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STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

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April 5, 1985

Mr. Mark Humphrey
Western Technical Center
Office of Surface Mining
Brooks Towers
1020 Fifteenth Street
Denver, Colorado 80202

Dear Mr. Humphrey:

RE: Final Technical Analysis, Utah Power & Light Company, Des-Bee-Dove Mines, ACT/015/017, #2, Emery County, Utah

Enclosed please find an annotated copy of the Des-Bee-Dove draft Technical Analysis (TA) which has been reviewed by the Division. In addition to those comments annotated in the document, major areas of concern or deficiencies identified during the Division's review are grouped below by reviewers' names.

Pamela Grubaugh-Littig

The Miscellaneous Section (Chapter V) still needs to be reworked. The applicant's proposal section is weak and does not explain how these facilities are built, maintained and will be restored to prevent damage to fish, wildlife and related environmental values.

The Miscellaneous Section included:

UMC 817.11 Signs and Markers
UMC 817.59 Coal Recovery
UMC 817.180 Transportation Facilities
UMC 817.181 Support Facilities and Utility Installations

The TA still lacks information and does not address:

UMC 817.89 Disposal of Noncoal Wastes
UMC 817.131 Cessation of Operations: Temporary
UMC 817.132 Cessation of Operations: Permanent
UMC 817.71-.74 Disposal of Underground Development Waste
UMC 817.81-.88 Coal Processing Waste Banks (these are not applicable, but should be mentioned)

The disposal of underground development waste is mentioned on page 23 (Section 8.1). However, this regulation UMC 817.71-.74 is not specifically addressed.

If variances are granted, OSM or consultant should be noted as granting them.

Richard V. Smith

Introduction

1. Geologic Setting, page 2: see comments on DOGM annotated Deer Creek TA.

Hydrologic Balance - Surface Water

1. Compliance, page 12: compliance with UMC 817.41 is not identified or discussed.

2. Stream Buffer Zones, page 14: evaluation of compliance should address the absence of perennial and intermittent streams.

Hydrologic Balance - Ground Water

1. Applicant's Proposal, page 15:

   A. Paragraph 1; values associated with "significant inflow" should be identified.

   B. Paragraph 3; Deer Creek Mining and Reclamation Plan (MRP) includes an illustration that shows a piezometric surface.

2. Compliance, page 15-16:

   A. UMC 817.13-.15; belong elsewhere in the TA.

   B. UMC 817.50; nonsense! Neither OSM or anyone else knows absolutely whether unplanned discharge will occur.

Probable Hydrologic Consequences

1. Compliance, page 17:

   A. Paragraph 1; the statement with regard to subsidence and recharge borders on circular reasoning. The reasoning utilized to determine that subsidence is not expected to alter unsaturated conditions is based on a rather tenuous conclusion. See paragraph 1, sentence 2, page 23.

Subsidence Control Plan

1. Compliance, page 32: see previous comment under item #11 in December 11, 1984 correspondence.

Alluvial Valley Floors

1. Compliance, page 40: a negative (or positive) AVF finding must address only those criteria described under UMC 785.19(c)(2).

   Other criteria or reasons are neither applicable or desirable in the TA.

General Comment on Cumulative Hydrologic Impact Analysis (CHIA)

The CHIA documents being used to describe existing environments in TAs and support findings need to be updated to include current U. S. Geological Survey WRD publications. Namely, those authored by Danielson, et al (1981), Lines, et al (1984) and Lines (in press). It is particularly important that OSM realize the ground water system is not simply confined to springs and that WRD expertise indicates the most important resource may encompass the Star Point-Blackhawk aquifer below the coal seams being mined. Therefore, the CHIAs and TA description of environment, regulatory determinations,

monitoring, stipulations and derived findings should acknolwedge and address the potential impact of mining on the Star Point-Blackhawk aquifer. It appears that OSM documents would benefit substantially from accessing USGS, WRD expertise in the area of ground water hydrology.

Steve Cox

1. Generals comments #1 and specific comments #11A and #12 (Condition #1) which were addressed in the Deer Creek additional concerns letter should be included on this one also.

2. The conditions in Attachment A should be worded exactly as those in the TA or vice versa. Condition #2 under UMC 817.111-.117 (TA, Section 10.3) is not included in Attachment A. It should be.

3. Questions 9 and 12 of our previous Draft TA letter (December 10, 1984) were addressed.

Other problems or discrepancies within the TA have been so noted by annotating the enclosed copy.

Thank you for the opportunity to review this TA. The Division looks forward to revewing the improved TA during the near future. Should you have any questions regarding the Division's concerns or comments, please contact John Whitehead or Tom Munson at your earliest convenience.

Sincerely,

Thomas Munson

Thomas Munson
Reclamation Hydrologist

btb
Enclosures
cc: Ron Daniels
Lowell Braxton
Steve Cox
Pam Grubaugh-Litig
8860R-27-30

Tom Munson
Rick Smith
John Whitehead

CONTENTS

Utah Power and Light Company
Des-Bee-Dove Mine Complex

Memorandum

To: Assistant Secretary for Land and Minerals Management

From: Director, Office of Surface Mining

Subject: Recommendation for Approval of the Des-Bee-Dove Mine Complex Mining Plan, Utah Power and Light Company, Emery County, Utah, Federal Leases, U-02664, SL-050133, and SL-066116.

I am prepared to approve a permit for the Des-Bee-Dove Mine Complex pursuant to the Surface Mining Control and Reclamation Act and subject to approval of the mining plan. My decision to approve the Utah Power and Light Company's permit is based on: (1) the applicant's complete permit application, (2) our permit conditions, (3) public participation, (4) review of the application by the Office of Surface Mining (OSM), (5) review by the State, as required by the approved Utah State Program, and (6) compliance with the National Environmental Policy Act.

The Secretary may approve a mining plan for Federal lands under 30 U.S.C. 207(c) and 1273(c). I find that the proposed operations will be in compliance with all applicable laws and regulations, and I recommend the Des-Bee-Dove Mine Complex mining plan, contained in the permit application package, updated through January 14, 1985, be approved.

Approval: I approve this proposed mining plan:

Assistant Secretary for Land
and Minerals Management

Date

MEMORANDUM

TO: Director, Office of Surface Mining

FROM: Allen D. Klein, Administrator, Western Technical Center

SUBJECT: Recommendation for Approval of Utah Power and Light Company's Des-Bee-Dove Mine Complex Mining Plan and Permit, Emery County, Utah, Federal Leases U-02664, SL-050133, and SL-066116.

I. Recommendation

I recommend approval with conditions of the Utah Power and Light Company's Des-Bee-Dove Mine Complex permit for an underground operation. This is an existing mine. My recommendation is based on the technical analysis and environmental assessment of the complete application. The applicant has proposed to continue underground mining on Federal coal leases U-02664, SL-050133, and SL-066116, during the 5-year permit. Private fee coal will be mined during this permit and subsequent permits issued during the 13-year life-of-mine. The permit with conditions included with this memorandum, will be in conformance with the applicable Federal regulations, the Utah State Program, and the Mineral Leasing Act, as amended. I also recommend that you advise the Assistant Secretary for Land and Minerals Management, under 30 CFR 746.14 that the Utah Power and Light Company's Des-Bee-Dove Mine Complex mining plan is ready for approval. I concur that a bond in the amount of $1,837,712.00 is adequate.

The Utah Division of Oil, Gas and Mining and the Office of Surface Mining (OSM), identified elements of the applicant's proposal which require conditions to comply with State and Federal law. The State permit ACT/015/017 and conditions are incorporated into the proposed Federal permit UT-0015, 1/85. The State regulatory authority will issue this permit subsequent to the Federal permit.

My recommendation for approval is based on the complete mining plan and permit application package, updated to January 14, 1985. I have determined that this action will not have a significant impact on the human environment.

II. Background

The proposed Des-Bee-Dove Mine Complex is located in Emery County, Utah, in the area of East Mountain and mostly in the Manti-La Sal National Forest. The permit area and life-of-operation contains 2,847 surface acres, of which 1,877; 50; and 920 acres are Federal; State; and private surface, respectively. All of these acres have been leased. This mine operation will not adversely affect any additional environmentally-sensitive areas. The proposed majority of the surface operations will utilize room-and-pillar mining methods. The Blind Canyon and Hiawatha coal seams will be mined to yield a production rate of 725,000 tons per year. All surface mine operations are scheduled to cease around the year 1998.

The U.S. Fish and Wildlife Service concurrence memorandum dated January 11, 1985, expressed concern for mule deer mortality resulting from deer-vehicle collisions along the Des-Bee-Dove/Wilberg Junction Road (used as a haulroad), and potential affects resulting from subsidence on raptor nests and nesting habitat within the permit area. Both of the issues have been addressed. Utah Power and Light Company has committed to assist the Utah Division of Wildlife Resources (UDWR) in a monitoring program to identify potential hazard sections of the road and to implement mitigation measures in consultaion with UDWR (permit application package (PAP), page 4-36). OSM's technical analysis has identified the potential of impact to raptors and has developed a Special Condition (No. 2) in Attachment A to the Surface Mining Control and Reclamation Act (SMCRA) permit. All concerns expressed by the U.S. Fish and Wildlife Service have been resolved.

The U.S. Forest Service concurrence letter dated January 3, 1985, expressed concern for 5 issues. OSM has responded to the Forest Service with a letter addressing each of their concerns. (Response is attached to the USFS letter enclosed in the Concurrence section of this document.) Two of the issues identified in the Forest Service letter, burying toxic waste and relocation of the gate, are included in Attachment A, Special Conditions (Nos. 5 and 6) to the SMCRA permit. The remaining issues do not require conditions to the permit.

The Des-Bee-Dove Mine Complex permit application was reviewed by OSM and the State of Utah, using the approved Utah State Program and the Federal Lands Program (30 CFR Chapter VII, Subchapter D). The Mineral Leasing Act portion of the plan was also reviewed for compliance with the applicable portion of 43 CFR 3480. The technical analysis and environmental assessment for this mine application was prepared by OSM. These documents, other documents prepared by Utah Division of Oil, Gas and Mining, the company's application, and other correspondence developed during the completeness and technical reviews are part of OSM's mining plan and permit application file.

(5)

A chronology of events related to this mining plan application is attached. After the Utah Power and Light Company published the newspaper notice as required, no written comments, objections, or requests for an informal conference were received. Written concurrence was provided by Bureau of Land Management, Branch of Solid Minerals; U.S. Forest Service; Bureau of Land Management, Moab District; and letters from U.S. Fish and Wildlife Service; the State Historic Preservation Officer.

The information in the permit application and mining plan, as well as other information documented in the recommendation package and made available to the applicant, has been reviewed by Utah Division of Oil, Gas and Mining staff in coordination with the OSM Project Leader.

The Des-Bee-Dove Mine Complex closed December, 1983, due to a fire in the Beehive Mine and for economic reasons. The mine complex was reopened on January 14, 1985, to provide coal to the Hunter Power Plant to partially replace production lost due to the closure of the Wilberg Mine as a result of a fire which started in the mine on December 19, 1984.

The Des-Bee-Dove/Wilberg Junction Road was constructed in 1983, in response to public concern for safety in the previous route that went through the residential streets of Orangeville, Utah. Utah Power and Light Company represented the road as a public road and failed to obtain a permit from the regulatory authority to construct the haulroad. The Utah Division of Oil, Gas and Mining (UDOGM) issued a notice of violation to Utah Power and Light Company on July 18, 1984, that required the haulroad be included in the PAP for a permanent program permit. On July 31, 1984, UDOGM issued a cessation order preventing the Utah Power and Light Company from using the road. The Utah Board of Oil, Gas and Mining reopened the haulroad under an emergency order to allow Utah Power and Light Company to resume production and delivery of coal to the Hunter Power Plan without routing trucks through the town of Orangeville. The cessation order was terminated ____, 1985.

What does this mean

Procedures for public participation have substantively complied with requirements with the exception of the public notice of availability of a complete mine plan required under UMC 786.11. The notice did not include the Des-Bee-Dove/Wilberg Junction Road. However, the public used the opportunity to comment on the need for this road during the public review process for the Emery Units 3 and 4 Environmental Impact Statement (BLM, 1979) and made it clear that the construction and use of this road was an important mitigation of the increased traffic resulting from the construction of the additional power units at the Hunter Power Plant. OSM has determined that the public involvement requirements have been substantively met, and republishing the public notice would delay the use of the road and cause impacts which the public has already addressed.

CHRONOLOGY OF EVENTS

Utah Power and Light Company
Des-Bee-Dove Mine Complex
Application for Mining Plan and Permit Approval

DATE	EVENT
May 1, 1981	Utah Power and Light Company (UP&L) submitted a permit application and mining plan, under the approved Utah Program, to the Utah Division of Oil, Gas and Mining (UDOGM) and the Office of Surface Mining (OSM).
May 1, 1981	Company filed application in County Courthouse.
October 7, 1981	OSM furnished comments on the permit application generated during its administrative completeness review (ACR) for the National Environmental Policy Act (NEPA), to UDOGM.
December 11, 1981	UDOGM sent a Notice of Administrative Delay to UP&L.
March 9, 1983	UDOGM and OSM sent a jointly prepared ACR to UP&L and notified UP&L that the Des-Bee-Dove Mine Complex permit application and mining plan was incomplete.
July 13, 1983	UP&L submitted additional material in response to ACR.
August 9, 1983	A 100-year storm event occurred at the Des-Bee-Dove Mine Complex which filled the entire sediment pond with sediment.
October 31, 1983	UDOGM and OSM notified UP&L of hydrology deficiencies discovered in the Des-Bee-Dove Mine Complex permit application and mining plan in course of preparation of the TA.
December 2, 1983	UP&L submitted a response to the October 31, 1983, determination of adequacy (DOA).
December 20, 1983	UDOGM approved an emergency sediment pond bypass variance in order to remove sediment from the pond deposited during the 100-year storm event.

DATE	EVENT
January 17, 1984	UDOGM and OSM notified UP&L of deficiencies discovered in the Des-Bee-Dove Mine Complex State permit application and mining plan.
February 15, 1984	UDOGM and OSM announced that UP&L's permit application and mining plan was complete (prior to the addition of the Des-Bee-Dove/Wilberg Junction Road) and OSM commenced its technical analysis (TA) and environmental analysis (EA).
February 24, 1984	UP&L responded to UDOGM and OSM concerning those deficiencies.
April 21, 1984	UP&L published fourth consecutive weekly notice in the Sun-Advocate newspaper that a complete permit application and mining plan has been filed (prior to the addition of the Des-Bee-Dove/Wilberg Junction Road to the permit application).
June 20, 1984	UP&L supplied supplemental information to UDOGM and OSM.
July 18, 1984	UDOGM issued a NOV to UP&L for construction of the Des-Bee-Dove/Wilberg Junction Road.
July 31, 1984	UDOGM issued a cessation order prohibiting the use of the road.
November 16, 1984	OSM submitted the draft TA for the Des-Bee-Dove Mine Complex mine to UDOGM for its review and comment.
December 10, 1984	UDOGM submitted its comments regarding the draft TA for the Des-Bee-Dove Mine Complex to OSM.
December 21, 1984	OSM notified UP&L of deficiencies discovered in the Des-Bee-Dove Mine Complex permit application and mining plan.
December 24, 1984	UP&L supplied supplemental information to UDOGM and OSM.
January 14, 1985	UP&L supplied supplemental information to UDOGM and OSM.
, 1985	UDOGM terminated the cessation order.
January 28, 1985	OSM prepared final EA and FONSI.

(8)

DATE	EVENT
January 30, 1985	OSM submitted the final TA for the Des-Bee-Dove Mine Complex to UDOGM for its review and comment.
January 30, 1985	OSM recommends approval of mining plan.
February 1985	UDOGM recommends approval of UP&L's permit application and issued a permit.

No!
not yet

(9)

FINDINGS

UTAH POWER AND LIGHT COMPANY

DES-BEE-DOVE MINE COMPLEX

Application for Mining Plan

I. The Office of Surface Mining (OSM) has determined that the permit application plan, submitted on May 1, 1981, and updated through January (17), 1985, and the permit with conditions is accurate and complete and complies with the requirements of the approved Utah State Program, the Surface Mining Control and Reclamation Act (SMCRA), and the Federal Lands Program. [UMC 786.19(a)] why changed from 1/14/85

II. OSM has reviewed the permit application and mining plan, and prepared the technical analysis (TA) and environmental assessment (EA) and based on this has made the following findings:

1. The applicant proposes acceptable practices for the reclamation of disturbed lands. These practices have been shown to be effective in the short-term; there are no long-term reclamation records utilizing native species in the Western United States. Nevertheless, OSM has determined that reclamation, as required by the Act, can be feasibly accomplished under the mining plan when supplemented by the conditions (See conditions 1, 3 and 4.)

   OSM has determined that reclamation at Des-Bee-Dove Mine Complex is technologically and economically feasible under SMCRA Section 522(a)(2) and (b). [UMC 786-19(b); TA, pages 32-35; permit application package (PAP), pages 4-1 to 4-22]

2. The probable cumulative hydrologic impact assessment (CHIA), of all existing and anticipated coal mining within the general area as described in UMC 784.14(c), has been made by OSM. Included in this assessment were the Trail Mountain, Wilberg, and Des-Bee-Dove Mines within the Cottonwood Creek drainage basin and the Deer Creek Mine within the Huntington Creek basin. OSM has determined that the operations proposed under the application have been designed to prevent material damage to the hydrologic balance outside the proposed mining plan area over the entire projected life of the proposed mining operation. [UMC 786.19(c); PAP pages 2-71 to 2-98; TA, page 16; Appendix I of these Findings]

3. After reviewing the description of the proposed permit area, OSM determine this area is:

   a. Not included within an area designated unsuitable for surface coal mining operations. [UMC 786.19(d)(1)]

   b. Not within an area under study for designating lands unsuitable for surface coal mining operations. [UMC 786.19(d)(2)]

   c. Not on any lands subject to the prohibitions or limitations of 30 CFR 761.11(a) (national parks, etc.), 761.11(f)(public buildings, etc.), and 761.11(g) (cemeteries). [UMC 786.19(d)(3); PAP page 1-15]

   d. Within 100 feet of the outside right-of-way of a public road. The public right-of-way enters the permit area and is subject to permit requirements. [UMC 786.19(d)(4); TA, page 36]

   e. Not within 300 feet of any occupied dwelling. [UMC 786.19(d)(5); PAP, page 1-16]

   f. Not unsuitable in accordance with 522(b) and (a)(3) of SMCRA.

   g. Located on federal lands within the boundaries of the Manti-LaSal National Forest. However, based on OSM's analysis and on the concurrence of the Forest Service, the surface operations and the impacts incident to the Des-Bee-Dove Mine Complex will be incompatible with significant recreational, timber, economic or other values of the Manti-LaSal National Forest.

4. OSM's issuance of a permit and the Secretarial decision on the Mineral Leasing Act plan are in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800). [UMC 786.19(e); OSM's Environmental Assessment Addendum; State Historic Preservation Officer concurrence letter of March 16, 1984]

5. The applicant has the legal right to enter and begin mining activities in the permit area. [UMC 786.19(f); PAP, pages 1-14 to 1-15]

6. The applicant has submitted proof and OSM's records indicate that prior violations of applicable law and regulations have been corrected, with the exception of the violations issued for the Des-Bee-Dove/Wilberg Junction Road and the sediment storage area construction. The abatement for these violations requires acquisition of the required permits. The applicant is diligently pursuing a resolution to the violations pursuant to UMC 786.17(c)(2) (personal communication with D. Wayne Hedberg, Utah Division of Oil, Gas and Mining). [UMC 786.19(i); PAP, pages 1-1 to 1-22; personal communication with Donna Griffin, OSM Reclamation Specialist, in OSM Albuquerque Field Office, and Tom

Munson, Reclamation Hydrologist, Utah Division of Oil, Gas and Mining, on January 8, 1985]

7. OSM's records confirm that all fees for the Abandoned Mine Reclamation Fund have been paid. [UMC 786.19(h); personal communication with John Sender, OSM Fee Compliance Officer, in OSM Albuquerque Field Office on January 8, 1985]

8. OSM records show that the applicant does not control and has not controlled mining operations with a demonstrated pattern of willful violations of the Act of such nature, duration, and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act. [UMC 786.19(i); personal communication with Donna Griffin, OSM Reclamation Specialist, in OSM Albuquerque Field Office, and Tom Munson, Project Manager, Utah Division of Oil, Gas and Mining, on January 8, 1985]

9. Coal mining and reclamation operations to be performed under the permit will not be inconsistent with the Wilberg and Deer Creek Mines in the immediate vicinity of the Des-Bee-Dove Mine Complex. [UMC 786.19(j)]

10. The applicant has provided evidence that there are no prime farmlands in the permit area and area for life-of-mine. [UMC 786.19(l); letter of negative determination from Soil Conservation Service, November 10, 1983; PAP 2-149]

11. Negative alluvial valley floor determinations have been made for the drainages in the proposed permit area and area for life-of-mine. These determinations were made on the basis of no alluvial valley floors in or adjacent to permit area and underground effects on aquifers will not affect downstream alluvial valley aquifers. [UMC 786.19(l) TA, page 39]

12. As applicable, the permittee shall comply with UMC 700.11(e) and Subchapter B and K for compliance, modification,or abandonment of existing structures.

13. The proposed postmining land use of the permit area has been approved by the Utah Division of Oil, Gas and Mining, and OSM. [UMC 786.19(m); TA page 39]

14. OSM has made all specific approvals required by the Act, the approved Utah State Program and the Federal Lands Program. [UMC 786.19(n); TA; letters of concurrence]

15. The proposed operation will not affect the continued existence of threatened or endangered species or result in the destruction or adverse modification of their critical habitats. On January 16, 1984, the Endangered Species Office of the U.S. Fish and Wildlife Service (USFWS) made a tentative amendment to their earlier (1/10/84) clearance letter, since the Des-Bee-Dove Mine Complex might cause depletions from the Colorado River system, thereby possibly affecting two endangered fish species. OSM found that the Des-Bee-Dove Mine Complex would not cause surface-water depletions from either Cottonwood Creek or Grimes Wash. [UMC 786.19(o); TA, page 20; letters from USFWS dated January 10 and 16, 1984]

16. Procedures for public participation have substantively complied with requirements of the Act, the approved Utah State Program, the Federal Lands Program, and Council on Environmental Quality regulations (40 CFR Part 1500 et seq.). [30 CFR 740.13(c)(3); UMC 786.23(a)(2); Chronology of Events]

17. The applicant has complied with all other requirements of applicable Federal laws and either has or has applied for permits from the U.S. Environmental Protection Agency, Region VIII, Utah Division of Health, and Utah Southeastern Utah Health District. [30 CFR 746.13(g); PAP, page 1-18, letters of concurrence and clearance]

_____

Administrator
Western Technical Center

_____

Headquarters Reviewing Officer

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FINDINGS

APPENDIX I

Cumulative Hydrologic Impact Assessment Summary
Des-Bee-Dove Mine Complex

Surface-Water Hydrology

The Des-Bee-Dove Mine Complex is located on an unnamed tributary to Grimes Wash, approximately 4 miles upstream of its confluence with Cottonwood Creek. Cottonwood Creek is a perennial stream entering the San Rafael River approximately 18 miles southeast of the mine. No perennial or intermittent streams exist within the Des-Bee-Dove Mine Complex permit boundary. The disturbed areas associated with the Des-Bee-Dove facilities and sedimentation ponds are located on an unnamed ephemeral tributary to Grimes Wash. There are two small springs located within the permit area.

Approximately 65 percent of the streamflow of Cottonwood Creek occurs during the April-June snowmelt runoff period. Average annual precipitation ranges from 14 inches at the Des-Bee-Dove Mine Complex to over 30 inches on East Mountain. The water quality in Grimes Wash reflects the presence of carbonate rocks which cap the ridges and peaks in the basin. Total dissolved solids (TDS) concentrations range from 200 to 400 mg/L (milligrams per liter). Downstream of the cumulative impact area (below a USGS stream gage), water quality is degraded by natural runoff and irrigation return flows which pass over Mancos Shale-derived soils. The gypsiferous Mancos Shale contributes substantial concentrations of salts to the surface-water system. TDS concentrations in the San Rafael River, 28 miles southeast of the Des-Bee-Dove Mine Complex, typically average from 2,000 to 4,000 mg/L. Wilberg Mine discharge water, which is pumped to the mine complex, contains approximately 550 mg/L TDS, based on four years of discharge data. The other mine within the Cottonwood Creek drainage, Trail Mountain, discharges little mine water to the surface drainages.

Geologic Setting

The lowermost stratum of importance in the area is the Masuk Shale Member of the Mancos Shale Formation, which crops out downstream of the Des-Bee-Dove Mine Complex. Above the Masuk Shale are the Star Point Sandstone, the coal-bearing Blackhawk Formation, the Castlegate Sandstone, the Price River Formation, and the North Horn Formation. Faults known to exist within the permit boundary include the Deer Creek, Bear Canyon, and Maple Gulch Faults. No igneous intrusions are known to exist within the permit area.

Unnecessary

There are two mineable coal seams in the area: the Hiawatha seam at the base of the Blackhawk, and the Blind Canyon seam approximately 90 feet above the Hiawatha seam.

The Des-Bee-Dove mining operations are separated from the Deer Creek and Wilberg Mines by the Deer Creek Fault in the western portion of the permit area. Both mineable seams are extracted by Des-Bee-Dove operations.

The Hiawatha seam is accessed through the Deseret Mine; the Blind Canyon seam is accessed through the Beehive and Little Dove Mines. Although the Des-Bee-Dove permit area spans the Huntington Creek and Cottonwood Creek drainage basins, all surface disturbance is confined to the Cottonwood Creek basin. The Des-Bee-Dove Mine Complex is a relatively "dry" mine, and has intercepted virtually no ground water during its history. For this reason, ground-water impacts to the Huntington Creek basin are negligible and the cumulative hydrologic impact discussion is confined to the effects of mining on the Cottonwood Creek basin.

There is some overlap between the Wilberg Mine operations in the Cottonwood Creek basin and the Deer Creek Mine operations in the Huntington Creek basin. The Wilberg Mine operates in the lower coal seam; the Hiawatha, and the Deer Creek Mine operates in the upper coal seam, the Blind Canyon; therefore the mining operations of the Deer Creek Mine partially overlie the operations of the Wilberg. The overlap of these mining operations occurs at the boundary between the Huntington Creek and Cottonwood Creek drainages. The surface-water drainage boundary is assumed to be the same as the ground-water basin divide. Mine inflows from Wilberg will be discharged into the Cottonwood Creek drainage and mine inflows from the Deer Creek Mine will be discharged into the Huntington Creek basin. The overlap of the Wilberg Mine into the Huntington Creek basin is insignificant, whereas the overlap of the Deer Creek Mine into the Cottonwood drainage is larger. However, since all intercepted ground water in the Deer Creek Mine will be discharged into Huntington Creek, there is no significant surface water impact (quantity) related to the interaction.

Some interbasin transfer of ground water will occur between the two basins as a result of these two mines overlapping. Wilberg will intercept ground water from the Huntington Creek basin and Deer Creek will intercept (a relatively larger amount of) ground water from the Cottonwood Creek basin. The net effect will be a slightly higher volume of intercepted Cottonwood Creek ground water being discharged into the Huntington Creek basin. Since Des-Bee-Dove intercepts minimal ground water, no mine-water discharges are anticipated. The effects of this mine will be overshadowed by the hydrologic impacts of its neighbors. Below the confluence of Cottonwood Creek with the San Rafael River (which is also below the confluence of Huntington Creek with the San Rafael), the net effect of all interbasin transfer of ground water will be negligible.

Ground-water Hydrology

Ground water occurs under perched water table, and confined conditions in the general area of the Des-Bee-Dove Mine Complex. Numerous springs have been identified on East Mountain west of the Des-Bee-Dove permit area.

These springs range from ephemeral seeps to perennial springs. Most of the springs originate in the upper portion of the North Horn Formation as perched springs. Only two springs have been identified in the Des-Bee-Dove permit area. Both springs are associated with faults and neither discharges significant quantities of water.

At present, ground water enters the Wilberg Mine at flow rates up to 400 gpm with the potential for more water to be encountered intermittently as mining operations extend further and intercept both fault zones and saturated fluvial channel sandstones. The upper limit of potential future mine discharges (ground-water inflow less internal mine consumption) has been estimated to be approximately 4 cfs. Given the hydrogeologic conditions in the area and the historical mine water inflow at the mine, such a value is considered a worst-case situation.

The Des-Bee-Dove Mine Complex operations have not intercepted significant quantities of ground water. The applicant reports two incidents of major ground-water interception. In one incident, the working face crossed a fault hydrologically connected to an in-mine sump. In the second instance, the mining operation intercepted less than 10 gpm inflow in the fall of 1983. The "leaker" ceased by the second quarter of 1984.

Ground-water quality is characterized as a calcium-magnesium-bicarbonate type, and is similar to that of the surface water in the area.TDS concentrations range from 254 mg/L to 695 mg/L, but consistently average 372 mg/L. Such values are similar to concentrations observed in the surface waters.

Anticipated Mining

Coal mining operations have been in existence in the Des-Bee-Dove area since the 1890's. All anticipated mining within the area includes Trail Mountain, Wilberg, and Des-Bee-Dove Mines in the Cottonwood Creek basin, and the Deer Creek Mine in the Huntington Creek basin.

Delineation of the Cumulative Impact Area (CIA)

Surface Water

Small parts of the Des-Bee-Dove and Wilberg mining operations overlap into the Huntington Creek drainage basin; similarly, a small part of the Deer Creek Mine cumulative impact area overlaps into the Cottonwood Creek basin. The compound effect on the two is insignificant. Therefore, the cumulative impact area for the Des-Bee-Dove Mine Complex includes the Cottonwood Creek basin only. Below the confluence of Grimes Wash and Cottonwood Creek, stream discharges are of sufficient magnitude that it is unlikely that mining-related impacts can be detected. Therefore, the CIA for the assessment of material damage has been defined as the drainage area contributing to Cottonwood Creek above this confluence. All present and anticipated mining in this basin occurs in the lower one-third of the basin.

Ground water

The lack of piezometric data in the various water-bearing units within the Cottonwood Creek basin does not allow precise determination of ground-water divides in the area. However, the assumption that the ground-water basin coincides with the surface-water basin is well within the limitations and accuracy of the data and assumption inherent to this analysis. The Pleasant Valley, Joe's Valley, and Trail Canyon Faults may act as conduits for interbasin movement of ground water into or out of Cottonwood Creek basin; however, there is little evidence to support this concept. The outcropping of the low-permeability Masuk Shale within the downstream limits of the CIA effectively limits the amount of ground water which could leave the basin as underflow. This is the single most important hydrogeologic control and allows delineation of the ground-water CIA. Since the overlap into the Huntington Creek drainage basin is insignificant with respect to surface water, it is also considered insignificant with respect to ground water. Therefore, the ground-water cumulative impact area is considered within the drainage of the Cottonwood Creek.

Summary of Cumulative Hydrologic Impacts

The hydrologic impacts of present and future coal mining activity within the Des-Bee-Dove Mine Complex CIA have been addressed both quantitatively and qualitatively. Quantitative assessments (see Cottonwood CHIA) focused primarily on surface-water impacts which result from the discharge of intercepted ground water at the Wilberg Mine. The analysis utilized average monthly water quality and discharge records from Cottonwood Creek and the Wilberg Mine in combination with anticipated mine inflows to predict future quality and quantity impacts.

In the Cottonwood CHIA, the Wilberg Mine dominated the analysis because of an extensive data base, the large volume of mine water inflow relative to the other general area mines, and Wilberg's greater area of disturbance. The Des-Bee-Dove Mine Complex has intercepted minimal ground water and has no recorded discharges. Some intercepted ground water from the Wilberg Mine is imported to the Des-Bee-Dove Mine Complex for in-mine use.

Qualitative analysis of the effect of mine dewatering and subsidence on the ground-water system has been presented in the CHIA, with particular emphasis on the potential for diminution of spring flows. Because of the complex nature of the hydrogeology, the unknown vertical and horizontal extent of subsidence effects, and the relationship between precipitation and spring discharge, a prediction of future impacts to the ground-water system based on analytical methods was not attempted. However, based on the available data and information, the probable impacts have been predicted.

Impacts to surface-water quality of Cottonwood Creek are expected to gradually increase over the next 20 years as underground mining operations advance beneath East Mountain (Wilberg, Des-Bee-Dove, and Deer Creek Mines) and Trail Mountain (Trail Mountain Mine). The primary impact is associated with the discharge of intercepted ground water, which is expected to reach a maximum between the years 2000 and 2005. Impacts are

quantified by flow-weighting the estimated TDS concentrations of the mine discharge water with that of the average monthly water quality and discharge of Cottonwood Creek. The maximum predicted impacts for this period indicate that the highest concentration of TDS is expected to occur in the month of March, reaching 375 mg/L. This represents an increase of 53 mg/L over the background TDS concentration, or approximately 16.5 percent. This contrast with the increase of over 1,500 mg/L TDS resulting from irrigation return flows in Cottonwood Creek immediately downstream of the CIA.

The Utah Division of Health specifies a maximum recommended TDS concentration of 1,200 mg/L for agricultural use (irrigation and stockwatering). TDS limitations for other uses are adjusted on a case-by-case basis. The U.S. Public Health Service provides guidelines for drinking water standards which recommend a maximum TDS concentration of 500 mg/L for primary standards and 1,000 mg/L for secondary standards. Additionally, the U.S. Environmental Protection Agency (EPA) has published recommended limits for various irrigation hazards and industrial uses.

As a result of all anticipated mining, a maximum TDS increase of 53 mg/L in Cottonwood Creek (yielding a TDS value of 375 mg/L) will not degrade or preclude anticipated uses below the CIA. This is in contrast to the marked degradation which presently occurs downstream of the mined area due to irrigation activity on Mancos Shale soils. This activity increases TDS concentrations to levels which exceed the recommended limits for almost every use.

The maximum increase in the discharge of Cottonwood Creek can be estimated by assuming that all of the ground water which is intercepted by mining activities is "new" water to the basin (i.e., that which would not be present normally). The assumption is overly conservative, but serves to define an upper limit on the magnitude of the potential increase.

Similarly, the maximum decrease in streamflow during the hydrogeologic resaturation period following the cessation of mining can be estimated. By assuming that the diminution of natural streamflow during this period is equal to the peak rate of mine dewatering (ground-water recharge and storage components), the upper limit of potential streamflow reduction can be estimated.

The greatest percent change occurs during the non-irrigation season, November through April. Changes to the average monthly flow of Cottonwood Creek during the growing season are less than five percent. Thus, even if changes to the ground-water system were as great as these conservative estimates indicate, the timing of the impacts within the yearly cycle is such that minimal impacts would occur during the period of greatest demand, May through October. This is due to a combination of effects: the natural hydrologic cycle; regulation of Joe's Valley Reservoir; and, the anticipated amounts of future mine dewatering based on present inflow rates, basin characteristics, and seasonal effects.

After mining is completed, strata at Deer Creek and Wilberg Mines, which were dewatered during the mining process, will start to resaturate. This will result in a reduction of base flow in Cottonwood Creek on the order

of 4.0 cfs. This represents 4 percent of the mean daily flow rate of Cottonwood Creek. Seasonally, the largest percent depletion of discharge during retreat mining will occur during the non-irrigation period, November through April, where average monthly flows may experience depletions of 20 to 30 percent. Since the Des-Bee-Dove Mine Complex will intercept little ground water, insignificant base flow diminution will be attributable to the Des-Bee-Dove Mine Complex.

Des-Bee-Dove is essentially a dry mine, drained by ephemeral washes. Within the permit area there are two relatively insignificant ephemeral springs that together produce an average yearly peak flow which ranges from 3 to 20 gpm. Since minimal ground water has been intercepted by the underground workings, there has been no mine-water discharge to the surface drainage system. Surface water collected on site and ground water intercepted by the Wilberg Mine is transferred to the Des-Bee-Dove operations for in-mine use. The effects of the Des-Bee-Dove mine operations on the hydrologic balance are negligible.

Impacts Associated With Subsidence

The results of a U.S. Bureau of Mines subsidence study above longwall panels at the Deer Creek Mine immediately adjacent to the Des-Bee-Dove Mine Complex indicate that topographic modification due to subsidence may occur over 1,500 feet above longwall-mine areas. Subsidence effects at the USBM study location have been limited to topographic modification in the form of a broad, swale-like troughs with no subsidence cracking or mass movement evident. The factors limiting cracking and mass movement are as follows:

a. the presence of the massive Castlegate Sandstone which is resistant to caving and which separates the mine workings from the major spring-bearing strata, and

b. the presence of substantial thicknesses of clay shales in the overlying Blackhawk Formation, that deform to internal tension cracks.

Where the Castlegate Sandstone is absent, a greater potential exists for subsidence to alter the hydrologic balance of the area. Tension cracks have a greater opportunity to extend to the surface, thus rerouting surface- and sub-surface water flow into the mine workings. Topographic modification of surface features may result locally in increased erosion rates, increased stream gradients, or other undesirable surface effects. Risk of damage to the hydrologic system decreases in proportion to increasing overburden thickness.

Diminution of spring flow due to subsidence may occur within the permit area. These springs are located along the Deer Creek Fault and discharge from the Price River Formation (as mapped by Utah Power and Light Company). It is not possible to predict the amount of potential damage, if any, which may occur to either of these springs. The CHIA recognizes only the potential risk to these resources. Because of the complex geological, hydrological, structural, and climatic interdependence, continual monitoring will be required to accurately assess hydrologic damage. The most promising avenue of approach in this regard appears to

be the use of discharge recession curves for selected springs to document deviations in spring-flow characteristics.

Cumulative Impacts

Increase in TDS (primarily sodium, calcium, magnesium, bicarbonate, and sulfate) and TSS will occur; however, it has been determined that these increases do not cause material damage to the surrounding hydrologic balance. The Des-Bee-Dove Mine Complex will contribute minimal, if any, impact.

Possible diminution of spring flow due to subsidence-related effects may occur. Post-mining base-flow diminution will result as resaturation of dewatered strata occurs once retreat of the mining operations commences in the Wilberg and Deer Creek Mines. Diminution of base flow in Cottonwood Creek will continue until such time as the strata resaturate and the ground-water system has achieved equilibrium. Worst-case base-flow diminution is estimated to be approximately 4 cfs, or 4 percent of the mean daily flow rate of Cottonwood Creek. Seasonally, the largest percent depletion will occur during the non-irrigation period from November through April, when this impact will be least felt by downstream users. The Des-Bee-Dove Mine Complex will contribute minimal, if any, effect.

Finding

An assessment of the probable cumulative hydrologic impacts with respect to the Des-Bee-Dove Mine Complex and all anticipated mining in the area has been made. The proposed Des-Bee-Dove mining operation and all other anticipated mining operations have been found to be designed to prevent material damage to the hydrologic balance outside the permit area over the life of the proposed mining operations.

At best, a premature finding that has a restricted data base for support.

(21)

Rec'd 28 Oct 87 on EA

FINDING OF NO SIGNIFICANT IMPACT

Utah Power and Light Company
Des-Bee-Dove Mine Complex

The technical analysis (TA), and the environmental assessment (EA) were prepared by the Office of Surface Mining (OSM) preceding this "Finding of No Significant Impact" statement, identify certain environmental impacts that would result from the Federal approval of the mining plan for Utah Power and Light Company's Des-Bee-Dove Mine Complex. The 5-year permit application, submitted to the State under its approved permanent program, proposes a total permit area of 2,803 acres. The permit area encompasses portions of several Federal leases.

The regional impacts of coal mining in central Utah are addressed in the Bureau of Land Management's Uinta Southwestern Utah Coal Region environmental impact statement, 1983, and the U.S. Geological Survey's central Utah environmental impact statement, 1979. Impacts resulting from the Des-Bee-Dove/Wilberg Junction Road are discussed in the Bureau of Land Management's Emery, Units 3 & 4, final environmental impact statement (EIS), 1979. No significant impact were identified in the environmental impact statements.

The Office of Surface Mining determined that impacts to the Des-Bee-Dove Mine Complex area would result from mining Des-Bee-Dove Mine Complex. However, OSM finds that impacts would not be significant.

Based upon the evaluation of impacts given in the TA and EA, I find that no significant impacts to the human environment would result from the proposed mine. Therefore, an environmental impact statement is not required.

_____

Administrator
Western Technical Center

_____

Date

ENVIRONMENTAL ASSESSMENT
FOR THE DES-BEE-DOVE MINE COMPLEX,
EMERY COUNTY, UTAH

U.S. Department of the Interior
Office of Surface Minins
Western Technical Center
Denver, Colorado

January 21, 1985

(23)

ENVIRONMENTAL ASSESSMENT

UTAH POWER AND LIGHT COMPANY

DES-BEE-DOVE MINE COMPLEX

EMERY COUNTY, UTAH

INTRODUCTION

The Des-Bee-Dove Mine Complex is one of three separate mining operations owned by Utah Power and Light Company (UP&L) located on East Mountain about 7 miles north of Orangeville, Utah. The three operations, the Des-Bee-Dove, Wilberg, and Deer Creek, contain three mineable coal seams: Hiawatha, Cottonwood, and Blind Canyon. Two of the seams are located within the Des-Bee-Dove permit area and are accessed through three mine portals. The Hiawatha (lower) seam is mined through the Deseret portal. The Blind Canyon (upper) seam is mined through the Beehive and Little Dove Mines. The regional impacts of coal mining in this region are addressed in environmental impact statements by the Bureau of Land Management (1983), U.S. Geological Survey (1979) and Bureau of Land Management (1979).

The anticipated life-of-mine production from the Des-Bee-Dove Mine Complex is approximately 8.3 million tons by room-and-pillar continuous mining techniques. Estimated annual production averages 725,000 tons.

The main Des-Bee-Dove surface facilities are located on a 20-acre site in an unnamed canyon wash on the southeastern flank of East Mountain. A 4.5-acre site at the mouth of the wash is used for a sediment pond, and 50 acres provide right-of-way for a haul road. Total disturbance is 74.5 acres. Surface facilities at the main site include the following: earthen structures, coal stockpile, tipple, facility conveyors, parking lot, office-bathhouse, warehouse, underground shop, materials storage areas, access and service roads, mine ventilation fans, power supply and substation, potable water system, sewer treatment system, and drainage systems. There are 17 portals associated with the three mines. With the exception of two ventilation portals, all of these are located at the main facilities area. The Des-Bee-Dove Mine permit area encompasses 2,847 acres of land. Included are three Federal coal leases, U-0[illegible]4, SL-050133, and SL-066116, encompassing 1,520 acres of coal. In addition to the Federal coal, the Des-Bee-Dove permit area includes 1,048 acres of fee coal. Lands affected by surface disturbance include the facilities area, the sedimentation pond and the haul road right-of-way. These lands are controlled by the State of Utah, Bureau of Land Management, U.S. Forest Service and private (UP&L).

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I. PURPOSE AND NEED FOR ACTION

The Des-Bee-Dove Mine Complex is currently operating under an interim mining permit issued by the State of Utah, Division of Oil, Gas and Mining (Act/015/017) on May 11, 1979. To continue mining, UP&L has submitted an underground mining and reclamation permit application in compliance with the Coal Mining and Reclamation Permit Program (Chapter I) of the State of Utah. The necessary Federal action is to approve, disapprove, or conditionally approve the application in accordance with the requirements of the Surface Mining Control and Reclamation Act (SMCRA) and the Mineral Leasing Act.

This environmental assessment will address the environmental consequences of the proposed mining operations and reclamation plans in the permit application. The consequences of no permit approval will also be addressed. The purpose of this document is to assist the Secretary of the Interior to make a decision with respect to NEPA compliance.

II. DESCRIPTION OF ALTERNATIVES

Proposed Action: Approval of the Permit, With Conditions

OSM may approve the operator's permit application package for mining of 1,520 acres of Federal coal subject to certain conditions.

Alternative I: No Action

The regulatory authority may take no action at this time and require the operator to submit additional information necessary for permit application approval. The operator would continue to mine under the interim permit until a permit decision was resolved or the coal was mined out. The permitting review process would continue because even if the coal were mined out, reclamation would have to be conducted under the requirements of the Utah Regulatory Program approved January 21, 1981.

Alternative II: Disapproval of the Permit Application Package

Disapproval of the applicant's permit would result in permanent closure of the existing mining operation. All facilities are in place at the Des-Bee-Dove Mine Complex, so this alternative would not result in long-term impacts greatly different from Alternative I. The most noticeable impact would be socioeconomic in nature, resulting in the permanent loss of jobs in the area. Under this alternative, the mine operator would begin reclamation at the disturbed area, resulting in revegetation and a slight increase and improvement in wildlife habitat. Reclamation plans would have to be brought up to permanent program standards.

The impact unique to this alternative would be the loss of approximately 8.3 MM tons of coal reserves for use in UP&L's Hunter Power Plant.

25

III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

3.1 Geologic Setting

The three UP&L mines, including the Des-Bee-Dove, are located in the central Utah coal basin. The coal seams are located in the lower 150 feet of the Blackhawk Formation. Below the Hiawatha seam is the Starpoint Sandstone, which is a marker bed between the Blackhawk and the Mancos Shale. The Castlegate Sandstone is located approximately 750 feet above the Blind Canyon seams. This massive sandstone is almost 200 feet thick in this area and is a prominent cliff former. Above this is the Price River Formation of interbedded shales and sandstones. This formation forms the cap of East Mountain in the Des-Bee-Dove area. All of these noted formations are part of the Mesa Verde Group. East Mountain is deeply dissected and overburden above coal seams is usually much less than the total thickness of all formations.

3.2 Soils

Soils occurring within the proposed permit area are composed of five soil mapping units. These units are Typic Cryochrepts-Lithic Cryorthents-rock outcrop; Pachic Cryoborolls; Typic Torriorthents; Typic Cryoborolls, and Chipeta-Badlands Complex. Adjacent to the disturbed areas, soil units included the Comodore-Beenow Complex and the Rock Outcrops-Rubble Land-Sunup Gravelly Loam Complex. The native soils are generally shallow and extremely rocky, and exhibit low productivity. On the disturbed areas, surface materials are composed of cut-and-fill materials as well as mine- generated spoil and coal wastes.

3.3 Hydrologic Resources

The Des-Bee-Dove Mine Complex facility is located on a 20-acre site in an unnamed canyon wash on the southern perimeter of East Mountain. The unnamed wash is tributary to Grimes Wash, and eventually to Cottonwood Creek. The watershed above the sediment pond has an area of 298 acres, of which 86 acres are located above the facilities area.

The natural terrain is rocky, steep and sparsely vegetated. All drainages within the permit area are ephemeral. When runoff upstream of the facilities area occurs, it is collected by a series of surface ditches and routed to the Deseret sediment pond.

The Des-Bee-Dove Mine Complex does not intercept significant quantities of ground water. Where ground water has been encountered, its flow (less than 10 gpm) has rapidly diminished. The water-producing areas of the mine are assumed to represent isolated pockets of stored ground water.

Two springs were identified within the Des-Bee-Dove permit area. Both springs occur within the Price River Formation and are associated with the Deer Creek and Bear Creek Faults. These two

faults, averaging 100 to 180 feet of displacement, essentially isolate the Des-Bee-Dove hydrologic system from the overall hydrologic systems of East Mountain. The two faults appear to be both a local recharge and discharge area for the ground-water system. Recharge to ground-water sources in the Des-Bee-Dove permit area is low due to an arid climate (less than 14 inches of precipitation per year).

3.4 Vegetative Resources

The permit area contains five distinct vegetation communities, all of which are representative of the steep canyons and mountains of central Utah, and are described as follows: pinyon-juniper, salt-desert shrub, mixed conifer, grassland, and sagebrush. Only the first two communities have been disturbed by mine facilities. The pinyon-juniper community is dominated by pinyon pine and Utah juniper in the overstory, and curlleaf mountain mahogany in the sparse understory. The salt-desert shrub com- munity is dominated by cuneate saltbush, shadescale, and Salina wildrye.

3.5 Fish and Wildlife

Wildlife species inhabiting the mine permit area and vicinity are typical for this region of the Wasatch Plateau and no critical habitats for threatened or endangered wildlife species occur in the areas disturbed or to be disturbed by mining operations. The bald eagle is a winter visitor to the region but will not be affected by mine activities.

Cliffs in the vicinity of the mine portal and facilities area represent potentially valuable cliff-nesting habitat for several species of raptors (e.g. golden eagle, red-tailed hawk, and prairie falcon). Wooded habitats within the permit area also provide nest sites for tree-nesting species such as northern goshawk, Cooper's hawk, sharp-shinned hawk, redtailed hawk, American kestrel, and screech owl.

Mule deer occur within the mine plan area year-round. During the summer they are found predominantly in habitats at the mid to upper elevations in the permit area (e.g. mixed conifer, sagebrush, and grassland). In the winter, habitats (especially pinyon-juniper) at the lower elevations along the benches and slopes of the southern portions of East Mountain in the vicinity of the Des-Bee-Dove Mine Complex are designated by the Utah Division of Wildlife Resources (UDWR) as high-priority mule deer winter range.

3.6 Land Use

Surface ownership of the Des-Bee-Dove Mine Complex and facilities area is private (UP&L Co.). The majority of the surface acreage within the mine permit area is either privately owned or is Federal (BLM and USFS) and Federal (1,877) acres. The remaining surface acreage is private (920 acres) and State (50 acres).

Preminins lond uses in the disturbed orcos ossociotod with the Dec-Bee-Dove Mine Complex were livestock grazing and wildlife habitat. Land use on and adjacent to the permit area consists of recreation, mining, wildlife habitat, and limited livestock grazing.

3.7 Topography

The Des-Bee-Dove facilities area is constructed within the upper reaches of an unnamed wash on East Mountain. The natural topography of the area is rocky and extremely steep, with slopes extending to vertical cliffs. The hillslope above the mine is formed by interbedded shales and sandstones and massive sandstone beds. The massive sandstone layers form vertical cliffs over much of the hillside.

The main surface facilities are built on five earthen structures. The hillside has been excavated to form additional work area for the opera- tions. The sediment pond is located further down the wash where the terrain is less steep.

3.8 Air Resources

The applicant is currently using several fugitive-dust control practices at the Des-Bee-Dove Mine Complex. The applicant proposes to continue these practices throughout the life and subsequent reclamation of the mine site.

The main service road and parking lots are asphalt surfaced. Service roads to the mine portals are gravel surfaced. Vehicular traffic on these roads is controlled to minimize contribution of fugitive dust. Service roads are used daily at low speeds for access by service and labor person- nel. The steep natural terrain restricts unauthorized travel on other than established roads and limits vehicle speeds on roadways that are established.

Fugitive dust control procedures are implemented in the coal handling process. The high moisture content of the coal at Des-Bee-Dove Mine Complex provides dust control throughout the coal handling process.

3.9 Socioeconomics

The Des-Bee-Dove Mine Complex was temporarily idled until January 14, 1983. Until this time, the Wilbers miner workforce (317 employees) were unemployed and waiting to begin working in the Des-Bee-Dove Mine Complex. Prior to the shut-down at the Des-Bee-Dove Mine Complex, the company employed 165 workers. The balance of the Wilbers workforce will work at the Deer Creek Mine. The current and projected population of the affected area is as follows:

	1983 Population	1990 Population
Carbon County, Utah		
Emery	11,313	17,479

	Helper	3,217	3
971			
	Emery County, Utah		
	Huntington	2,594	
2,976			

* Source: Utah State Planning Coordinator's Office, 1983.

Other communities within commuting distance of the mine include Castle Dale, Ferron, and Orangeville in Emery County.

The Des-Bee-Dove/Wilberg Junction Road was constructed in 1983 following public review and comments on the environmental impact statement for Emery Units 3 and 4. The road is not presently permitted.

Additional information regarding the socioeconomic environment of this area may be found in the Bureau of Land Management's "Round II Final Environmental Impact Statement, Uinta-Southwestern Utah Coal Region," October 1983.

3.10 Cultural Resources

See Addendum A.

IV. ENVIRONMENTAL IMPACTS OF THE PROPOSED ALTERNATIVE

4.1 Soils

Most of the soils in the Des-Bee-Dove Mine Complex facilities area, sedimentation pond, and haul road, were lost during construction in association with mining operations. The disturbed areas are dominated by rock outcrop, rubble land and shallow, stony residual soils. There is no suitable topsoil borrow site within the permit area.

There are five major fills at the Des-Bee-Dove Mine Complex. With the proposed reclamation plan, one fill would provide soil substitute material for final contouring and grading. Soil analyses of the fill materials have shown this material to be suitable as a topsoil substitute for reclamation. Microbial population and organic matter content will be increased by temporary reclamation practices, used to stabilize the fill. Following grading, seedbed material will be sampled to test for fertilizer requirements and to identify localized high EC and SAR concentrations. Fertilizer will be broadcast prior to planting. Given the marginal nature of the pre-existing soils and postmining vegetation success on reapplied soil in the West, the impact of the proposed alternative on the Des-Bee-Dove soils will be limited.

4.2 Surface-Water Hydrology

All surface drainage facilities are designed to safely control water and sediment runoff from all disturbed areas. In addition, surface water originating from undisturbed lands upstream of the sediment pond will be controlled. Storm runoff from above and within the mine facilities area is collected in a system of open ditches, bermed roadways and culverts and is discharged to the tributary below the facilities area. Immediately downvalley and at the mouth of the drainage, a sediment pond collects the runoff and sediment yield from the disturbed areas.

The sediment pond is designed to detain the 10-year, 24-hour storm. It should be noted that when the design event is exceeded (i.e. storm events larger than the 10-year, 24-hour storm), sediment detention times will be reduced, leading to a slightly higher sediment loading in Grimes Wash. Runoff from 298 acres of ephemeral wash will be temporarily detained in the Des-Bee-Dove sediment pond. This water will be released to Grimes Wash following the required 24-hour detention. The surface-water impact associated with the Des-Bee-Dove Mine Complex operations will be minimal.

At the end of mining and reclamation, impact to the surface water system will be minimal. It is not anticipated that dewatering of the springs by mining activities or associated subsidiaries will take place. The two springs located on the permit area are hydrologically connected to a major fault system (100 to 180 feet of displacement). Should mining at the Des-Bee-Dove affect the recharge/discharge characteristics of the fault system, the loss of these two springs will have negligible impact on the surface-water system.

Reclamation of the drainage at the Des-Bee-Dove Mine Complex will consist of removing the temporary drainage system, diversion and sedimentation pond. A permanent channel will be constructed on the original bedrock. A riprap-lined channel will be constructed across the tipple yard fill. All channels are designed to pass the 100-year, 24-hour runoff peak flow. The proposed surface-water reclamation plan will have negligible impact on water quantity or quality of Grimes Wash.

4.3 Ground-water Hydrology

Relative to other underground mines, Des-Bee-Dove is a "dry" mine. Significant ground-water inflow has been measured on two occasions, and these rapidly diminished. Hence, it is not anticipated that significant dewatering of the overlying aquifers is occurring. The applicant is monitoring springs and seeps in the general area.

The dry nature of the Des-Bee-Dove Mine Complex contrasts with the wet conditions in the Wilberg and Deer Creek Mines which underlie a major portion of East Mountain. The conclusion is that saturated ground-water conditions do not occur within the proposed mined areas in the Des-Bee-Dove permit areas. Underlying water tables will be influenced by mining operation only to the extent that recharge to these aquifers is altered. At the present time recharge is being augmented by imported water from the Wilberg Mine. The effect of this recharge on ground-water levels in lower strata is probably slight.

The Des-Bee-Dove Mine Complex will be extracting a maximum of 16 feet of coal from two seams at average depths of 1,300 to 1,600 feet. The two springs are located in the overlying Price River Formation. The thickness of the overburden separating the mining activities from the springs should be sufficient to limit any subsidence-induced dewatering.

Based on the available data, it can be concluded that the Des-Bee-Dove mining operation will not significantly impact ground-water resources during or following the operational phases of the mine.

4.4 Vegetative Resources

The main facility area has displaced a total of 70 acres of pinyon-juniper vegetation. An additional 4.5 acres of salt-desert shrub vegetation has been displaced by the Deseret sedimentation pond. The construction of the haul road has affected 50 acres of pinyon-juniper and salt-desert shrub communities. During mining, certain fill sites within the facilities area will be stabilized by a temrorary revegetation mix to (1) control erosion, (2) evaluate revegetation methodologies, and (3) develop an alternate soil-substitute material. Following mining, the disturbed area will be regraded and revegetated. After the area is successfully revegetated, no long-term impacts are expected, as vegetation communities must be sufficiently recovered before the company's bond is released.

4.5 Fish and Wildlife Resources

Surface disturbance associated with the Des-Bee-Dove Mine Complex total approximately 74.5 acres. Mining activities have affected the pinyon-juniper (70 acres) and salt-desert shrub (4.5 acres) vegetation types, and these areas will remain devoid of wildlife habitat for the life of the mine until reclamation is successful. None of the areas affected represent any critical habitats for threatened or endangered species. Because of this and the limited areal extent of surface disturbance, wildlife impacts resulting from loss of habitat will remain relatively minor.

What about the 50 acres of road?

Other mine-associated wildlife impacts that may be more significant than direct loss of habitat include: (1) mule deer road-kills, (2) human harassment of all wildlife, (3) disruption of mule deer movement patterns by the haul road, (4) potential effects of subsidence on springs, and (5) potential effects of mining and subsidence on raptor cliff nesting habitat. The potential for mule deer road-kills is most serious during the winter when mule deer congregate in critical winter range traversed by the Des-Bee-Dove/Wilbers Junction Road. UP&L is working with the Utah Division of Wildlife Resources (UDWR) to mitigate impacts to mule deer through an employee education program and establishment of improved habitat.

The effects of human harassment on wildlife, either inadvertent or purposeful, should be considered from a cumulative standpoint since at least three other mines are currently operating along the southern end of East Mountain. Since premining baseline data for wildlife populations in the area are lacking, these effects are very difficult to quantify.

useless statement

Mine-related subsidence is not expected to impact springs within the Des-Bee-Dove permit area. The total spring flow within the permit

area is small in comparison to the total spring flow on East Mountain. Monitoring and protection of East Mountain springs will protect the general hydrologic balance from the cumulative effects of the Wilberg and Deer Creek Mines Complex.

At a minimum, mine activities will likely preclude raptor nesting use of cliff nest sites within one kilometer of the Des-Bee-Dove Mine Complex facilities area. The effect of subsidence on raptor cliff nesting habitat ~~will be~~ would be minor. Subsidence at a cliff face will simply create new cliff face that will provide equivalent nesting habitat. In the event that a nest is constructed in the permit area (none currently exist) and a subsidence event occurs that affects that nest, the permit requires the mine operator to work closely with State and Federal agencies to mitigate damage to the nest site.

Overall, these potential mining-induced effects on fish and wildlife resources are considered as an unavoidable adverse impact (BLM, 1979, p. 8-87).

4.6 Land Use

Surface disturbance associated with the Des-Bee-Dove Mine Complex will remain until reclamation is completed following mine closure. Land-use impacts resulting from surface disturbance will be relatively minor since these areas have already been disturbed and will not be expanded. In addition, premining grazing use of these areas was limited because of steep slopes and generally low levels of available wildlife forage.

4.7 Topography

Impacts associated with the backfilling and grading of the facilities area at the mine are minimal. During the backfilling and grading operation, the minesite will be disturbed by the operations. This will increase erosion rates, and will require that surface-water control structures be maintained until vegetation is established. The applicant has provided a plan which adequately addresses those concerns and ensures mass stability and revegetation of the slopes. The facilities area will be regraded to a suitable landform. All benches will be graded to essentially their premining condition, except for structure No. 1. In order to provide a suitable grade for revegetation and slope stabilization, all final surfaces will be graded to a 1V:2H. The haul road will be reclaimed by returning 40 percent of the original excavated material. This reclamation plan will include a final cut structure, averaging 50 feet high. Such a structure is not inconsistent with the surrounding landforms. The Utah Regulatory Program does not require the reclaimed topography to approximate the original topography.

but it does have 45 feet of 1:3 (should be added)

4.8 Subsidence

Mining operations at the Des-Bee-Dove Mine Complex have resulted in the lowering of the ground surface by a maximum of 2.5 feet since

1980. The total amount of subsidence which has occurred is unknown, since mining operations predated all monitoring programs. Two possible subsidence scenarios exist at the Des-Bee-Dove Mine Complex. Where thick layers of Castlegate Sandstone or Price River Formation exist, the surficial effects of subsidence will be moderated. A uniform lowering of the surface would be expected. The magnitude of the lowering will be a function of the thickness of cover, and the thickness of extracted coal. Uneven settling of the land surface may occur as barrier pillars restrict the subsidence, or as retreat mining progresses. Uneven subsidence will result in tilting of the land surface and possible failure into naturally oversteepened slopes. The second possible subsidence scenario may occur where the Price River Formation and Castlegate Sandstone are absent. In this case surface cracking may occur along barrier pillars or extraction panels. To date, however, no fracturing of the surface has been observed in these shallow cover areas.

Where the applicant has mined below sandstone escarpments (Castlegate, Price River), significant fracturing has occurred. Such fracturing has weakened the structural integrity of these cliffs. However, the limited escarpment fracturing that has or will occur will have negligible impact on the use of the cliffs as wildlife habitat.

Current analytical techniques are limited in identifying possible impacts and require further data collection as mining progresses. The worst-case analysis indicates that some slope failure might occur which could alter the appearance of the slopes, cause some surface cracking, or topple some blocks from the ridges. This could pose a hazard to persons hiking in the area or using the road. However, this risk is not excessive given the natural ruggedness of the terrain and spalling of rock through natural erosion processes. These impacts will occur over an extended period of time in scattered portions of permit area. In areas where maximum extraction occurs, the subsidence may occur within a few years. If subsidence is dependent upon pillar failure, then subsidence may take decades to occur.

4.9 Air Resources

Those activities which produce the most dust are coal haulage below the mine, coal handling, and surface winds over the disturbed area. The impacts of dust pollution at the mine are significantly reduced by the relatively small area of surface disturbance and various dust control measures outlined in the description of the affected environment in this document.

4.10 Socioeconomics

The socioeconomic impacts attributable to this permit action would be beneficial to Orangeville, Utah. Assuming average annual production resumes, the majority of the 165-person workforce would be rehired by the company from the local area (i.e. Price, and Helper in Carbon County and Huntington, Castle Dale, Ferron, and

Orangeville in Emery County). The unemployment rate is projected to remain at 13 percent throughout 1985; therefore, the majority of mine-associated population would come from the local area. Since little in-migration is anticipated, the increased employment level at the mine will not have an adverse cumulative socioeconomic effect on the area. Repermitting at this time would allow use of this Des-Bee-Dove/Wilbers Junction road, which is now unpermitted. Use of the road would eliminate all coal haul-truck traffic from the town of Orangeville, as well as some additional vehicular traffic accessing the mine. The applicant is currently using the Des-Bee-Dove/Wilbers Junction Road under an emergency order issued by the Utah Board of Oil, Gas and Mining.

4.11 Cultural Resources

See Addendum A.

V. IMPACTS OF ALTERNATIVES

5.1 Alternative I

No action would allow the operator to continue operating under the interim permit until a permit decision was resolved or the coal was mined out. However, the Des-Bee-Dove/Wilbers Junction Road could not be used past mid-February when the Utah Board's emergency order expires. The impacts would be the same as the preferred alternative except that additional effort would be expended in continuing the permitting process for the application.

5.2 Alternative II

Disapproval of the applicant's permit would shut down the existing Des-Bee-Dove mining operation and reclamation of the present disturbance would commence. Under the requirements of SMCRA, the reclamation of the site must be conducted under the requirements of the approved Utah Regulatory Program. Should the applicant/operator fail to obtain such approval, the regulatory authority would be required to initiate reclamation following forfeiture of the performance bond. Given the 13-year life of the mine and the prospects of no additional surface disturbance, this alternative would provide few additional environmental benefits. One possible benefit would be a slight reduction in subsidence. The impact of this alternative would be the loss of approximately 165 jobs and approximately 8.3 MM tons of coal reserves. It is possible that UP&L would use some of its existing staff for reclamation operations.

VI. REFERENCES

Bureau of Land Management, 1979. Final Environmental Impact Statement, Emery Units 3 and 4. BLM, Washington, D.C.

Bureau of Land Management, 1983. Final Environmental Impact Statement: Uinta-Southwestern Utah Coal Region, Round II Coal Leases. BLM, Washington, D.C., October.

U.S. Geological Survey, 1979. Final Environmental Impact Statement: Development of Coal Resources in Central Utah, U.S.G.S., Washington, D.C.

Environmental Assessment

Addendum A

Wilbers, Deer Creek and Des-Bee-Dove

Cultural Resources

A. Description of Existing Environment

A single all inclusive inventory of the three Utah Power and Light mines was conducted in 1980 by Archaeological-Environmental Research Corporation and included intensive inventories of proposed surface disturbance areas and a sample inventory of areas potentially impacted by subsidence. The resulting report summarized previous work in the lease area including surv- vey of areas around drill hole locations and 160 acres sample units in con- junction with the central Utah coal project. Areas surveyed include the Wilbers, Des-Bee-Dove and Deer Creek mines in Emery County, Utah. A total of eight sites and 12 isolated finds have been recorded and include one historic site and seven prehistoric sites. Four of the sites (42 EM 1308, 1309, 1310, 1633) are considered elisible for nomination to the National Register of Historic Places. None of the elisible sites were in an area of proposed surface disturbance though potential impacts from subsidence may occur in the future.

B. Description of Applicant's Proposal

OSM's administrative review of the cultural resources documentation sub- mitted with the UP&L permit applications identified several inadequacies that required the submission of additional information. The applicant has submitted the required information.

C. Evaluation of Compliance

Applicant's Compliance: Acceptance and implementation of the proposed Special Stipulations (Section E) will indicate that the applicant is in compliance with all applicable regulations and legislation.

OSM Compliance: OSM has received concurrence from the Utah State Historic Preservation Officer concerning elisibilities of sites (recommended as elisible: 42EM 1308, 1309, 1310, 1663 - recommended as not elisible: 42EM 853, 854, 855, 1307), and in a finding of "No Effect" if the permit is approved.

D. Revision to Applicant's Proposal

If the plan is approved, the applicant will satisfy the permit conditions identified in Section E.

E. Proposed Permit Conditions

Special Permit Condition: At such time that OSM, in consultation with the Division of Oil Gas and Mining and the SHPO, determines that subsidence within the permit area may adversely affect known or unrecorded cultural sites, additional cultural resources studies may be required. This deter- mination will be based on new subsidence or cultural resource information and clear justification will be presented to the applicant.

F. Summary of Compliance

The applicant will be in compliance if the condition in Section E is adhered to. OSM is in compliance. SHPO concurrence has been received, and by ensuring that the proposed permit conditions are followed.

G. Proposed Departmental Action

The Secretary can approve the application with the proposed Special Stipulations following receipt of SHPO concurrence with recommendations concerning site elisibility and project effect.

H. Residual Impacts of Proposed Departmental Action Sites which are currently considered inelisible for nomination to the NRHP will be directly impacted and an unknown number of sites will be indirectly affected.

Cultural resources that are considered insignificant today may contain information that would be recognized as significant in the future. These sites could be adversely affected, making future data recovery impossible. Unknown cultural resources may also be adversely affected through operator activities, vandalism and unauthorized collection.

I. Alternatives to the Proposed Action

One alternative would be disapproval of the permit. Another would be to require complete inventory of the permit area and avoidance of all cultural resources during construction of surface facilities. Neither of these alternatives is appropriate.

The preferred alternative is to approve and implement the requirements stipulated in Section E. This allows the applicant to proceed and allows OSM to comply with all applicable Federal legislation and regulations.

UNITED STATES DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
ECOLOGICAL SERVICES
2060 ADMINISTRATION BUILDING
1745 WEST 1700 SOUTH
SALT LAKE CITY, UTAH 84104-5110

(ES) January 11, 1985

MEMORANDUM

TO: Acting Deputy Administrator
Technical Service Center West
Office of Surface Mining
Denver, Colorado

ATTN: Mark Humphrey

FROM: Field Supervisor

SUBJECT: Completeness Review, Des-Bee-Dove Mine, Utah Power and Light UT-0015

This letter completes our most recent review of the Des-Bee-Dove mine plan relating to the outstanding concerns of our agency. These concerns were verbally transmitted to Mr. Mark Humphrey on January 8, 1985. We believe that they can readily be addressed through stipulations or as mitigating measures.

Specific concerns are:

- The road constructed in 1983 connecting the Wilberg and Des-Bee-Dove mines should be mitigated for significant wildlife impacts. This road apparently crossed critical deer winter range. The Company should commit to mitigation that satisfies both the Bureau of Land Management and Utah Division of Wildlife Resources. Possible mitigation for the 86.5 acres of new surface disturbance is enhancement of deer winter range to maintain the carrying capacity of the critical habitat and hazards to deer resulting from construction design or traffic should be analyzed and hazards minimized.

- Eagle nests in Sections 14 and 24 may be affected by subsidence if mining occurs under their supporting cliffs. If mining is conducted under the nests, mining methods should be employed that prevent destruction of the nests or nestlings. Failure to prevent these losses would place the Company and the approving

agencies in violation of "The Bald Eagle Act". Determination of mitigating measures for these potential losses should be deferred until this situation exists and the resultant opportunities for mitigation are known. Due to the potential for subsidence, a monitoring plan should be developed (such as had been planned for the South Lease of the Wilberg Mine prior to the recent fire) to identify and quantify impacts of subsidence prior to mining under escarpments sheltering raptor nests.

Please advise it this does not fulfill your requirements for concurrence and additional information is required.

Robert L. McCue

cc: DWR, Salt Lake City, Utah
DWR, Price, Utah
OGM, Salt Lake City, Utah
ARD/HR, Denver, Colorado

UT0015

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ENDANGERED SPECIES OFFICE
1406 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138-1197

IN REPLY REFER TO:

January 16, 1984

TO: Branch Chief, Utah Task Force
Office of Surface Mining, Denver, Colorado

FROM: Field Supervisor, Endangered Species Office
U. S. Fish and Wildlife Service, Salt Lake City, Utah

SUBJECT: Wilberg, Deer Creek and Des-Bee-Dove Mines-Amendment to Species List

On January 10, 1984 we sent you a memorandum providing you with a species list for the subject mines. The only species listed was the canyon sweetvetch (Hedysarium accidentale var. canone). Your letter of December 14, 1983 requesting a species list only provided the name and location of the mines, no indication of the type of mine or operation. Therefore we could only assume surface disturbance at or in the vicinity of the mine.

It was recently brought to our attention by our Regional Office that these and other mines are expected to utilize water from the upper Colorado River system. If this is the case, then the species list should be amended to include the Colorado squawfish (Ptychocheilus lucius) and the humpback chub (Gila cypha). This same amendment would apply to any other species list which we have previously provided for mines which obtain water from the same source. Our concern with these projects stems from the need to analyse the impacts of the depletions of water from the river on identified minimum flows and the need to contribute to the conservation program designed to compensate for the loss of water from the system.

In the future it will be appreciated if your request for a species list will be more informative as to the type of mining operation and the source of any natural resources which may be utilized in the operation. This will allow us to provide a more complete speices list for each project.

Your assistance in this matter will be appreciated.

Fred L. Bolwahnn

UT0015

United States Department of the Interior

FISH AND WILDLIFE SERVICE
ENDANGERED SPECIES OFFICE
1406 FEDERAL BUILDING
125 SOUTH STATE STREET
SALT LAKE CITY, UTAH 84138-1197

IN REPLY REFER TO:

January 10, 1984

MEMORANDUM

TO: Branch Chief, Utah Task Force
Office of Surface Mining, Denver, Colorado

FROM: Field Supervisor, Endangered Species Office
U. S. Fish and Wildlife Service, Salt Lake City, Utah

SUBJECT: Wilberg, Deer Creek and Des-Bee-Dove Mines

We have reviewed your memorandum of December 14, 1983 concerning the Wilberg, Deer Creek and Des-Bee-Dove mines in Emery County, Utah. No species currently listed by the Fish and Wildlife Service as either threatened or endangered are in the vicinity of these mines and we do not expect any impact to listed endangered species. We would like to bring to your attention, however, the rare and restricted plant species canyon sweetvetch (Hedysarium occidentale var. canone) which is under review for possible listing as threatened or endangered in the future (see F.R. Vol. 45, No. 242 pp. 82480 & 82513). This species may occur in areas to be impacted by mining operations in the Wasatch Plateau in Emery County, Utah. Dr. Stanley Welsh of Brigham Young University in Provo, Utah (tele. no. 801/378-2289) and Mr. Robert Thompson of the U. S. Forest Service in Price, Utah (tele. no. 801/637-2817) are the individuals most familiar with the canyon milkvetch.

Fred L. Bolwahnn

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
Moab District
P. O. Box 970
Moab, Utah 84532

OSM-WTC
1985 JAN 11 AM 9:04
RECEIVED

JAN - 9 1985

3482
U-02664
(U-067)

Memorandum

To: Western Technical Center, OSM, Denver

Attention: Allen Klein

From: District Manager, Moab

Subject: Concurrence with Approval of PAP Including Addition of a Haulage Road to the Des-BeeDove Mine Plan, Utah Power and Light Company

We have no objection to adding to the permit application package (PAP) the haulage road between the Des-Bee-Dove Mine and the Wilberg haulage road. This road has been completed with all necessary rights-of-way and permits required by the BLM. It also is compatible with our land use plans. Adding the road to the PAP will have no effect on the resource recovery and protection plan (R^2 P^2). In fact, the road is essential to the mine now that Utah Power and Light Company's Des-Bee-Dove Mine must supply coal to the Hunter Power Plants due to the disaster at the Wilberg Mine.

We therefore give our concurrence to approval of the subject PAP including the addition of the coal haulage road.

cc: USO (U-921)

United States Department of the Interior

BUREAU OF LAND MANAGEMENT
UTAH STATE OFFICE
324 SOUTH STATE, SUITE 301
SALT LAKE CITY, UTAH 84111-2303

IN REPLY REFER TO
3482
SL-051297
(U-921)

OSM-WTO
RECD JAN 14 AM 8 58

January 11, 1985

Doesn't Belong

Memorandum

To: Utah Senior Project Manager, OSM, Denver

Attn: Mark Humphrey

From: Chief, Mining Law and Solid Minerals, BLM-SO, Salt Lake City

Subject: Soldier Creek Coal Company, Soldier Canyon Mine, Carbon County, Utah, Permit Application Package (PAP)

Additional information was received from OSM after the Resource Recovery and Protection Plan (R_2P_2) for the subject mine was considered adequate for BLM administration of the associated Federal coal leases. The supplemental data to the subject PAP was reviewed and commented on in our memorandum dated December 17, 1984. The pages forwarded with your letter dated November 2, 1984, and identified as "10/02/84 submittal of revisions for mining and reclamation plan, additional vegetation information" were also reviewed at that time. Your November 2, 1984, letter was not listed in our memorandum dated December 17, 1984

This memorandum will record that we determined there were no conflicts with the R_2P_2 part of the subject PAP in the November 2, 1984, submittal.

J. Th. Maffitt

cc: Moab DO
Soldier Creek
PRRA
DOGM

United States Department of Agriculture
Forest Service
Manti-LaSal National Forest
599 West Price River Drive
Price, Utah 84501

Reply to: 2820

Date: January 3, 1985

Mr. Allen D. Klein, Administrator
OSM - Reclamation and Enforcement
Brooks Towers - 1020 15th Street
Denver, Colorado 80202

Dear Mr. Klein:

The Forest Service received a copy of Utah Power and Light's Mining and Reclamation Plan (MRP) for the Des-Bee-Dove Mine on December 28, 1983. We have not yet received the draft Technical Analysis. Consequently, our review encompassed only the 1983 MRP and subsequent revisions through the November 8, 1984 submittal.

Our comments are as follows:

Volume I, Page 2-70 The analysis of the over-burden samples tested show that in general no toxic or hazardous materials are present.

The above statement implies that toxic or hazardous materials were found during sample testing. If specific hazardous or toxic materials were found we need to know what they were and the measures taken for their disposal. If no toxic or hazardous materials were found, then the words in general should be deleted from the sentence.

Volume II, Page 4-6 Any other material found to be toxic.....are to be handled in the same manner.

The Forest Service does not allow the burying of toxic waste on National Forest System lands.

Volume II, Page 4-30 A survey to locate structures on East Mountain that could be affected by subsidence has been completed and none were located above Des-Bee-Dove Mine.

A spring and water trough in the NW¼NW¼SW¼, Section 23, Township 16 South, Range 8 East, SLBM, needs to be identified and protected. The spring needs to be added to the water monitoring stations.

Volume IV, Map 1-1 This map shows some unleased land within the permit area. These lands are NE¼SE¼, Section 26, and NW¼SW¼, N½SW¼SW¼, Section 25, Township 17 South, Range 7 East. Utah Power and Light is occupying these lands under a Special Use Permit issued by the Forest Service, so the jurisdiction is still with the Forest Service. These lands need to be excluded from the permit area.

Map 4-1 Final Reclamation Map

Sheet 2 of 5 shows a drainage channel being proposed to be reestablished out of the bottom of the natural channel. The channel needs to remain at the lowest part of the natural channel.

Sheet 2 of 5 also shows a closed gate within the switchback area. The gate needs to be left where it is, down the canyon from the switchback area.

Because the above comments may be readily corrected and to expedite your permitting process, I will consent for the Forest Service to the Des-Bee-Dove MRP. This consent is, of course, subject to our receipt and review of the Technical Analysis and satisfactory response to our comments on both documents.

Sincerely,

Reed C Christensen

REED C. CHRISTENSEN
Forest Supervisor

JAN 08 1985

Reed C. Christensen, Forest Supervisor
Manti-La Sal National Forest
599 West Price River Drive
Price, Utah 84501

Dear Mr. Christensen:

The Office of Surface Mining (OSM) Western Technical Center, has received your concurrence comments regarding the Dee-Bee-Dove mine complex dated January 3, 1985. Many of the comments noted in in your letter are issues addressed by Utah Power and Light Company in their permit application.

The following information responds to issues in your letter:

1. "Volume I, Page 2-70 The analysis of the overburden samples tested show that in general no toxic or hazardous materials are present."

"The above statement implies that toxic or hazardous materials were found during sample testing. If specific hazardous or toxic materials were found we need to know what they were and the measures taken for their disposal. If no toxic or hazardous materials were found, then the words in general should be deleted from the sentence".

Sampling methods are based on statistical probability and unless a 100 percent sampling method is used, no one can definitely state that there are no toxic or hazardous materials within the permit area. Therefore the words "in general" are acceptable to OSM.

2. "Volume II, Page 4-6 Any other material found to be toxic ..... are to be handled in the same manner."

"The Forest Service does not allow the burying of toxic waste on National Forest System lands".

A condition to the permit will be included in the Surface Mining Control and Reclamation Act (SMCRA) permit that precludes Utah Power and Light Company from burying toxic materials on National Forest System lands without written permission from the U.S. Forest Service.

3. "Volume II, Page 4-30 A survey to locate structures on East Mountain that could be affected by subsidence has been completed and none were located above Des-Bee-Dove mine".

"A spring and water trough in the NW1/4NW1/4SW1/4, Section 23, Township 16 South, Range 8 East, SLBM, needs to be identified and protected. The spring needs to be added to the water monitoring stations".

The legal location above is incorrect according to Mr. Sam Hotchkiss (T. 17 S., R. 8 E. is correct). The spring has been noted in OSM's technical analysis and Utah Power and Light Company currently monitors this spring. OSM hydrologist have found that the Deer Creek fault is the source of the spring, which is recharged from the westside of the fault. Therefore, Des-Bee-Dove mine complex should not have a dewatering effect on the spring.

4. "Volume IV, Map 1-1"

"This map shows some unleased land within the permit area. These lands are NE1/4SF1/4, Section 26, and NW1/4SW1/4, Section 25, Township 17 South, Range 7 East. Utah Power and Light is occupying these lands under a Special Use Permit issued by the Forest Service, so the jurisdiction is still with the Forest Service. These lands need to be excluded from the permit area".

The only land to which this comment applies are the Forest Service special use permit areas. As we have discussed with representatives of the Manti-La Sal National Forest on a number of previous occasions, such activities within the special use permit areas are integral to underground coal mining activities as defined in UMC 700.5, these activities fall under the requirements of the Surface Mining and Reclamation Act of 1977, and must be considered part of the mining permit area.

5. "Map 4-1 Final Reclamation Map"

a. "Sheet 2 of 5 shows a drainage channel being proposed to be reestablished out of the bottom of the natural channel. The channel needs to remain at the lowest part of the natural channel."

The channel designed must remain as proposed by Utah Power and Light Company in order to be in compliance with Utah permanent regulatory program (UMC 817.72) and Federal regulations (30 CFR 817.72). These requirements prohibit the company from establishing surface water flow across a valley fill. In any case, it would be very difficult to design and construct stable structures to bring a stream down the face of a valley fill.

b. "Sheet 2 of 5 also shows a closed gate within the switchback area. The gate needs to be left where it is, down the canyon from the switchback area."

A condition to the permit will be included in the Surface Mining Control and Reclamation Act (SMCRA) permit that precludes Utah Power and Light Company from removing the gate from National Forest System lands without written permission from the U.S. Forest Service.

I hope that these responses and the forecoming technical analysis satisfactorily address the Forest Service comments itemized in your letter. If you have any further comments or questions, please call either Mark Humphrey or Walter Swain at (303) 844-3806.

Sincerely,

Allen Klein
Administrator
Western Technical Center

cc: Robert Hagen, OSM- Albuquerque
Dianne Nielsen, DOGM
Mary Boucek, DOGM
Ed Browning, USFS

6307A:MRH:1/23/85

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WESTERN TECHNICAL CENTER

SCOTT M. MATHESON
GOVERNOR

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

MELVIN T. SMITH, DIRECTOR
300 RIO GRANDE
SALT LAKE CITY, UTAH 84101-1182
TELEPHONE 801/533-5755

March 16, 1984

Rex L. Wilson, Chief Archeologist
Western Technical Center
Office of Surface Mining
Reclamation and Enforcement
Brooks Towers
1021 15th Street
Denver, Colorado 80202

RE: Utah Power & Light Company's Des-Bee-Dove, Deer Creek, and Wilberg Mines, Emery County, Utah

In Reply Refer To Case No. E416

Dear Mr. Wilson:

The Utah Preservation Office has received for consideration your letter requesting consultation on eligibility and effect of cultural resources located in connection with Utah Power & Light Company's Des-Bee-Dove, Deer Creek, and Wilberg Mines.

After review of your letter, and the site forms in our files, our office would concur with the Office of Surface Mining's determination of eligibility for 42Em1308, 1309, 1310, and 1633. Secondly, our office would concur with the determination of non-eligibility for sites 42Em853, 854, 855, and 1307. Lastly, considering that none of the recommended eligible sites will be impacted by proposed surface disturbance activities, our office would concur with your determination of no effect on these eligible sites.

The above is provided on request as information or assistance. We make no regulatory requirement, since that responsibility rests with the federal agency official. However, if you have questions or need additional assistance, please let us know. Contact Jim Dykman at 533-7039.

Sincerely,

Wilson G. Martin
Deputy State Historic
Preservation Officer

WGM:jrc:E416/0215V

UNITED STATES
DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING

This permit, UT-0015, 1/85, which incorporates Utah Permit ACT-015-017, is issued for the United States of America by the Office of Surface Mining (OSM) to:

Utah Power and Light Company
1407 W. North Temple
Salt Lake City, Utah 84116

for the Des-Bee-Dove Mine Complex. Utah Power and Light Company is the lessee of Federal coal leases U-02664, SL-050133, and SL-066116.

Sec. 1 STATUTES AND REGULATIONS - This permit is issued pursuant to the Surface Mining Control and Reclamation Act of 1977, 30 U.S.C. 1201 et seq., hereafter referred to as the Act, and the Federal coal lease(s) issued pursuant to the Mineral Leasing Act of February 15, 1920, as amended, 30 U.S.C. 181 et seq., the Federal Coal Leasing Amendments Act of 1976, as amended 30 U.S.C. 201 et seq. and in the case of acquired lands, the Mineral Leasing Act for Acquired Lands of September 7, 1947, as amended, 30 U.S.C. 351 et seq. This permit is also subject to all regulations of the Secretary of the Interior including, but not limited to, 30 CFR Chapter VII and 43 CFR Part 3400, and to all regulations of the Secretary of Energy promulgated pursuant to Section 302 of the Department of Energy Organization Act of 1977, 42 U.S.C. 7152, which are now in force or, except as expressly limited herein, hereafter in force, and all such regulations are made apart hereof.

Sec. 2 The permittee is authorized to conduct surface coal mining and reclamation operations on Federal lands (as shown on the Ownership Map 1-2 in the permit application) as well as on such other lands within State permit ACT-015-017 affecting or affected by those operations on Federal lands within the Des-Bee-Dove Mine Complex permit area situated in the State of Utah, Emery County, and located within:

Township 17 South, Range 7 East, Salt Lake Meridian;

Section 11, E1/2, E1/2 W1/2; Section 12, W1/2 NW1/4, NW1/4 SW1/4; Section 13, SE1/4 SW1/4; Section 14, W1/2, W1/2 E1/2, NE1/4 NE1/4, SE1/4 SE1/4; Section 23, all; Section 24, W1/2, W1/2 SE1/4; Section 25, W1/2 SW1/4; Section 26, N1/2, N1/2 SE1/4, NE1/4 SW1/4; Section 34, SE1/4 NE1/4, NE1/4 SE1/4; Section 35, W1/2 SW1/4, Portions of the E1/2 E1/2; Section 36, Portions of the N1/2 NW1/4;

Township 18 South, Range 7 East, Salt Lake Meridian:

Section 2, Portions of the W1/2 NE1/4, Portions of the NE1/4 SW1/4;

and to conduct surface coal mining and reclamation operations on the foregoing described property subject to the conditions of the leases, the approved mining plan, and Utah State permit ACT 015017, issued May 11, 1978, including all conditions, and all other applicable conditions, laws and regulations.

Sec. 3 The term of this permit is for 5 years from the date of issuance, except that this permit will terminate if the permittee has not begun the surface coal mining and reclamation operations covered herein within 3 years of the date of permit issuance.

Sec. 4 The permit rights may not be transferred, assigned, or sold without the approval of the Director, OSM. Request for transfer, assignment, or sale of permit rights must be done in accordance with 30 CFR 740.13(e) and UMC 788.17-.19.

Sec. 5 The permittee shall allow the authorized representatives of the Secretary, the Utah Division of Oil, Gas and Mining, including but not limited to, inspectors and fee compliance officers, without advance notice or a search warrant, upon presentation of appropriate credentials, and without delay to:

a. Have the rights-of-entry provided for in 30 CFR 842.13 and UMC 782.15.

b. Be accompanied by private persons for the purpose of conducting an inspection in accordance with 30 CFR 842.12 and UMC 842.12, is in response to an alleged violation reported by the private person.

Sec. 6 The permittee shall conduct surface coal mining and reclamation operations only on those lands specifically designated as being within the permit area on the maps submitted in the mining plan and permit application and approved for the term of the permit and which are subject to the performance bond.

Sec. 7 The permittee shall minimize any adverse impact to the environment or public health and safety resulting from noncompliance with any term or condition of this permit, including, but not limited to:

a. Accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;

b. Immediate implementation of measures necessary to comply; and

c. Warning, as soon as possible after learning of such noncompliance, any person whose health and safety is in imminent danger due to the noncompliance.

Sec. 8 The permittee shall dispose of solids, sludge, filter backwash, or pollutants removed in the course of treatment or control of waters or emissions to the air in the manner required by the approved Utah State Program and the Federal Lands Program which prevents violation of any applicable State or Federal law.

Sec. 9 The permittee shall conduct its operations:

a. In accordance with the terms of the permit to prevent significant, imminent environmental harm to the health and safety of the public; and

b. Utilizing methods specified as conditions of the permit by Utah Division of Oil, Gas and Mining and OSM in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program, and the Federal Lands Program.

Sec. 10 The permittee shall provide the names, addresses, and telephone numbers of persons responsible for operations under the permit to whom notices and orders are to be delivered.

Sec. 11 Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with SMCRA, the approved Utah State Program and the Federal Lands Program.

Sec. 12 If during the course of mining operations previously unidentified historic properties are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify UDOGM and OSM. UDOGM, after coordination with OSM shall inform the permittee of necessary actions required.

Sec. 13 The operator shall pay all reclamation fees required by 30 CFR Chapter VII, Subchapter R, for coal produced under this permit.

Sec. 14 APPEALS - The permittee shall have the right to appeal: (a) under 30 CFR 775 from actions or decisions of any official of OSM; (b) under 43 CFR 3000.4 from an action or decision of any official of the Bureau of Land Management; (c) under 30 CFR 290 from an action, order, or decision of any official of the Bureau of Land Management; or (d) under applicable regulations from any action or decision of any other official of the Department of the Interior arising in connection with this permit.

Sec. 15 SPECIAL CONDITIONS - The permittee shall comply with the terms and conditions set out in the lease(s) and this permit. In addition, the permittee shall comply with the conditions appended hereto as Attachment A. These conditions are also imposed upon the permittee's agents and employees. The failure or refusal of any of these persons to comply with these conditions shall be deemed a failure of the permittee to comply with the terms of this permit and the lease. The permittee shall require his agents, contractors, and subcontractors involved in activities concerning this permit to include these conditions in the contracts between and among them. In accordance with 30 CFR Part 774 (1983) these conditions may be revised or amended, in writing, by the mutual consent of the grantor and the permittee at any time to adjust to changed conditions or to correct an oversight. The grantor may, by order, require reasonable revision of this permit to ensure compliance with the act and the regulatory program.

OFFICE OF SURFACE MINING

By: _____.
Administrator, Western Technical Center

. _____.
Date

ATTACHMENT A

Special Conditions

This should be the same wording as that under Section 1.3 (Condition #1)

1. Within 30 days of permit approval, a plan for the Des-Bee-Dove/Wilberg Junction Road identifying sampling and analytical techniques must be submitted to the regulatory authority for approval prior to soil sampling. The results from the soil analyses, identification of the best available topsoil substitute materials, estimates of material volumes for final reclamation, and a commitment to selectively place the best suitable topsoil substitute material during final reclamation operations must be submitted to the regulatory authority no later than 6 months after permit approval. At a minimum, the analyses must include data on soil texture, pH, EC, SAR, N, P, and K. A sufficient number of samples must be taken to adequately characterize this material.

Use the same stipulation as that in the Deer Creek TA (Section 2.3)

2. The permittee must commit to developing a mitigation plan, in consultation with the USFWS and regulatory authority, should potential subsidence related impacts to raptor nests constructed on escarpments be anticipated during the life-of-mine.

3. Within 30 days of permit approval, the permittee shall revise the desert shrub seed mix such that a minimum of 40 grass seeds per square foot of pure-live seed (PLS) is provided.

What about Condition #2 under Section 10.3?

4. Within 30 days of permit approval, the permittee must submit:

   a. a revised sediment control plan to be implemented during and after final reclamation,

   b. and a time table for reclamation after achieving the required effluent limitations from the sediment pond site.

5. If toxic materials are encountered at the Des-Bee-Dove Mine Complex, the permittee shall either obtain written permission from the Forest Supervisor (Manti-La Sal National Forest)and the regulatory authority to bury toxic-waste material on National Forest System lands, or submit for approval, by the regulatory authority an alternate site for burying toxic waste material.

6. The permittee shall either obtain written permission from the Forest Supervisor (Manti-La Sal National Forest) to relocate the access gate to the mine facilities from its current location to the proposed postmining location, or submit a commitment to leave the gate at its current location.

When?

7. Within 30 days of permit approval, the permittee must demonstrate that the long-term stability of the cut structure at station 125+00, along the Des-Bee-Dove/Wilberg Junction Road meets the 1.5 safety static factor requirement for UMC 817.101(b)(1).

TECHNICAL ANALYSIS

DES-BEE-DOVE MINE COMPLEX

Office of Surface Mining

Western Technical Center

1020 15th Street

Denver, Colorado 80202

TECHNICAL ANALYSIS

DES-BEE-DOVE MINE COMPLEX

Office of Surface Mining

Western Technical Center

1020 15th Street

Denver, Colorado 80202

INTRODUCTION

Utah Power & Light Company of Salt Lake City, Utah, has submitted an underground mining and reclamation permit application (PAP) for the Des-Bee-Dove Mine Complex in Emery County, Utah, in compliance with the Coal Mining and Reclamation Permanent Program (Chapter I) of the State of Utah. The permit area and mining plan area consist of 2,847 acres and will be mined to the year 1998 (life-of-mine). The term of permit is five years, with right of successive renewal for the permit area, which is the life of mine. The Des-Bee-Dove Mine Complex is presently operating under an interim mining permit issued by the State of Utah, Division of Oil, Gas and Mining (UDOGM) (Act/015/107) issued on May 11, 1978.

The Des-Bee-Dove Mine Complex is one of three separate mine facilities owned by Utah Power & Light Company (UP&L). They are located in the area of East Mountain (T17S, R7E), and are largely within the Manti-La Sal National Forest. The three mines are the Wilberg, Deer Creek, and Des-Bee-Dove, containing three mineable coal seams: the Hiawatha, Cottonwood, and Blind Canyon. Only two of these seams exist in the Des-Bee-Dove Mine Complex. These are mined in three mines: the Deseret, Beehive and Little Dove. The Hiawatha (lower) seam is mined through the Deseret mine. The Blind Canyon (upper) seam is mined through the Beehive and Little Dove Mines. The anticipated life-of-mine production is near 9.3 MM tons. Total in-place reserves within the Des-Bee-Dove Mine boundaries are approximately 17.2 MM tons. The mining plan consists of a system of mains and sub-mains connecting a series of room-and-pillar continuous mining sections. Estimated annual production averages 725,000 tons.

UP&L acquired the Des-Bee-Dove Mine Complex in 1972 from the Deseret Coal Company, a Latter Day Saints (L.D.S.) Church welfare project. The L.D.S. Church and the Castle Valley Fuel Company mined the property from 1938, to 1947, when the Mormon Church bought the Castle Valley Fuel operation. From 1936 to 1938 the mine workings were operated by two men, Edwards and Broderick. Mining began in the canyon in 1998 as the Griffith Mine.

The Des-Bee-Dove surface facilities are located in three areas: a 20.0 acre canyon site in an unnamed wash on the southeastern perimeter of East Mountain; on 50 acres of haul road connecting the Wilberg Mine and Des-Bee-Dove Mine Complex (both owned by UP&L); and a 4.5-acre sediment pond and storage site below the main facilities area. Surface facilities at the main site include the following: earthen structures, coal stockpile, tipple, facility conveyors, parking lot, office-bathhouse, warehouse, underground shop, materials storage areas, access and service roads, mine ventilation fans, power supply and substation, potable water system, sewer treatment system, and drainage systems. There are 17 portals associated with the mine, all of which, with the exception of two ventilation portals, are located at the main facilities area.

Coal Leases

The 2,847 acres contained in the Dee-Bee-Dove permit area cover all or part of the following federal coal leases:

	Coal Lease Area
U-02664	920 acres
SL-050133	80 acres
SL-066116	520 acres

Other owners of coal to be mined in the Dee-Bee-Dove permit area include:

The Estate of Malcolm McKinnon	48 acres
UP&L	1,000 acres

how can UP&L lease the other owner?

Other lands for which UP&L has right of entry:

	Area
State of Utah Special Use Lease Agreement No. 436	40 acres
U.S. Forest Service (USFS) Special Use Permit	100 acres
Bureau of Land Management (BLM) Permit for Haul Road	28 acres
Forest Service Permit for Haul Road	9 acres
State of Utah Permit for Haul Road	50 acres

Description of Operations

The Dee-Bee-Dove Mine Complex is a multi-seam operation utilizing room and pillar techniques for coal extraction. The mine is located in the Central Utah coal basin and will be operating in an area known as East Mountain. Full extraction is planned in the panel sections where pillars will be pulled. Extensive areas in both seams have already been mined in this operation.

III. HYDROLOGIC BALANCE - GROUND WATER

3.1 Applicant's Proposal

The hydrologic monitoring in the Des-Bee-Dove Mine Complex shows the mine workings to be essentially dry (see page 3-28, PAP Vol. 2). Significant ground-water inflow to the mines has been measured on two occasions (see PAP, Vol. I, page 2-73) and these rapidly diminished. The water-producing areas of the mines are, therefore, assumed to represent isolated pockets of stored ground water.

The dry nature of the Des-Bee-Dove Mine Complex contrasts to the wet conditions in the Wilberg and Deer Creek Mines. This is attributed to the fact that the displacement of the Deer Creek fault effectively separates the mine from the source of ground water on East Mountain and that recharge over the permit area is low.

Data on the piezometric gradient in the underlying Starpoint Formation are presently being collected from within the Deer Creek Mine. The applicant has stated in the 1984 Hydrologic Monitoring Report (page 39) that no piezometric level has been observed for the Starpoint Sandstone, indicating that the piezometric level is below the level penetrated by the drill holes.

As part of the applicant's hydrologic monitoring program for East Mountain, two springs in close proximity of one and other are monitored at one point where the first spring flows into the source of the second spring. The flow generated from the first spring is insufficient to measure, therefore both springs are measured together. Both springs occur in the Price River formation near the Deer Creek and Bear Creek faults. The remaining area of the permit is without springs or seeps.

3.2 Evaluation of Compliance of Proposal

UMC 817.13-.15 Casing and Sealing of Underground Openings

All surface drilled holes have been reclaimed according to the Geologic Survey's published Drill Hole Plugging Procedure and meets these regulatory requirements.

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

The underground development waste disposal area is shared by the Wilberg Mine and Des-Bee-Dove Mine Complex. To avoid inconsistent references on both operation and reclamation of this single area, the Des-Bee-Dove PAP has included the design features of this area by reference. Issues unique to the Des-Bee-Dove Mine Complex affecting operation and reclamation of this disposal area were not identified. The regulatory authority therefore refers to the Wilberg Technical Analysis for the discussion of the operation and reclamation of the waste rock disposal site. The applicant was found to be in compliance with the requirements of this section in the Wilberg Technical Analysis (see Permit Number UT-0001, 3/84).

UMC 817.50 Hydrologic Balance: Underground Mine Entry and Access Discharges

The portals of the Des-Bee-Dove Mine Complex will not discharge water from the underground workings (see pages 4-1 and 3-28, PAP Vol. 2). The applicant is in compliance with the requirement of this section.

UMC 817.52(a) Hydrologic Balance: Ground-water Monitoring

One spring is monitored within the Des-Bee-Dove permit area. Monitoring of springs in the Wilberg and Deer Creek Mine permit areas is also conducted by the applicant (see 1984 Hydrologic Monitoring Report for example). The applicant's hydrologic monitoring of ground water for the Des-Bee-Dove permit area is in compliance when considered as part of the applicant's overall hydrologic monitoring program.

UMC 817.53 Hydrologic Balance: Transfer of Wells

No transfer is planned.

UMC 817.55 Hydrologic Balance: Discharge of Water Into an Underground Mine

Inflows to the Des-Bee-Dove Mine Complex from the Wilberg Mine are reported by the applicant on a monthly basis in the hydrologic monitoring report. Data are submitted quarterly.

3.3 Conditions

None.

IV. PROBABLE HYDROLOGIC CONSEQUENCES

4.1 Applicant's Proposal

The applicant reports the land surface above the Des-Bee-Dove Mine Complex to be generally dry. The mine workings are also dry. Two springs are present in the permit area in an area where both seams of coal have been first mined. Monitoring of one spring has shown no impact to the flow of this spring to date. The applicant concludes that it is highly unlikely that mining will have any effect on the hydrologic regime in the area.

4.2 Evaluation of Compliance of Proposal

UMC 817.41 Hydrologic Balance: General Requirements

The Des-Bee-Dove Mine Complex is essentially a dry mine, meaning that saturated ground-water conditions do not occur within the strata from which coal is extracted. There is a long history at the mine complex for the need to import water for use in mining operations. The applicant's statement that the mine is dry (see

The seams which will be recovered are the Blind Canyon seam and, approximately 100 feet below, the Hiawatha seam. Mining operations plan to recover the uppermost seam first then the lower seam. Approximately 390 acres of mineable coal remain in the Hiawatha seam and 558 acres in the Blind Canyon seam that are accessible from the Dee-Bee-Dove Mine Complex. The minimum seam thickness that can be economically recovered is five feet. This limit defines the horizontal extent of mining in many areas. The thickness of coal in the mine area reaches 16 feet, though 10 feet appears to be about average.

Geologic Setting

The coal seams are located in the lower 150 feet of the Blackhawk Formation. Map 2-4 (PAP, Vol. 4) shows four cross-sections through the mine area. Below the Hiawatha seam is the Storrspint Sandstone which is a marker bed between the Blackhawk Formation and the Mancos Shale. Located approximately 750 feet above the Blind Canyon seam is the Castlegate Sandstone. This massive sandstone is almost 200 feet thick in this area and is a prominent cliff former. Above the Castlegate Sandstone is the Price River Formation, which is sandstone interbedded shale and conglomerate and is approximately 350 feet thick. The North Horn Formation lying above the Price River Formation is composed of interbedded shales and sandstones. This formation forms the cap of East Mountain in the area of the Dee-Bee-Dove Mine Complex. Figure 2-2 (the page after 2-60; PAP Vol. 1) shows the general stratigraphy of the mine area. All of the above noted formations occurring above the Mancos Shale are part of the Mesa Verde Group.

Renewable Resources

Renewable resources exist above the mine, however, no structures exist in the area over the mine except for unimproved access roads. The renewable resources that exist are springs, seeps, grazing land, timber and wildlife habitat. The springs and seeps are shown on Map 2-11 (PAP, Vol. 4). The Ground Water section of this Technical Analysis (Charter III) provides a detailed description of the hydrologic characteristics of the springs and seeps. In general, the springs emanate from the North Horn Formation on East Mountain. Only two springs emanate from the North Horn Formation within the Dee-Bee-Dove permit area and these occur on or near major faults.

Land uses above the mine include deer summer range, elk winter range, and raptor habitat (Map 2-19; PAP, Vol. 5). The raptor habitat generally follows the sandstone outcrops in the eastern section of the mine area.

Hydrologic Resources

The natural terrain of the permit area is rocky, dry and very steep, with moderate vegetation. The watershed above the sediment pond has an area of 298 acres, of which 86 acres are located above the facilities area (Figure 1, Appendix VII, PAP, Vol. 3). All streams

in the permit area are ephemeral with runoff occurring only in response to periods of intense rainfall. Average annual precipitation is approximately 14.0 inches. Estimated annual surface runoff for the Cottonwood basin (see Cottonwood CHIA; page 2.5A) is 4.3 inches. Total annual surface runoff from watersheds in the Des-Bee-Dove permit area is probably less than 2.0 inches with evaporation accounting for 10.0 inches and deep percolation to a ground-water table another 2.0 inches.

Historically, the Des-Bee-Dove mining operations have not produced water. As a result, water has been imported to the mines for such purposes as dust control, bathing and sanitation. Sources of imported water have included a pipeline from Burnt Tree Spring, several miles to the west; and delivery of water by tanker truck. The recent source of water is via a pipeline from the Wilberg Mine to a sump in the Little Dove Mine. Since the Wilberg Mine was closed as a result of a fire on December 19, 1984, the applicant has rehabilitated a system which allows water to be pumped up to the mine from the sediment pond. Contact with isolated (or 'meteoric') bodies of ground water has occurred on two occasions (UP&L Hydrologic Monitoring Program Annual Report for 1983, page 45).

The permit area is bounded on the west by the Deer Creek and Bear Creek faults. The Des-Bee-Dove permit area is not overlain by the Flagstaff Formation which is the main recharge area for ground water on East Mountain. Two springs occur in the permit area, both associated with the Deer Creek and Bear Creek faults. The absence of springs in the permit area and the lack of ground-water inflow to the mines is largely for two reasons. First, the lateral flow of ground water is disrupted by the displacement of the Deer Creek and Bear Creek faults. Second, the recharge rate is low since the permit area is located on a portion of East Mountain that receives low precipitation.

Vegetative Resources

Vegetation information can be found on pages 2-102 through 2-120 (PAP; Vol. 1) and in Appendix II. The revegetation plan is discussed on pages 4-11 through 4-22 (PAP; Vol. 2).

The permit area includes five major vegetation types, including mixed conifer, pinyon-juniper, sagebrush; grass; and salt-desert shrub. Only pinyon-juniper and salt-desert shrub communities have been disturbed by mine facilities. Pinyon-juniper communities occur on steep rocky slopes with a southern exposure and on more gentle terrain at lower elevations. At the lowest elevations the pinyon-juniper type grades into the salt desert shrub community.

Baseline data were not collected. The main facility area was constructed prior to the enactment of SMCRA. The Deseret sediment pond and Des-Bee-Dove/Wilberg Junction Road were constructed after enactment of SMCRA. Reference areas were selected and sampled from representative locations within the permit area.

The main facility area has displaced a total of 20 acres of vegetation from the pinyon-juniper community. An additional 4.5 acres of salt-desert shrub vegetation have been displaced by the Deseret Sedimentation Pond, along with 30 acres of salt-desert shrub displaced by the Dee-Bee-Dove/Wilbers Junction Road. It is expected that this acreage will be lost for the duration of mining and reclamation. Comparisons of similarity between each of the two reference areas and estimates of the pre-disturbance characteristics of respective disturbed communities are presented on page 2-113 (PAP, Vol. 1). The indices of similarity showed values of 83.3 and 97.3 percent for reference areas of pinyon-juniper and salt-desert shrub, respectively.

Field investigations revealed no threatened or endangered species present near any area of disturbance. The Office of Endangered Species, U.S. Fish and Wildlife Service (USFWS) provided a letter on August 13, 1983, stating that they have found no potential conflict with the proposed action.

Soils

Soils occurring within the proposed permit area are composed of four soil mapping units. These soils are Typic Cryochrepts - Lithic Cryorthents - Rock Outcrop, loamy-skeletal, shallow association, 40 to 60 percent slopes; Pachic Cryoborolls, loamy and loamy skeletal, 10 to 25 percent slopes; Typic Cryoborolls, loamy and loamy skeletal, 25 to 40 percent slopes; and Chipeta - Badlands complex, 10 to 25 percent slopes, eroded.

Due to previous mining operations, little soil remains on disturbed areas. The final graded surface to be used as a seedbed will be composed primarily of cut, fill, and mine-generated spoil materials. The pH of selected spoil samples ranged from 7.1 to 8.8 with coal waste samples having values of 7.1, 7.5, and 10.0. Electrical conductivity values for coal wastes and spoil samples taken in 1980 and 1983 were low, ranging from 0.3 to 2.5. Sodium adsorption ratios were relatively low for most materials analyzed in 1980 (< 1.0) and somewhat higher for materials analyzed in 1983 (2.76 to 3.28). Nitrogen, phosphorous and potassium levels were generally low for all samples analyzed. Percent saturation values for 1983 fill samples ranged from 20 to 30, indicating coarse spoils with relatively low water-holding capacity. Textures of 1980 fill samples were primarily sandy loam. Textures of 1983 samples were sandy clay loam (two samples) with the remaining sample a sandy loam. Soil sampling information for the Deseret sediment pond and sludge disposal area does not exist as topsoil was determined by the Office of Surface Mining (OSM) and UDOGM to be absent (Applicant's response to 90A, 1/27/84). Mancos shale was present in the surrounding area associated with a thin layer of poor soil material derived from Mancos Shale and badland parent materials. No soil information was presented for the Dee-Bee-Dove/Wilbers Junction Road portion of the permit. It can be assumed from the proximity of the road to the sediment pond that soils which had overlain this road are of comparable quality to those associated with the sediment pond.

The soils which are found adjacent to the disturbed area include the Comodore-Beenam Complex (Co-Be), 40 to 60 percent slopes, and the Rock Outcrop - Rubble Land - Sunup Gravelly loam (Ro-R-S), 40 to 70 percent slopes. The Co soil (50 percent of unit) is shallow and well drained and primarily supports mixed conifer vegetation. The Be soil (40 percent of unit) is also shallow and well drained and primarily supports grass vegetation. The Rock Outcrop is from sandstone and shale with Rubbleland boulders from sandstone (75 percent of unit). The S soils (25 percent of unit) are shallow and formed in material derived from sandstone. Permeability is moderately rapid in the soil above the rock.

Fish and Wildlife Resources

Wildlife species inhabiting the mine permit area and vicinity are typical for this region of the Wasatch Plateau and no critical habitats for threatened or endangered wildlife species occur in the areas disturbed or to be disturbed by mining operations. The bald eagle is a winter visitor to the region but will not be affected by mine activities.

Cliffs in the vicinity of the mines and facilities area represent potentially valuable cliff-nesting habitat for several species of raptors (e.g. golden eagle, red-tailed hawk, and prairie falcon). Wooded habitats within the permit area also provide nest sites for tree-nesting species such as northern goshawk, Cooper's hawk, sharp-shinned hawk, red-tailed hawk, American kestrel, and screech owl. A 1982 U.S. Fish and Wildlife raptor survey for cliff-nesting species identified one inactive golden eagle nest (#87) approximately 1,500 feet southeast of the Des-Bee-Dove Mine Complex area. Map 2-17 (PAP, Vol. 5) gives the location of the nest site. The USFWS has made recommendations concerning protection of raptor nest sites on or in the vicinity of the permit area in its letter dated November 17, 1981.

Mule deer occur within the mine plan area year-round. During the summer, they are found predominantly in habitats at the mid to upper elevations in the permit area (e.g., mixed conifer, sagebrush, and grassland). In the winter, habitats (especially pinyon-juniper) at the lower elevations along the benches and slopes of the southern portions of East Mountain in the vicinity of the Des-Bee-Dove Mine Complex are designated by the Utah Division of Wildlife Resources (UDWR) as high-priority mule deer winter range. Map 2-19 (PAP, Vol. 5) shows the location of mule deer winter range in relation to the mine permit area. The Des-Bee-Dove/Wilbers Junction Road traverses high-priority mule deer winter range. A high priority designation is given by the UDWR to "intensive use areas" for one or more species of wildlife. (For mule deer, high-priority range is synonymous with mule deer winter range.)

?

Page 10 of this document says this is "Critical winter range"

What does this mean?

Land Use

Surface ownership of the Des-Bee-Dove Mine Complex, including the facilities area and haulroad, is Federal (1,877 acres), private (720

acres) and State (50 acres) Mineral ownership within the permit area consists of Federal and fee coal. No oil or gas wells have been drilled within the permit area; and no gas or oil fields are known for the south end of East Mountain.

Premining land uses in the disturbed areas associated with the Dee-Bee-Dove mine were livestock grazing and wildlife habitat. Land use on and adjacent to the permit area consists of recreation, mining, wildlife habitat, and limited livestock grazing. Land use and local land use classifications are shown on Map 2-17 (PAP, Vol. 5). Recreational use of the permit area occurs primarily as hunting and sightseeing on East Mountain.

Coal mining in the vicinity of the Dee-Bee-Dove Mine Complex began as early as 1893. UP&L Co. has operated the Dee-Bee-Dove Mine Complex since 1972. No information on production, prior to UP&L Co. ownership, is available.

No farming or commercial forest harvesting has occurred within the permit area. In the vicinity of the mine facilities, steep, rocky terrain, poor soils, and low precipitation preclude any potential for farming. The predominance of rugged terrain and rocky cliffs also limits livestock grazing in the vicinity of the mine portal and facilities. BLM grazing allotments in the vicinity of the mine portal area are judged in fair condition with a downward trend. Range condition for USFS land on East Mountain above the mine portal area is judged as good, with a static to upward trend. Pinyon-Juniper and desert shrub are the only vegetation types that have been disturbed by surfacing mining activities. Total productivity of Pinyon-Juniper ranges from 25 to 100 lbs/acre (dry weight) on the steep rocky slopes, as estimated by the applicant; to 300 to 324 lbs/acre (dry weight) on the benches, as estimated by the U.S. Forest Service. Desert shrub range productivity is estimated at 100 to 295 lbs/acre (dry weight).

I. TOPSOIL

1.1 Applicant's Proposal

General

The applicant provided a soils map and corresponding discussion which generally characterized the soils (to subgroup) occurring over the entire permit area (PAP Vol. 1, pp. 2-129 to 2-139). Mapping corresponded basically to an Order III-IV Soil Conservation Service (SCS) survey. With the exception of possible subsidence effects, these soils will not be disturbed by mining operations.

Mine Area Proper

The area to be affected by mining operations in the surface facility area at the mine proper (approximately 20 acres) has been disturbed by previous mining activities. No soil exists on the area to be redisturbed. A general survey of cut, fill and immediately adjacent

soils was conducted and submitted. In 1980, a sampling program was initiated to characterize fill material which would serve as the planting medium following final grading (Vol. 2, Tables I and II, pp. 4-9 and 4-10). Additional sampling was conducted in 1983 to further evaluate the physical and chemical characteristics of fill material and coal wastes (see Tables I and II as cited above).

Because the Dee-Bee-Dove Mine Complex site is located on a previously disturbed site where no topsoil was salvaged, existing cut-and-fill material will constitute most of the seedbed material following grading. This medium, based on chemical and physical analysis, is considered generally suitable for reclamation given the absence of topsoil materials. Electrical conductivity (EC) and sodium adsorption ratios (SAR) are within acceptable limits. One pH value (8.8) was relatively high, though EC and SAR values for the sample were low. Textures ranged from sandy loam to sandy clay loam. Water-holding capacities are low (Vol. 2, Tables I and II, pp. 4-9 and 4-10).

Since soil material is lacking for reclamation, the applicant proposes to develop a substitute soil by temporarily reclaiming various existing fill slopes which will not be disturbed during mining operations (see Section X, Revegetation). Surface material of these slopes, through temporary reclamation, will increase in organic matter content and microbial populations thereby providing a planting medium superior to existing fill materials. At the onset of grading, this "topsoil" (cut-and-fill seedbed material) would be stripped from the reclaimed slopes and temporarily stockpiled. As grading is completed, this "topsoil" would be redistributed on newly graded surfaces to a depth of 6 to 12 inches at random locations over the site to enhance reclamation potential.

Sediment Pond

The soil overlying the sediment pond disturbance was characterized to complex level (Vol. 2, pp. 2-130 and 2-131). Series and mapping unit descriptions were provided for the soil assumed to have overlain the disturbance. These soils are derived from Mancos Shale and badland parent material. The soils are shallow, well drained and alkaline. Low plant productivities are characteristic of these soils. Fill material stockpiled during construction of the sediment pond will be redistributed during grading and contouring. Grading and recontouring will follow dewatering of the pond (Vol. 2, pp. 4-17 to 4-22).

Haul Road

The Dee-Bee-Dove/Wilbers Junction Road is constructed upon the Masuk tongue of the Mancos Shale on layers of terrace debris which, in places, overlies the Mancos Shale (Vol. 1, revised p. 2-70). Topsoil was not salvaged at the time of construction. The applicant has not provided the results of soil laboratory analysis for the proposed topsoil substitute material. The applicant proposes to use road fill material as a topsoil substitute and sample the fill areas

during the 1985 field season. In the absence of this information, and considering the proximity of the road to the sediment pond, it can be assumed for the purposes of this analysis that these soils characteristics roughly parallel the soils associated with the sediment pond disturbance. Following the conclusion of mining, road culverts will be removed and the pond graded prior to revegetation. is this supposed to be road or pond

Seedbed material of all disturbances (mine proper, sediment pond, haul road) will be sampled following grading for requirements and to detect the presence of localized high EC and SAR concentrations. Fertilizer will be broadcast prior to planting according to soil test results (Vol. 2, pp. 4-16 and 4-19).

1.2 Evaluation of Compliance of Proposal

UMC 817.21 Topsoil: General Requirements

The applicant has not provided laboratory analysis data for topsoil substitute material to be used to reclaim the Des-Bee-Dove/Wilbers Junction Road disturbance. The regulatory authority believes that because this disturbance includes most of the acreage associated with the application, such data are necessary. This information must be supplied for the applicant to be in compliance with this section.

UMC 817.22 Topsoil: Removal

The applicant has not removed topsoil prior to construction of the Deseret sediment pond and the Des-Bee-Dove/Wilbers Junction Road.

UMC 817.23 Topsoil: Storage

The applicant has not stored topsoil for final reclamation of the Deseret sediment pond and the Des-Bee-Dove/Wilbers Junction Road.

UMC 817.24 Topsoil: Redistribution

The applicant has not removed or stored topsoil nor identified suitable topsoil substitute material for redistribution over the graded Des-Bee-Dove/Wilbers Junction Road.

UMC 817.25 Topsoil: Nutrients and Soil Amendments

The applicant is in compliance with this section.

1.3 Conditions

1. Within 30 days of permit approval a plan identifying sample techniques must be submitted to the regulatory authority for approval prior to sampling. The results from the soil analyses and estimated material volumes for final reclamation and a commitment to identify and selectively place the best suitable topsoil substitute material for use in final reclamation operations must be submitted to the regulatory authority no later than 6 months after permit approval. At a minimum, the analyses must include data on soil

texture, pH, EC, SAR, N, P and K. A sufficient number of samples must be taken to adequately characterize this material.

II. HYDROLOGIC BALANCE - SURFACE WATER

2.1 Applicant's Proposal

The Des-Bee-Dove Mine Complex facility is located on a 20-acre site in an unnamed canyon wash on the southern perimeter of East Mountain. The natural terrain is rocky, dry and very steep, with moderate vegetation. The off-mine portions of the facilities include a haul road from the Wilbers Mine to the Des-Bee-Dove Mine, a waste rock disposal area (permitted under the Wilbers Mine), and the sedimentation pond. The watershed area is 298 acres, with 86 acres of undisturbed area above the mine.

Diversion ditches and a sediment pond are used to protect the surface hydrologic balance (see pages 3-27 to 3-28, 3-38 to 3-41, PAP, Vol. 2, Appendix VII; PAP Vol. 3). The runoff from the undisturbed area above the mine site is bypassed through the facilities area using a series of open channels and culverts. Storm runoff from within the mine facilities area is collected in a system of open ditches, bermed roadways and culverts, and discharged to the tributary below the mine facilities. Immediately downvalley of the mine facilities, a sediment pond detains runoff and sediment yield from 298 acres of watershed, including 20 acres of disturbed area. The right of way for the haul road is 86 acres in size, 50 acres of which is disturbed by the roadway. Drainage for the roadway is provided by ditches and culverts.

The upper pad contains the Little Dove and Beehive Mines. Discharge from the undisturbed area above these mines reaches the pad over the top of the Beehive Mine. Historically, this inflow has been used to augment the supply of water available for mining operations in the Des-Bee-Dove Mine Complex. The applicant proposes to construct a controlled diversion structure that will collect runoff from the undisturbed area and discharge it down a specially designed road section to a large-diameter culvert (see Map 3-11, PAP Vol. 5 for detailed drawings of the drainage plan) at the switchback above the Tipple. This culvert discharges down a sandstone cliff face to a concrete-lined stilling basin located on the Tipple fill. Discharge from the stilling basin is conveyed in an asphalt-lined channel to a riprap-lined channel that extends over the remainder of the Tipple fill. The road to the Tipple has been relocated and a dip crossing provided in the asphalt-lined channel for traffic accessing the facilities area pursuant to requirements under UMC 817.153(a) and (e). The riprap-lined channel transitions to another large culvert section, and then to a half round pipe section that conveys the flow to the bottom of the Tipple fill and into the natural drainage channel. A riprap energy dissipator is provided at the base of the Tipple fill. The conveyance system is designed to contain the 10-year, 24-hour storm and provides 1.0 foot of freeboard in the open channel segments of the design. The design accounts for superelevation and is conservative in calculating energy dissipation requirements.

The runoff from the mine facilities area is collected by a system of open ditches, bermed roadways and culverts that have a capacity to convey the peak runoff from a 10-year, 24-hour storm. The system is shown on Map 3-8 (PAP, Vol. 5).

Because of limited space within the mine facilities area and precipitous landforms surrounding the Des-Bee-Dove Mine Complex, the sedimentation pond was located down-valley of the main facilities area and placed at the mouth of the dry wash that drains the mine site. The storage requirement for the pond is 19.7 acre-feet, which includes 17.7 acre-feet of runoff and 2.0 acre-feet of sediment. The total pond capacity is 19.7 acre-feet. The design runoff volume was determined using a rainfall excess of 0.7 inches (corresponding to a SCS curve number of 85 and a rainfall depth of 1.9 inches) for the 10-year, 24-hour storm over 298 acres of the watershed. The sediment storage volume of 2.0 acre-feet is based on 0.1 acre-foot/acre sediment yield over a disturbed area of 20 acres. The applicant's annual sediment yield reaching the pond to date has been about 1.0 acre-feet.

The sediment pond has withstood a major storm event (2.3 inches). The amount of sediment and debris trapped in the pond required a significant cleanup effort (see page 3-41-C, PAP, Vol. 2). A sediment disposal area was established during cleanup adjacent to the sediment pond. The final configuration of the disposed sediment has a surface area of 0.93 acres and an average height of 35 feet. Runoff from the sediment storage site is channeled to the sediment pond for treatment (see Surface Drainage Map, MRP Amendment for Des-Bee-Dove Mines, June 12, 1984).

The Des-Bee-Dove Mine Complex to Wilbers Mine haul road crosses a topographic feature known as Danish Bench. The road is 2.3 miles in length and has numerous culverts that bypass runoff from ephemeral channels on Danish Bench. There are four culverts in excess of 24 inches in diameter and 19 24-inch-diameter culverts that provide roadway drainage. Of the large diameter culverts, one conveying flows for Grimes Wash (station 232+20 Map 5-1, Sheet 11 PAP Vol. 6) has an end area greater than 35 feet. Additional discussion regarding the hydraulic design of the culvert system for the haul road is given in Chapter 11 of this technical analysis (TA).

Reclamation of the drainage at the Des-Bee-Dove Mine Complex will consist of removing the temporary drainage system and the diversion, and at the end of the bonding period, the sediment pond. All fills will be removed above the tipple yard, which will result in a permanent channel on the original bedrock material. A riprap-lined channel will be constructed across the tipple yard fill. This channel will discharge down a riprap fan off the end of the fill, returning to the original channel. Two smaller channels will be built to prevent water from flowing onto the fill from the canyon sides and to prevent water from flowing over the steep down-valley face of the fill. All channels are designed to pass the 100-year, 24-hour runoff peak flow. The details of the reclamation drainage plan are shown on Maps 4-1 through 4-3 (PAP, Vol. 5).

A significant feature of the reclamation drainage plan is the bypass channel and riprap fan for conveying flows across the tipple yard fill. The applicant has proposed to leave the fill in place. The channel is routed along the north side of the fill, then down the riprap fan located off the fill itself. The channel will be riprap-lined (mean diameter of 1.25 feet) and have a base width of 15 feet with 2H:1V sideslopes. Where the channel crosses fill material, a 6-inch-thick clay liner will be used to prevent seepage from the channel to the fill, followed by 12 inches of filter material consisting of three gradations. On natural ground a 9-inch-thick filter with one gradation will be used. A transition is provided for directing flows into the channel and to the cascading rock fan. Since the channel will occupy the same bench as the mine access road, a grouted riprap road ford is provided at the upstream end of the transition. The fan will be constructed with a rirrap size sufficient to provide energy dissipation and stability. An energy dissipation pool is provided at the base of the fan for transitioning flows into the natural channel.

The sediment pond will be left in place to control sediment yields during the bonding period. Maintenance work is proposed in the late summer of each year to stabilize those areas experiencing erosion. After the bonding period is complete and vegetation is satisfactory, the sediment pond will be dried out and backfilled to approximate the original topography.

Reclamation of the haul road will involve removal of all culverts. Material from culvert excavation will be used to cover the remaining road sections. The ephemeral stream channels will be returned to their original condition.

UMC where is 817.41

2.2 Evaluation of Compliance of Proposal

UMC 817.42 Hydrologic Balance: Water Quality Standards and Effluent Limitations

All discharge from surface drainage at the Des-Bee-Dove Mine Complex passes through a sedimentation pond, and no water is discharged from the mines. The sediment pond has been assigned NPDES permit UT-0023591. The applicant is in compliance with the requirements of this section.

UMC 817.43 Hydrologic Balance: Diversions and Conveyance of Overland Flow, Shallow Ground-water Flow, and Ephemeral Streams

The drainage basin encompassing the Des-Bee-Dove Mine Complex is ephemeral, with a total area less than one square mile. The temporary diversions proposed by the applicant meet all the requirements of this section. For permanent reclamation of the channel the applicant meets the requirements of this section; however, UMC 817.72(d) requires that surface runoff be diverted away from a valley fill. The applicant is in compliance with the requirements of section (f) and has shown adequate riprap, filter, and clay liner to safely pass the 100-year, 24-hour runoff peak flow

(see Maps 4-1, PAP, Vol. 5). Given the precipitous terrain, the only other option for location of the permanent reclamation channel is to remove the tipple fill entirely. The applicant has therefore requested a variance from the requirements of UMC 817.72(d). Considering that the tipple fill has been shown by the applicant to be geotechnically adequate (Appendix X, PAP, Vol. 3) and the channel design meets the requirements of this UMC 817.43(f), the variance has been granted.

UMC 817.44 Hydrologic Balance: Stream Channel Diversions

All streams within the Des-Bee-Dove Mine Complex are ephemeral with a total drainage area less than one square mile and hence do not fall under the requirements of this section.

UMC 817.45 Hydrologic Balance: Sediment Control Measures

The existing drainage system at the Des-Bee-Dove Mine Complex provides an adequate means of controlling sediment runoff. All disturbed area runoff is directed to a sediment pond using a system of culverts, open ditches, bermed roadways, and a short stretch of natural channel.

During the bonding period it is expected that some erosion will occur on areas being revegetated. Annual maintenance is planned for these areas and runoff will be routed to the sediment pond. This will provide an adequate means of sediment control during this period. Upon final reclamation, the sediment pond will be removated, and the bond should be adjusted to include only the sediment pond area.

The sediment pond should be maintained until effluent limitation requirements can be met, from the runoff from the reclaimed areas. Once these requirements are met the sediment pond can be regraded and reclaimed, and alternative sediment control measures implemented until effluent limitation requirements are met from runoff from the reclaimed sediment pond area.

NO REFERENCES

UMC 817.46 Hydrologic Balance: Sedimentation Ponds

The sediment pond will completely retain runoff from the 10-year, 24-hour storm. The sediment pond operates with a manual dewatering device. This device can produce a 24-hour detention time required to meet effluent limitations. Two acre-feet of sediment storage is provided below the elevation of the dewatering device.

The applicant provides hydrologic calculations to determine the magnitude of the 25-year, 24-hour event used to design the emergency spillway. A peak flow of 372 cfs was determined. Using this design flow and Appendix VII (PAP, Vol. 3), considering transition losses into the spillway the spillway length and pond elevations were determined. The applicant indicates that the current spillway width of eight feet must be enlarged to 30 feet. Modification of the spillway structure is shown in Appendix VII (PAP, Vol. 3).

All other requirements of this section have been addressed adequately by the applicant.

UMC 817.47 Hydrologic Balance: Discharge Structures

The applicant adequately addresses the use of energy dissipators at the outlets of the sediment pond and the permanent diversion and is in compliance with this section.

UMC 817.49 Hydrologic Balance: Permanent and Temporary Impoundments

The only impoundment at the Dee-Bee-Dove Mine Complex is the sediment pond addressed under Section UMC 817.46. All additional requirements under this section have been addressed adequately by the applicant.

UMC 817.52(b) Hydrologic Balance: Surface Water Monitoring

Discharge from the Dee-Bee-Dove sediment pond is monitored in accordance with NPDES requirements. No situation of noncompliance has been reported to date by the applicant. The applicant is in compliance with the requirements of this section.

UMC 817.55 Hydrologic Balance: Discharge of Water Into an Underground Mine

The applicant proposes to revise the present drainage route at the upper fill structure so that runoff from the undisturbed drainage above the mine complex does not discharge into the mine portals. The applicant's new proposed drainage route meets the requirements of UMC 817.43. Upon implementation of these plans the applicant will be in compliance with this section.

UMC 817.56 Hydrologic Balance: Postmining Rehabilitation of Sedimentation Ponds, Impoundments, and Treatment Facilities

Rehabilitation of all temporary diversions and sedimentation ponds at the Dee-Bee-Dove Mine Complex have been addressed adequately by the applicant.

UMC 817.57 Hydrologic Balance: Stream Buffer Zones

No streams at the Dee-Bee-Dove Mine Complex contain a biological community as defined under Paragraph (c) of this section and hence do not fall under its regulations.

2.3 Conditions

Within 30 days of permit approval, the applicant must submit revised sediment control plans for final reclamation, including, but not limited to, a revised bond submittal, after achieving the required effluent limitations, time table for reclamation for the sediment pond and the alternative sediment control measures proposed after final regrading and reclamation of the sediment pond.

page 3-38, Vol. 2, PAP) is a statement of historical fact. Subsidence within the permit area is not expected to alter the unsaturated ground-water conditions in the Des-Bee-Dove Mine Complex, since surface recharge conditions to ground water will remain unchanged. Imported water from the Wilbers Mine will augment recharge to strata below the mining operation. The net effect of this increased recharge on water table in these lower strata is expected to be negligible. At the present time, mine water is obtained from the Deseret sediment pond. Prior to the closure of the Wilbers Mine, water was piped from the Wilbers Mine sump into the Deseret Mine sump.

Subsidence at the boundary of the permit area may affect the flow of two small springs that are associated with the Deer Creek fault. Loss or reduction of flow from these springs would be a minor alteration in the prevailing hydrologic balance. It is not considered to be a likely impact based on studies and monitoring conducted to date. Planned mining operations at the Des-Bee-Dove Mine Complex are expected to achieve an even lowering of the strata over the mines. Monitoring of spring flow and subsidence is carried out by the applicant and will provide the necessary information to assess subsidence effects on spring flow.

No significant changes in surface-water quality or quantity are expected from Des-Bee-Dove mining operations. Water quality will increase slightly in TDS and TSS, but will remain well within standards for drinking water and will not cause material damage to the surrounding hydrologic balance. No consumptive use of surface water is made by mining operations. Storm runoff is retained for 24 hours in the sediment pond, then released.

4.3 Conditions

None.

Needs more reference (Must explain how Applicant complies)

V. MISCELLANEOUS COMPLIANCE

Needs to be Redone

5.1 Applicant's Proposal

The Des-Bee-Dove Mine Complex is an existing operation with all facilities in place, with the exception of the new storm drainage system from the Beehive Mine to the sediment pond. Signs and markers are in place and existing conveyor systems descriptions have been provided on page 3-37 of the permit application.

5.2 Evaluation of Compliance of Proposal

UMC 817.11 Signs and Markers

The applicant is in compliance with this section.

UMC 817.59 Coal Recovery

Proposal of Non-Coal Waste 817.89 and .131 and .132

Proposal

The applicant is conducting mining operations so as to maximize the utilization and conservation of coal at the Des-Bee-Dove Mine Complex as stated by the Bureau of Land Management. The applicant is therefore in compliance with UMC 817.59.

UMC 817.180 Other Transportation Facilities

The applicant is in compliance with this section.

UMC 817.181 Support Facilities and Utility Installations

The applicant is in compliance with this section.

5.3 Conditions

None.

VI. EXPLOSIVES

6.1 Applicant's Proposal

Explosives were used at the Des-Bee-Dove Mine Complex to realign an access road to the lower pond face. Approximately 5,200 cubic yards of material were blasted. Due to the use of explosives on the surface, the applicant was required to meet UMC 817.61 to UMC 817.68. The applicant has provided information on blasting requirements in Appendix VI of the PAP.

All blasting was done under the supervision of a certified blaster and was conducted to meet the requirements of Utah Permanent Regulatory Program and the requirements of the Mine Safety and Health Administration, Department of Labor. The individuals were certified as provided by 30 CFR 850 and the State Industrial Commission.

There are no dwellings or buildings located within one-half mile of the mine site that are not owned by the applicant. Exhibit 1 in Appendix VI shows the proposed blasting record.

6.2 Evaluation of Compliance of Proposal

UMC 817.61 Use of Explosives: General Requirements

The applicant has stated that compliance with all Federal and State laws was achieved. In addition, blasting was conducted by a certified blaster. The applicant has stated that this certification was in accordance with 30 CFR 850 and applicable regulations of the State of Utah Industrial Commission. The applicant is in compliance with this section of the regulations.

UMC 817.62 Use of Explosives: Preblasting Survey

There are no structures located within one-half mile of the permit area. This regulatory requirement does not apply.

UMC 817.65 Use of Explosives: Surface Blasting Requirements

There are no currently existing dwellings or structures within one-half mile of the area potentially affected by surface blasting. Therefore, part (a) of this section does not apply.

The applicant has stated that blasting occurred between sunrise and sunset. The applicant is in compliance with part (b) of this section of the regulations.

Information was provided concerning the warning and all-clear signals which was used during blasting operations and measures were taken to control access to the site. Therefore, the applicant is in compliance with parts (c) and (d) of this section of the regulations.

Blasting did not occur within 1,000 feet of any dwellings, or within 500 feet of any disposal wells, petroleum or gas-storage facilities, municipal waste storage facilities, fluid-transmission pipelines, gas or oil collection lines, or water and sewage lines other than those used by the mining operation. The applicant's facilities are located within 500 feet of blasting. However, since blasting was a very minor operation and it is in the applicant's best interest to protect these structures, blasting within this distance is acceptable. The applicant is in compliance with part (f) of this section of the regulations.

The applicant has provided a statement of compliance with regulations concerning the control of flyrock, airblast, and ground vibrations. The applicant is in compliance with parts (e), and (g) through (l) of this section of the regulations.

UMC 817.67 Use of Explosives: Seismographic Measurements

Since there are no structures within one-half mile of the area except those owned by the applicant, the applicant committed to using the scaled distance formula for control of ground vibration.

UMC 817.68 Use of Explosives: Records of Blasting Operations

The applicant has provided a sample blasting record which shows that all information required by this part will be recorded. The applicant is in compliance with this section of the regulations.

6.3 Conditions

None.

VII. PROTECTION OF FISH, WILDLIFE, AND RELATED ENVIRONMENTAL VALUES

7.1 Applicant's Proposal

The applicant's plan for protection of fish and wildlife is presented on pages 4-34 to 4-38 (PAP, Vol. 2). The applicant has

committed to (1) reporting any golden eagle nesting activity in the vicinity of the mine disturbance areas to the USFWS, (2) consulting with the USFWS if any additional mine related developments are planned in the raptor nesting zone (Map 2-17 PAP, Vol. V), (3) placing deer crossing signs along the haul/access roads within the permit area, (4) reporting the occurrence of deer road-kills and snake dens to the UDWR, and (5) providing a wildlife educational instruction to employees to reduce the potential for harassment of wildlife. The UDWR is currently conducting a deer road-kill monitoring program that includes the Des-Bee-Dove Mine Complex access road and the Des-Bee- Dove/Wilberg Junction Road. If any hazardous areas are identified along the road within the permit area, the applicant will consult with the UDWR for appropriate mitigation measures (page 4-37, PAP, Vol. 2).

The applicant has supplied a map showing the location of golden eagle nests in relation to the mine facilities (PAP, Map 2-17) and has committed to consulting with the USFWS if any additional activities are planned in the raptor nesting zone (page 4-35, PAP, Vol. 2).

The 69 KV line that serves as the power source for the Des-Bee-Dove Mine has been determined to be raptor-safe by the USFWS (letter dated Nov. 10, 1982, to UDOGM). Sufficient phase-to-phase and phase-to-ground clearances are provided on this line to preclude electrocution of large raptors.

Following cessation of mining, the applicant will restore the stream channel and revegetate disturbed sites. Plant species selection and planting patterns are designed to restore wildlife habitat as a principal postmining land use. Details of the revegetation plan are provided on pages 4-17 through 4-22 of the PAP (Vol. 2) and in Section X of the technical analysis.

Because of the importance of springs as a water source for the area's wildlife, as a final commitment, the applicant has stated (pages 4-37 and 4-39, PAP, Vol. 2), that any surface water disturbance resulting from subsidence associated with the Des-Bee-Dove mine will be replaced or repaired as follows:

1. "Streams will be bridged across bedrock fractures by culverts until sediments fill the cracks."

2. "Springs and seeps proven to be lost to subsidence action will be replaced by guzzlers which will be located and designed with prior regulatory authority approval."

7.2 Evaluation of Compliance of Proposal

UMC 817.97 Protection of Fish, Wildlife, and Related Environmental Values

Surface disturbances associated with the Des-Bee-Dove Mine Complex total approximately 74.5 acres (haul/access road, main site, and sediment pond). This acreage denotes actual disturbance and does not include 36 acres of undisturbed right-of-way associated with the Des-Bee-Dove/Wilberg Junction Road. These disturbances will last for the life-of-mine and until reclamation is complete. Because of the limited areal extent of surface disturbance, wildlife impacts resulting from loss of habitat will remain relatively minor.

None of the areas affected by the mine represent any critical habitats for threatened or endangered wildlife species (USFWS Endangered Species Office letter of January 10, 1984). The bald eagle is a winter visitor to the region but will not be affected by mining activities.

Other mine associated wildlife impacts that may be more significant than direct loss of habitat include (1) human harassment of all wildlife, (2) mule deer road-kills, and (3) the potential effects of subsidence on springs and raptor cliff nesting habitat.

This is a useless statement

The effects of human harassment on wildlife, either inadvertent or purposeful, should be considered from a cumulative standpoint since at least three other mines are currently operating along the southern end of East Mountain. However, since premining baseline data for wildlife populations in the area are lacking, these effects are extremely difficult to quantify. However, UP&L has proposed an education program for mine employees to reduce the potential for harassment of wildlife. At a minimum mining activities will likely preclude golden eagle nesting use of the inactive nest site within approximately 1,500 feet of the Des-Bee-Dove Mine facilities (Map 2-17, PAP, Vol. 5).

The potential for mule deer road-kills is greatest during the winter months when mule deer congregate in high-priority winter range traversed by the Danish Bench and the Des-Bee-Dove/Wilberg Junction roads. However, unless a particularly hazardous area is identified by UDWR or applicant monitoring, this impact is not expected to be significant. The applicant has also committed to working with the the UDWR to establish improved critical deer winter habitat to offset the displacement of habitat by the Des-bee-Dove/Wilberg Junction Road.

Mine-related subsidence could impact springs on East Mountain and raptor cliff nesting habitat in areas where surface fracturing is possible. The effect of subsidence on springs and raptor cliff nesting habitat cannot be fully determined at this time. Future monitoring will be required to provide sufficient information regarding the extent of impacts related to subsidence.

With regard to subsidence impacts on raptor cliff nesting habitat, the applicant will be mining under several areas where the Castlegate Sandstone and Price River Formation form major

escarpments in this area. Mining under these types of escarpments may have a significant impact on their stability. To date, significant fracturing of the Castlegate and Price River Formations has occurred over the Des-Bee-Dove Mine Complex (see the annual Subsidence Reports, 1981 and 1982). It can be expected that this type of subsidence impact will continue as retreat mining occurs under the escarpments. However, based on the 5-year mine plan, mining under escarpments will not occur in any areas where active or inactive raptor nests have been located (Maps 3-1, 3-2 and 2-17, PAP, Vol. 5). As long as nesting does not occur in areas potentially affected by subsidence, no impacts to nesting raptors is expected. In addition, no significant impacts to raptor nesting habitat is anticipated, since subsidence-related fracturing of cliff faces would not be expected to eliminate cliff faces, but merely create new escarpments.

In the event that a new nest is established on an escarpment in a potential subsidence zone, the nest could be damaged or lost depending on the degree of subsidence. The applicant has not committed to mitigating this potential impact.

7.3 Conditions

The applicant must commit to mitigating, in consultation with the USFWS, potential impacts to raptor nests constructed on escarpments that are affected by mine-related subsidence.

VIII. BACKFILLING AND GRADING

8.1 Applicant's Proposal

The mine facilities are described in the permit application package (PAP) in the mine facilities description starting on page 3-12. All of the described facilities are located in the 74.5-acre disturbance except for a breakout from the Deseret Mine in Section 14 which has been constructed. All other ventilation for the mine is associated with the portals in the facilities area.

A development waste and coal waste disposal site is located below the Wilbers Mine facilities area. This small fill structure has been described and evaluated in the Wilbers Mine Technical Analysis. The fill receives coal waste and development waste from both the Wilbers Mine and the Des-Bee-Dove Mine Complex.

The major earthen structures at the facilities area are shown on Map 3-10 (PAP, Vol. 5). These earthen structures are described in the PAP (Vol. 2, page 3-44). The major fill is Structure No. 1 and provides 4.1 acres of working space. This fill is constructed of approximately 200,000 cubic yards of waste rock, boney coal and coal fines. The applicant has reconstructed the fill as shown on Map 4-3 (PAP, Vol. 5). This reconstruction will entail grading of the fill to a 1V:2H slope.

The stability of Structure No. 1 has been evaluated by the applicant. Two exploratory holes were drilled through the pile and information obtained on the density of the material and the type of material. This information along with stability analyses of the fill are provided in Appendix 10 of the PAP. The applicant has determined a minimum safety factor for the fill of 1.4 assuming a friction angle of 32 degrees, cohesion of zero and a density of 71 pounds per cubic foot. The analysis in the appendix was conducted using the Spencer Method. With a cohesion of 100 pounds per square foot, a safety factor of 1.53 was determined. In the applicant's analysis using the Simplified Bishop method, page 3-56 of the PAP, a toe failure was assumed and a safety factor of 1.7 was determined.

The stability of the fill described as Structure No. 2 is described in the PAP in Appendix XI. The remaining fills are described on page 3-49.

Reclamation of the facilities site will entail the removal of all structures, backfilling of the portals, and backfilling of the facilities area to slopes no greater than 1v:2h. The volumes of material to be handled are itemized on the Quantities Summary Sheet following page 4-7 in the PAP. In addition to the quantities of material shown on this table, the applicant will be backfilling 16,296 cubic yards of material to reclaim Structure No.2. Structure No. 1 will remain, but a diversion will be constructed around the fill. The backfilling and grading plan is described in the PAP starting on page 4-1. All material will be backfilled in 18-inch lifts and compacted. Stability of the backfilled slopes is discussed in the PAP starting on page 4-6.

All concrete above ground and all asphalt is to be buried in the backfill for Structure No. 2 with four feet of non-toxic material. All other material identified as toxic will be backfilled in this area (PAP, Vol. 2, page 4-6). how identified

The applicant is also reclaiming the Des-Bee-Dove to Wilbers Bypass road. The proposed reclamation plan will require hauling of 263,300 cubic yards of fill material, 12,100 cubic yards of asphalt, and 20,200 cubic yards of road base. During construction of this road, approximately 624,000 cubic yards of material was excavated. Therefore, the applicant will only be replacing approximately 40 percent of the excavated material. As such, it is apparent that the site will not be returned to AOC. A cut structure of probably over 50 feet high will be retained. However, all drainage channels through the site will be reestablished. Retention of the cut structure is not inconsistent with surrounding landforms, but the applicant has not provided sufficient information to assess the long-term stability of the cut.

8.2 Evaluation of Compliance of Proposal

UMC 817.99 Slides and Other Damage

Specific plans have been provided for reporting slides to the Division of Oil, Gas and Mining should they occur. The applicant is in compliance with this section.

UMC 817.100 Contemporaneous Reclamation

The applicant has stated that reclamation will commence upon completion of mining, expected date 1998. A schedule for reclamation has been provided on a table following page 4-24 of the mining and reclamation plan. This plan shows that reclamation will take approximately one year and that maintenance and monitoring will continue for an additional 10 years. In addition, the applicant has provided for an interim vegetation plan to stabilize slopes in the facilities area (see page 4-11 in the PAP). The applicant is in compliance with this section (see also Chapter X, Revegetation).

UMC 817.101 Backfilling and Grading: General Requirements

The applicant is planning to return the surface disturbances associated with the Des-Bee-Dove facilities area to a suitable postmining topography which will support the intended postmining land use. All benches will be graded to essentially their premining condition except for the Structure No. 1. The location of this fill in the canyon will not be inconsistent with the surrounding topography with its 27 degree side slopes and one adequate drainage channel around the fill has been established. The postmining drainage has been evaluated in the Surface Water section of this TA.

Due to the size and content (coal fines) of Structure No. 1, the stability of this structure is of concern. The regulatory authority has reviewed the stability of Structure No. 1 using the Simplified Bishop's Method, a friction angle of 25 degrees which is the worst-case information determined by analysis in the information provided in Appendix X, cohesion of zero which is also the worst-case information, and a density of 71 pounds per cubic foot for the coal fines. A cohesion of zero is further substantiated by information found in "Engineering Design Manual Coal Refuse Disposal Facilities", published by the Department of the Interior, Mine Safety and Health Administration, which states a typical cohesion for coal fines is zero. The abutment key fill shown on Map 4-3 (PAP, Vol. 5) was assumed to have a cohesion of zero, angle of internal friction of 40 degrees, and a density of 120 pounds per cubic foot. Using the configuration of the slope shown on this drawing, it was determined that the minimum safety factor was 1.26 for a failure surface just above the abutment key. In addition, several other failure planes located further into the pile showed safety factors of 1.4 or less. This is less than the required safety factor of 1.5 and less than the safety factors determined by the applicant.

The difference in the determinations is likely due to the different strength parameters used when compared to the analysis conducted by the applicant using the Spencer Method. Alternatively, the worst-case failure plane may not have been identified by the applicant. This is certainly the case in comparing the applicant's evaluation using the Simplified Bishop method where the failure plane was assumed to go through the toe of the fill. Given the nature of the material and the method of placement during construction of the fill, end dumping, which results in a loose, unconsolidated fill material, it would appear that the safety factor for this fill is less than the required 1.5. However, it should be noted that this fill has been in place for many years without apparent major failures.

In the letter to the applicant from the Office of Surface Mining dated January 16, 1984, it was stated that the applicant could obtain a variance from the safety factor requirements if certification could be obtained from a Professional Engineer (PE) stating that the fill was stable and did not pose a threat of slope failure. In addition, the PE must also address the public health and safety issue if the slope fails. The applicant provided a letter from Rollins, Brown and Gunnel, Inc. (RBG) dated February 17, 1984, stating that in their opinion the safety factor was greater than 1.53. A following letter addressed public health and safety issues, and was certified. The applicant is in compliance with the section of the regulations pertaining to stable postmining slopes.

Plans have been provided for grading along the contour. The applicant is in compliance with this section of this regulation.

include in 817.13 to .15

The applicant has provided plans for the closure of the portals which are shown in Figure 1 in Chapter 4 of the PAP. The applicant has provided a suitable backfilling and grading plan for those areas.

The applicant is proposing to retain most of a cut structure at Station 125+00, along the Des-Bee-Dove/Wilberg Junction Road. Information on the configuration of this cut, the geologic conditions, and stability of the cut have not been identified by the applicant. Therefore, a determination of compliance with the requirement of UMC 817.101(b)(1) for a static safety factor (SSF) of 1.5 cannot be made.

UMC 817.103 Backfilling and Grading: Covering Coal and Acid- and Toxic-Forming Materials

The applicant is planning to bury asphalt and concrete, and acid- and toxic-forming material under more than 4 feet of material in the backfill for Structure No. 2 during final backfilling and grading operations. Although no toxic waste materials have been identified by the applicant, the U.S. Forest Service (USFS) has expressed concern over the burial of toxic waste on National Forest System

lands (letter of concurrence dated January 3, 1995). The applicant must obtain written permission from the Forest Supervisor prior to burying toxic waste on National Forest System lands, specifically, on Structures Nos. 1 and 2

The reader is referred to Charter X, Revegetation, for further discussion related to this section.

UMC 817.106 Regrading or Stabilizing Rills and Gullies

Plans have been submitted for the repair of rills and gullies in the bond estimate. Based upon the current maintenance program, 24 hours of work per year are needed to repair rills and gullies. The applicant is in compliance with this section.

8.3 Conditions

1. Within 30 days of permit approval, the applicant must demonstrate that the long-term stability of the cut structure at station 125+00, along the Des-Bee-Dove/Wilbers Junction Road meets the 1.5 safety static factor requirement for UMC 817.101(b)(1).

2. If toxic materials are encountered at the Des-Bee-Dove Mine Complex, the applicant must either obtain written permission from the Forest Supervisor (Manti-La Sal National Forest) to bury toxic waste material on National Forest System lands, or submit for approval by the regulatory authority, an alternate site for burying toxic waste material.

IX. SUBSIDENCE CONTROL PLAN

9.1 Applicant's Proposal

The applicant's subsidence control plan is to maximize coal extraction, i.e., pillar extraction in panel sections, to achieve an even lowering of the surface to the extent possible. It is anticipated that the pillars which might remain will crush out and minimize the effects of uneven subsidence on the surface. This will have the effect of maintaining an even subsidence trough.

The applicant has stated that full extraction panels have been oriented parallel to the major faults and joints. This alignment with respect to jointing is proposed to prevent the formation of irregular sawtooth subsidence cracks in the overlying surface lands.

The applicant has proposed a subsidence monitoring plan which is described in Appendix XII of the PAP. In general, the plan consists of a combination of photogrammetry methods tied in with conventional survey methods. The survey will be conducted once a year in mid-summer when the survey can be run in conjunction with the USFS

vegetational studies. A ground-control survey will be established on a grid system. The applicant has not provided the survey location map showing where the survey monuments will be located. The monuments will provide not only a scale for the photography but also by expanding and monumenting the control survey, a primary grid will be established for measuring both horizontal and vertical displacement.

The applicant has stated that subsidence impacts to roads will be mitigated. The roads will be repaired and regraded to restore them to their pre-subsidence usefulness.

There have been no specific mitigation plans submitted for subsidence impacts such as dewatering of springs or seeps, surface cracking, or slope failures.

The applicant has not provided for public notices to be submitted to the affected surface owners which detail the areas in which mining is to take place, the planned date of the mining activity, and measures to be taken to mitigate subsidence impacts. Most of the land over the mine is owned by UP&L and the USFS. However, it appears that some privately owned land is in areas adjacent to the mine that could be within the angle of draw of subsidence effects.

9.2 Evaluation of Compliance of Proposal

UMC 817.121 Subsidence Control: General Requirements

A. Description of Subsidence Effects Observed To Date

Monitoring of subsidence to date has included surveys by UP&L using conventional survey methods and photogrammetric methods, and helicopter flyovers. Data collected through 1982 has been documented in the applicant's annual Subsidence Reports for 1981 and 1982. In addition, monitoring has occurred over the Wilberg and Deer Creek Mines which is useful in predicting subsidence in this general area. Though this data was for areas where longwall mining methods were used, the applicant is planning full extraction methods in the room and pillar panels of the Des-Bee-Dove Mine complex which are expected to create similar subsidence impacts.

The U.S. Bureau of Mines (USBM) has been studying subsidence at the UP&L mines since 1979. The initial study monitored subsidence over two longwall panels developed in the Blind Canyon upper seam between 1979 and 1980. The depth of cover over these panels ranged from 1,600 feet to 1,450 feet. The first indication of subsidence occurred over Panel 5 East, which was mined first, in September 1979. At a minimum, the face had advanced 460 feet before subsidence occurred. Three inches (0.25 feet) of subsidence was measured at this time. The maximum amount of subsidence measured was 2.7 feet in December 1980 when the analysis in the USBM report ended. This indicates that subsidence due to mining occurs fairly soon after coal extraction. The maximum amount of subsidence occurred near the

midpoint of the panel lengths and just north of the chain pillars separating Panels 5 East and 6 East but within Panel 5 East. This shows that the chain pillars crushed out and did not significantly affect the subsidence trough.

Additional data have been supplied by the applicant showing monitoring information through September 1983; this is part of the USBM study. Based on these data, it is probable that the maximum amount of subsidence which will occur due to mining in a single seam under the conditions in this area has been observed (6 feet over Panel 6 East). However, no mining has yet occurred under Panel 6 East and as such the maximum amount of subsidence that might occur due to multiple seam mining in this area has most likely not been observed.

Almost 5 feet of subsidence has occurred as of September 1983 over Panel 5 East which was the first panel to be extracted in 1979. Since mining subsequently occurred in the Hiawatha seam (Panel 9 Right) almost directly below Panel 5 East, subsidence has continued due to multiple seam mining with a minor residual effect from single seam mining. It is expected that subsidence over mined areas within the permit area will not continue more than a few years once all mining in an area is complete.

The subsidence profile continues to show that the chain pillars are crushing out and not creating any significant variation in the profile. The barrier pillars which are located at the ends of the panels to protect the mains from mining in the panels and the pillar section to the north of Panel 5 East do not appear to be crushing at all and effectively stop subsidence except for angle-of-draw effects. The maximum slope measured at the edge of the subsidence trough as of June 1983 was over Panel 6 East and was 0.09 inches/foot.

Several other subsidence occurrences over the Wilberg, Deer Creek and Des-Bee-Dove Mines have been noticed by aerial inspections conducted by the applicant. These disturbances have been recorded in the annual subsidence monitoring reports that have been submitted to the Division of Oil, Gas, and Mining, State of Utah and in an August 3, 1982, letter to the Division of Oil, Gas, and Mining, State of Utah. One area is located over the Des-Bee-Dove Mine Complex in the Castlegate Sandstone near a steep slope area. The area of disturbance encompasses approximately 10 acres and contains several east-west trending fractures. The area overlies retreat mining which took place in October 1981.

Photogrammetry and conventional surveys conducted by the applicant and recorded in the annual Subsidence Reports show subsidence over the Des-Bee-Dove Mine Complex of up to 2.5 feet due to mining since 1980. These surveys have shown that even though multiple seam mining has occurred in this area, no surface cracking has been observed in areas overlain by the North Horn Formation. Cracking has been

observed in the Castlegate and Price River Formations. The total amount of subsidence which has occurred is unknown, since monitoring commenced after mining in the upper seam was complete and subsidence had most likely already occurred.

B. Evaluation of Probable Subsidence Effects

B.1 Lowering of the Land Surface in Areas Underlain by the Castlegate Sandstone and Price River Formation

The effects of subsidence on the surface will be modified by the occurrence of the thick layers of the Castlegate Sandstone and the Price River Formation. These effects would tend to mitigate the possibility of surface cracking where the sandstone layers were continuous through the area. However, it is expected that the land surface will be significantly lowered. The maximum extent of this lowering is not known at this time due to the layout of the monitored mine areas as described above.

The maximum amount of subsidence which would be expected over a single seam maximum extraction area under 1,500 feet of cover has probably been identified in Panel 6 East in the Blind Canyon seam and is almost 6 feet as shown by data collected for September 1983. Between June 1983 and September 1983, the surface only dropped an additional 0.08 feet indicating that subsidence has probably stabilized in this area. Depth of cover over this panel is approximately 1,500 feet. It would be expected that the sandstone layers would provide a certain amount of bending action over the cave above the underground workings which would tend to reduce the amount of subsidence from what might be expected if only weaker strata existed above the mine.

If the information from Panel 6 East were doubled to reflect mining in 2 seams, then a lowering of the surface of almost 12 feet might be expected where the cover was approximately 1,500 feet and maximum extraction occurred. The applicant has estimated a maximum of 10 feet of subsidence where cumulative extraction from the two mineable seams will not exceed 20 feet. The applicant's estimate may be reasonable for areas of the mine where the depth of cover is greater than 1,500 feet given the thickness of the interburden between the Blind Canyon seam and the Hiawatha seam. In areas where the depth of cover is less than 1,500 feet to 1,250 feet which is the top of the Price River Formation, the amount of subsidence may be greater than the projected 10 feet.

Even settling of the land surface by complete extraction methods is not the primary concern associated with subsidence at the Des-Bee-Dove Mine Complex. The major problem will most likely be associated with areas of uneven subsidence caused by restriction of subsidence by barrier pillars or as retreat mining progresses, an advancing subsidence trough will occur on the surface. In these areas, the

ground surface will tilt, causing areas of tension and compression on the surface. In the case of the advancing mine face, these effects are transient and not as pronounced. However, where a barrier pillar remains, the surface tension and compression effects will remain causing horizontal strains. The maximum slope measured to date is in the vicinity of Panel 6 East (Wilbers Mine, Blind Canyon seam), and slopes at 0.09 inches/foot over 1,400 feet of cover. This is a severe slope for structures and would cause severe damage if a structure existed in this region. The slope would be expected to steepen as mining in the Hiawatha seam (lower seam) progressed, increasing the amount of subsidence within the trough. This effect has been observed in the area being monitored where subsidence has increased from 2.7 to almost 6 feet and the slope has increased from 0.06 inches/foot to 0.09 inches/foot.

In the areas of high strain, steep slopes in the North Horn Formation may be susceptible to failure. The North Horn Formation consists of a high percentage of clay layers, and given the right moisture conditions, could slump. This has apparently occurred in the past in unmined areas in the North Horn Formation where in 1979, a slump 150 feet long was recorded (see Memo to Coal File, Utah Division of Oil, Gas and Mining, September 6, 1979). Subsidence could potentially trigger slope failures in this formation, although it would be difficult to determine if the failures were due to subsidence or natural failure, as was the situation with the 1979 slump.

The above-described conditions may be modified somewhat because the applicant is leaving large barrier pillars which may not crush out. The effect of this is to lessen the effective size of the openings in the mine, and maximum subsidence may not occur since the critical width may not be reached or exceeded. However, along the western side of the operation, it appears that the applicant is planning to extract a large continuous opening when retreating the 1st North Mains in the Blind Canyon seam and the 2nd North Mains in the Hiawatha seam. The critical width may be exceeded in this area and maximum subsidence may occur.

R.2 Lowering of the Land Surface in Areas not Underlain by the Castlegate Sandstone

A few land areas overlying the Dee-Bee-Dove operation will be undermined where the strata overlying the operation consists only of the Blackhawk Formation. As such, the surface protection provided by the thick sandstone layers of the Castlegate and the Price River Formations will not exist.

As mining progresses in these areas of shallow cover, i.e. 150 to 750 feet of cover, surface cracking may occur along barrier pillars or between extraction panels. The applicant has stated that the

caving height can range from 33 to 50 times the thickness of the coal seam; therefore, surface fracturing could be expected where the depth of cover ranges from 100 to 350 or 500 feet of cover. To date, no fracturing of the surface has been observed in areas where the Blackhawk Formation crops out at the surface (see the applicant's annual Subsidence Reports).

In these areas of shallow cover, subsidence can be expected to be greater than measured to date. Since 60 percent of the seam thickness has not been reflected in subsidence at the surface over Panel 6 East, it would be reasonable to assume that a greater percentage of the seam thickness might be reflected in subsidence at the surface in areas where the Castlegate Sandstone does not exist. Therefore, minings in these areas with shallow cover will cause greater subsidence impacts. Areas with shallow cover above the Dee-Bee-Dove Mine Complex are relatively inaccessible.

C. Evaluation of the Proposed Monitoring Plan

As minings progresses and additional information is collected, the impacts associated with subsidence will be more clearly identified. As such, the applicant's monitoring program is crucial, along with interpretation of monitoring results. The proposed program shows the location of surface grid points established over the permit area for photogrammetric and conventional surveys (CM-1099-DS Appendix 8, PAP Vol. 3). The applicant provides a map showing the grid system in this area (CM-1091-DS Appendix 8, PAP Vol. 3). The applicant has committed to providing the regulatory authority with annual survey information, interpretation of subsidence occurrences, and development of mitigation plans if appropriate (see addition dated 12/21/84 Appendix 8, PAP Vol. 3). The survey data provide information correlating the photogrammetry studies with the conventional surveys.

UMC 817.122 Subsidence Control: Public Notice

The applicant has provided for notice to the USFS on subsidence effects to the surface that they own above the mine; other lands above the mine are owned by UP&L. The applicant is in compliance with UMC 817.122.

UMC 817.124 Subsidence Control: Surface Owner Protection

The applicant has proposed to mitigate impacts to roads effected by the proposed operation. As minings progresses and additional information is obtained on subsidence impacts, additional mitigation measures may be necessary. At this time, it is not possible to determine the effects to springs in the area, the extent of disruption of the surface nor to escarpments. The applicant monitors these features and will evaluate the effect of subsidence

Irrigation will be practiced only if a planting failure occurs after the first year. Slopes will be cultivated for two years to eliminate weeds and rodenticides will be placed by a licensed applicator to reduce rodent populations on these slopes. Plantings will be evaluated in August. Permanent line intercept transects shall be used to record species composition and ground cover. Shrub and tree plantings will be evaluated for species survival rates and vigor. Copies of evaluation reports will be forwarded to UDOGM annually. Samples will be taken of seedbed material at five-year intervals to record productivity changes. Standard parameters are to be evaluated.

A variety of grass, forb, shrub, and tree species will be evaluated. Most species proposed are considered drought tolerant. Four introduced species are included for plantings. These are Artemisia abrotanum, Kochia prostrata, Melilotus officinalis, and Medicago sativa. The majority of species to be evaluated are scheduled for use during final revegetation.

Final Revegetation Plan (Vol. 2, revised pp. 4-17 to 4-22)

Final revegetation will be initiated the first appropriate season following grading. Two vegetative communities will be established. These are the pinyon-juniper and desert shrub communities. The pinyon-juniper community is to be established on the mine proper. The desert shrub community shall be established on the area disturbed by the sediment pond. Techniques described below may be modified given the results of the Interim Plan.

Level areas will be ripped and disked during final grading. Seedbed materials on steeper slopes will not be treated following grading. Sampling for fertilizer analysis shall then take place. "Soil" developed as a result of "interim" plantings will be randomly spread over the graded surface to a depth of six to 12 inches. The seed mixture and fertilizer (at rates based on soil tests) are to be broadcast onto the seedbed in the fall. On more level slopes, the soil surface shall be turned with a drag to cover the seed and fertilizer. Steeper slopes will be hand-raked to accomplish this objective. Alfalfa hay mulch will then be spread over the seedbed at the rate of approximately two tons per acre. Steep slopes will be covered with "Vexar" netting to anchor the mulch. On more level slopes, mulch anchoring is to be accomplished by crimping. In the following spring, containerized shrub and tree stock shall be planted. Species will be planted in "clumps" to enhance wildlife habitat. Clumps will be randomly spaced over the mine site. A fertilizer tablet shall be placed with the backfill for each seedling during planting. Basins to collect water are to be formed around each seedling. Each seedling will be hand-watered at the time of planting. Seedlings shall be protected by "Vexar" tubes.

Sprinkle irrigation will be employed if initial plantings fail. Slopes are to be cultivated for two years to eliminate weeds. Rodenticides shall be placed on revegetated areas by licensed applicators for rodents, or, as required, to control rodent populations.

The applicant has stated that vegetation methodologies to be used at the mine proper will be implemented to revegetate the Des-Bee-Dove/Wilbers Junction Road (Vol. 2, revised p. 3-31).

The majority of plant species selected for revegetation of the mine area proper and sediment pond are either native to the area or are considered appropriate additions added to increase species diversity. Melilotus officinalis is the sole introduced species currently scheduled for planting.

The seed mixture to be planted to reclaim the Des-Bee-Dove/Wilbers Junction Road is contained in the "Right of Way Grant" from the BLM.

The applicant has identified the means by which parameters for measuring revegetation success will be obtained. These measures are briefly described on pages 4-21 and 4-22 (PAP, Vol. 2) and include methods and statistical limits similar to those used when the reference areas were established.

The applicant has also committed to using a "student's t test" of the sample means to compare sampled parameters for eventual release of bond.

10.2 Evaluation of Compliance of Proposal

What reg. is this in compliance with?

The vegetation data collected from reference areas show that these sites are acceptable areas and representative of the floral community which existed prior to mining.

UMC 817.100 Contemporaneous Reclamation

The applicant will temporarily revegetate fill slopes at the tipple area, bathhouse, and stockpile area, Deseret sediment pond, and Beehive mine areas to prevent erosion. This will take place the first appropriate season following permit approval to mine. Revegetation activities will be in the form of test plots as described on revised pages 4-11 to 4-16 (PAP, Vol. 2). The remaining existing disturbed areas are required for mine operation.

At the conclusion of mining operations, structural removal and backfilling will begin. Revegetation operations will commence the following September on all disturbed areas. The sediment pond will remain in operation through the 10-year responsibility period, after which it will be graded and revegetated.

The applicant is in compliance with the requirements of this section.

UMC 817.111 Revegetation: General Requirements

The applicant is in compliance with the majority of the requirements of this section. The proposed revegetation schedule conforms to accepted standards. Revegetation activities will be accomplished during recognized planting seasons. Seeding and planting rates are appropriate with one exception, the desert shrub community. The applicant proposes to broadcast seed and cover by harrowing a total of nine pounds of grass seed (PLS) per acre (Vol. 2, revised p. 4-18). Two of these species making up this total are Elymus saline and Sitanion hystrix. The applicant states that broadcast seeding followed by harrowing is equivalent to seed drilling. While the Regulatory Authority does not necessarily agree with this statement, the main concern is with the species involved. Neither of these species is considered to have a high establishment potential. The establishment potential for Sitanion hystrix is rated as low. The characteristics of Elymus saline parallel those of Oryzopsis hymenoides. (Dittberner, P.L., and M. R. Olsen, 1983. The plant information network (PIN) database: Colorado, Montana, North Dakota, Utah and Wyoming. U.S. Fish and Wildlife Service. FWS/OBS-80/36. 786 pp.) The Regulatory Authority believes that the seeding rate for the desert shrub community must be modified to provide for an acceptable level of plant establishment and consequent soil stability. At a minimum, 40 grass seeds per square foot of PLS should be provided (see Condition). The applicant has committed to utilize the seed mixture in the "Right-of-Way Grant" to revegetate the haul road disturbance. This seed mixture is in compliance with the requirements of this section.

The sediment pond disturbance will be revegetated at the end of the responsibility period using the techniques cited above. No revegetation plan has been presented for the area disturbed by the disposal of sediment pond sludge.

Mulching techniques proposed are in accordance with standard practices. Irrigation will be used only if initial plantings fail.

? What are they - See Deer Creek TA for conditions on mulching!

Considering the potential range in average annual precipitation, proposed slopes, and the quality of seedbed materials, revegetation is considered feasible, though difficult. This is particularly true for sites exhibiting steeper slopes and/or Mancos shale parent material. It is likely that several years will be required before vegetative cover approaches assumed pre-mining levels. However, the applicant has proposed to use plant species and employ revegetation techniques which are appropriate (with the exception of the Desert Shrub Community seed mixture), given projected post-grading conditions, for attaining revegetation goals. The commitment to irrigate, if initial plantings fail, significantly increases the feasibility of revegetation. Results of test plot studies will aid in determining the potential success of revegetation and, through modifications in the proposed final revegetation plan, increase the feasibility of revegetation.

UMC 817.112 Revegetation: Use of Introduced Species

Melilotus officinalis is the single introduced species scheduled for plantings. Melilotus officinalis is acceptable based on the UDOGM position that this species has a high potential for establishment, fixes nitrogen, and that commercial seed sources of native forbs are limited.

UMC 817.113 Revegetation: Timing

How

The applicant has complied with the requirements for this section.

UMC 817.114 Revegetation: Mulching and Other Soil Stabilizing Practices

The applicant has complied with the requirements of this section. How

UMC 817.116 and 817.117 Revegetation: Standards for Success and Tree and Shrubs Stocking for Forest Land

The applicant has complied with the requirements of this section. How

10.3 Conditions

1. Within 30 days of permit approval, the applicant shall revise the desert shrub seed mix such that a minimum of 40 grass seeds per square foot of PLS is provided.

2. Within 30 days of permit approval, the applicant must revise the reclamation plan to include a revegetation plan for the sediment disposal area adjacent to the Deseret sediment pond.

Is this final or interim reclamation

XI. ROADS

11.1 Applicant's Proposal

Maintenance + restoration should be included in applicant's proposal for all of the roads

Is this pre-law?

There are three facility roads at the Des-Bee-Dove Mine Complex: (1) a short section of the Danish Bench access road, (2) mine access road, and (3) the Des-Bee-Dove/ Wilbers Junction Road (haul road).

The mine access road is an unnumbered county road that is asphalt-surfaced and extends approximately seven miles along Danish Bench between State Highway 29 and the Des-Bee-Dove Mine Complex site located within the permit area. The road width averages 20 feet. The road gradient is approximately five percent overall to the mine site and approximately eight percent overall from the mine site to the mine office. The steepest gradient is approximately 10 percent. Surfacing is four inches thick on standard gravel road base; crowned in the center and gently sloping to the sides. Roadways cut in the

steep embankments have guard rails and berms installed at critical locations for safety and runoff control. The mine access road is used daily by mine personnel for access to the mine facilities. Twice yearly the road is utilized for cattle drives to and from East Mountain grazing areas.

The mine access road is approximately 2,500 feet long and winds from the mine offices past Deseret Mine and ends near the Beehive Mine. The road width averages 20 feet. The gradient averages about 10 percent overall, with one steep section near 30 percent. There is a 500-foot section with a gradient near 15 percent. The road construction consists of compacted soil and a gravel surface. Because of the steep gradients in the portal area, large berms or steel guard rails have been constructed to promote safety. The portal access road is used daily for access by mine labor and service personnel. Like the mine access road, the portal access road is utilized twice annually for cattle drives to and from East Mountain grazing areas.

The Des-Bee-Dove/Wilbers Junction Road is asphalt-surfaced and extends approximately 2.8 miles from the Danish Bench access road to State Highway 57. The road width averages 29 feet and the steepest gradient is about 15 percent, more or less. Surfacing is about 4 inches thick on standard gravel base, crowned in the center and gently sloping to the sides. Guard rails and berms have been installed at critical locations for safety and erosion control. The Des-Bee-Dove/Wilbers Junction Road is used for coal haulage and access to the mine facilities. Some local traffic also utilizes this road.

11.2 Evaluation of Compliance of Proposal

UMC 817.150 Roads: Class I: General

The applicant has provided evidence that a registered PE certified the design and construction of the mine access and haul road as required under part (d) of this section. Other requirements of this section are in compliance.

UMC 817.151 Roads: Class I: Location

The applicant has complied with the requirements of this section.

UMC 817.152 Roads: Class I: Design and Construction

All requirements of this section have been met by the applicant.

UMC 817.153 Roads: Class I: Drainage

The applicant has been found to be in compliance with all requirements of this section, except with regard to sediment control. Since construction of the Des-Bee-Dove/Wilbers Junction

Road, problems related to scour at culvert outlets and deposition of sediment in culverts has been observed. Several standard design modifications are conditioned that will alleviate these problems. Utah Division of Oil, Gas and Mining (UDOGM) inspectors have issued Notices of Violation (NOV), which are now under abatement. The abatement of the NOV is being pursued by the applicant in a satisfactory manner.

UMC 817.154 Roads: Class I: Surfacing

The applicant is in compliance with the requirements of this section.

UMC 817.155 Roads: Class I: Maintenance

The sediment control problems associated with culverts along the Des-BeeDove/Wilbers Junction Road are expected to be routine maintenance problems. The applicant has not committed to maintaining the Des-Bee-Dove/Wilbers Junction Road and associated facilities (i.e. culverts, gabions, and road surface). The regulatory authority feels that a commitment to a routine maintenance schedule with particular emphasis on culvert erosion and sedimentation problems is necessary. The problem is being handled through the UDOGM inspection and enforcement procedures.

UMC 817.156 Roads: Class I: Restoration Must must be discussed

The applicant meets the requirements of this section.

UMC 817.160 Roads: Class II: General

The applicant has complied with the requirements of this section.

UMC 817.161 Roads: Class II: Location

The applicant has complied with the requirements of this section.

UMC 817.162 Roads: Class II: Design and Construction

(a)(3) A section of the mine access road has a gradient exceeding 15 percent for more than the 300 foot maximum as specified under part (a) of this section. Steep canyon terrain allows no leeway for a more gradual gradient. The applicant states in the proposal that sufficient evidence was provided to OSM and DOGM to make a determination whether a variance should be granted. Based on topographic and other information in the permit application, it appears that major construction of a ~~complying roadway would increase environmental degradation.~~ The applicant is therefore granted a variance under UMC 817.162(a). by OSM or consultant

All other requirements of this section have been met by the applicant.

UMC 817.163 Roads: Class II: Drainage

The applicant is in compliance with this section.

UMC 817.164 Roads: Class II: Surfacing

The applicant is in compliance with this section.

UMC 817.165 Roads: Class II: Maintenance

The applicant has complied with the requirements of this section.

UMC 817.166 Roads: Class II: Restoration must be discussed

The applicant meets the requirements of this section.

UMC 817.170 - 817.176 Roads: Class III

There are no existing or proposed Class III roads at the Des-Bee-Dove Mine Complex.

11.3 Conditions

None.

XII. ALLUVIAL VALLEY FLOORS

12.1 Applicant's Proposal

The facilities of the Des-Bee-Dove Mine Complex are situated in a narrow canyon with steep side slopes and valley slope. The canyon lacks top soil and does not contain irrigatable land that could be used for agricultural purposes. The canyon in which the surface facilities are located contains deposits of mass movements, slope wash, debris erosion, and sheet runoff. The area is classified as an upland and nonirrigation area and, therefore, cannot be considered as an alluvial valley floor. Furthermore, disturbance or interruption of aquifers within the underground mine complex will have no effect on downstream alluvial valley floors, insomuch as there is virtually no ground water discharged.

12.2 Evaluation of Compliance of Proposal

UMC 785.19 Underground Coal Mining Activities on Areas or Adjacent to Areas Including Alluvial Valley Floors in the Arid or Semi-arid Areas of Utah

As there are no alluvial valley floors in or adjacent to the permit area and underground disturbance of aquifers will not affect downstream alluvial valley floors, the applicant is in compliance with this section.

12.3 Conditions

None.

XIII. POSTMINING LAND USE

13.1 Applicant's Proposal

Premining use of the permit area was for livestock grazing and wildlife habitat. At the present time, cattle graze the lower portions of the permit area in the spring and the upper portions (East Mountain) during the summer months. The permit area provides habitat for elk, deer, and raptors during various seasons throughout the year (pages 2-133 through 2-143, PAP, Vol. 2).

The applicant intends to return the disturbed mine areas to their premining land uses of livestock grazing and wildlife habitat. Following cessation of mining, the disturbance areas will be recontoured to blend into the existing topography and be revegetated as described in the Reclamation Plan section (pp. 4-17 through 4-22, PAP, Vol. 2). Vegetation will be re-established to be comparable to species diversity, cover, density, and productivity of the established reference areas.

13.2 Evaluation of Compliance of Proposal

UMC 817.133 Post-Mining Land Use

The applicant has complied with the requirements of this section.

13.3 Conditions

None.

XIV. AIR RESOURCES

14.1 Applicant's Proposal

The applicant is currently using several fugitive-dust control practices at the Des-Bee-Dove Mine Complex. The applicant proposes to continue these practices throughout the life and subsequent reclamation of the mine site.

The main service road and parking lots are asphalt surfaced. Service roads to the mine portals are gravel surfaced. Vehicular traffic on these roads is controlled to minimize contribution of fugitive dust. Service roads are used daily at low speeds for access by service and labor personnel. The steep natural terrain restricts unauthorized travel on other than established roads and limits vehicle speeds on roadways that are established.

Fugitive dust control procedures are implemented in the coal handling process. Little Dove run-of-mine belt conveyor is covered. Belt scrapers are installed on most conveyors to reduce coal dust generation. Coal sizing and handling from stockpile to truck are completely enclosed in the Des-Bee-Dove tipple. A vacuum system in the tipple helps reduce coal dust generation during crushing and screening plus assists in tipple housekeeping. Transfer points in the tipple are enclosed, rubber curtained at inlets and outlets, and are equipped with dust collection hoods.

The high moisture content of the coal at Des-Bee-Dove Mine provides dust control throughout the coal handling process. Analysis of samples taken during processing show an average 8.4 percent inherent and surface moisture content in 775 samples. Coal dust generation is reduced throughout the handling process by the dampening effect of this moisture.

The captive nature of the Des-Bee-Dove Mine product nearly eliminates the possibility of spontaneous combustion conditions developing. Long-term stockpiling within the permit area is unlikely. Maximum stockpile duration is approximately one month. Care is taken to ensure that short-term stockpiles are completely cleared away prior to restockpiling.

14.2 Evaluation of Compliance of Proposal

UMC 817.95 Air Resources Protection

The applicant has addressed adequately all major topics of this section, and is in compliance with the regulation.

14.3 Conditions

None.

XV. CULTURAL RESOURCES

See Environmental Assessment Addendum A.

XVI. BONDING

16.1 Description of Applicant's Proposal

Estimated costs are in 1984 dollars and include lands having been disturbed for the purpose of handling, crushing, storing, and transporting coal extracted through the Dec-Bee-Dove Mine Complex. The applicant has identified one bonding increment. Cost estimates are based on engineering analyses and standard references such as the Caterpillar Performance Handbook and Rental Rate Bluebook for Construction Equipment. A summary of the applicant's estimated costs is shown below:

	Category	Amount ($)
1	Surface Facilities Removal	162,236
2	Portal Sealing	45,084
3	Hauling, Backfilling, Compaction and Grading	555,686
4	Toxic and Acid Forming	8,126
5	Install Drainage Channels	106,923
6	Temporary Sedimentation Control Facilities	0
7	Soil Sampling and Seed Bed Preparation	14,392
8	Fertilizing and Mulching	45,619
9	Seeding and Planting	160,903
10	Disease and Pest Control	17,776
11	Soil Stabilization - Rills and Gullies	10,315
12	Contingent Seeding and Planting	14,500
13	Revegetation Inventory for Bond Release	7,222
14	Sediment Control Structure Removal	44,689
	Mobilization	10,000
SUBTOTAL		1,203,470

10% Contingency	120,347
TOTAL	1,323,817
Escalate 6.78%	1,937,712

16.2 Evaluation of Compliance of Proposal

UMC 800.11 Requirments to File a Bond

1.a. The applicant has requested a permit term of five years.

b. The revegetation liability period pursuant to UMC 817.116(b) shall be ten years as permit area precipitation is substantially less than 26 inches.

UMC 800.12 Requirements to File a Certificate of Liability Insurance

The applicant has complied with this section.

UMC 800.13 Regulatory Authority Responsibilities

The regulatory authority has analyzed the bond estimate and supporting calculations provided by the applicant. The estimates have been found to be adequate by OSM. The applicant is in compliance with this section.

16.3 Conditions

None.

XVII. REFERENCES

Bureau of Land Management, 1979, Final Environmental Statement, Emery Units 3 and 4. BLM, Washington, D.C.

Bureau of Land Management, 1983, Final Environmental Impact Statement: Uinta-Southwestern Utah Coal Region, Round II Coal Leases, BLM, Washington, D.C., October.

U.S. Geological Survey, 1979, Final Environmental Impact Statement: Development of Coal Resources in Central Utah. USGS, Washington, D.C. Utah Power and Light Company, 1983, Des-Bee-Dove Coal Mine Permit Application, to Office of Surface Mining. Revised 1984.

U.S. DEPARTMENT OF THE INTERIOR
OFFICE OF SURFACE MINING
RECLAMATION AND ENFORCEMENT
NOTICE OF A DECISION AND AVAILABILITY
OF BOTH A TECHNICAL ANALYSIS AND AN
ENVIRONMENTAL ASSESSMENT FOR
UTAH POWER AND LIGHT COMPANY
PERMANENT PROGRAM PERMIT
DES-BEE-DOVE MINE COMPLEX
EMERY COUNTY, UTAH

The United States Department of the Interior, Office of Surface Mining Reclamation and Enforcement (OSM), has approved, with conditions, a 5-year permit for Utah Power and Light Company to mine coal at its Des-Bee-Dove Mine Complex.

The Des-Bee-Dove Mine Complex coal mine is located in Emery County, Utah, in the area of East Mountain. The mine has been in operation since 1938. The proposed permit area will cover approximately 2,847 acres, approximately 74.5 of which have been disturbed to date. No additional area is proposed for disturbance. Maximum mine production is at a rate of 725,000 tons of coal over 13 years.

Any person with an interest which is or may be adversely affected by this Federal permit approval action may request an adjudicatory hearing on the final decision within 30 days after publication of this notice, in accordance with Section 514(c) of the Surface Mining Control and Reclamation Act (SMCRA). Any hearing will be governed by provisions of 5 U.S.C. Section 554. A petition for review of the OSM decision should be submitted to:

Hearings Division Office of Hearings and Appeals
U.S. Department of the Interior
4015 Wilson Boulevard
Arlington, Virginia 22203

Pursuant to 40 CFR Sections 1501.4(c) and 1506.6, notice is hereby given that the Office of Surface Mining has completed a technical analysis (TA) for the mining and reclamation plan (mining plan) for the Des-Bee-Dove Mine Complex, Emery County, Utah. OSM has supplemented this TA with an environmental assessment (EA). OSM's recommendation to approve Utah Power and Light Company mining plan and the permit application with conditions is in accordance with Sections 510 and 523 of SMCRA. OSM's analysis is that no significant environmental impacts would result from such approval. For information or clarification concerning the approval of the Des-Bee-Dove mine plan, please contact Mark Humphrey at (303) 844-5656, Office of Surface Mining, Denver, Colorado.

Both the TA and the EA are available for public review at the following locations:

Office of Surface Mining Reclamation and Enforcement
Western Technical Center
1020 15th Street
Denver, Colorado 80202

Office of Surface Mining Reclamation and Enforcement
Albuquerque Field Office
219 Central Avenue N.W.
Albuquerque, New Mexico 87102

Utah Division of Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84114