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October 26, 1983

Mr. C. E. Shingleton, Director  
Permitting, Compliance and Services  
Mining and Exploration  
Utah Power & Light Company  
1407 West North Temple  
Salt Lake City, Utah 84110

RE: Apparent Completeness Review  
Utah Power & Light Company  
Deer Creek Mine  
ACT/015/018, Folder No. 2  
Emery County, Utah

Dear Mr. Shingleton:

Enclosed are the results of the joint Office of Surface Mining/Division of Oil, Gas and Mining (OSM/DOGM) Apparent Completeness Review (ACR) for Utah Power & Light Company's (UP&L) Deer Creek Mine ACR response received by this office June 13, 1983. The OSM has contracted the assistance of Simons, Li and Associates in preparing the draft response.

The following areas of the mine plan and the ACR response lack sufficient detail for a Determination of Completeness to be made.

1. UMC 782.13--Identification of Interests
2. UMC 784.1--Reclamation Plan: General Requirements
3. UMC 784.20--Subsidence Control Plan
4. UMC 805.11--Determination of Bond Amount
5. UMC 817.21-.25--Topsoil
6. UMC 817.97--Protection of Fish, Wildlife and Related Environmental Values
7. UMC 817.116--Revegetation: Standards For Success

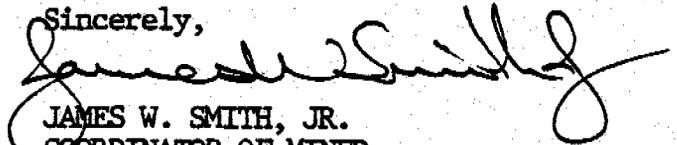
Several other sections have minor questions and concerns which need more clarification. Please note that the response must be received at OSM no later than November 21, 1983. The final determination of completeness will be made

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by OSM based on the material provided on November 21. If the material is determined to be incomplete, the permit application will be returned to the applicant and authority to operate under administrative delay will be terminated. If the permit application is found to be complete, public notice may begin and OSM will proceed with the technical analysis.

If you have any questions, please feel free to contact me or Cy Young of the Division Staff.

Sincerely,



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

JWS/CJY:btb

Enclosures

cc: Allen D. Klein, OSM  
Shirley Lindsey, OSM  
L. Kunzler, DOGM  
P. Grubaugh-Littig, DOGM  
E. Hooper, DOGM  
C. Young, DOGM  
M. Boucek, DOGM  
D. Wayne Hedberg, DOGM

## DETERMINATION OF ADEQUACY

Utah Power & Light Company  
Deer Creek Mine  
ACT/015/018, Emery County, Utah

October 26, 1983

### UMC 771.23 Permit Applications: General Requirements for Format and Contents

The mining and reclamation plan for Deer Creek Mine was submitted in April 1981. Since that time, a number of modifications have been made to this plan. It is requested that the applicant incorporate all information from these various modifications into the permit application package so as to produce a single self-contained document that is current and provides all information relevant to all aspects of the application. Text, maps, figures and tables that have been updated as a result of agency review should be substituted in place of superseded material. Any internal contradictions resulting from the addition of new or revised material should be resolved.

### UMC 782.13 Identification of Interests

(a)(2) Much of this information incorrectly appears under UMC 782.15, Right-of-Entry. In addition, comparison of the surface and coal ownership maps submitted with the original application and the Meetinghouse Lease Modification show a variety of inconsistencies which must be resolved. Please correct the following points:

1. Reference the list of coal and surface owners of record in this section (UMC 782.13) and update it to show the current owners of record and status of lands as required by UMC 771.23(b).
2. The ownership maps must present the current proposed permit area boundary for only the Deer Creek Mine.
3. Update the maps to identify all current coal leases, fee coal, and surface ownership. It is understood that certain leases are to be shared with the Wilberg operation, and/or mined coal seams overlap each other. These overlaps with the Wilberg Mine can simply be identified on the maps with unique coding keyed to the legend.
4. The fee coal identified in the original application (page 1-9) as the SW1/4 of Section 14 and belonging to Utah Power & Light Company (UP&L) seems to have been incorrectly identified with the Deer Creek and Wilberg Mines rather than the Des-Bee-Dove Mines. When correcting these maps and text, please double check this area's status and treat as necessary.

(a)(3) A separate listing of leasehold interests must be provided by the applicant. Or, in the absence of any leasehold interests, a negative declaration should be provided.

(a)(4) A separate listing of purchasers of record must be provided by the applicant. Or, in the absence of any purchasers of record, a negative declaration should be provided.

UMS 782.18 Personal Injury and Property Damage Insurance Information

As indicated in the Apparent Completeness Review (ACR) (Point No. 1), the applicant will include a rider that the insurance company will notify the OSM and DOGM if substantial changes are made to the policy. This rider could not be found in the ACR response.

UMC 782.21 Newspaper Advertisement and Proof of Publication

After notification by the Regulatory Authority (RA) that the application has been found to be complete, and advertisement in a local newspaper for four consecutive weeks, provide a copy of the (fourth) newspaper advertisement of the application's submittal.

UMC 783.12 General Environmental Resources Information

Incorporate all information pertinent to the Deer Creek Mine but submitted in response to the Wilberg Mine ACR into the permit application for the Deer Creek Mine.

UMC 783.14: Geology Description

Supply values of potential alkalinity (expressed as equivalent  $\text{CaCO}_3$  [mg/l]) of material immediately above and below the Blind Canyon seam and Hiawatha seam. The pH values given are not equivalent to potential alkalinity.

With regard to the Meetinghouse Lease Modification, reference is made to downthrown faults and thickening of the Hiawatha seam. Please supply cross-section(s) or log(s) demonstrating this structure. Include a section from the bottom of the South Fork of Meetinghouse Creek to the top of the mineable coal seam. Indicate if impeding layers are present and the location of ground water, if encountered.

Also, include a location or index map showing where the new lease area (Meetinghouse Lease) is with respect to the area designated in the mine application.

Supply values of the pyritic content and potential alkalinity [expressed as equivalent  $\text{CaCO}_3$  (mg/l)] of the stratum immediately above and below each coal seam to be mined and the clay content of the strata immediately below each seam given in the modification.

UMC 783.19 Vegetation Information

The vegetation information presented for the permit area and major modifications is generally complete. However, a few points still need clarification; these are:

1. All vegetation information should be condensed into a single, clearly understandable document.

2. The areas disturbed by mining (at present and including the overland conveyor to the power plant) and those proposed for future disturbance should be clearly identified (e.g., small map included as a figure with corresponding tabulation of appropriate disturbance acreages) by vegetation type.
3. Productivity estimates must be provided for all vegetation types that have been or will be disturbed by mining operations, not just the pinyon-juniper community. In addition, the statements with regard to productivity appear to be identical to those given for the Wilberg Mine (e.g., "Lower Grimes Wash") rather than specific to the Deer Creek Mine. Please provide Soil Conservation Service (SCS), U. S. Forest Service (USFS), or Bureau of Land Management (BLM) statements regarding productivity for all three vegetation communities in Deer Creek Canyon. Photocopies of the response from the appropriate range conservationists should be included.
4. The mixed-conifer reference area indicated on the mine plan area vegetation map may not be accurately located. Aerial photos showing the reference area indicate that more than 50 percent of the reference area is dominated by a community devoid of trees. Please explain the choice of this location for the mixed-conifer reference area.
5. Provide the area (acres) of the mixed-conifer reference area.
6. Present reference area ground cover data by species.

#### UMC 783.20 Land Use Information

The land use section should reference the Coal Ownership Map (Map 1-1) and the Surface Ownership Map (Map 1-2).

The vegetation report states that mixed conifer, pinyon-juniper, and riparian vegetation types have been previously disturbed by mining. Productivity estimates for all three vegetation types need to be provided, not just for pinyon-juniper. Range productivity estimates can be obtained from the SCS for soil types or range sites similar to the disturbed areas.

Provide the approximate dates of historic mining activity and the amount of coal removed, to the extent that this information is available.

#### UMC 783.25 Maps and Plans

Show the locations of the cross-sections in Map CE-10244-EM on the surface Exploration Drill Holes Map CE 10309-EM.

Show the strikes and dips of coal outcrop lines shown on these maps: Figure CE-10471 in the ACR response; and, Figure CE-10470 in the modification.

Provide a Blind Canyon overburden isopach map. Indicate on this map the strikes and dips of the Blind Canyon outcrop lines.

UMC 783.27 Prime Farmland Investigation

Provide the negative determination from the SCS for the lease modification.

UMC 784.12 Operation Plan: Existing Structures

(a)(4) Provide sufficient information to enable evaluation of the stability of the fill area. This must be provided so that the approach and assumptions that were used in the analysis can be assessed.

UMC 784.13 Reclamation Plan General Requirements

The interim plan techniques are appropriate for steep slopes (greater than 3:1), but from the examination of postreclamation cross-sections and contours it is evident that lesser slopes will be reclaimed. The reclamation of slopes less than 3:1 should also be addressed.

The application should show, under final revegetation, that reference areas will be resampled at the end of the liability period for direct comparison with the revegetated areas.

The applicant has stated that no revegetation, except as related to subsidence, will be required in conjunction with the Meetinghouse Lease Modification. This is questioned since ventilation breakouts will result in surface disturbances. The applicant also mentions coal extraction through rehabilitated entries in the Deer Creek Mine. Are these entries included in the Deer Creek Mine permit application, or are these entries to be bonded under the modification submittal? Please clarify.

A reclamation plan appears to be required for the ventilation breakouts and the rehabilitated portals associated with the Meetinghouse Lease Modification as these portals are not included in the Deer Creek Mine permit application. Identify the total acreage disturbance associated with the ventilation breakouts (and portals, if appropriate) for the Meetinghouse Lease Modification. Provide a description, including appropriate cross-sections and maps, of the measures to be used to seal the ventilation breakouts (and portals, if appropriate).

(a) There are several references concerning the revegetation of, and test plots to be established on, the terraced wall canyon. What is the status of this area? Is this part of the permit area? If so, a detailed revegetation plan and associated bonding calculations must be submitted. If not, this should be clearly defined in the revegetation plan.

In the final revegetation plan, the disturbed area estimate for the pinyon-juniper area is listed as eight acres (page 4-8), whereas five acres of disturbed pinyon-juniper woodland are estimated in the Vegetation Information Section (Table 2). Which is correct? According to vegetation information presented in the application, five acres of riparian vegetation have been disturbed by mining. A seed mix for restoration of this type was provided on page 38 of the ACR response; what methods will be used to prepare the planting medium and establish seeds and container stock?

Revegetation plans for roads to be reclaimed are not shown. Are there roads to be reclaimed? If so, plans for reclamation and revegetation must be included.

(b)(1) Provide a schedule showing reclamation of the components of the mine on a year-by-year basis in addition to the revegetation schedule included in the application.

(b)(2) Provide documentation substantiating the development of the unit costs presented in the bond estimates which have been developed for the disturbances within this permit term. This documentation would consist of identifying references used in the analysis and providing any background calculations that were made in the estimates. Information such as equipment productivity and haul distances used in the analysis should be provided.

Background calculations must be provided showing how the volumetrics were determined as shown in the bond calculations. Include any additional cross-sections which might have been utilized in developing the volumetrics. (See related questions under [b][3] of this section.) In some instances, references are made to a "lot." More information must be provided for these operations to determine how much material is being handled.

A cost for the monitoring and maintenance of rills and gullies over the 10-year responsibility period must be added to the bond amount. This should include the mobilization of equipment to backfill rills and gullies and the reestablishment of vegetation. In addition, the cost of monitoring of sediment pond discharges must be included.

Reclamation of the stream channels will require the use of a significant quantity of sized riprap material. Provide costs for purchase, transport and placement of the riprap.

(b)(3) As part of grading, the applicant must commit to removing and burying gravel base materials from roads and structures sites and eliminate the use of gravel as a sole seedbed material.

On page 25 of the ACR response, the applicant lists the "four areas within the mine disturbed areas which require earth work considered as back-filling." An explanation of the backfilling activities is listed for some of these sites; however, explanations of backfilling methods are requested for all of the sites listed.

On page 2-105 of the applicant's soil report, the applicant's consultant recommends terracing of cut-and-fill slopes to aid vegetative establishment. If the applicant plans to establish terraces on such steep slopes, specifications must be submitted.

The description of the backfilling and grading in the permit area provides only general information on the procedures that will be utilized. A plan must be provided for backfilling of the disturbed sites showing the volumes of material to be handled, the amount of fill to remain in specific areas and the amount of fill available to cover asphalt waste and any toxic material that is known to exist. This analysis is a materials balance showing the amount of fill in place, and the amount of fill to be backfilled into specific areas. Calculations made by the applicant to respond to this request must be provided, including any additional cross-section information.

The applicant has stated that no stability calculations were made on the reconstructed slopes due to the fact that there is no grade steeper than 1v:2h and that slopes at 1v:1.3h have remained stable. Since slope stability depends on many factors other than the final grade, especially the method of construction of the fills, the comparison may not be adequate. The applicant must provide a description of the proposed method of fill construction and a stability analysis.

(b)(4) Tables 1 and 2 in the soil section show that some fill materials on site have high electrical conductivity values. Given proposed final slope grades and the climate of the area, it is questioned whether vegetation sufficient to control erosion and attain the proposed postmining land-use can be established on slopes covered by such seedbed material. The applicant must propose a plan of waste material testing and grading by which only materials with acceptable electrical conductivity values are returned for use as seedbed materials on final graded slopes. Proposed acceptable electrical conductivity limits should be identified.

On pages 4-6 and 4-13 of the original reclamation plan, the applicant refers to the use of soil materials for use in revegetation. What is the source of this soil material?

As per original ACR comments, the applicant must submit a seedbed material redistribution plan for the terraced highwall area.

The method of developing "topsoil" described in the ACR response (page 41) has merit. Will this material be placed on the planting surface as "topsoil" material or as clumps of intact vegetation similar to sodding? How will the planting surface be prepared for the transplanted material? What type of equipment is meant by the term "scoop"? How large will the "islands" be? How will the transplanted material be maintained (any irrigation)? How will the fill slope be reclaimed after the "topsoil" is removed?

(b) (5) (i) The reclamation schedule in the original application shows fertilizing and mulching occurring subsequent to soil preparation, seeding, and planting. How will straw mulch be applied and anchored after seedlings are planted without causing excessive seedling disturbance? Second, mulching could be delayed as long as two months after seeding and planting according to the schedule. Mulching should occur as soon after seeding and planting are completed as possible. Third, according to statements in the revegetation plan, fertilization should take place during seedbed preparation. The schedule shows it occurring after this technique. These discrepancies should be clarified in the schedule and the text.

The seed mixture for the mixed-conifer vegetation type was eliminated from final revegetation. Why was it not retained?

The applicant should consider reducing the seeding rates shown on pages 38, 39, 41, 42 and 45 of the ACR response for most species. It is recommended that the applicant discuss seeding rates with the DOGM.

(b) (5) (iii) On page 4-12 of the original application, the applicant states that on level areas tractors will implement generally the same procedures as on steep slopes. What procedures are these?

The applicant refers to "base root stock plantings" on pages 4-13 of the original application. Are these the same procedures as stated in the ACR response for the terrace highwall revegetation tests or are the tests a substitute for base root stock planting? Please clarify.

If the applicant will retain the technique of blasting holes in sparse soil/rock outcrop areas to permit seedling planting, provide additional details for this technique. How large will the holes be? What type of planting medium will be used? What plant species will be tried?

(b) (5) (iv) On page 4-12 of the original application, several methods of mulching are mentioned. Describe the mulching method(s) which will be used. In the ACR response, page 42, the applicant refers to use of 1/2 inch of alfalfa hay mulch. How many tons/acre will this be?

(b) (5) (v) If irrigation is to be used, describe methodology, equipment, timing, water source.

(b) (5) (vii) Submit a soil fertility testing plan to be used at the time of reclamation for the evaluation of all proposed topsoil substitute material and topsoil amendments. The plan should detail method and depth of sampling, number of samples, proposed sampling locations, laboratory tests to be conducted.

(b)(7) Provide plans describing how and where the following materials will be disposed of: (1) sediment from sediment ponds (original application, page 3-17); (2) waste rock material showing high SAR values (original application, Table 7); (3) identified "hot spots" (reclamation plan, page 4-11); and, (4) flammable material (ACR response, page 22).

Regarding the second item, certain chemical analyses indicate that some underground waste rock has a high SAR value sufficient to hinder the reestablishment of vegetation. Provide a plan for identification and special handling of this material. For such material that is to be placed in the fill, or for such material already on or near the fill surface, provide a plan for covering the high SAR material with four feet of non-toxic material.

#### Interim Stabilization and Vegetation Plan

With respect to the methodology stated on pages 42 and 43 of the ACR response, the following comments are submitted: (1) seedbed preparation techniques need to be included; and, (2) fertilizer should be applied according to soil test recommendations.

The evaluation procedure used to determine species success should be amended. Rather than randomly sampling for composition and cover, the applicant would be strongly advised to randomly locate permanent transects. Permanent rebar endpoints would serve to control a metal tape stretched between for intercept measurements. Permanent transects would then record historic changes in cover and composition.

The current status of interim revegetation at the mine site should be detailed.

#### Terraces

Plots should be irrigated only if irrigation will be used during postmining revegetation. Otherwise the irrigation could lead to false or biased data. Water catchment should only be instituted on the plot if it is incorporated in the final revegetation plan design. In addition, care must be taken to design plots such that water is not conveyed from one plot to another.

As with fill slope sampling, permanent transects of random design would be preferred.

#### UMC 784.19 Underground Development Waste

Provide an updated design of the development waste disposal site showing the anticipated final configuration of the pile. An estimate should be made by the applicant on the amount of development waste that might be expected to be encountered over the life of the mine and the amount that can be disposed of underground. Given that the mine plan has been laid out and need for raises

and slopes identified, it should be possible to estimate the volume of material that will require disposal in the Deer Creek Portal area. Design of the pile incorporating consideration of the final configuration would then be possible. If the proposed fill does not have sufficient capacity to handle the required volume of development waste over this permit term, plans must be submitted for another disposal site.

The applicant states that coal waste is being disposed of in the waste rock disposal site. Given the sometimes high pyrite values on some of the roof and floor rock (up to 10 percent in one set of samples), and the fact that this material is most likely to be inadvertently mined and removed as coal waste, there exists a distinct possibility that the material will not support vegetation and four feet of cover may be required over the coal waste. It is understood that this waste accounts for a very small percentage of the material disposed of at the site, but if unmixed isolated pockets exist, reestablishment of vegetation may not be possible in those areas.

#### UMC 784.20 Subsidence Control Plan

The applicant must show all areas affected by subsidence, as defined by the angle of draw, as part of the permit area.

The information and analyses collected and completed to date on subsidence primarily address lowering of the surface as a result of mining in areas of relatively thick overburden cover. However, the primary issues surrounding subsidence impacts to the environment at the UP&L mines may center more around areas of shallow cover, particularly where streams exist, and along the canyon sides where springs and seeps are predominant. An analysis of subsidence impacts should address these areas of potential subsidence events.

Is the barrier between the coal outcrop and the proposed operations adequate to prevent a slumping? A geotechnical analysis must be provided showing that the coal barrier to be left will prevent significant slumping in areas where springs and seeps and land use might be affected.

The subsidence analysis should be provided for the worst-case situation for the several types of conditions that exist. These would include areas where mining will occur in one, two or three seams under the shallowest overburden conditions, near faults, and/or near edges of the canyons. These various scenarios should then be related to the existence of significant seeps and springs, and sensitive land use areas.

The subsidence monitoring plan that the applicant has proposed must be discussed in light of these issues. Monitoring should commence in any potentially sensitive areas prior to mining within the area defined by the angle of draw around areas of concern. Monitoring should continue during mining and for a period of time until subsidence (if any) has ceased. However, in the areas where it is proposed to leave pillars, it is understood that subsidence is not expected to occur. In these areas, it would perhaps be more appropriate to monitor the stability of the pillars in the mine to determine if they are remaining stable under design loads.

UMC 784.26 Air Pollution Control Plan

In response to the ACR, the applicant states unpaved roads in the mine area are used infrequently, require no dust control and all data concerning fugitive dust control has previously been submitted to the Utah State Division of Health, Bureau of Air Quality. Obtain a letter from the Bureau of Air Quality indicating that a fugitive dust control plan is not needed and incorporate this letter into the permit application. In absence of a letter from the Bureau of Air Quality, incorporate the details of the air quality monitoring program and all data previously submitted to the Bureau of Air Quality into the permit application.

UMC 800.5 Definitions

The applicant must identify the type of bonding program (surety, self-bond, etc.) which will be submitted.

UMC 800.11 Requirements to File a Bond

The applicant has stated that a bond covering subsidence impacts has been obtained to cover potential damage to structures due to subsidence. What is the amount of the bond and how did the applicant determine the amount required?

Statements made in the ACR response (page 7) indicate that the coal reserves north of Rilda Canyon will no longer be accessed through an underground negotiated access, but rather with a bridge spanning the canyon and new portal facilities in the canyon. A bond must be calculated and appropriately filed in accordance with UMC 800.1(b)(1) if these facilities are to be developed during the current permit term. This bond must include removal of facilities, backfilling and grading, and final revegetation. The term of the permit may be adversely affected if these facilities are not appropriately bonded. Please provide the appropriate calculations.

Similar to the bonding requirements for Rilda Canyon, the Meetinghouse Canyon lease area must also be bonded with regard to reclamation of the ventilation portals. The modification document does not include these bonding calculations, therefore they must be provided.

UMC 805.11 Determination of Bond Amounts

Calculations for permit application modifications are required. With regard to bond calculations submitted in the original application, further supporting calculations are required. The following comments pertain to calculating the bond amounts for modifications (Meetinghouse Canyon lease area and Rilda Canyon access) as well as resubmitting bonding material relevant to the permit application as a whole.

(a)(1) Supporting calculations are required to evaluate/confirm the bond necessary for posting and to evaluate the potential success of reclamation. These calculations should be submitted subsequent to completion of the revisions to the reclamation plan requested in this document, including but not limited to the Rilda Canyon access and the Meetinghouse Canyon lease area.

Methods of calculation and organization are open to the applicant; however, presentation of the information must be logical and allow confirmation of the bond estimate. Each step for each type of reclaimed site outlined in the reclamation plan must be included (e.g., ripping, scarification, seedbed preparation, fertilization, seeding, transplanting, mulching, riprapping, etc.). Variations in reclamation/revegetation techniques with respect to site-specific conditions must be addressed where they have an influence on cost (e.g., less than 3:1 slopes versus greater than 3:1 slopes). Identify the labor classifications and labor rates used to develop cost (i.e., equipment operator, common laborer) rather than a gross labor cost. The type of equipment proposed for the work must be identified with the associated cost rate.

With respect to the bond estimate given by the applicant, the following comments apply.

1. Ripping costs, scarification costs, and soil laboratory testing fees were absent.
2. Bond estimates should be calculated on current unit costs with an accompanying table identifying adjustment factors (e.g., inflation) for future years; or bond estimates could be calculated on expected future costs (define basis of estimates) and discount these to present value.
3. Soil testing costs do not appear to be adequate. Calculations must be provided supporting this or an amended figure.
4. Vegetation monitoring estimates appear low. Calculations need to be provided supporting this or an amended figure.
5. Revegetation success testing costs are absent.

(a)(2) It is necessary that bond estimates reflect costs to the RA with respect to equipment delivery to the site, etc., since the RA would not have access to the applicant's equipment. Have such costs been included in the calculations? If yes, a statement to this effect is necessary. If not, calculations need to be adjusted accordingly.

(a)(4) The regulations require that additional funds be included in the bond cost estimate which reflect cost changes during the last five years for activities included in the reclamation plan. Are such cost adjustments included in the present costing? If yes, a statement of this effect is

needed. If not, calculations need to be adjusted accordingly. A line item following the calculation for each step in the reclamation plan would be one way of presenting such costs. A total adjusted figure for the entire bond amount, identified as such, would be another method.

UMC 817.15 Casing and Sealing of Exposed Underground Openings: Permanent

When no longer needed for monitoring, the monitoring wells must be sealed in accordance with the appropriate state regulations. Incorporate this information into the permit application.

UMC 817.22-.25 Topsoil

The applicant indicates in the ACR response (page 40) that fill material suitable as alternate topsoil material was tested again in 1983. Provide a description of the methodology used for collection and information (or map) on the location of these samples.

The soil and waste rock data shown in the original application and the ACR response should be reorganized into a single table itemizing the results from laboratory analyses for all samples collected at the Deer Creek Mine. This table should indicate the sample, number, type of material, and when the sample was collected. If all materials to be used as topsoil substitute are not represented, the operator is requested to conduct additional sampling on such substitute materials. Areas lacking data are: (1) material for reclamation of the coal storage bin and surrounding area; (2) soil material that will be used to reclaim the riparian habitat; (3) soil material for reclamation of the waste rock disposal area; and, (4) soil material for reclamation of the terraced highwall area. Sampling and chemical analyses to be conducted for any additional needs should follow the document "Guidelines for Management of Soils", prepared by DOGM and include a value for pH.

Data for pH values have not been provided for samples included in the ACR response. This information should be included. If the applicant has retained a portion of the original material sampled, pH values could be derived easily. If not, the applicant should consult with the laboratory to determine if an estimated pH range could be provided based on existing lab data for these samples.

The slag material tested (original application, pg. 2-109) had a very high pH and a "moderate" SAR. The cause for such values is unknown. The applicant should commit to additional chemical and/or plant growth tests to prove the suitability of this material as a plant growth medium or commit to burying this material out of the plant root zone.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

Provide site-specific information on raptor nesting use of cliff areas in the vicinity of all new construction activities within the Wilberg, Des-Bee-Dove and Deer Creek permit areas. This information is needed to

determine if any mitigation or monitoring plans are necessary to protect raptors in these areas. If any raptor nest sites are identified within a kilometer of the proposed activities, these nest sites should be mapped and informal consultation initiated with the U. S. Fish and Wildlife Service (USFWS). The applicant should incorporate in the application the results of the USFWS 1981 and 1982 raptor surveys for the Deer Creek Mine.

Provide a map showing mule deer high priority and/or critical winter range in relation to the permit area. If such habitat is not part of the permit area, provide a statement to that effect.

On page 35 of the ACR response, the applicant commits to replacing or repairing surface water flow disturbed by subsidence. Details for placement and design of guzzlers must be submitted to the regulatory authority prior to utilizing them for mitigation to replace surface waters.

The applicant includes the Division of Wildlife Resources' (DWR) general wildlife mitigation recommendations as a mitigation plan without comment. Please identify in the application those specific portions of the DWR's mitigation proposal which the applicant intends to utilize at the Deer Creek Mine.

The applicant states that wildlife habitat will be one of the primary postmining land-uses. The applicant also implies, in a general way, on page 36 of the ACR response that revegetation for wildlife will be consistent with UMC 817.97(9). Please provide more detailed information regarding the size and spacing of vegetation clumps (shrubs and trees) for wildlife.

#### UMC 817.106 Regrading or Stablizing Rills and Gullies

The applicant must make a commitment in the application to comply with the requirements of this section.

#### UMC 817.116 Revegetation: Standards For Success

The applicant states, in the ACR response, five points with regard to "sampling for 10-year responsibility period and bond release" pursuant to this section and UMC 784.13(b)(5)(vi). The following comments pertain to these points:

- No. 1 Late summer (July - August) is preferable.
- No. 2 Acceptable; however, other techniques may be more cost effective and provide better quality data.
- No. 3 Acceptable, however, the PCQ stechnique, implemented as a complete random design or systematic design is preferred.
- No. 4 Acceptable.

- No. 5 Not acceptable. Merely stating that revegetation success "will" be based on UMC 817.116(b)(3)(iv) and 817.117 is not adequate. The applicant must state how compliance with this section will be effected. The applicant must:
1. detail the proposed management plan for approved reference areas;
  2. detail monitoring methods and standards which will be used to gauge the success of revegetation and to determine when augmented seeding or plantings will be needed to meet the revegetation success standards;
  3. detail testing procedures which must be passed to trigger final bond release;
  4. overall success standards should be related to the pre-mine vegetation study and the established reference areas (refer to DOGM vegetation guidelines for details).

NOTE: Reference areas must be in fair or better range condition at the time of bond release.

#### Socio-Economic Analysis

The applicant states that all information requested by the ACR concerning socio-economics is available in the Final Environmental Statement for the Emery (Hunter) Power Plants. Incorporate the applicable information into the permit application.