based and correlated to the site index and condition of the corresponding reference area, 2.7 to 3 trees and/or shrubs per 100 feet<sup>2</sup> will be used in riparian areas.

3. Refer to Appendix M, Volume VI.

The sixty (60) clump plantings (40 locations on North facing slopes and 20 locations on south facing slopes) will be located in such a manner as to create cover corridors for travel from the undisturbed areas adjacent to the Belina site, to the riparian zone. The specific location of these plantings cannot be plotted at this time, as that will depend largely upon the size of the reclaimed openings, final location of meandering overland channel, anticipated direction of animal migration, and other influencing factors. Prior to locating these plantings, the applicant commits to incorporating the recommendations of the Division of Wildlife Resources as related to these random plantings. By properly locating these plantings, the applicant expects to maximize wildlife utilization of the feral habitat by providing desirable cover conducive to such employment.

UMC 817.97 PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL  
VALUES

Significant, unanswered, wildlife issues remain with regard to the development of the proposed conveyor system; however, Valley Camp has indicated that they are not currently seeking permit authority to build the conveyor. Conveyor related wildlife inadequacies will be raised again when Valley Camp applies for a permit revision to build this structure.

Other remaining UMC 817.97 inadequacies are as follows:

- (1) Attachment 4, Appendix M, referenced on p. 4 of the September 16, 1983, responses not included in the September 16, 1983, response. The applicant still makes generalized and unspecified commitments to protecting wildlife (Appendix M, Attachment 2, p. 2) with respect to future mine expansion and operations and to other miscellaneous mining situations. This type of issue has been a major concern of the USFWS. Therefore the applicant must:
  - a) Identify what the specific wildlife safeguards are and how they will be implemented (Appendix M, Attachment 2, p. 2, paragraph 3);
  - b) Specifically identify what other situations are envisioned that would disturb wildlife habitats and explain what best available reclamation procedures would most likely be used for each type of situation (Appendix M, Attachment 2, p. 2, paragraph 4);
  - c) Valley Camp should contact Lynn Kunzler of UDOGM and/or Jim Munson, USFWS, to get guidance on providing the specific information required under a and b.
- (2) Items No. 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 feet<sup>2</sup> 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.
- (3) The applicant makes reference to currently conducting a planting program near the junction of the Belina haulroad and Eccles Creek to prevent silting impacts on the Creek, but does not provide site specific details on the planting program (response to 817.97 comments, page 5, 9/15/83). The UDWR (letter dated 9/8/83) identified siltation and turbidity impacts on the Eccles Creek fishing as outstanding issues of concern and specifically noted that considerable reclamation is still needed. Therefore, the applicant needs to provide the following:

- a) A description of how site preparation prior to seeding will be conducted on slopes exceeding 40 degrees, as referenced but not described in Appendix M, page 4 (dated 9/14/83). Since the slopes of concern are generally steeper than 40 degrees, the descriptions of methods are especially important for the TA.
- b) A description of the planting program identified above (referenced: response of 817.97 dated 9/15/83, page 4) including details of the special provisions that are being incorporated, if any, to; (a) stabilize and revegetate the steep slopes of the road shoulder; and, (b) prevent further siltation impacts on aquatic life in Eccles Creek and Whiskey Gulch.
- c) A concise description of how the procedures identified in 1 and 2 above will specifically prevent siltation impacts on aquatic life in both streams, from both short-term and long-term perspectives.
- d) A description of : 1) species composition and spacing (i.e. planting density) of woody species in the riparian area of Whiskey Gulch; and, 2) the source and reclamation of the source of "clumps" (Appendix M) to be used for reclamation. Also, the applicant must identify the reference area for the riparian zone.

#### COMMENTS

The reference to attachment 4, Appendix M, referenced on page 817.97-5, paragraph 5, should have been Attachment 2 of Appendix M.

- (1) a) Valley Camp has committed to the following wildlife safeguards:
  - (1) Education of all mine personnel to mitigate undue impacts to wildlife [new employees as well as an annual refresher course for all employees].
  - (2) To reclaim all disturbed areas as quickly as weather and conditions permit.
  - (3) To utilize plant species which are beneficial to target species of wildlife.
  - (4) To avoid unnecessary disturbance during birthing periods.
  - (5) To construct facilities to minimize adverse impacts of wildlife.
  - (6) To enhance, wherever possible, structures such as sediment ponds, to facilitate wildlife (i.e., salamander population Belina Pond).

- (7) To regulate speed on all roads to minimize vehicle-wildlife accidents.
- (8) To monitor and report any and all unusual sightings or encounters with wildlife.
- (9) To cooperate with the Division of Wildlife Resources to whatever extent is possible to protect and maintain our local wildlife.

Refer also to UMC 784.21, Volume III, for additional information.

- (1) b) Other than the conveyor, which has been proposed and discussed at length, Valley Camp does not anticipate any additional disturbances. As previously mentioned on several occasions, should the need for additional surface disturbances become necessary, the applicant will pursue all avenues of regulatory approval prior to commencement of any such disturbance.
- (2) The consulting firm of E.I.S. was contracted to determine the amount of riparian habitat which existed both above and below the Belina Mine disturbance. Actual measurements were taken above and below the mine at 5 meter intervals, and the riparian zone identified and mapped. A mean and a computer simulation of what existed along Whiskey Gulch prior to the disturbance was formulated.

The stream reclamation design took the meander line, as well as the zone of moisture maximization, into consideration to determine that area which would sustain a riparian habitat. This area then was mapped and measured to estimate a net gain of 15,000 feet<sup>2</sup>. It is understood that this is an estimation only, and that exact calculations are not realistic at this point. Although it is relatively safe to assume, based on meander line alone, a net gain in riparian habitat is highly probable.

A continuous band of riparian habitat will be established; the clumps are created with the silt traps and will be in evidence during low flows and inundated during high flows. They are not included in the base calculations as to total area.

- (3) a) Site preparation prior to seed consisted of utilizing a "Region 6 Planting Tool" to create small terraces or benches approximately 18" x 12" along the contour of the slope. These terraces were utilized to plant containerized seedlings on. The actual terracing, as well as the human activity necessary to build the terraces, created an enhanced seed bed by breaking surface crusting and creating small catchments to retain seed. Mulch and tackifying procedures are outlined in Appendix A, of the September 1983, submittal.

- (3) b) A description of the planting program referenced here is found in response 3-A above. Upon completion of tree planting, the areas(s) of concern were again reseeded, via hydroseed methods. This work was accomplished in conjunction with the revegetating of disturbed areas along the Belina Road resulting from the paving activities. This work (revegetation) was completed on October 28, 1983.
- (3) c) The utilization of both tackifying agents and mulches is a well proven methodology to retain soil movement and thus minimize siltation on a short-term (1 year). It is advocated by the UDWR, USFS, and BLM as the best methodology available for large scale application where revegetation is the desired end result.

The long-term goal (in excess of 1 year) is to re-establish a diverse and stable vegetative cover which will sustain itself, and in so doing, act as a stabilizer as well as a vegetative filter to preclude siltation of the creeks in question.

- (3) d) As Valley Camp has indicated previously, there is in excess of 3 acres of interior revegetation well established on the Belina site. The vegetation will inadvertently need to be removed at the cessation of mining activities and the onset of recontouring and reclamation. With minor loss, this well established vegetation can be relocated in a sequential manner as the reclamation of the site commences. Thus, providing a source of "clumps" while at the same time, reclaiming in the normal process those areas where the clumps are removed.

The species composition of the clumps at this point is conjecture due to the cessation toward a climax community which will transpire over the next 20+ years. However, it is a safe assumption that in this time frame, those species which are in evidence would be well adapted to the site.

The riparian reference area is 100 meters above and below the disturbance along Whiskey Gulch.

UMC 784.22 DIVERSIONS

Remaining inadequacies are as follows:

1. Valley Camp still has not provided a notarized letter from the landowner (Milton Oman) accepting the postmining land use. In addition, as a result of the September 16, 1983 information submitted by the applicant, a letter from the landowner accepting responsibility for maintenance of the channel diversion and permanent impoundment (UMC 817.133) must be provided.
2. In the final DOA, Valley Camp was asked to provide riprap sizing designs for channel base and discharge areas, and they responded with an acceptable design for sizing the riprap on a "run-of-pit" basis. Run-of-pit rock does provide for some range of rock sizes, but this does not ensure a stable non-eroding channel. Valley Camp must commit to riprap with a gradation curve as called for in HEC II (Federal Highway Administration, June 1967) or other pertinent reference. All riprap sections with a  $D_{50}$  greater than 12 inches must have 6 inches of sand and gravel bedding or other acceptable bedding gradation or a filter cloth below the riprap.
3. Valley Camp was also asked in the final DOA to establish both the sinuosity and longitudinal profile of the reclaimed permanent channel in Whiskey Gulch, and they provided this information for the channel on top of the Whiskey Gulch fill. However, the applicant still needs to provide plans and profile of the channel drop section. These plans must show the sinuosity and longitudinal profile of the channel drop section or the reclaimed, permanent channel. Valley Camp must provide as-built design, plans, and construction specifications for the channel drop section as requested in the final DOA.

COMMENTS

1. In connection with the inadequacies described under UMC 784.22, it appears that a separate letter regarding maintenance responsibility is being required from the landowner. Such an interpretation is contrary to both the regulations and the position of OSM in promulgating the regulations. As specified in the materials submitted, the operator has responsibility for the construction of the channel diversion and permanent impoundment contemplated as a postmining land use. In this circumstance, OSM has expressly recognized that there is no need to obtain any letter of commitment from third parties, since the operator will be doing both the mining and the development of the postmining land use. We quote the following from the Federal Register Vol. 44 - No. 50, March 13, 1979, Book 2, Page 15244:

The fifth alternative, qualifying the letter of commitment requirement with the words "if appropriate" is feasible if "appropriate" is well-defined. In the context of this subparagraph, "if appropriate" excludes only those operators who are going to do both the mining and the development of the postmining land use from obtaining a letter of commitment from third parties. Release of the operator bond, in such instances, will be contingent on fulfillment of the postmining land use obligation.

In these cases, the letter of commitment must still be provided as a part of the permit application but it may be signed by the operator. The office has determined that the fifth alternative will protect the interests of the public and allow operators the necessary flexibility. Accordingly, the words "if appropriate" have been added to Section 816.133(c)(4).

The operator's commitment, as suggested in the above quote, is evidenced by its signed permit application.

2. Figure 3-35, attached, provides a riprap gradation curve for the reconstructed stream channel. The mean diameter of the riprap was determined by the techniques presented in the National Cooperative Highway Research Program, "Research Results Digest". The calculation is presented on Figure 3-33.

The gradation curve is based on the sample distribution provided in Section 10-2.1 (Dumped Riprap) of "Hydraulic Engineering Circular No. 11", published by the U.S. Department of Transportation. The curve has been adjusted to account for the difference between the  $D_{50}$  (0.66') of the example, and the  $D_{50}$  of the (0.58') recommended for the reconstructed channel.

The channel drop section for the reclaimed overland channel was constructed as part of the reconstruction of the lower pad and sedimentation pond No. 4. The applicant cannot confirm the use of gravel bedding for placement of riprap in this channel at the time of construction. However, all related construction of this facility was performed under constant supervision of a Golder Associate's geotechnical field engineer, who was responsible for insuring that the work was performed in conjunction with standard engineering practices and the requirements of the Division. The entire facility was also designed to accepted criteria governing such installation in 1979.

The site grading plan, as prepared by Golder Associates, was submitted to the Division for review on July 24, 1979.

3. A plan and profile drawing of the drop channel (sediment pond spillway) is included as Figure 3-36.

For as-built design, plans and construction specifications for the channel drop section, please refer to the Golder Associates report found in Appendix A, Volume V.

Figures 3-35 and 3-36 will be inserted into section UMC 784.22 of Volume VI, along with revised page No. 784.22-2 upon final approval.

UMC 784.23 OPERATION PLAN: CERTIFICATION OF MAPS, PLANS, AND  
CROSS-SECTIONS

Valley Camp's September 16, 1983, submittal states: "A professional engineer or geologist has certified all maps, plans, and cross-sections...". This is unacceptable. Valley Camp must have either a qualified professional engineer or a professional geologist certify (with his seal and signature), each map, plan, and cross-section in the application. It would be sufficient for Valley Camp to provide a letter properly signed by a professional engineer or geologist that references those maps, plans, and cross-sections in the application which are not currently certified accompanied by a reference attached to the uncertified plans, maps and cross-sections back to this letter.

COMMENTS

A certification letter from Mr. Edwin B. Foust, P.E., referencing maps and drawings found in Volume VI, which are without an appropriate seal, is submitted for insertion into UMC 784.12 of Volume VI as page 18.

UMC 817.54 HYDROLOGIC BALANCE WATER RIGHTS AND REPLACEMENT

In the September 16, 1983, response, Valley Camp proposed to keep the sedimentation pond at the Belina portal yard as a permanent impoundment. Valley Camp must commit to transferring sufficient water rights to the post-mining land use to provide for storage of water in this pond. If the State Engineer does not require a transfer of water rights to this permanent impoundment, Valley Camp must provide a letter from the State Engineer stating such.

COMMENTS

It is the applicant's position that neither the commitment by Valley Camp nor the letter from the State Engineer is required by the regulations. In this regard, it is the applicant's understanding that water rights can only be transferred to persons and other legal entities, therefore, a literal interpretation of the request would preclude submittal of such letters by either the applicant, or the State Engineer, inasmuch as the stated deficiency would require a commitment to transfer "to the post-mining land use", or a determination by the State Engineer regarding a transfer to a "permanent impoundment".

In lieu of such submittals, the applicant does commit to the following, which it believes satisfies both the regulations and the spirit of the stated deficiency.

"In connection with the applicant's proposal to leave the No. 4 sediment pond at the Belina portal area intact, as a permanent impoundment (UMC 784.15), and prior to release of the reclamation bond, Valley Camp of Utah, Inc., commits to transfer sufficient water rights to the appropriate landowner to provide for storage of water in the pond." This transfer, of course, being subject to the requirements, for such purposes, of the laws of the State of Utah governing such water rights at the time of final reclamation.