



0015
STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
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4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

April 7, 1983

Mr. Don W. Nelson
S. J. Groves & Sons Company
614 Charleston National Plaza
Charleston, West Virginia 25301

RE: Apparent Completeness Review
Western States Minerals Corp.
J. B. King Mine
ACT/015/002
Folder No. 2
Emery County, Utah

Dear Mr. Nelson:

Enclosed please find a copy of the Division's Apparent Completeness Review (ACR) for Western States Minerals Corporation's J. B. King Mine. The ACR, in an effort to expedite the review process, has listed areas that are incomplete as well as addressed areas that will require additional information necessary to proceed with a Technical Analysis (TA). Concerns expressed by other relevant State agencies have been incorporated into the ACR, with the exception of the State Department of Health, whose comments may be forwarded at a later date, if warranted.

It should be noted that until a detailed mining plan is received by the Division for the F seam, extraction of this bed shall not be permitted on the J. B. King property. It is suggested that a conference be held at least six months prior to the anticipated commencement of recovery operations (F seam) in order to expedite the procedure of formulating an adequate plan submittal, which may be reviewed and approved as quickly as possible.

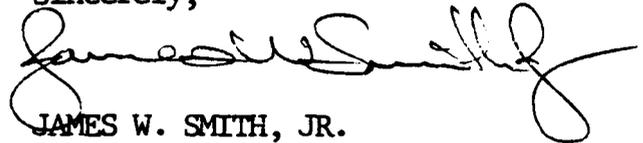
The Division would also like to take this opportunity to point out that during a recent inspection of the minesite by technical staff, it appeared that old portals were not well secured, creating a potential safety hazard, and drainage did not appear to be well maintained. Your prompt attention to these areas of concern is requested.

Mr. Don W. Nelson
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April 7, 1983
Page 2

The next phase of the J. B. King Mine review, the Determination of Completeness (DOC), is scheduled for August 1983. Therefore, it is necessary that the Division receive Western States' response to this ACR document by July 20, 1983 in order that we may be able to maintain our objectives of repermitting all existing operations as soon as possible. If the applicant does not plan to proceed with permitting at this time due to continued suspension of operations, please contact the Division in order that we may place the mine in officially inactive status.

If you have any questions concerning the ACR, please contact me or Mary Boucek of my staff. We would be more than happy to arrange a meeting to discuss or clarify any items which you think would help you in your resubmission and further facilitate the review process.

Sincerely,



JAMES W. SMITH, JR.
COORDINATOR OF MINED
LAND DEVELOPMENT

JWS/MMB:btb

Enclosure

cc: Allen Klein, OSM
M. Boucek, DOGM
T. Munson, DOGM
E. Hooper, DOGM
S. Storrud, DOGM
R. D. Maier, DOGM
S. Pruitt, DOGM

APPARENT COMPLETENESS REVIEW

Western States Mineral Corporation
J. B. King Mine
ACT/015/002, Emery County, Utah

UMC 782.13 Identification of Interests

(b), (c) On page 2-2, the applicant states that information regarding the officers and directors of Western States Mineral Corporation is presented on the following page. This information has not been included as referenced.

(d) Each application shall contain a statement of any current or previous coal mining permits in the United States (not only in Utah) held by the applicant subsequent to 1970 and by any person identified in paragraph (b)(3) of UMC 782.13 and of any pending permit application to conduct underground or surface coal mining activities in the United States. This information shall be listed by permit or application number and identify the Division for each of those coal mining operations.

UMC 782.14 Compliance Information

(c) The applicant has not adequately addressed this requirement. Past violations issued November 7, 1979 were not detailed. This information must be supplied, as well as details of violations received subsequently (e.g., April 17, 1981).

UMC 782.16 Relationship to Areas Designated Unsuitable for Mining

(a) The applicant is hereby informed by the Division that the proposed permit area is not within an area designated unsuitable for the surface effects of underground coal mining activities nor is it within an area under study for designation as such, as of the date of this writing.

UMC 782.18 Personal Injury and Property Damage Insurance Information

The applicant needs to: (1) include a rider that the insurance company will notify the Division of Oil, Gas and Mining if substantial changes are made to the policy; and (2) confirm that insurance will be kept in effect through completion of final reclamation.

UMC 782.19 Identification of Other Licenses and Permits

The applicant must list all other licenses and permits under applicable State and Federal land-use, air and water quality, water rights and health and safety laws and regulations needed to conduct underground coal mining activities. This list must identify each license and permit by: (a) type of permit or license; (b) name and address of issuing authority; (c) identification numbers of applications for those permits or licenses or, if issued, the identification numbers of the permits or licenses; and (d) if a decision has been made, the date of approval or disapproval by each issuing authority. Please supply this information.

UMC 782.21 Newspaper Advertisement and Proof of Publication

On page 2-7 of the permit application, it is stated that proof of publication, as required, will be forwarded to the Division. A review of Division records has revealed that this was not done. The applicant must supply the Division with this documentation.

UMC 783.13 Description of Hydrology and Geology

A more thorough description of ground water use at the minesite and in the mine is required. One page of water quality data from Well No. 1 does not describe accurately the water sources for the mine and the quality and quantity of these sources. Water Wells 1, 3, 4, 5 and 6 are shown on the map, but no information other than total depth is given. The overall description of ground water is not site-specific enough and must be upgraded. Has the U. S. Geological Survey (USGS) collected any other samples on any existing wells in the area? If they have, please submit these data.

UMC 783.14 Geology Description

(a)(2) The applicant is requested to provide the Division with a geologic map of the mine plan area showing: (1) distribution of outcropping formations and Quaternary surficial deposits; (2) strike and dip readings of strata; (3) major joint zones; (4) extent of outcropping burnt coal (I seam); (5) folds and faults.

(a)(2)(i) The applicant is requested to provide the Division with the depths of water-bearing zones which have been penetrated by all drilling in the mine plan area. A piezometric map in particular is requested, along with the drill hole control points and supporting data.

(a)(2)(ii) The applicant is requested to submit to the Division isopach maps of the overburden above the I seam and of the interburden between the I and F seams.

~~*~~ (a)(2)(iii) The applicant is requested to submit analyses of the pyritic content and potential alkalinity of the strata immediately above and below the coal seam to be mined (I seam) and the clay content of the stratum immediately below the coal seam to be mined.

(a)(2)(iii) Iron sulfide (pyrite and marcasite) content of the coal seam is required to be reported to the Division.

UMC 783.15 Ground Water Information

(a)(1) The applicant should supply an accurate description of available water producing zones within the mine plan and adjacent areas.

(a)(2) The applicant is requested to provide the Division with available information concerning the lithology and thickness of aquifers in the mine plan area.

UMC 783.17 Alternative Water Supply Information

If contamination, diminution or interruption of existing ground water supplies are discovered, what alternative sources have been identified and where are they located?

UMC 783.19 Vegetation Information

The vegetation information section of the permit application is seriously lacking in terms of mapping, site-specific data and standards for revegetation success.

The application lacks both a detailed (scale 1" = 500' or larger) and general vegetation map. The applicant must supply a detailed vegetation map which delineates vegetation types in the immediate area affected by surface operations including the location of reference areas to be used as standards for revegetation success (as per UMC 783.24[f]). The applicant should also furnish an overall small scale (1:24,000) vegetation map delineating the general vegetation types throughout the permit area.

The application indicates that two vegetation types have been affected by surface disturbances, those being pinyon-juniper woodland and a shadscale shrubland type. However, site-specific information regarding vegetation is unclear or totally lacking. The Division recognizes that disturbances associated with mining have already occurred but the applicant makes no attempt to describe vegetation in the immediate area surrounding the mine and no mention has been made regarding what will serve as a standard or standards by which to assess revegetation success. The applicant must supply quantitative data which adequately describes the vegetation type(s) to be used as standards for revegetation success. The applicant is advised to establish a reference area or areas in adjacent undisturbed vegetation and to conduct quantitative sampling during the 1983 field season.

The following information must be provided for the reference area (or areas): (a) cover by species; (b) total vegetation cover (shrub and herbaceous combined), plus cover by litter, rock and bareground, the sum of which cannot exceed 100 percent; (c) woody plant density for shrubs and trees, if the reference area is representative of a shrub or tree community; (d) productivity data or a statement of productivity; (e) a range condition determination.

Cover and density must be determined by random, quantitative sampling which must be statistically adequate according to the following formula:

$$N = t^2 s^2 / d^2$$

where

N = minimum number of samples necessary, based on total cover estimates and density estimates (unless a total count method is used for density)

t = The t statistic for a 2-tailed t test at 80 percent confidence for woody communities and 90 percent confidence for herbaceous communities

s = sample standard deviation

d = 0.1 X (10 percent of the sample mean)

Since surface disturbance has already occurred, it is not necessary to quantitatively sample all vegetation communities in the permit or lease area. Only the reference area (or areas) needs to be quantitatively sampled. At the time of bond release, revegetation success will be based on comparisons between the reference area and reclaimed area with respect to cover, production and woody plant density and sampling adequacy will be required to be demonstrated statistically. A diversity standard must also be developed, i.e., how will the species diversity of the reclaimed area be compared to that of the undisturbed reference area.

Prior to initiating the necessary field studies, please contact the Division.

UMC 783.22 Land-Use Information

(a)(2)(ii) The applicant must submit the land capability of the affected area expressed as average yield of food, fiber, forage or wood products. Due to the fact that the area was disturbed approximately 30 years ago, adjacent areas may be used to estimate the average yields. Consultation with the appropriate State or Federal agencies (Bureau of Land Management [BLM], Soil Conservation Service [SCS], Utah State Agricultural Extension Services, etc.) is advisable in order to supply this needed land-use information. Yield or productivity data may also be correlated to that required under UMC 783.19, Vegetation Information.

(b) The applicant should expand on the previous mining activities of the permit area concerning:

1. Type of mining used.
2. Coal seams or other mineral strata removed.
3. The extent of coal removed.

4. Dates of past mining.
5. Uses of land preceding mining.

(c) What types and numbers of livestock as referred to on page 4-5 of the Mining and Reclamation Plan (MRP) utilize the vicinity of the minesite? Is this area a part of an actively managed grazing allotment (administered by the Utah Division of State Lands and Forestry or the BLM)? The applicant should supply this additional information as well as a land-use map as referred to in (a)(1) of this regulation.

UMC 783.24 Maps: General Requirements

The applicant must supply maps showing:

- (A) All boundaries of lands and names of present owners of record of those lands, both surface and subsurface, included in or contiguous to the permit area.
- (B) the boundaries of lands within the proposed permit area upon which the applicant has the legal right to enter and begin underground coal mining activities.
- (C) The boundaries of all areas proposed to be affected over the estimated total life of the underground coal mining activities, with a description of size, sequence and timing of the mining of subareas for which it is anticipated that additional permits will be sought, if applicable.
- (D) The location of all buildings in and within 1,000 feet of the proposed permit area, with identification of the current use of the buildings.
- (E) The location of surface and subsurface man-made features within, passing through, or passing over the proposed permit area, including but not limited to, major electric transmission lines, pipelines and agricultural drainage tile fields.

(h) Each public road located in or within 100 feet of the proposed permit area.

UMC 783.25 Cross-Sections, Maps and Plans

(c) Overburden strata (above the I seam) and the underlying stratum (including facies changes) must be identified on the cross-sections provided to the Division. There is no identification of stratum on any cross-section.

(d) The applicant is requested to show all coal crop lines and the strike and dip of the coal to be mined within the proposed mine plan area.

(i) On map or aerial photographs which shows disposal areas, C.M. - No. 1, D. S. - No. 1 and B. S. - No. 1, the applicant must show dimensions of each disposal site and approximate acreage; also, State scale.

(1) The maps submitted under this section (UMC 783.25) must be certified by a qualified professional engineer or geologist.

UMC 783.27 Prime Farmland

The applicant must submit a letter from the State Office of the Soil Conservation Service (SCS) stating that the SCS has reviewed the permit area and they have determined that the permit area does or does not contain any areas classified as Prime Farmland.

UMC 784.11 Operation Plan: Existing Structures

(a) Each application shall contain a description of each existing structure proposed to be used in connection with or to facilitate the underground coal mining activities. The description shall include:

(3) The approximate dates on which construction of the existing structure was begun and completed, and a showing including any monitoring data, that the structure meets the performance standard of Subchapter K or Subchapter B of Chapter VII, 30 CFR.

(b) The applicant should include a narrative explaining the construction, modification, use, maintenance and removal of the impoundments found on-site and also the water pollution control facilities.

UMC 784.13 Reclamation Plan: General Requirements

(b)(3) The applicant addresses the area of backfilling but does not indicate where all the material that will be necessary to cover the portal area, the refuse area and the contaminated material will come from. The old gob pile is not suitable material as a borrow area. The material itself may be considered toxic and, if so, cannot be used as a fill material for other areas.

The applicant must submit plans that fully address the area of backfilling and grading in accordance with UMC 817.101 and 817.103.

(b)(4) The applicant must submit a soil survey of the general area surrounding the area of disturbance. The survey is needed to formulate a soil redistribution plan that meets the requirements under UMC 817.24, Topsoil Redistribution.

(b)(5)(i) Page 3-45 states that "planting and seeding efforts will begin in the spring months of each year, as necessary." Whereas early spring is an acceptable time of year for transplanting, seeding is more effectively accomplished in late fall. Neither seeding nor transplanting should be attempted during summer months. The applicant must be specific about the relative schedule for revegetation.

(b)(5)(ii) Comments relative to species selection have been included under UMC 817.111-.117.

(b)(5)(iv) On page 3-45, it is stated "At the first available opportunity the applicant intends to initiate the recommended test plots using a weed-free straw mulch." This test plot plan has not yet been initiated but is strongly encouraged by the Division. Nevertheless, the applicant must still formulate a revegetation plan at this point in time which addresses mulching and other moisture retention techniques. If future revegetation test plots demonstrate that mulching is not necessary, the plan may then be amended accordingly.

(b)(5)(v) The applicant must address irrigation plans, particularly since the minesite is located in an area of very low precipitation. A plan should be formulated which discusses the possibility of supplemental watering if needed during the reestablishment of vegetation at the minesite.

(b)(5)(vi) It should be noted that, for bond release, vegetation cover and productivity of reclaimed areas should equal or exceed 90 percent of the vegetation cover and productivity of the approved standard for revegetation success. The applicant must select a standard, for example, a reference area or areas, to be used for revegetation success (see comments under UMC 783.19). Reference areas must be in fair condition or better at the onset (when initially established and sampled) and if future heavy animal use or man-induced degradation is anticipated in the vicinity, the reference area must be actively managed (e.g., fenced) to prevent deterioration.

More detail is required with respect to revegetation monitoring. For example, which parameters will be monitored (cover, density of shrubs and/or trees, productivity), to what extent, how often, etc.? The applicant is advised to consult with the Division regarding the formulation of revegetation monitoring plans as well as further development of acceptable reclamation plans and baseline vegetation surveys to establish success standards.

For further comments relative to the revegetation aspects of the mining and reclamation plan, please refer to comments under UMC 817.111-.117.

(b)(7) Applicant should submit descriptions of measures to ensure that all debris, acid-forming, toxic-forming and fire hazard materials are disposed of in accordance with UMC 817.89 and 817.103.

(b)(8) Applicant must submit a description with cross-sections and maps of measures to seal mine openings.

(b)(8) A description is requested of the measures taken to plug, case or manage drill holes within the proposed permit area.

UMC 784.14 Protection of Hydrologic Balance

(b)(3) The applicant shall submit a plan for the collection, recording and reporting of ground and surface water quality and quantity data, according to UMC 817.52.

Since the applicant has not intercepted any ground water in the mine itself or in its exploratory drilling, then what are the quantities and quality of the water that mining requires and obtains from wells in the area? If water is pumped into the mine, are there any sump areas within the mine used for storing excess water or does the water flow readily out of the floor of the mine?

(c) The applicant must provide what is felt to be a determination of the probable hydrologic consequences of their underground coal mining activities. Under full production, does the applicant feel there are adequate ground water supplies to supply mining needs? Does the applicant project a lack of ground water due to depletion of existing aquifers? If so, what new sources of ground water does the applicant propose to exploit?

UMC 784.15 Reclamation Plan: Postmining Land-Use

The applicant references the Reclamation Section of the mine plan to cover the feasibility of returning the affected area to the proposed postmining land-use. The Reclamation Section lacks any type of data to support the claim that the proposed soil material that is to be used for plant establishment will indeed support vegetative growth.

The applicant must supply qualitative data in the form of chemical and physical analyses of any and all topsoil substitutes as outlined under UMC 817.22(e).

UMC 784.16 Reclamation Plan: Ponds, Impoundments, Banks, Dams and Embankments

(a) Each application shall include a general plan for each proposed sedimentation pond, water impoundment and coal processing waste bank, dam or embankment within the proposed mine plan area.

The applicant must also provide:

1. A description, map and cross-section of the structure and its location.
2. Preliminary hydrologic information required to assess the hydrologic impact of the structure.

Maps and figures associated with these structures must be prepared by, or under the direction of, and certified by a qualified registered professional engineer.

(3)(iv) The applicant must describe the timetable and plans to remove each structure, if appropriate.

(b)(1) Sediment ponds, whether temporary or permanent, shall be designed in compliance with the requirements of UMC 817.46.

UMC 784.17 Protection of Public Parks and Historic Places

The mine plan does not indicate why a cultural resource survey of the area has not been performed. This portion of the mine plan is weak and is not, in the opinion of the State Historic Preservation Officer (Division of State History) reflective of the information that could have been brought forward to support the nonsurvey of the mine plan area. The applicant should submit documentation stating whether historical or archeological resources are present and to what extent.

UMC 784.18 Relocation or Use of Public Roads

The applicant should state whether or not there are any public roads on or within the permit area. If there are, applicant should address UMC 784,18, page 88 of State mine regulations.

UMC 784.19 Underground Development Waste

The applicant should submit descriptions with maps and cross-sections of waste disposal areas, addressing those subjects outlined below.

(b) Each application shall contain the results of a geotechnical investigation of the proposed disposal site, including the following:

(1) The character of bedrock and any adverse geological conditions in the disposal area;

(2) A survey identifying all springs, seepage and ground water flow observed or anticipated during wet periods in the area of the disposal site;

(3) A survey of the potential effects of subsidence of the subsurface strata due to past and future mining operations;

(4) A technical description of the rock materials to be utilized in the construction of those disposal structures containing rock chimney cores or underlain by a rock drainage blanket; and

(5) A stability analysis including, but not limited to, strength parameters, pore pressure and long-term seepage conditions. These data shall be accompanied by a description of all engineering design assumptions and calculations and the alternatives considered in selecting the specific design specifications and methods.

(c) If, under UMC 817.71(i), rocktoe buttresses or key-way cuts are required, the application shall include the following, if applicable:

(1) The number, location and depth of borings or test pits which shall be determined with respect to the size of the spoil disposal structure and subsurface conditions; and

(2) Engineering specifications utilized to design the rocktoe buttresses and key-way cuts which shall be determined in accordance with paragraph (b)(5) of this section.

UMC 784.20 Subsidence Control Plan

(a)(2) A map delineating the extent of planned and controlled subsidence is requested.

(b)(1) A detailed description is requested of the measures to be taken to prevent subsidence from causing material damage or lessening the value of reasonably foreseeable use of the surface, including the anticipated effects of planned subsidence.

(b)(2)(iii) A map is requested of the area in which no coal removal is planned in order to protect the overlying area.

(b)(2)(v) The applicant is requested to submit to the Division a report of the current status of the subsidence monitoring program, along with the results of past surveys. In the future, the Division shall be informed on a regular basis of the outcome of all subsidence monitoring.

(d) Where are the ". . . streams, springs, structures and other features . . ." in or adjacent to the proposed permit area that are being referred to on page 3-31 of the mine plan application?

UMC 784.22 Diversions

Each application shall contain descriptions, including maps and cross-sections, of stream channel diversions and other diversions to be constructed within the proposed permit area to achieve compliance with UMC 817.43-.44.

The applicant has provided poor maps and cross-sections of the existing diversions on-site. The applicant must also provide supportive sizing calculations and detailed cross-sections of all hydrologic structures found on-site. A certain portion of the diversion surrounding the old gob area needs to be upgraded so that the flow is directed into the 30 inch CMP culvert under the road rather than ponding in a low portion of the ditch along the berm. The maintenance of all culverts and diversions needs to be addressed.

UMC 784.23 Operation Plan: Maps and Plans

The applicant must submit surface and cross-section maps of each topsoil stockpile.

(b)(9) Are all explosives removed from the mine plan area (as indicated on page 3-22 of the mine permit application)?

(b)(12) The applicant is requested to show the location of each subsidence monitoring point.

UMC 784.25 Return of Coal Processing Waste to Abandoned Underground Workings

Will any coal processing waste be returned to abandoned underground workings?

UMC 817.22 Topsoil Substitutes and Supplements

(e) The applicant must provide chemical and physical analysis of any material that will be used as plant growth medium.

The applicant seems to indicate that the soil material under the coal fines and buildings in and around the pad area will be used for final reclamation. If this is true, then chemical and physical analysis of this soil material must be submitted to the Division.

The proposed list of analyses mentioned under the soil preparation section of the mine plan is adequate if water soluble Ca, Mg and Na and sodium adsorbtion ratio (SAR) are added.

Several soil samples should be taken in various locations across the pad. This will aid in getting an idea of the make up of the pad as a whole.

UMC 817.41 Hydrologic Balance: General Requirements

(b) The applicant needs to determine the effects of withdrawing large quantities of ground water in an area that may not supply much ground water to begin with. The Division would like to see some discussion of the recharge capacity associated with the pumping of wells in the area for mine related use.

UMC 817.43 Hydrologic Balance: Diversion and Conveyance of Overland Flow, Shallow Ground Water Flow and Ephemeral Streams

(c) Appropriate sediment control measures for these diversions may include, but not be limited to, maintenance of appropriate gradients, channel lining, revegetation, roughness structures, detention basins.

The applicant currently has not provided appropriate maintenance of culverts and diversions. Culverts are clogged with debris and ditches are not acceptably maintained. The applicant must address these issues and how diversion structures may be better maintained in the future.

UMC 817.46 Hydrologic Balance: Sedimentation Ponds

Since the applicant does not have a primary discharge structure on the sedimentation pond, then the applicant must prove that the existing structure can provide total containment for the 10-year, 24-hour storm, plus sediment volume and freeboard.

UMC 817.48 Hydrologic Balance: Acid-forming and Toxic-forming Materials

The applicant indicates that toxic- and/or acid-forming materials have been encountered during mining operations. The applicant must provide information on how these toxic and acidic materials will be kept from entering surface or ground water.

UMC 817.52 Surface and Ground Water Monitoring

(a)(2) When underground coal mining activities may affect ground water systems serving as aquifers which significantly ensure the hydrologic balance of water use either on or off the mine plan area, ground water levels and ground water quality shall be periodically monitored. The Division requests more information on the wells which serve as the sole source of water at J. B. King.

UMC 817.59 Coal Recovery

A detailed explanation of the 25 percent loss of coal at the preparation plant is requested.

A map is requested showing areas where reduced recovery is anticipated due to adverse conditions.

UMC 817.81 Coal Processing Waste Banks: General Requirements

The applicant should remove and dispose of all contaminated material in the site used for refuse disposal. This would aid in reclamation by centralizing all material that may be toxic and restrictive to revegetation efforts.

UMC 817.89 Disposal: Noncoal Waste

The applicant must submit plans for disposal of noncoal waste in accordance with this section.

The applicant should supply a narrative explaining disposal of grease, lubricants, paints, flammable liquids, garbage, abandoned machinery, timber or other combustibles.

UMC 817.95 Air Resources Protection

Applicant should state what dust control measures are employed dealing with unpaved access roads.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

Specific information regarding fish and wildlife resources in the vicinity of the mine is lacking. Though the mine is currently in suspension, the Division recommends the formulation of a written plan which discusses how the mining operations comply with this performance standard or will comply when production continues. In order to accomplish this, it is advised that the applicant develop fish and wildlife information specific to the J. B. King mine plan area. Please contact the Division and the Division of Wildlife Resources (DWR) for further explanation.

UMC 817.100 Contemporaneous Reclamation

On page 3-36, it is stated that topsoil storage piles will be revegetated by immediately seeding with the appropriate seed mixture. What is this seed mixture, at what rates has it been applied (in pure live seed), etc.? Have or will any other areas be temporarily stabilized? The applicant must furnish additional information on contemporaneous reclamation at the minesite and must commit to contemporaneous reclamation of disturbed areas as outlined in this performance standard.

UMC 817.111-.117 Revegetation

Page 3-44 states "In accordance with Utah State guidelines, a suitable permanent, effective and diverse vegetational cover of species native to the area, or suitable substitutes, will be established on affected areas." Table 3-1 lists the suggested seed mixture, four species of which are introduced. The use of introduced species has been restricted with the enactment of P. L. 95-87 and the implementation of Utah's permanent program. Use of these species, particularly standard crested wheatgrass (*Agropyron desertorum*) and fariway crested wheatgrass (*Agropyron cristatum*) must be justified as per UMC 817.112. These grasses have a tendency to outcompete desirable native species and result in monocultures; they are, therefore, not considered to be suitable sbustitutes without further justification. Whereas yellow sweetclover (*Melilotus officinalis*) is an introduced species, it is a nitrogen-fixing legume which can benefit reclamation efforts and is, therefore, considered a suitable substitute.

The Division encourages the use of and monitoring of a variety of plant species and treatments during interim revegetation (prior to final reclamation) in order to assess and amend, if necessary, the final revegetation plan. The applicant is urged to develop revegetation test plots during the interim which utilize species intended for use in final reclamation including various treatments (topsoil depths, soil stabilizing and moisture retention techniques, etc.). This is especially important in cases where adequate topsoil is not in existence at the minesite. A monitoring plan for revegetation should be developed in order to assess the success or failure of various species and techniques employed.

On page 3-45, it is stated that 18.38 acres will be planted with tree seedlings. Which species, at what stocking rates, etc.? It is further stated on page 3-45 that premining pinyon-juniper cover equaled 20 percent, which "will be the goal of postmining reclamation efforts." Reclamation success regarding tree establishment is judged on the basis of density (number of stems per unit area), not cover. (The amount of time necessary to reestablish premining tree cover would be excessive and unnecessarily delay bond release.) Therefore, the applicant must address tree stocking rates which should be correlated to tree density in an adjacent reference area, if the latter is chosen to serve as a standard for revegetation success (see comments under UMC 783.19).

On page 3-50(d), the applicant states "The western portion will be reseeded with recommended grasses." More diversity will be required to be reestablished in the western portions of the reclaimed minesite, i.e., forbs and shrubs will also need to be reestablished. Again, the applicant must establish revegetation success standards by which to assess reclamation efforts.

UMC 817.131 Cessation of Operations: Temporary

On June 19, 1981, Western States informed the Division of its temporary cessation of operations at the J. B. King Mine. However, further information regarding the suspension is necessary for compliance with this performance standard.

1. The applicant must commit to effectively supporting and maintaining all surface access openings to underground operations and to securing surface facilities in areas in which there are no current operations.
2. The applicant must supply information pertaining to:
 - (A) a statement of the exact number of surface acres and the horizontal and vertical extent of subsurface strata which have been in the permit area prior to cessation;
 - (B) the extent and kind of reclamation of surface area which will have or have been accomplished; and

- (C) identification of the backfilling, regrading, revegetation, environmental monitoring, underground opening closures and water treatment activities that will continue during the temporary cessation. The Division has noted maintenance problems in the past and has been noted elsewhere in this document.

UMC 817.150 Roads

Applicant should submit cross-sections and profile maps of all Class I (Primary) and Class II (Secondary) roads, showing design including pitch, grade, location and maintenance. Also, a brief description of erosion control, ditches, culverts (including design calculations) and any minor reconstruction should be included. Please review Sections UMC 784.24 and 817.150 through 817.176 to assure that the performance criteria are being met.