

**Deer Creek Mine, PacifiCorp  
Emery County, Utah November 1994  
U-7653, U-06039, U-47977, SL-050862**

# **MINING PLAN DECISION DOCUMENT**

**PacifiCorp**

**Deer Creek Mine**

**Federal Leases U-7653, U-06039,**

**U-47977, SL-050862**

**Emery County, Utah**



**U.S. Department of the Interior  
Office of Surface Mining Reclamation and Enforcement**

**Prepared November 1994**

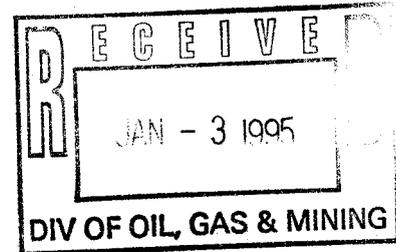


# United States Department of the Interior

## OFFICE OF SURFACE MINING

Reclamation and Enforcement  
1999 Broadway, Suite 3320  
Denver, Colorado 80202-5733

December 22, 1994



Mr. Val Payne  
PacifiCorp  
201 South Main, Suite 2100  
Salt Lake City, Utah 84140-0021

Dear Mr. Payne:

The Assistant Secretary, Land and Minerals Management, Department of the Interior, approved on December 13, 1994, the Deer Creek Mine mining plan for Federal leases U-7653, U-06039, U-47977, SL-050862. The mining plan approval authorized mining of about 38 million tons of Federal coal in 1412 acres of Federal leases U-7653, U-06039, U-47977, SL-050862. This mining plan approval supplements the Deer Creek mining plan for Federal leases SL-064607-064621, SL-064900, SL-070645, U-1358, U-02292, U-084923, U-084924, U-083066, U-040151, U-044025, U-014275, U-024319, U-47979, U-47977, and SL-050862 approved on October 11, 1985, the mining plan for Federal leases U-47977 and SL-050862 approved on January 6, 1993, and modified on July 16, 1993 and July 29, 1994, and the mining plan for U-06039 approved on July 29, 1994.

Mining operations must be conducted in accordance with both the Utah State permit and the approved mining plan. I have enclosed a copy of the mining plan approval document. Please read the terms and conditions of the mining plan approval document carefully. If you have any questions, please contact Richard Holbrook or me at (303) 672-5597.

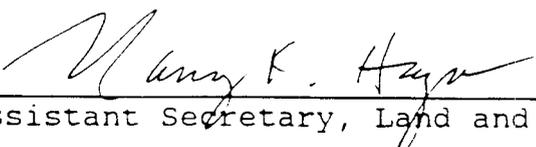
Sincerely,

Ranvir Singh, Chief  
Federal Lands Branch

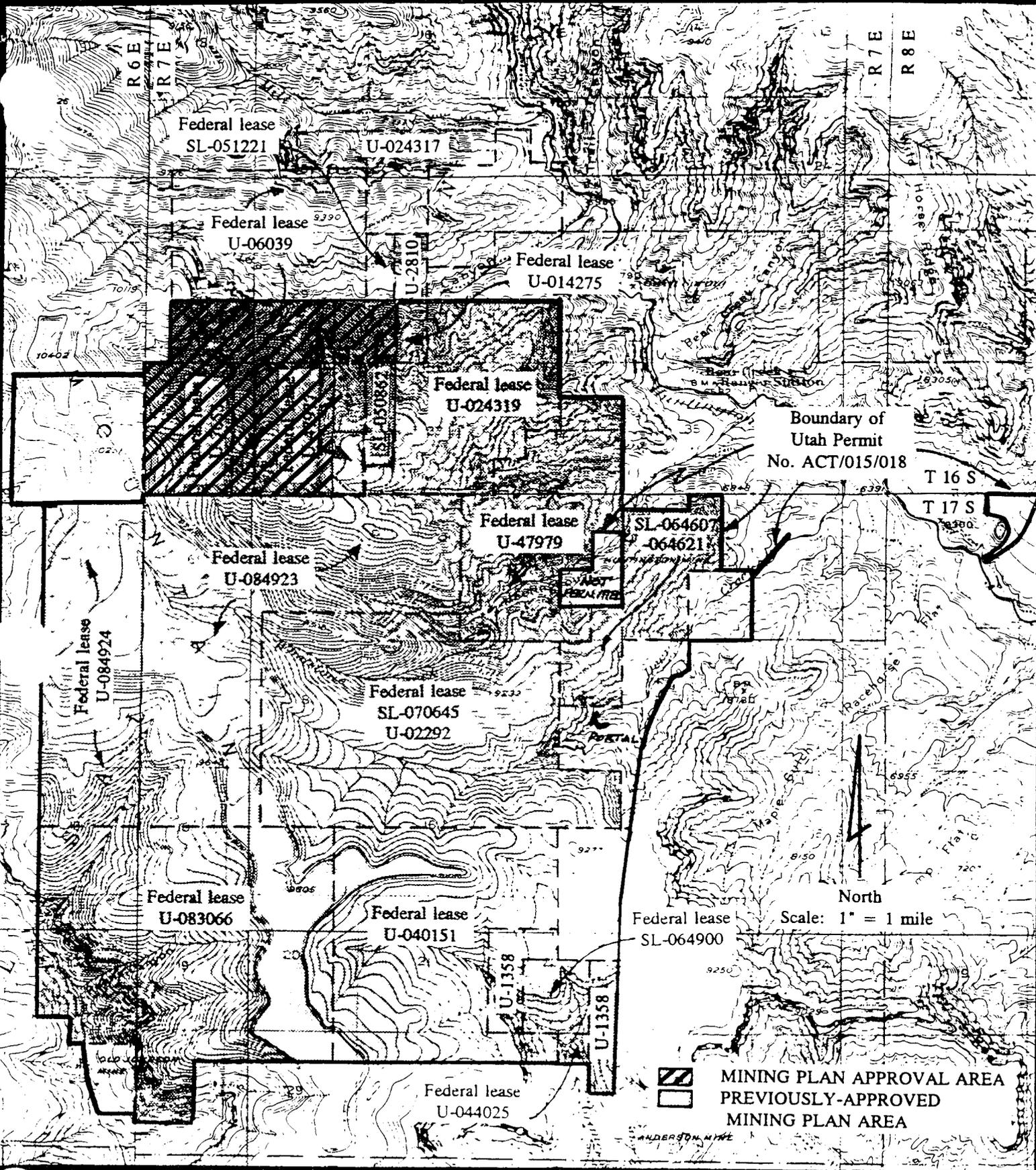
Attached

cc: BLM Price Resource Area  
Utah Division of Oil, Gas and Mining  
OSM Albuquerque Field Office

4. The operator shall comply with the terms and conditions of the leases, this mining plan approval, the special conditions appended hereto as Attachment B, and the requirements of the Utah Permit No. ACT/015/018 issued under the Utah State program, approved pursuant to the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.).
5. This mining plan approval shall be binding on any person conducting coal development or mining operations under the approved mining plan and shall remain in effect until superseded, cancelled, or withdrawn.
6. If during mining operations unidentified prehistoric or historic resources are discovered, the operator shall ensure that the resources are not disturbed and shall notify Utah Division of Oil, Gas and Mining and the Office of Surface Mining Reclamation and Enforcement (OSM). The operator shall take such actions as are required by Utah Division of Oil, Gas and Mining in coordination with OSM.

  
\_\_\_\_\_  
Acting Deputy Assistant Secretary, Land and Minerals Management

12-13-84  
\_\_\_\_\_  
Date



Attachment A  
 Mining Plan Approval Area  
 Deer Creek Mine  
 Emery County, Utah

ATTACHMENT B

Special Conditions

1. In the event that rocks or other debris from the escarpment above Rilda Creek reach Rilda Creek and cause blockage or alteration of the natural flows, the operator will be required to remove the materials causing the blockage, take necessary measures to prevent sediment production, replace riparian vegetation through reclamation or other means, and re-establish the natural flow patterns. The method of conducting these required activities must be approved in advance by the regulatory authority with consent from the Forest Service.
2. Any damage to fences, roads, spring developments, or other structures caused by escarpment failures or other operations must be repaired or replaced as soon as possible. Methods for repair or replacement of such facilities must be approved in advance by the regulatory authority with consent from the Forest Service.
3. The operator must take necessary measures to prevent raptors from building and occupying nests in the escarpment area during periods that they would be at risk from subsidence. Golden eagle nest 296A must be protected from subsidence unless the operator obtains a take permit from the U.S. Fish and Wildlife Service.
4. The operator must monitor subsidence and escarpment areas to determine the extent of escarpment failures that occur and to determine when they stabilize. The operator is responsible to ensure public safety in the areas where escarpment failures are likely to occur until it is determined that subsidence is substantially complete and the escarpments have stabilized. Methods of providing for public safety and for monitoring escarpment failures, including the frequency of monitoring, must be approved in advance by the regulatory authority with consent from the Forest Service.
5. Should escarpment failures occur to an extent beyond that predicted in the Forest Service's August 1994 environmental assessment or cause functional impairment of surface resources (impacts that are not consistent with management prescriptions in the Forest Plan), additional operations that could cause escarpment failures must be suspended until subsidence effects are re-evaluated by the regulatory authority in consultation with the Forest Service.



# United States Department of the Interior

OFFICE OF THE SOLICITOR

*Rocky Mountain Region  
P.O. Box 25007, D-105  
Denver Federal Center  
Denver, CO 80225*

TELE. (303) 231-5353

FAX (303) 231-5363

December 2, 1994

OSM.DV.P093

94-12-08-01

## Memorandum

To: Chief, Federal Lands Branch, Western Support Center,  
Office of Surface Mining Reclamation and Enforcement

From: Jennifer E. Rigg, Office of the Regional Solicitor, Rocky  
Mountain Region

Subject: Deer Creek Mine; Mining Plan Decision Package;  
PacifiCorp; Emery County, Utah; Federal Lease Nos.  
U-7653, U-06039, U-47977, and SL-050862

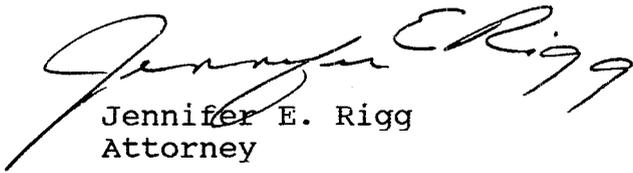
This office has reviewed the decision package for PacifiCorp's Deer Creek Mine for Federal Leases Nos. U-7653, U-06039, U-47977, and SL-050862 in Emery County, Utah. This mining plan supplements the Deer Creek Mine mining plan for Federal Lease Nos. SL-064607-064621, SL-064900, SL-070645, U-1358, U-02292, U-084923, U-084924, U-083066, U-040151, U-044025, U-014275, U-024319, U-47979, U-47977, and SL-050862 approved on October 11, 1985; the mining plan for Federal Lease Nos. U-47977 and SL-050862 approved on January 6, 1993 and modified on July 16, 1993 and July 29, 1994 and the mining plan for U-06039 approved on July 29, 1994. Approval of this mining plan will authorize mining of about 38 million tons of Federal coal within 1412 acres within Federal Lease Nos. U-7653, U-06039, U-47977, and SL-050862.

The Secretary of the Interior and the State of Utah have entered into a cooperative agreement which delegates to the State permitting responsibility for operations on Federal lands pursuant to § 523 of SMCRA. Pursuant to the Utah State Program and the cooperative agreement, the State made findings for approval of the permit amendment application package on October 27, 1994.

The decision package includes proposed memoranda from the Assistant Director, Western Support Center, Office of Surface Mining Reclamation and Enforcement (OSM), to the Director of OSM, and from the Director to the Assistant Secretary, Land and Minerals Management, which recommend approval of the mining plan.

We find that any issues raised during review of the decision

package have been resolved and that approval of the mining plan is consistent with applicable law.



Jennifer E. Rigg  
Attorney



# United States Department of the Interior

## OFFICE OF SURFACE MINING

Reclamation and Enforcement  
1999 Broadway, Suite 3320  
Denver, Colorado 80202-5733

November 21, 1994

### MEMORANDUM

TO: Gina Guy, Regional Solicitor  
Rocky Mountain Region

FROM: Ranvir Singh, Chief  
Federal Lands Branch

*Richard Holbrook*  
ACTING

SUBJECT: Deer Creek Mine Mining Plan Decision Document

I have attached the draft Decision Document for the Deer Creek Mine Mining Plan for Federal Leases U-7653, U-06039, U-47977, SL-050862. Please review the document and provide me your comments on or before November 30, 1994.

PacifiCorp has informed us that they recently have encountered unforeseen adverse mining conditions (burned coal) that has resulted in a shortage of minable coal under the approved mining plan. They have indicated that they will have mined out the "currently-approved" coal by the first part of December, thus an expeditious review is warranted.

If you have any questions, please contact Richard Holbrook at 672-5599 or me.

Attachment

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Deer Creek Mine  
Federal Leases U-7653, U-06039, U-47977, SL-050862  
Mining Plan Decision Document

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  - a. Memorandum from the Director to the Assistant Secretary, Land and Minerals Management
  - b. Memorandum from the Assistant Director, Western Support Center, through the Deputy Director, to the Director
2. Location Maps
3. Chronology
4. National Environmental Policy Act Compliance Documents
5. Documentation of Consultation, Concurrence and Compliance:
  - a. Bureau of Land Management
  - b. U.S. Fish and Wildlife Service
  - c. State Historic Preservation Office
  - d. U.S.D.A. Forest Service, Manti-La Sal National Forest
6. Mining Plan Approval Document
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# United States Department of the Interior

OFFICE OF SURFACE MINING  
Reclamation and Enforcement  
Washington, D.C. 20240

DEC 8 1994

## MEMORANDUM

To: Assistant Secretary, Land and Minerals Management

From: Robert J. Uram  
Director, Office of Surface Mining Reclamation and Enforcement

Subject: Recommendation for Approval of the PacifiCorp's Deer Creek Mine Mining Plan for Federal Leases U-7653, U-06039, U-47977, SL-050862, Emery County, Utah

I recommend approval with conditions of the PacifiCorp's Deer Creek Mine mining plan for Federal leases U-7653, U-06039, U-47977, SL-050862 pursuant to the Mineral Leasing Act of 1920, as amended. This mining plan supplements the Deer Creek mining plan for Federal leases SL-064607-064621, SL-064900, SL-070645, U-1358, U-02292, U-084923, U-084924, U-083066, U-040151, U-044025, U-014275, U-024319, U-47979, U-47977, and SL-050862 approved on October 11, 1985, the mining plan for Federal leases U-47977 and SL-050862 approved on January 6, 1993, and modified on July 16, 1993 and July 29, 1994, and the mining plan for U-06039 approved on July 29, 1994. My recommendation to approve the Deer Creek Mine mining plan is based on: (1) PacifiCorp's complete permit application package (PAP), (2) compliance with the National Environmental Policy Act of 1969, (3) documentation assuring compliance with applicable requirements of other Federal laws, regulations, and executive orders, (4) comments and recommendations or concurrence of other Federal agencies, and the public, (5) the findings and recommendations of the Bureau of Land Management with respect to the resource recovery and protection plan and other requirements of the Federal leases and the Mineral Leasing Act, and (6) the findings and recommendations of the Utah Division of Oil, Gas and Mining with respect to the PAP and the Utah State program.

The Secretary may approve a mining plan for Federal leases under 30 U.S.C. §§ 207(c) and 1273(c). Pursuant to 30 CFR Chapter VII, Subchapter D, I find that the proposed mining plan will be in compliance with all applicable laws and regulations. The decision document for the proposed mining plan action is attached.

Attachment



# United States Department of the Interior

OFFICE OF SURFACE MINING  
Reclamation and Enforcement  
Washington, D.C. 20240

DEC 8 1994

## MEMORANDUM

To: Assistant Secretary, Land and Minerals Management

From: Robert J. Uram *[Signature]*  
Director, Office of Surface Mining Reclamation and Enforcement

Subject: Recommendation for Approval of the PacifiCorp's Deer Creek Mine Mining Plan for Federal Leases U-7653, U-06039, U-47977, SL-050862, Emery County, Utah

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Attachment

OPTIONAL FORM 96 (7 CO)

**FAX TRANSMITTAL**

To: Rick Hollbrooke  
Dept: ASMR  
Fax #: OSM-WSC

From: RWietz  
Fax #: 2022082904

2022193100

NSN 7540 01-547-7360 9098 100 GENERAL SERVICES ADMINISTRATION



# United States Department of the Interior

## OFFICE OF SURFACE MINING

Reclamation and Enforcement  
1999 Broadway, Suite 3320  
Denver, Colorado 80202-5733

DEC 6 1994

### MEMORANDUM

TO: Director

THROUGH: Deputy Director

FROM: Acting Assistant Director, Western Support Center

SUBJECT: Recommendation for Approval with Conditions of the PacifiCorp's Deer Creek Mine Mining Plan for Federal Leases U-7653, U-06039, U-47977, SL-050862, Emery County, Utah

#### I. Recommendation

I recommend approval with conditions of the Deer Creek Mine mining plan for Federal leases U-7653, U-06039, U-47977, SL-050862. This mining plan supplements the Deer Creek mining plan for Federal leases SL-064607-064621, SL-064900, SL-070645, U-1358, U-02292, U-084923, U-084924, U-083066, U-040151, U-044025, U-014275, U-024319, U-47979, U-47977, and SL-050862 approved on October 11, 1985, the mining plan for Federal leases U-47977 and SL-050862 approved on January 6, 1993, and modified on July 16, 1993 and July 29, 1994, and the mining plan for U-06039 approved on July 29, 1994. My recommendation is based on: (1) PacifiCorp's complete permit application package (PAP), (2) compliance with the National Environmental Policy Act of 1969, (3) documentation assuring compliance with applicable requirements of other Federal laws, regulations, and executive orders, (4) comments and recommendations or concurrence of other Federal agencies, and the public, (5) the findings and recommendations of the Bureau of Land Management with respect to the resource recovery and protection plan and other requirements of the Federal leases and the Mineral Leasing Act, and (6) the findings and recommendations of the Utah Division of Oil, Gas and Mining with respect to the PAP and the Utah State program.

Approval of this mining plan will authorize mining of approximately 38 million tons of Federal coal within the approved mining plan area covering 1412 acres within Federal leases U-7653, U-06039, U-47977, SL-050862, as shown on the maps included with this decision document. The U.S.D.A. Forest Service identified, in its September 27, 1994,

Decision Notice and Finding of No Significant Impact for approval of this mining plan action, certain elements of PacifiCorp's proposal that require special conditions to comply with Federal laws. Those special conditions relating to the underground mining activities are incorporated into the mining plan approval document. The Forest Service conditions will mitigate the adverse environmental and health and safety effects of potential escarpment failures in the vicinity of Rilda Creek.

Utah Division of Oil, Gas and Mining (DOGM) reviewed the PAP under the Utah State program, the Federal lands program (30 CFR Chapter VII, Subchapter D), and the Utah cooperative agreement (30 CFR § 944.30). Pursuant to the Utah State program and the cooperative agreement, Utah DOGM approved the PAP and issued the revised permit on November 2, 1994.

The Office of Surface Mining Reclamation and Enforcement (OSM) has consulted with other Federal agencies for compliance with the requirements of applicable Federal laws, and their comments and concurrences are included in the decision document. The resource recovery and protection plan was reviewed by the Bureau of Land Management (BLM) for compliance with the Mineral Leasing Act of 1920, as amended, and 43 CFR Part 3480, and BLM recommended approval of the mining plan in memorandums dated February 23, 1991 and December 6, 1994. The U.S. Fish and Wildlife Service provided its final consultation comments under Section 7 of the Endangered Species Act in a memorandum dated November 4, 1994. The State Historic Preservation Officer determined in letters dated July 13, 1994, and February 22, 1990, that no additional protection of cultural resources was required. The U.S.D.A. Forest Service, Manti-La Sal National Forest, conditionally concurred with the proposed mining plan action in a letter dated September 27, 1994.

I have determined that the proposed area of mining plan approval is not unsuitable for mining in accordance with section 522(b) of SMCRA. The proposed area of mining plan approval is not near any area proposed for wilderness designation in the H.R. 1500 bill.

The permit revision area is located on Federal lands within the boundaries of the Manti-La Sal National Forest National Forest. However, based on OSM's analysis and on the concurrence of the U.S.D.A. Forest Service, the surface operations and impacts of the Deer Creek Mine are incident to an underground coal mine and will not be incompatible with significant recreational, timber, economic, or other values of the Manti-La Sal National Forest National Forest.

OSM has determined that approval of this mining plan will not have a significant impact on the quality of the human environment. The impacts of approval of this mining plan

and alternatives are described in the environmental assessment attached to the Finding of No Significant Impact (FONSI) included with the decision document.

The mining plan approval document included in the decision document is in conformance with the Mineral Leasing Act of 1920, as amended, and applicable Federal regulations. I recommend that you advise the Assistant Secretary, Land and Minerals Management, under 30 CFR Part 746, that the PacifiCorp's Deer Creek Mine mining plan for Federal leases U-7653, U-06039, U-47977, SL-050862 is ready for approval.

## II. Background

The Deer Creek underground coal mine is located in Emery County, Utah, 8 miles west of Huntington. The mine has been in operation since 1969. About 93 acres have been affected by surface disturbance to date. Including the 2372-acre permit revision area, the total permitted area of the Deer Creek Mine contains about 17,000 acres. Mining is expected to continue for 35 years under Utah Permit No. ACT/015/018 and the approved mining plan.

The original mining plan for the Deer Creek Mine was approved under the Federal lands program on October 11, 1985, for Federal leases SL-064607-064621, SL-064900, SL-070645, U-1358, U-02292, U-084923, U-084924, U-083066, U-040151, U-044025, U-014275, U-024319, and U-47979.

PacifiCorp submitted in February 1990, a permit revision application for the 2372-acre Rilda Lease Extension (1732 acres in Federal leases U-7653, U-06039, U-47977, SL-050862 and 640 acres in a State lease). Concerns about subsidence effects on water resources and escarpments in Rilda Canyon resulted in an extended review of the application. In 1993, PacifiCorp encountered unforeseen adverse mining conditions and needed to extend mining operations (the 3rd North Main) into two of the Rilda Lease Extension Federal leases to determine if the proposed mining plan for the Rilda Lease Extension area was feasible. To allow this "exploration" mining, the 120-acre mining plan for Federal leases U-47977 and SL-050862 was approved on January 6, 1993 in conjunction with Utah DOGM's approval of an incidental boundary change IBC-1.

Adverse mining conditions continued to be encountered resulting in two more incidental boundary changes. The mining plan for Federal leases U-47977 and SL-050862 was modified on July 16, 1993 and July 29, 1994 in conjunction with incidental boundary changes IBC-2 (160 acres) and IBC-3 (40 acres). The mining plan for Federal lease U-06039 (20 acres) was approved on July 29, 1994 in conjunction with Utah DOGM's approval of incidental boundary change IBC-3. With this mining plan action for the remainder of the Rilda

Lease Extension, the approved mining plan area for the Deer Creek Mine will contain a total of 15,278 acres.

The underground mining operations utilize longwall mining methods. The Blind Canyon and Hiawatha coal seams are mined at an average production rate of about 3 million tons per year. No additional surface disturbance except that related to mining-induced subsidence will result from this action.

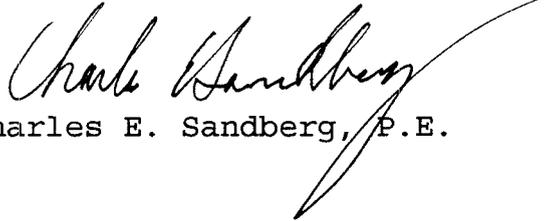
A chronology of events related to the processing of the PAP is included with the decision document. The information in the PAP, as well as other information identified in the decision document, has been reviewed by Utah DOGM staff in coordination with the OSM Project Leader.

During the review of the PAP, the Forest Service identified concerns about construction of a surface facility for a ventilation fan in Rilda Canyon and the proposed subsidence of escarpments in Rilda Canyon. The North Emery County Water Users Association expressed concerns about mining effects on its springs in Rilda Canyon. PacifiCorp removed the proposal for the surface facilities from the PAP and submitted it in a separate application that is currently under review. The Forest Service and BLM conducted an extensive analysis of the subsidence effects on the Rilda Canyon escarpments (discussed in the environmental assessment) and the Forest Service developed conditions to mitigate those effects. The conditions are included in the mining plan approval document. PacifiCorp negotiated a settlement with the North Emery County Water Users Association that satisfied its concerns about adverse effects on its springs.

The public was notified of the availability of the PAP for review by publication of newspaper notices for four consecutive weeks, with a last publication date of May 10, 1994. No public comments on the PAP were received after the public notice was published.

Utah DOGM determined that a bond in the amount of \$2,000,000.00 is adequate for the Utah Permit No. ACT/015/018 associated with this mining plan action. The bond is payable to the State and the United States.

The PAP submitted by PacifiCorp and updated through February 18, 1994, Utah DOGM's State Decision Document provided to OSM under the cooperative agreement, the environmental assessment and FONSI of the proposed action and alternatives prepared by OSM, other documents prepared by Utah DOGM, and correspondence developed during the review of the PAP are part of OSM's administrative record.



Charles E. Sandberg, P.E.

Date DEC 6 1994

Attachments



# United States Department of the Interior

OFFICE OF SURFACE MINING

Reclamation and Enforcement

WASHINGTON, D.C. 20240



## MEMORANDUM

To: Assistant Secretary, Land and Minerals Management

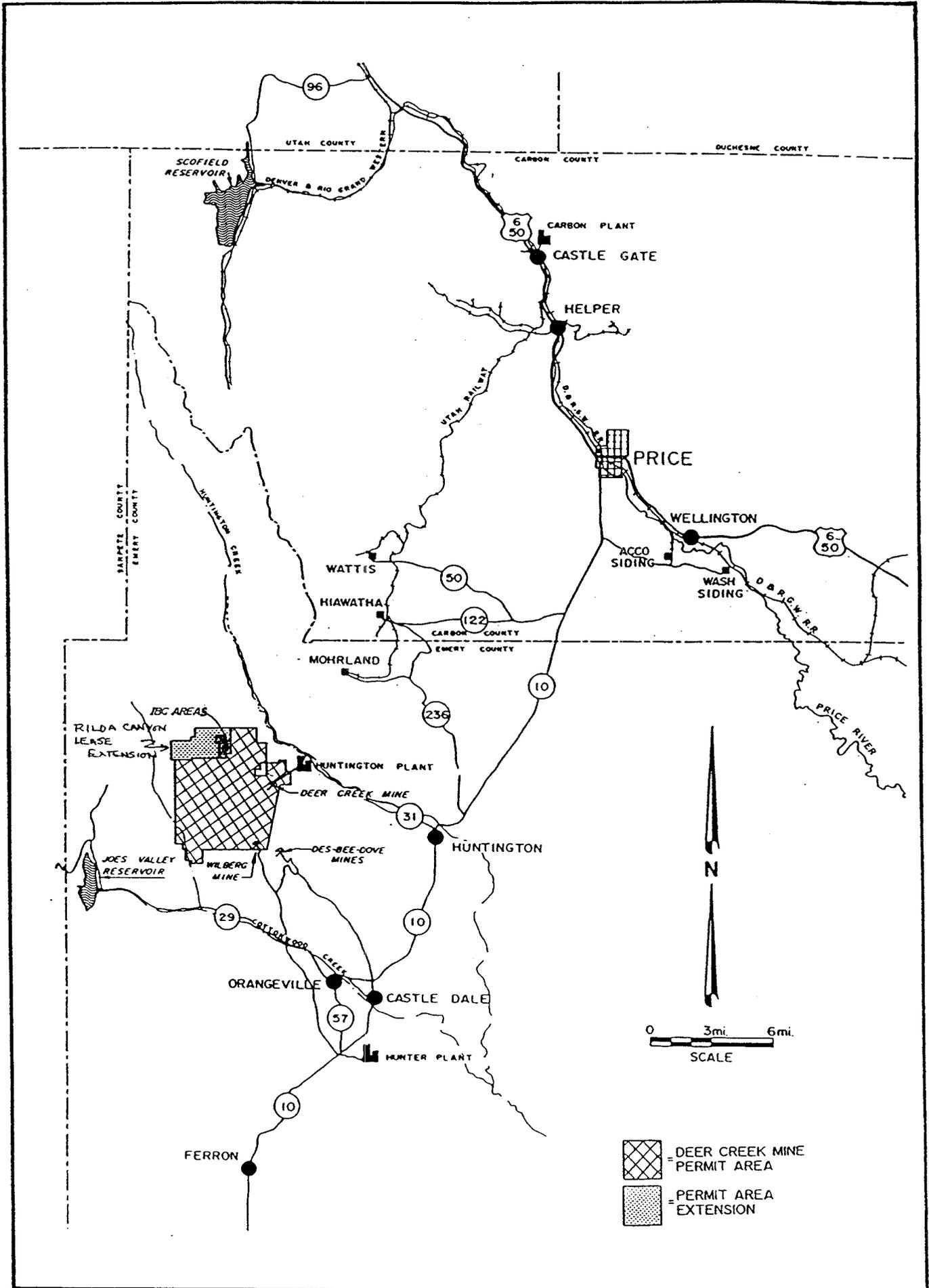
From: Robert J. Uram  
Director, Office of Surface Mining Reclamation and Enforcement

Subject: Recommendation for Approval of the PacifiCorp's Deer Creek Mine Mining Plan for Federal Leases U-7653, U-06039, U-47977, SL-050862, Emery County, Utah

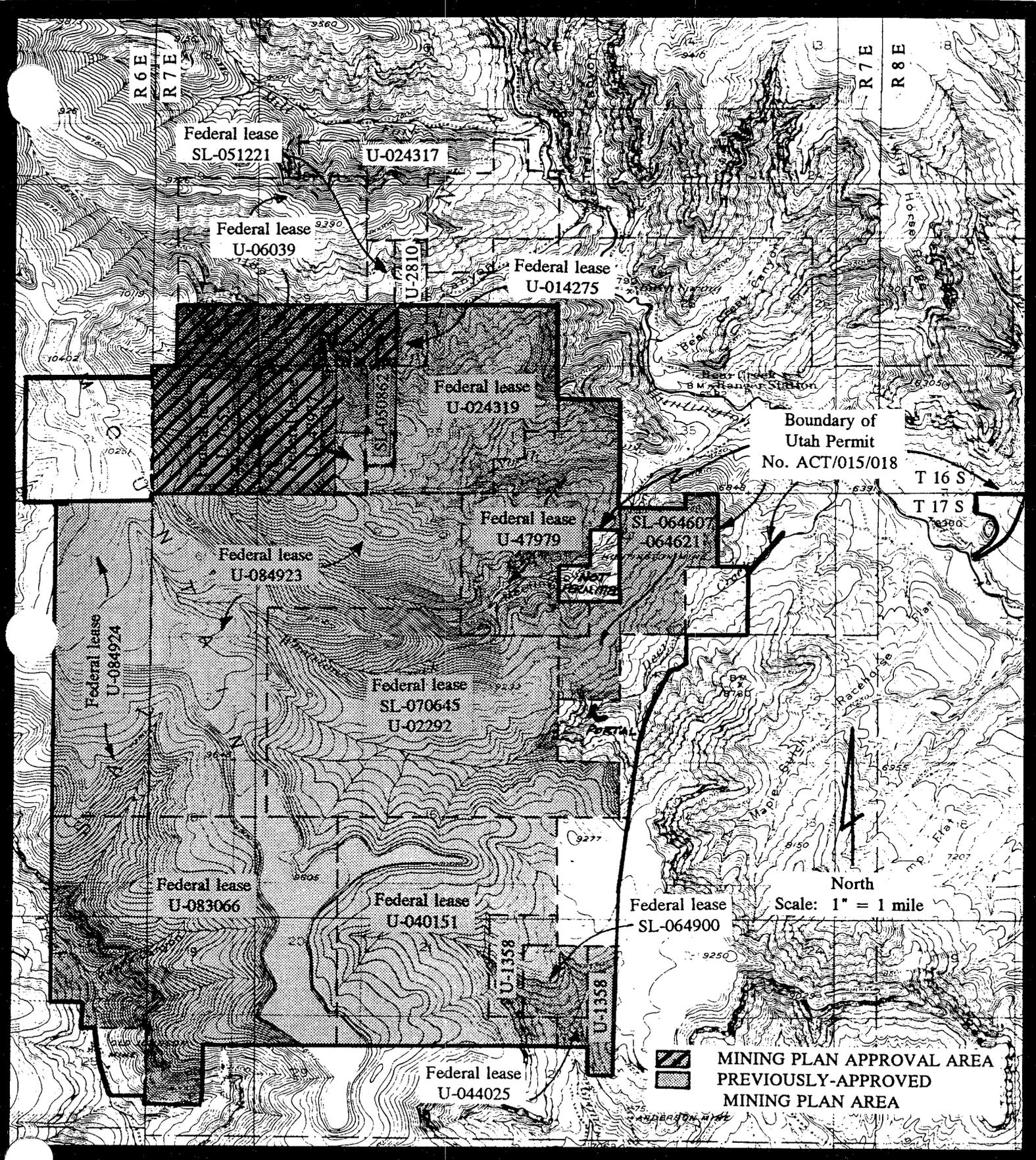
I recommend approval with conditions of the PacifiCorp's Deer Creek Mine mining plan for Federal leases U-7653, U-06039, U-47977, SL-050862 pursuant to the Mineral Leasing Act of 1920, as amended. This mining plan supplements the Deer Creek mining plan for Federal leases SL-064607-064621, SL-064900, SL-070645, U-1358, U-02292, U-084923, U-084924, U-083066, U-040151, U-044025, U-014275, U-024319, U-47979, U-47977, and SL-050862 approved on October 11, 1985, the mining plan for Federal leases U-47977 and SL-050862 approved on January 6, 1993, and modified on July 16, 1993 and July 29, 1994, and the mining plan for U-06039 approved on July 29, 1994. My recommendation to approve the Deer Creek Mine mining plan is based on: (1) PacifiCorp's complete permit application package (PAP), (2) compliance with the National Environmental Policy Act of 1969, (3) documentation assuring compliance with applicable requirements of other Federal laws, regulations, and executive orders, (4) comments and recommendations or concurrence of other Federal agencies, and the public, (5) the findings and recommendations of the Bureau of Land Management with respect to the resource recovery and protection plan and other requirements of the Federal leases and the Mineral Leasing Act, and (6) the findings and recommendations of the Utah Division of Oil, Gas and Mining with respect to the PAP and the Utah State program.

The Secretary may approve a mining plan for Federal leases under 30 U.S.C. §§ 207(c) and 1273(c). Pursuant to 30 CFR Chapter VII, Subchapter D, I find that the proposed mining plan will be in compliance with all applicable laws and regulations. The decision document for the proposed mining plan action is attached.

Attachment



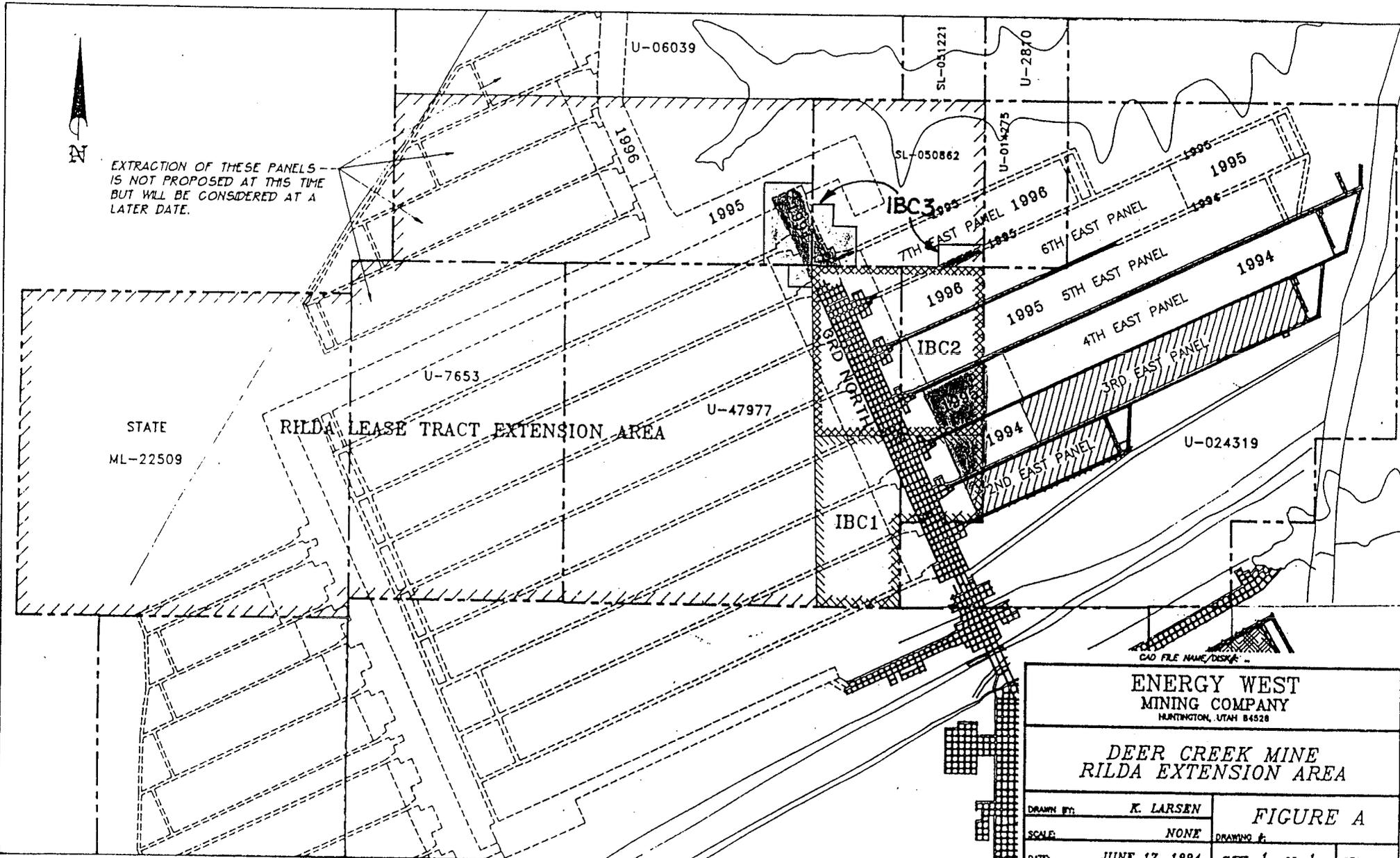
-  = DEER CREEK MINE PERMIT AREA
-  = PERMIT AREA EXTENSION



Mining Plan Approval Area  
 Deer Creek Mine  
 Emery County, Utah



EXTRACTION OF THESE PANELS  
IS NOT PROPOSED AT THIS TIME  
BUT WILL BE CONSIDERED AT A  
LATER DATE.



CAO FILE NAME/DESK#

ENERGY WEST MINING COMPANY HARRINGTON, UTAH 84528	
DEER CREEK MINE RILDA EXTENSION AREA	
DRAWN BY: K. LARSEN	FIGURE A
SCALE: NONE	DRAWING #:
DATE: JUNE 17, 1994	SHEET 1 OF 1 REV.

CHRONOLOGY  
Deer Creek Mine  
Federal Leases U-7653, U-06039, U-47977, SL-050862  
Mining Plan Decision Document

<u>DATE</u>	<u>EVENT</u>
February 12, 1990	PacifiCorp submitted the permit application package (PAP) under the approved Utah State Program to the Utah Division of Oil, Gas and Mining (DOGM) for a permit revision for the Deer Creek Mine.
February 18, 1990	The Office of Surface Mining Reclamation and Enforcement (OSM) received the PAP.
February 23, 1991 December 6, 1994	The Bureau of Land Management provided its findings and recommendations on the approval of the mining plan.
February 8, 1994	PacifiCorp resubmitted to Utah DOGM a reformatted PAP to replace the 1990 PAP.
February 18, 1994	The Office of Surface Mining Reclamation and Enforcement (OSM) received the resubmitted, reformatted PAP.
April 14, 1994	Utah DOGM determined that the PAP was administratively complete for public review and comment.
May 10, 1994	PacifiCorp published in the Emery County Progress the fourth consecutive weekly notice that its complete PAP was filed with Utah DOGM.
July 13, 1994	The State Historic Preservation Office provided its comments on the mining plan.
September 27, 1994	The U.S.D.A. Forest Service, Manti-La Sal National Forest provided its final concurrence with the approval of the mining plan.
November 2, 1994	Utah DOGM approved the PAP.
November 4, 1994	The U.S. Fish and Wildlife Service provided its final consultation comments on the mining plan.

CHRONOLOGY  
Deer Creek Mine  
Federal Leases U-7653, U-06039, U-47977, SL-050862  
Mining Plan Decision Document  
(continued)

<u>DATE</u>	<u>EVENT</u>
November 8, 1994	OSM received Utah DOGM's final State Decision Document.
December 1994	OSM's Western Support Center recommended that the mining plan be approved.

U.S. DEPARTMENT OF THE INTERIOR  
OFFICE OF SURFACE MINING RECLAMATION AND ENFORCEMENT  
FINDING OF NO SIGNIFICANT IMPACT  
FOR  
Deer Creek Mine  
Federal Leases U-7653, U-06039, U-47977, SL-050862  
Mining Plan Decision Document

A. Introduction

PacifiCorp submitted a permit application package (PAP) for a permit revision for the Deer Creek Mine to the Utah Division of Oil, Gas and Mining (DOG M) under the Utah State program (30 CFR Part 944). The PAP proposes extending underground mining operations into about 2372 acres, including 1412 acres of Federal leases U-7653, U-06039, U-47977, SL-050862. The proposed mining plan would cause no new surface disturbance except that which results from mining-induced subsidence.

Under the Mineral Leasing Act of 1920, the Assistant Secretary, Land and Minerals Management, must approve, approve with conditions, or disapprove the mining plan for Federal leases U-7653, U-06039, U-47977, SL-050862. Pursuant to 30 CFR Part 746, the Office of Surface Mining Reclamation and Enforcement (OSM) is recommending approval of this mining plan with conditions.

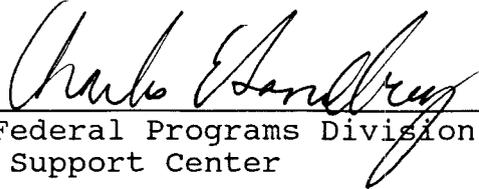
B. Statement of Environmental Significance of the Proposed Action

The undersigned person has determined that the above-named proposed action would not have a significant impact on the quality of the human environment under section 102(2)(C) of the National Environmental Policy Act of 1969 (NEPA), 42 U.S.C. §§ 4332(2)(C), and therefore, an environmental impact statement is not required.

This finding of no significant impact is based on the attached environmental assessment (EA) prepared August 1994, by the U.S.D.A. Forest Service in cooperation with the Bureau of Land Management and OSM. The EA addresses the environmental impacts resulting from the approval of PacifiCorp's proposed mining plan for Federal leases U-7653, U-06039, U-47977, SL-050862, including construction of surface facilities and mining under Rilda Canyon escarpments. The mining plan recommended for approval with conditions by OSM is for underground mining activities only and does not include construction of any surface facilities. The approval conditions, developed by the Forest Service, will mitigate the adverse environmental and health and safety effects of potential escarpment failures in the vicinity of Rilda Creek. A proposed mining plan modification to construct the surface facilities is

currently being reviewed by Utah DOGM, the Forest Service, and OSM.

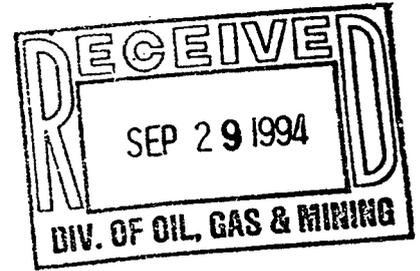
OSM independently evaluated the EA as of the date specified below and determined that it adequately and accurately assesses the environmental impacts of the proposed action and provides sufficient evidence and analysis for this finding of no significant impact. OSM takes full responsibility for the accuracy, scope, and content of the attached EA.

 acting

Chief, Federal Programs Division  
Western Support Center

12-6-94  
Date

DECISION NOTICE  
AND  
FINDING OF NO SIGNIFICANT IMPACT



PACIFICORP DEER CREEK MINE SURFACE FACILITIES  
AND  
MINING UNDER THE CANYON ESCARPMENT  
IN RILDA CANYON

USDA FOREST SERVICE, INTERMOUNTAIN REGION  
MANTI-LA SAL NATIONAL FOREST  
PRICE RANGER DISTRICT  
EMERY COUNTY, UTAH

INTRODUCTION

PacifiCorp submitted a permit revision and mining plan to the Utah Division of Oil, Gas and Mining (UDOGM) proposing to construct a breakout with ancillary facilities in Rilda Canyon to provide ventilation of underground workings for the Deer Creek Coal Mine. The proposal would include construction of a facilities pad and new access road on Federal Coal Lease U-06039, reconstruction of the existing road in Rilda Canyon to accommodate project and public use, and installation of an overhead 25 KV power transmission line from the Huntington Power Plant in Huntington Canyon to the facilities pad. The facilities pad would contain 3 mine openings or portals, a fan at the easternmost of the three portals, a substation, water storage tank, and pumphouse.

In addition, the mining plan calls for mining beneath the south slope or escarpment of Rilda Canyon, including the lower reaches of the south slope of the Left Fork of Rilda Canyon on Federal Coal Leases U-06039, U-7653, U-47977, SL-050862, U-014275, and U-024319. The proposed mining (longwall method) would induce subsidence that could cause escarpment failures along the Castlegate Sandstone outcrop. Lease stipulations contain a restriction that prohibits underground mining that could cause the creation of hazardous conditions such as escarpment failures and landslides, unless specifically evaluated and approved. Specific evaluation and approval is required to prevent hazardous conditions and associated impacts.

The Forest Supervisor, Manti-La Sal National Forest, must decide whether or not to consent to construction of the surface facilities and mining under the canyon slope that could cause subsidence and potential escarpment failures. Consent authority is provided under the Federal Coal Leasing Amendment's Act of 1975, Surface Mining Control and Reclamation Act of 1977 and Federal Regulations 30 CFR 700 to end. If consent is given, the Forest Supervisor must identify any measures required for the protection of non-mineral resources. In addition, the Forest Supervisor must decide whether or not to issue the required special-use permit for the powerline on National Forest System lands under the Federal Land Policy and Management Act of 1976,

authorize Emery County to reconstruct Forest Development Road 50246 (Rilda Canyon Road) under a project agreement, and grant an easement to Emery County for operation and maintenance under the Federal Roads and Trails Act of 1964.

An Environmental Assessment (EA) was prepared for this proposal by the Forest Service with participation from the Bureau of Land Management and Office of Surface Management which were identified as cooperating agencies. The EA was tiered to the Final Environmental Impact Statement, Manti-La Sal National Forest (Forest Plan FEIS). The EA evaluated three alternatives which consist of (1) No Action, (2) the proposed action (plan as proposed by PacifiCorp) with required mitigations, and (3) a modified proposed action alternative that would not allow mining which would cause subsidence of the canyon slope/escarpment and potential escarpment failures. The analysis considered cumulative impacts to the ecosystems in Rilda Canyon, socioeconomic impacts, and concerns regarding maximum economic recovery of the coal resources in the area.

#### DECISION/RATIONALE (DECISION NOTICE)

Based on the analysis, I have decided to consent to the proposal by PacifiCorp with mitigations designed to mitigate the anticipated impacts (Alternative 2, Proposed Action with Mitigations). A copy of the required mitigations are included as Attachment 1. Implementation of this decision would include issuance of a special-use permit to authorize construction of the 25KV overhead powerline, and completion of a project agreement with Emery County for reconstruction of the Rilda Canyon Road (FDR 50246) currently under Forest Service jurisdiction (from the North Emery Water User's Association (NEWUA) springs to the Forks of Rilda Creek). Once this reconstruction is completed in accordance with the project agreement, an easement would be issued to Emery County, transferring jurisdiction of this road.

I feel that this alternative best meets the needs of the general public by providing a balance between recovery of Federal coal reserves in the area and preserving the integrity of the ecosystems in Rilda Canyon consistent with Forest Plan direction. It would provide for recovery of approximately 10.4 million tons of recoverable coal under the escarpment and necessary ventilation to safely mine reserves to the west. It would involve a low risk of causing long-term impacts to water quality and quantity in Rilda Creek and the North Emery Water User's Association culinary springs. It provides for up-front mitigation of possible impacts to the NEWUA culinary water supply (potential net benefit), and requires measures that would improve the condition of riparian vegetation in the RPN (Emphasis on Riparian Area Management) Management Unit to offset the estimated 2.4 acres of long-term loss of riparian vegetation in the RNG (Emphasis on Production of Forage) Management Unit. The potential public safety hazard is considered low because it is not likely that rocks would reach the Rilda Canyon due to distance, topographic factors, and vegetation.

The decisions required by the cooperating agencies in regard to the proposal will be documented in separate decision documents, released to the public, and appealable in accordance with that agency's specific regulations.

## PUBLIC INVOLVEMENT

Scoping letters were sent to interested parties on May 5, 1994, that briefly described the proposal and requested public comment. A legal notice informing the public of the proposal and requesting public comment was published in the Sun Advocate (publication of record) on May 5, 1994, and the Emery County Progress (supplemental publication) on May 10, 1994. Two response letters were received during project scoping and a third letter was received during preparation of the environmental analysis. Emery County stated that they support the proposal. The Utah Division of Wildlife Resources expressed concern in regard to potential impacts to wildlife and riparian habitat in Rilda Canyon and suggested that measures be taken to mitigate habitat loss and improve riparian habitat in adjacent areas. In the third letter, Huntington-Cleveland Irrigation Company requested a copy of the EA for review when completed.

A copy of the EA was sent to potentially affected parties, and those who responded during project scoping or specifically requested a copy on August 4, 1994. A legal notice was published in the Sun Advocate and Emery County Progress on August 9, 1994 notifying the general public that the EA was available for public review for 30 days and that Alternative 2 was the Forest Service preferred alternative. Two letters were received as described below.

The Huntington Cattlemans Association stated that they protest construction of a fence at the mouth of Rilda Canyon in Huntington Canyon because this area has been grazed for many years and is spring range that is of vital importance to them. In a telephone conversation between District Ranger Jankiewicz and Lee Lemmon of the Cattle Association, it was explained that the fence would prevent grazing of approximately 7.6 Animal Unit Months (AUM) of approximately 4,512 AUMs provided in the Gentry C&H Allotment which has been determined to be an insignificant amount of use in a non-critical area. Lee stated that he would not object further but wanted to be on record as protesting the decision.

Craig Smith of Nielsen & Senior, representing the Huntington-Cleveland Irrigation Company, responded with a series of comments regarding potential impacts to water in the Huntington drainage. The comments and Forest Service responses are included in this document as Attachment 2. As discussed in the responses, I feel that the EA adequately addresses the concerns. The EA and Cumulative Hydrologic Impact Assessment (CHIA) show that the selected alternative would not have a significant impact to the hydrologic balance in Huntington Creek.

## FINDING OF NO SIGNIFICANT IMPACT (FONSI)

Based on the referenced EA for this project, I have determined that implementation of this project is not a major Federal action that would significantly affect the quality of the human environment. Therefore, the preparation of an Environmental Impact Statement is not required. This determination was made considering the following factors:

My decision and the resulting actions comply with direction of the Land and Resource Management Plan, Manti-La Sal National Forest, 1986, as amended (Forest Plan).

There are no anticipated significant effects on the quality of the human environment, either as an individual action, or as part of the cumulative effects of other past, present, and reasonably foreseeable actions within the Rilda Canyon area.

There would be no unacceptable hazards to public health or safety.

There are no highly uncertain, highly controversial, unique, or unknown risks.

There will be no adverse affects to districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. There will be no loss or destruction of cultural or historical resources.

There will be no adverse affects to endangered, threatened, or sensitive plant or animal species or their habitat, as documented in the Biological Evaluation in the project file.

The decision and resulting actions comply with other Federal, State, and local laws and requirements imposed for the protection of resources.

Mitigation measures specified in this Decision Notice will be monitored to assure that they are carried out as planned.

#### IMPLEMENTATION DATE AND MONITORING

Implementation of this decision may take place no sooner than November 21, 1994 which is the fifth business day following the end of the 45 day appeal period. See appeal rights discussed in the next section.

Monitoring of subsidence, flow and quality of water in Rilda Creek and the NEWUA springs is the responsibility of PacifiCorp under lease stipulations and requirements of the approved mining permit. Water monitoring information is submitted to the Utah Division of Oil, Gas and Mining on intervals specified in the Mine Plan. Subsidence monitoring results and an annual summary of hydrologic monitoring are submitted on an annual basis.

#### APPEAL RIGHTS

This decision is subject to appeal pursuant to 36 CFR Part 215.7 and Part 251.

Any written appeal under 36 CFR Part 215.7 must be postmarked or received by the Appeal Deciding Officer, Dale Bosworth, USDA Forest Service, Intermountain Region, 324 25th Street, Ogden, Utah 84401 within 45 days after publication of the Notice of Decision in the Sun Advocate Newspaper of Price, Utah (publication of record). The Notice of Decision will be published on September 27, 1994, therefore, any appeals must be filed on or before November 14, 1994. Appeals must meet the requirements of 36 CFR 215.14.

This decision is subject to appeal under 36 CFR 251, Subpart C. Any written notice of appeal submitted by the holder of a written instrument to occupy and use National Forest System lands must be fully consistent with 36 CFR 251.90 including the reasons for the appeal and must be filed on or before November 14, 1994. Notice of Appeal and statement of reasons must be submitted in writing to Dale Bosworth, USDA Forest Service, Intermountain Region 324 25th Street, Ogden, Utah 84401. Simultaneously send a copy of the Notice of Appeal to George Morris, Forest Supervisor, Manti-La Sal National Forest, 599 West Price River Drive, 84501.

Required decisions of the cooperating agencies would be subject to review and appeal specific to their appropriate regulations and are not appealable to the Forest Service as specified in the above paragraph.

*George A. Morris*

\_\_\_\_\_  
GEORGE A. MORRIS  
Forest Supervisor

*9-27-94*

\_\_\_\_\_  
Date

DN/FONSI Attachment 1

MITIGATIONS

Operations are subject to adherence to the stipulations attached to the individual coal leases affected by operations and to provisions of the approved mine plan and permit. The mitigations listed below are in addition to those required by the leases or mine permit.

1. The permittee must construct a fence and cattleguard at in Rilda Creek at the east boundary of National Forest System lands to exclude livestock use on National Forest System lands in the canyon. Maintenance of this facility during the life of operations would be the operator's responsibility. This would prevent damage to the riparian vegetation and enhance the area for wildlife to offset the loss of riparian vegetation from facilities pad and road construction. The fence and cattleguard designs and specific location are subject to Forest Service review and approval.
2. The facilities pad must be fenced to provide for public safety safety and prevent access by livestock and big game species.
3. Facilities must be painted with a color that blends naturally with the surrounding environment. The color is subject to approval by the Forest Service.
4. In the event that rocks or other debris from the escarpment reach Rilda Creek and cause blockage or alteration of the natural flows, the operator will be required to remove the materials causing the blockage, take necessary measures to prevent sediment production, replace riparian vegetation through reclamation or other means, and re-establish the the natural flow patterns. The method of conducting these required activities are subject to approval of the regulatory authority with consent from the Forest Service.
5. Any damage to fences, roads, spring developments, etc. caused by escarpment failures or other operations must be repaired or replaced as soon as possible. Methods for repair of replacement of such facilities are subject to approval of the regulatory authority with consent from and Forest Service.
6. The permittee must take necessary measures to prevent raptors from building and occupying nests in the escarpment area during periods that they would be at risk from subsidence. Golden eagle nest 296A must be protected from subsidence unless the operator obtains a take permit from the U.S. Fish and Wildlife Service.
7. The permittee must monitor subsidence and escarpment areas to determine the extent of escarpment failures that occur and to determine when they stabilize. The operator is responsible to ensure public safety in the areas where escarpment failures are likely to occur until it is determined that subsidence is substantially complete

and the escarpments have stabilized. Methods of providing for public safety and for monitoring escarpment failures (including the frequency of monitoring) are subject to approval of the regulatory authority with consent from the Forest Service.

8. Should escarpment failures occur to an extent beyond that predicted and cause functional impairment of surface resources (impacts that are not consistent with management prescriptions in the Forest Plan), additional operations that could cause escarpment failures must be suspended pending evaluation by the regulatory authority in consultation with the Forest Service.
9. The permittee must provide final designs for the facilities pad access road that address stabilization of the cut and fill slopes, protection of the road from stream erosion, and measures to prevent materials from entering stream channels. Forest Service approval of the designs is required prior to implementation.

DN/FONSI Attachment 2

HUNTINGTON-CLEVELAND IRRIGATION CO. COMMENTS WITH FOREST SERVICE RESPONSES

The specific concerns (comments) in the September 7, 1994 letter are listed below (underlined), followed by the Forest Service response (September 15, 1994 letter to Craig Smith):

1. The EA should contain specific mitigation requirements for water quantity or quality impacts on ground and surface water. The requirements must be keyed and tailored to specific impacts on specific water sources and include how a particular impact will be mitigated.

In the process of conducting the environmental analysis, it was identified that the greatest risk of disrupting flow is from proposed longwall panels in shallow overburden (less than 500 feet) under the Left Fork of Rilda Creek. Due to the high potential for cracks to develop and potentially drain water from the alluvial aquifer, PacifiCorp agreed to drop these longwall panels from their proposal. Additional information would be required to determine how much of the total flow of Rilda Creek is contributed by this segment of the alluvial aquifer before the panels can be further considered for approval.

Our findings show that groundwater recharge is from the north of the canyon, the stream channel would be protected from subsidence, and there are no springs other than the NEWUA springs. Based on these findings, the only remaining concerns in regard to water quality and flow involve (1) sediment production from construction activities, (2) potential spills, and (3) effects to flow at the NEWUA springs. The proposal includes a sediment plan with best management practices for minimizing the production of sediment. Upon approval by UDOGM/OSM, operations would be subject to provisions already included in the approved Mining and Reclamation Plan, such as the spill contingency plan. Hydrologic data indicates that there is only low potential for mining on the south slope of Rilda Canyon to affect flow at the NEWUA springs because recharge is from the alluvial aquifer and the area north of Rilda Creek. Since the flow at the NEWUA springs is being diverted for culinary water, loss of flow in Rilda Creek is not likely. PacifiCorp has taken measures, specified in their agreement with NEWUA, to replace water in quality and quantity in the event that impacts occur. It is most likely that these measures would provide an overall net benefit to water users by providing up-front mitigation before mining occurs. Since this was part of the proposal and PacifiCorp has already committed to replacement of water in concept (pages 4-77, 4-78, and 4-83), there is no need for additional stipulations. These measures are adequately discussed and considered in the EA.

2. The EA fails to address the issue of how and where PacifiCorp intends to dispose of water encountered in its mining operations in the Rilda

Canyon area. Until this issue is addressed, it is difficult to provide comment.

The proposal does not request or provide for water discharge or disposal in Rilda Creek. A UPDES permit would be required by the State of Utah for any water discharge. Discharge of water into Rilda Creek was not raised as an issue by the public or participating agencies.

The EA addresses discharge of water encountered in the mine on page IV-18, paragraph 4. Water encountered during mining would be stored in the mine workings or discharged into Deer Creek under PacifiCorp's existing UPDES discharge permit. The facilities pad is designed to drain precipitation back into the mine workings, preventing the need for a sediment pond in Rilda Canyon that would result in additional surface disturbance. Considering geologic conditions in the area, there is no expectation that water encountered in the mine workings would drain from the Rilda Canyon portals once the workings are abandoned and surface disturbances are reclaimed.

3. A general stipulation prohibiting trans-drainage movement of water is also needed to prevent water encountered in the mine acres within Huntington Canyon being moved.

As discussed in the EA, it was determined that groundwater recharge of the springs and alluvial flow in Rilda Creek is mostly, if not all, from the north because of the southerly dip of the rock layers. Very little water has been encountered in the development workings on the south side of the canyon. Due to the dip of the rock layers and small amount of water encountered in this area thus far, it is not likely that flow in Rilda Creek would be diverted. Any water encountered in the mine workings would be stored in the mine or discharged into Deer Creek that would drain back into Huntington Creek. Under the UPDES permit, water discharged from the mine must meet State water quality standards.

Underground mining would not likely divert a significant amount of surface flow from precipitation/runoff from the south slope of Rilda Canyon into the groundwater regime.

4. It is of particular concern that this EA has been prepared and issued without the benefit of the final approved Probable Hydrologic Consequences (PHC) or the preparation of a Cumulative Hydrologic Impact Analysis (CHIA). It is stated on page III-6 of the EA that the PHC is being analyzed and the CHIA is being prepared. Without these important hydrological documents, the EA is premature. The EA should not be issued until after the public has an opportunity to review the Division of Oil, Gas & Mining's review of the PHC and CHIA. This is not merely a procedural issue, but a substantive one. Huntington-Cleveland believes that the PHC understates the scope and nature of impact that the mining activities of PacifiCorp will have. Specifically, it is believed that mining in Rilda Canyon will disrupt nearby springs in Huntington Canyon as well. This potential impact cannot be seriously discussed without the final CHIA.

There is no requirement that the CHIA be completed prior to conducting an environmental analysis for a project, however, the EA was completed as a parallel and coordinated process with the Division's review of the PHC and preparation of the CHIA. The hydrologist that has the lead for preparation of the CHIA participated as an interdisciplinary (ID) team member for preparation of the EA, representing OSM. The purpose of the statement in the EA (page III-6) was to reference the CHIA and show that the evaluations are consistent. The EA substantively discloses the hydrologic impacts and resulting cumulative effects related to mining south of Rilda Canyon that are contained in the CHIA. Development and review of the PHC has been ongoing for several years.

Forest Service decision regarding consent will be based on the results of the EA. Before the Department of Interior Assistant Secretary, Lands and Minerals Management (ASLMM) can approve the proposal, the Office of Surface Mining must have the EA, the Forest Service consent decision, and CHIA, as well as other required documents.

5. Another area of general concern is the total lack of any required mitigation for surface and groundwater impacts in the EA. A telephone discussion of this issue with Forest Service officials revealed that the Forest Service is relying on general stipulations found in the Forest Plan. We believe that this approach is insufficient to address impacts on ground and surface water.

PacifiCorp has been monitoring the hydrology in the Rilda Canyon area for several years to collect data for the PHC and CHIA. The Mining and Reclamation Plan includes provisions for hydrologic monitoring (Volume 9, Appendix A), and for replacement of water (pages 4-77, 4-78, 4-83, and Volume 9, Appendix G). In addition, the affected Federal Coal leases contain a stipulation that requires replacement of water in quality and quantity in the event that it is lost due to mining. All operations within the leases are subject to these stipulations.

Appendix 3 of the EA contains stipulations. In the first paragraph, it is stated "Operations are subject to adherence to the stipulations attached to the individual coal leases affected by operations and to provisions of the approved mine plan and mine permit". Since these provisions are already in place and PacifiCorp's proposal contains a commitment consistent with this stipulation, there is no need to specify their inclusion again. As stated in our response to your first comment, the proposal for operations in Rilda Canyon contains specific mitigations that have already been initiated to replace water if monitoring detects effects that can be attributed to mining.

The hydrologic monitoring plan includes monthly monitoring of water flow at the Right Fork surface well (RCF1), just below the springs in the main channel of Rilda Creek (RCF3), and the mouth of Rilda Creek (RCW4). The flow at the NEWUA springs is monitored monthly. The

monitoring wells (P1, P3-7) near the springs will also be monitored on a monthly basis. Quality is monitored at these stations quarterly.

6. Finally, a follow-up and enforcement mechanism needs to be implemented whereby impacts, if occurring, will be identified and mitigation required. Currently, there is no such mechanism and impacts beyond those predicted are not addressed.

PacifiCorp has already done extensive detailed monitoring of the hydrology in Rilda Canyon. They have committed to a comprehensive monitoring program to detect impacts to water quality and quantity. The results of monitoring must be submitted to the Utah Division of Oil, Gas and Mining within a certain time frame after it is collected. Enforcement of the mine plan provisions and mining regulations is a responsibility of the Division. The Forest Service does not have funding and personnel available to review all monitoring data. We are, however, notified by the operator and/or the Division if impacts are detected. It is our policy to cooperate with the Division in their enforcement of any applicable stipulations. If you feel that additional monitoring should be accomplished, we would encourage you to enter into an agreement with PacifiCorp to cooperate in their monitoring effort or to conduct independent monitoring. If you wish to do so, please contact Charlie Jankiewicz, District Ranger, to make necessary arrangements to conduct this work.

ENVIRONMENTAL ASSESSMENT

PacifiCorp Deer Creek Mine Surface Facilities  
and  
Mining Under Canyon Escarpments  
in Rilda Canyon

USDA Forest Service  
Intermountain Region  
Manti-La Sal National Forest  
Price Ranger District  
Emery County, Utah

August, 1994

Responsible Officials:

GEORGE A. MORRIS  
Forest Supervisor  
Manti-La Sal National Forest  
599 West Price River Drive  
Price, Utah 84501

ROGER ZORTMAN  
District Manager  
Bureau of Land Management  
Moab District  
P.O. Box 970  
Moab, Utah 84532

Cooperating Agencies:

Bureau of Land Management  
  
Office of Surface Mining

For Further Information  
Contact:

Charlie Jankiewicz  
District Ranger  
Price Ranger District  
599 West Price River Drive  
Price, Utah 84501  
(801) 637-2817

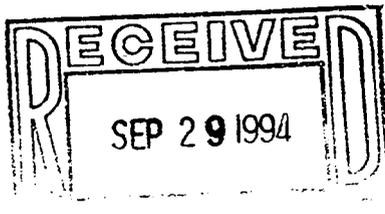


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CHAPTER I  
PURPOSE AND NEED FOR ACTION

I. INTRODUCTION

PacifiCorp submitted a permit revision and mining plan to the Utah Division of Oil, Gas and Mining proposing to construct a breakout with ancillary facilities in Rilda Canyon for the Deer Creek Mine. The purpose of the breakout is to provide intake and exhaust portals for ventilation of underground workings. The proposal would include construction of a facilities pad and new access road on Federal Coal Lease U-06039, reconstruction of the existing road in Rilda Canyon to accommodate project and public use, and installation of an overhead power transmission line (Maps 1 and 3).

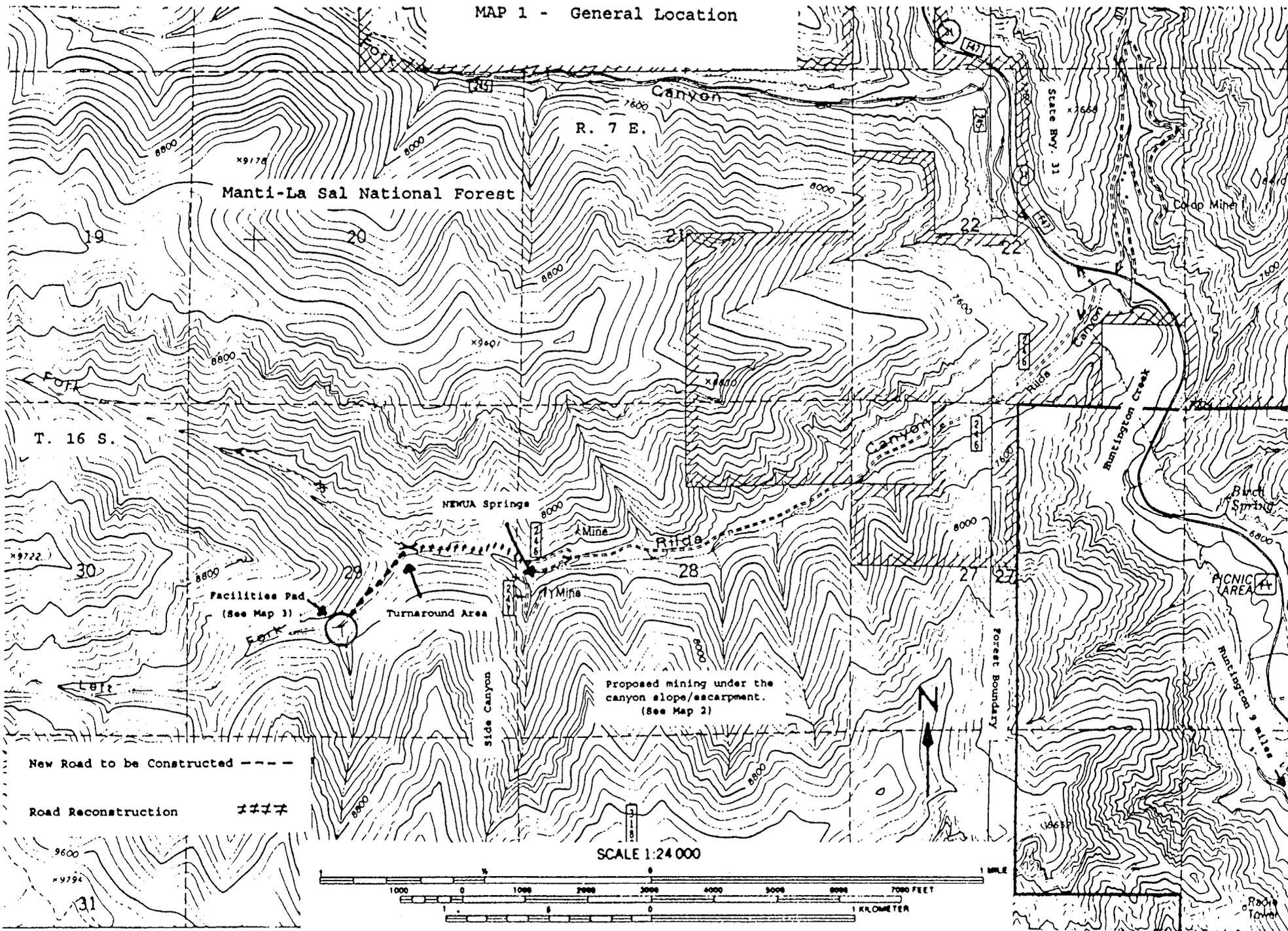
PacifiCorp has also proposed to mine beneath the south slope (escarpment) of Rilda Canyon (below the forks) and the Left Fork of Rilda Canyon on Federal Coal Leases U-06039, U-7653, U-47977, SL-050862, U-014275, and U-024319 which would cause subsidence of this area (Maps 1 and 2). The purpose is to maximize production of coal resources and extend the life of the Deer Creek Mine. Stipulations contained in the Federal coal leases proposed for mining contain a restriction that prohibits underground mining operations and surface subsidence that could cause the creation of hazardous conditions such as potential escarpment failures and landslides, unless specifically evaluated and approved. Specific evaluation and approval of mining under escarpments is required to prevent hazardous conditions and associated impacts, unless they can be mitigated to be consistent with Forest Plan goals and prescriptions.

The proposed facilities pad would be located on National Forest System lands in the Left Fork of Rilda Canyon administered by the Price Ranger District of the Manti-La Sal National Forest in Section 29, T. 16 S., R. 7 E., SLB&M, Emery County, Utah (Map 1). The new road for access to the facilities pad lies entirely on National Forest System lands in the left fork. Those portions of the existing Rilda Canyon road to be upgraded for this project are located in Rilda Canyon within the administrative boundary of the Manti-La Sal National Forest on Federal and private lands. The proposed powerline traverses National Forest System lands, private lands within and outside of the administrative boundary of the Forest, and public lands administered by the Bureau of Land Management, San Rafael Resource Area.

II. PURPOSE AND NEED FOR ACTION

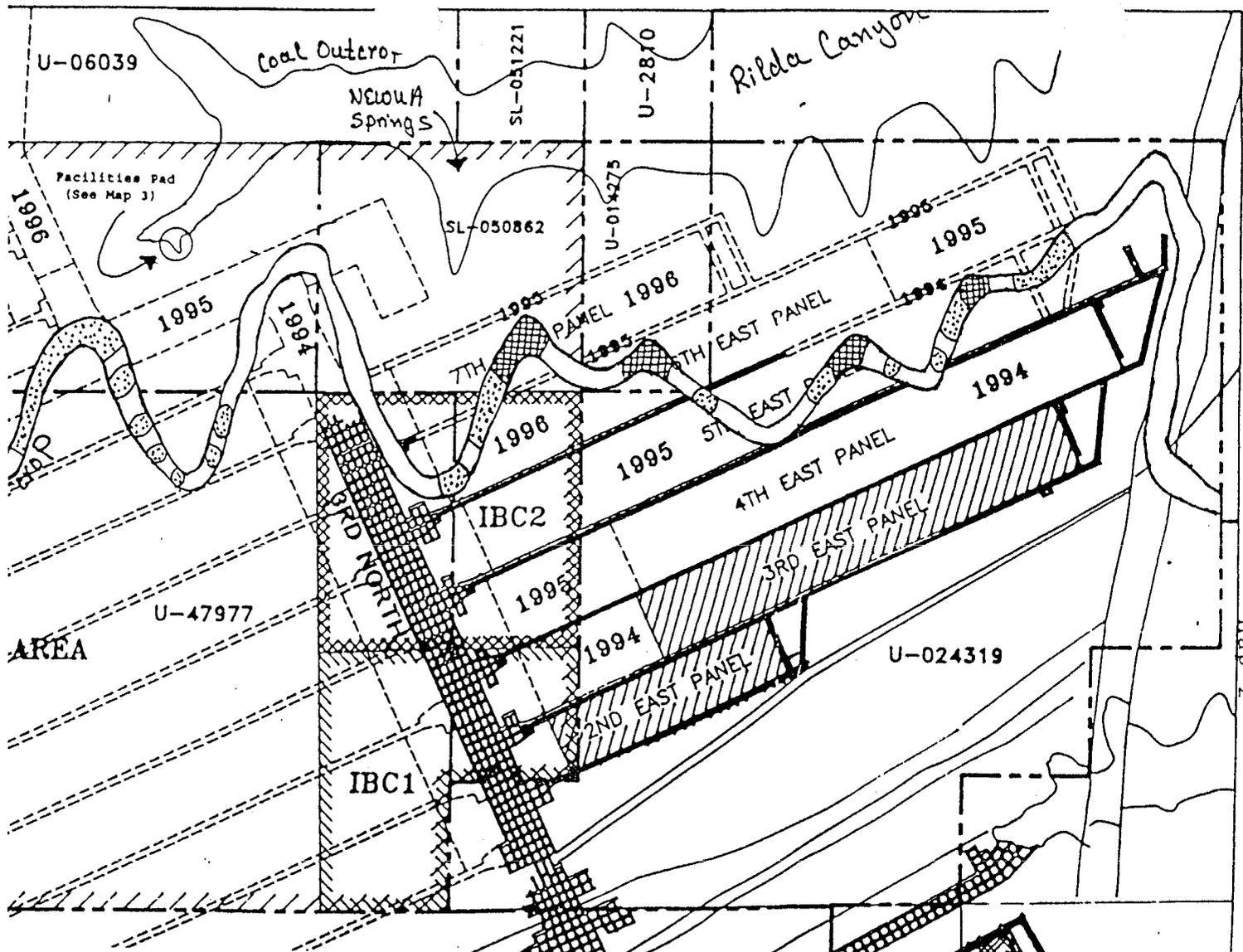
The purpose of the proposed action is to maximize the recovery of coal reserves and the associated socioeconomic benefits. Mining under the escarpments would maximize recovery of the coal reserves within the associated Federal coal leases. The breakouts and ancillary facilities are needed to provide ventilation of the existing and proposed underground mine workings in the area and provide for the safety of the miners consistent with Mine Safety and Health Administration regulations.

MAP 1 - General Location



Map 1

CONTOUR INTERVAL 90 FEET



te Sandstone Outcrop

Potential for Failure (>75% Probability)

rate Potential for Failure (25-75%)

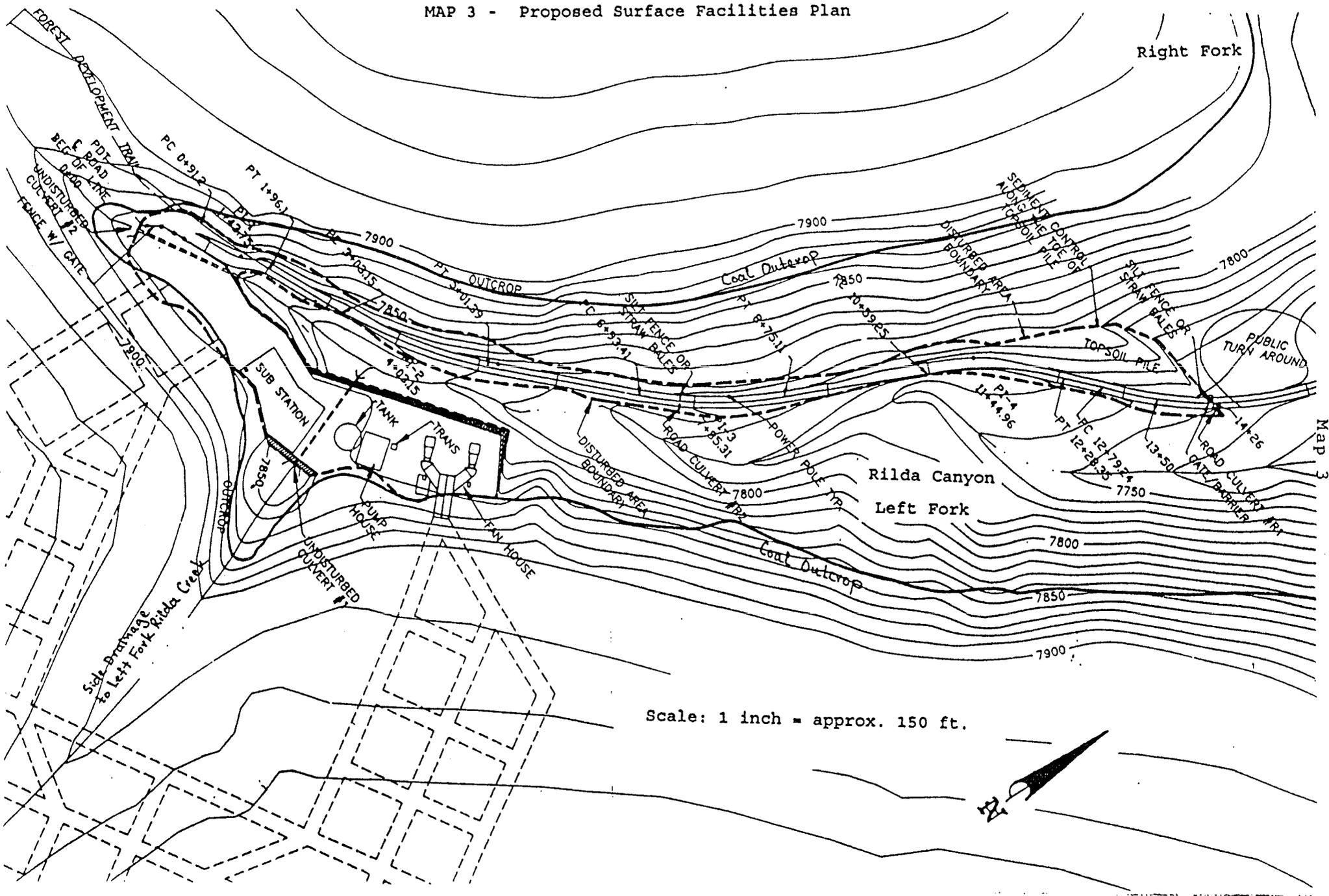
Potential for Failure (10-24%)

igible (<10%)

<b>ENERGY WEST</b> <b>MINING COMPANY</b> <small>HARRINGTON, UTAH 84028</small>		
<b>DEER CREEK MINE</b> <b>RILDA EXTENSION AREA</b>		
<small>DRAWN BY:</small> <b>K. LARSEN</b>	<b>FIGURE A</b>	
<small>SCALE:</small> <b>NONE</b>	<small>DRAWING #:</small> <b>1</b>	<small>REV.:</small> <b>1</b>
<small>DATE:</small> <b>JUNE 17, 1994</b>	<small>SHEET:</small> <b>1 of 1</b>	<small>REV.:</small> <b>1</b>

Map 2

MAP 3 - Proposed Surface Facilities Plan



Scale: 1 inch = approx. 150 ft.



Map 3

The Bureau of Land Management, Office of Surface Mining, and Forest Service must evaluate the proposal and conduct an environmental analysis under the National Environmental Protection Act of 1969 and their specific authorities. The environmental analysis will be used by the agencies as the basis for making their respective decisions in regard to the proposed action and issuing required permits.

This analysis is tiered to the Final Environmental Impact Statement, Manti-La Sal National Forest, 1986 and the Final Environmental Impact Statement, San Rafael Resource Management Plan, 1988.

### III. AUTHORITIES

The proposed action falls under the authorities of the Mineral Leasing Act of 1920, as amended (MLA); Surface Mining Control and Reclamation Act of 1977 (SMCRA); Federal Coal Leasing Amendments Act of 1975 (FCLAA); Federal Land Policy and Management Act of 1977 (FLPMA); National Forest Roads and Trails Act of 1964 (FRTA); Federal Regulations 43 CFR 3400 and 30 CFR 700 to end; Land and Resource Management Plan, Manti-La Sal National Forest, 1986; and San Rafael Resource Management Plan, 1988.

### IV. PROPOSED ACTION

The facilities pad would contain 3 mine openings or portals, a fan at the easternmost of the three portals, a substation, water storage tank, and pumphouse. To provide the area needed for the facilities pad approximately 140 feet of the Left Fork drainage channel and 140 feet of a small side drainage would be channeled into culverts. Approximately 17,000 cubic yards of fill would be imported to cover the culverts and form the pad. A "Hilficker" type retaining wall would be installed to support a near vertical fill slope adjacent to the drainages to reduce the overall size of the area to be disturbed, protect the pad from erosion, and reduce sediment production. The northeast corner of the pad would be approximately 40 feet in elevation above the road. The facilities pad would disturb 1.2 acres.

The Rilda Canyon road (Forest Development Road 50246), from the North Emery Water Users Association springs (end of Emery County jurisdiction) to the forks of Rilda Canyon, would be reconstructed to a one-lane standard with turnouts and a 14 foot gravel surface. Improvement of the road would provide access adequate for PacifiCorp's operations and public use. A gravel turnaround/parking area would also be constructed at the Forks. The parking/turnaround area would provide parking and a turnaround area for recreational traffic in the canyon, mostly associated with the trails in the North and South Forks. The length of this existing road segment is 3,800 feet with a disturbed area of 2.4 acres. The road would be partially relocated resulting in an overall length of 3,500 feet with a final disturbed area of 4.2 acres. Approximately 1,000 feet of the old road would be contemporaneously reclaimed (0.6 acres). Net new disturbance after reclamation would be 1.8 acres. Emery County has applied for an easement across National Forest System lands to reconstruct

and maintain this road and the parking/turnaround area to meet the needs of PacifiCorp and Emery County. If approved, the work would be authorized under a project agreement between Emery County and the Manti-La Sal National Forest. Once the road is completed, an easement would be granted by the Forest Service to Emery County for operation and maintenance.

A new access road would be constructed along the north slope of the Left Fork from the end of Forest Development Road 50246 and the turnaround/parking area to the facilities pad, a distance of 1,350 feet. The road would follow the general alignment of an existing trail. It would be constructed to a one-lane standard with a 12 foot gravel surface. Access would be restricted to PacifiCorp personnel by construction of a gate. The new road would disturb 1.3 acres.

A new 25KV overhead powerline would be constructed from the Huntington Canyon Power Plant to the facilities pad in Rilda Canyon. The new line would be constructed parallel to the existing Mill Fork powerline in Huntington Canyon. The alignment would deviate from the existing line in Huntington Canyon near the mouth of Rilda Canyon and extend along the Rilda Canyon road on the north (uphill) edge to the facilities pad. The powerline would supply electrical power to the fan and pumphouse. The powerline would physically disturb only the areas where poles would be installed.

The new line would be constructed to a design that would protect raptors from electrocution. The existing line would be upgraded to be raptor safe.

#### V. SCOPE OF THE ANALYSIS

The scope of the analysis is confined to issues associated with the proposed action. The analysis considers the cumulative effects to specific components of the ecosystems and socioeconomic climate identified as issues.

The analysis is tiered to the Final Environmental Impact Statement, Manti-La Sal National Forest, 1986 (Forest Plan FEIS) and the Final Environmental Impact Statement, San Rafael Resource Management Plan, 1988.

#### VI. ANALYSIS AND DECISION CRITERIA

The powerline and road reconstruction would be located in MMA (Emphasis on Leasable Minerals Development), RNG (Emphasis on Production of Forage), and RPN (Emphasis on Riparian Area Management) Management Units. The new road and facilities pad would lie within the RNG Management Unit. The decision must be consistent with applicable laws and regulations, as well as Forest Plan forestwide management goals for the affected resources, and management prescriptions for the MMA, RNG, and RPN Management Units. Construction of the powerline across public lands administered by the Bureau of Land Management must comply with direction in the San Rafael Resource Management Plan (RMP).

The mine plan must be in compliance with the Surface Mining Control and Reclamation Act of 1977, Federal Regulations 30 CFR 700 to end, and the Utah Coal Rules, and MSHA (Mine Safety and Health Administration) regulations (30 CFR 1-199) for underground safety.

Surveys have been completed by qualified specialists in conformance with the National Historic Preservation Act and the Endangered Species Act and associated laws and regulations. It has been determined that the proposed action would not cause adverse impacts to cultural resources or Threatened, Endangered, and sensitive plant and animal species. Copies of the Biological Evaluation and Cultural Resources Survey Reports are included in the project file.

#### VII. DECISIONS TO BE MADE

The Department of the Interior Assistant Secretary, Land and Minerals Management (ASLMM) must decide whether to approve, conditionally approve, or disapprove the mining plan for Federal Coal Leases SL-050862, U-47977, U-7653, and U-06039 under the authority of the Mineral Leasing Act of 1920 (MLA). The Office of Surface Mining (OSM) must prepare a decision document for the ASLMM that recommends approval, conditional approval, or disapproval of the mining plan.

OSM's recommendation on the mining plan is based on (1) the complete permit application package, including the permit application and resource recovery and protection plan, (2) compliance with the National Environmental Policy Act of 1969, (3) documentation assuring compliance with applicable requirements of other Federal laws, regulations, and executive orders, (4) comments and recommendations or concurrence of other Federal agencies, and the public; (5) the findings and recommendations of the Bureau of Land Management with respect to the resource recovery and protection plan and other requirements of the Federal leases and the Mineral Leasing Act, and (6) the findings and recommendations of the Utah Division of Oil, Gas and Mining (DOGGM) with respect to the permit application and the Utah State Program. The respective roles of OSM and DOGGM are described in Appendix 4.

The Bureau of Land Management (BLM) must decide whether the mining operations proposed in the (changes to the) resource recovery and protection plan will achieve maximum economic recovery of the Federal Coal and whether the proposed operations are in compliance with the terms and conditions of the Federal leases, the Mineral Leasing Act of 1920, as amended, and 43 CFR 3400. The BLM must also decide whether to issue a right-of-way (FLPMA) for those portions of the proposed powerline that cross public lands administered by BLM.

The Forest Supervisor, Manti-La Sal National Forest, must decide whether or not to consent to construction of the surface facilities and mining under the canyon slope that could cause slope/escarpment failures. Consent authority is provided under FCLAA, SMCRA, and requirement for consultation with the surface management agency 30 CFR 700 to end. If consent is given, the Forest Service must identify required measures for the protection of non-mineral resources. In addition, the Forest Service

must decide whether or not to issue the required special-use permit for the powerline on National Forest System lands (FLPMA), and whether or not to authorize Emery County to reconstruct Forest Development Road 50246 under a project agreement and to grant an easement to Emery County for operation and maintenance of the road (FRTA). The Forest Supervisor must decide whether or not to allow new disturbance and use of facilities in the RPN (Riparian) Management Unit adjacent to perennial portions of Rilda Creek in conformance with management direction for RPN Management Units in the Forest Plan.

CHAPTER 2  
ALTERNATIVES

I. INTRODUCTION

This chapter describes the issues identified during project scoping by the public and interdisciplinary team and the alternatives considered. A table that compares the alternatives in relation to the issues is presented. This table is a summary of the information on the effects of implementation from Chapter 4. Alternatives that were considered but not evaluated are described with an explanation of why they were not evaluated.

II. ISSUES

Letters were sent to potentially affected parties on May 5, 1994 (Appendix 1). The letters briefly described the proposed action and location, and specifically invited comments and identification of issues. A legal notice was published in the Sun Advocate of Price, Utah (publication of record) on May 5, and the Emery County Progress (supplemental publication) on May 10, that also briefly described the proposal and invited public comment. The letters and legal notices identified the close of the comment period as June 6, 1994.

Two letters were received in response to project scoping. Emery County stated that they support the proposal. The Utah Division of Wildlife Resources expressed concern in regard to potential impacts to wildlife habitat and riparian vegetation in Rilda Canyon, and suggested measures that should be taken to safeguard these values. The Huntington-Cleveland Irrigation Company responded by telephone on July 12, 1994, and requested that they be included on the mailing list to receive information on the proposal.

The interdisciplinary team reviewed the responses and identified the following issues:

- \* Mining under the steep canyon slopes/escarpments could result in subsidence that could cause escarpment failures. Slope/escarpment failures could destroy existing vegetation along the slope, change the wildlife habitat, increase erosion along the slopes, and increase sediment in Rilda Creek. (Measured by area of disturbance and relative change in sediment production.)
- \* Escarpment failures could present a safety hazard to people using the road in the bottom of the canyon and anyone hiking or hunting along the canyon slope. (Measured by relative safety hazard)
- \* If the escarpment fails at the location of golden eagle nest #296A, the nest could be destroyed. It was last active in 1989 and has been inactive to the present. It was tended in 1991. (Measured by % probability of nest failure.)
- \* Construction and operation of the new road and facilities and reconstruction of the existing Rilda Canyon Road would remove

approximately 4.3 acres of vegetation that could increase the amount of sediment production in Rilda and Huntington Creeks. Increased sediment could affect downstream water uses and the fishery in Huntington Creek.

- \* Construction and use of the facilities would cause human activity that could displace spotted bats and goshawks. After construction is completed, the disturbance caused by vehicle access would be infrequent, however, the disturbance caused by exhaust fan noise would be constant. (Measured by area and duration of potential habitat loss)
- \* The new powerline would be visible along the Rilda Canyon road. The pad facility would be visible along the trail in the South Fork of Rilda Creek. The additional powerline to be constructed along an existing powerline in Huntington Canyon could increase the visibility of these facilities. The proposed facilities would be consistent with the visual quality objectives for the area (modification, partial retention) but the visual quality would be decreased. (Measured by consistency with visual quality objectives and relative change in visual quality.)
- \* The Recreation Opportunity Spectrum (ROS) classification for the area is Rooded Natural Appearing. The project could decrease the quality of the recreation experience in Rilda Canyon due to the fan noise and visibility of facilities. (Measured by relative change in recreation use.)
- \* Mining in the area and construction of the proposed facilities could affect flow and quality of North Emery Water User's Association's (NEWUA) springs in Rilda Canyon that lie approximately one mile downstream of the proposed facilities pad. (Measured by acres of disturbance and relative duration of sediment production.)
- \* Mining and subsidence of escarpments could intercept ground water that contributes to ground and surface water flow in Rilda Creek. (Measured by potential for decreasing flow.)
- \* Mining and surface facilities could decrease riparian vegetation and RPN (riparian) management units in Rilda Canyon. (Measured by area and duration of loss.)

### III. ALTERNATIVES

#### A. Alternatives Considered and Evaluated

1. No Action - The No Action alternative must be evaluated for all proposals. Under this alternative the proposal would not be approved.
2. Proposed Action with Mitigations - Allow the surface facilities and mining under the escarpment as proposed with mitigation measures (Appendix 3) to minimize impacts.

3. Modified Proposed Action with Mitigations - Allow the surface facilities with mitigation measures (Appendix 3) to minimize impacts, but do not allow mining under the canyon slope/escarpment that is likely to cause slope/escarpment failures.

B. Alternatives Considered but Eliminated for Evaluation

1. Helicopter and Underground Access Only - Allow construction of the pad but do not allow improvement of the Forest Development Road from the NEWUA springs to the Forks or construction of the new road from the Forks to the facilities pad. The breakouts would be constructed from within the mine and all access to the pad would be provided through the mine workings and/or by helicopter. This would include providing electrical power to the fan and northern mine area by running a 25KV cable through the underground mine workings.

This alternative was eliminated from further evaluation because of the high costs involved for helicopter transport of the transformer, fan, and 17,000 cubic yards of fill material needed to build up the facilities pad and control erosion. In addition, the transformer and fan components are too large to be transported through the mine working, even when dismantled for transportation. According to PacifiCorp installation of a 25KV cable through the mine workings would present safety and economic problems.

2. Breakout at the Outcrop/Pipe Air to Facilities Down Canyon

Under this alternative the breakout would occur from within the mine with no road access. A pipe would be constructed from the breakout down-canyon to a facilities pad on an existing flat open area.

This alternative was eliminated from further evaluation because the pipe would need to carry 600,000 cubic feet per minute of air. This would require a concrete reinforced 8 ft. diameter pipe to prevent collapse under the suction within the pipe. It would also need to be anchored to the ground for stability. This would require the same level of disturbance as the proposed road. It would offer no practical environmental advantages with higher cost.

3. Mining of 4 Additional Longwall Panels in the Blind Canyon Seam (upper seam) and 1 Panel in the Hiawatha Seam (lower seam) Under the Left Fork of Rilda Creek.

PacifiCorp in their Probable Hydrologic Consequences (PHC) and the regulatory agencies have identified the potential for this mining to subside the channel, crack the ground surface, and drain water flowing through the alluvial aquifer into the mine workings or other permeable rock layers. Overburden in the area

ranges from 250 to 500 feet. This could decrease the flow of the NEWUA springs and the flow in Rilda Creek with impacts to other surface resources.

Data collected for the area is not sufficient to quantify the potential water loss downstream at the springs and in the perennial portion of the Rilda Creek. PacifiCorp withdrew their proposal to mine in this area and will initiate a study to collect the necessary data. Depending on the results of the study, PacifiCorp may or may not again propose to mine in this area.

#### IV. COMPARISON OF ALTERNATIVES

The following table has been generated to display the differences between the evaluated alternatives relative to the identified issues. Each issue is identified by heading with subheadings for the specific resources that could be affected. Comparisons are based on the potential effects to each issue by resource category. Parameters of measure used to compare alternatives are discussed for each issue are identified in the descriptions of the issues in Chapter 2, Item II. Refer to Chapter 4 for a detailed discussion of the environmental effects for resource categories by alternative.

TABLE 1, COMPARISON OF ALTERNATIVES

<u>ISSUE/RESOURCE</u>	<u>ALT. 1 NO ACTION</u>	<u>ALT. 2 PROP. ACTION W/MITIGATIONS</u>	<u>ALT. 3 MOD. PROP. ACTION W/MITIGATIONS</u>
<b>Escarpment Failure</b>			
Vegetation	No Effect	Long-term removal of <10 acres Spruce/Fir Coniferous Forest.	No Effect
Wildlife Habitat	No Effect	Long-term loss of <10 acres of forage and cover.	No Effect
Golden eagle Nest #296A	No Effect	Low potential (<10%) for loss of the nest.	No Effect
Increase Erosion and sediment prod.	No Effect	Temporary increase in erosion on barren slopes with some sediment production. (<10 acres)	No Effect
Surface Water Quality	No Effect	Temporary increase in sediment to Rilda Creek.	No Effect
Public Safety	No Effect	Low risk of rocks reaching the road. Low risk of personal injury due to low usage of the steep canyon slopes.	No Effect
Visual Quality	No Effect	Decrease in visual quality but would be natural appearing. Consistent with visual quality objectives.	No Effect
<b>Mining under escarpments could intercept ground water.</b>			
Flow at NEWUA springs and Rilda Creek could be decreased.	No Change (Low Potential)	Increased potential due to subsidence. (Low Potential)	No Change (Low Potential)

TABLE 1, COMPARISON OF ALTERNATIVES (Cont.)

<u>ISSUE/RESOURCE</u>	<u>ALT. 1 NO ACTION</u>	<u>ALT. 2 PROP. ACTION W/MITIGATIONS</u>	<u>ALT. 3 MOD. PROP. ACTION W/MITIGATIONS</u>
<b>Escarpment Failures (Cont.)</b>			
Riparian Veg./ RPN Management Unit	No Change (Low Potential)	Decreased flow could alter the riparian vegetation community species in Rilda Creek. (Low Potential)	No Change (Low Potential)
Wildlife Habitat	No Change (Low Potential)	Decreased flow could decrease habitat. (Low Potential)	No Change (Low Potential)
<b>Construction and use of surface facilities.</b>			
Wildlife (Terrestrial)	No Change	Human activity and fan noise could displace wildlife into adjacent areas. (1.5 sq. mi. Short-Term) (< 1 sq. mi. Long-Term)	Same as Alt. 2
Ground and Surface Water	No Effect	Any spills of fuel or other substances could pollute the NEWUA springs and Rilda Creek. Increase sediment in Rilda Creek during construction (4.3 acres new dist.).	Same as Alt. 2
Aquatic Wildlife	No Effect	Spills and sediment could affect macroinvertebrate populations/diversity.	Same as Alt. 2
Visual Quality	No Effect	Decrease visual quality in Huntington Canyon (powerline) and Rilda Canyon (road, powerline, facilities pad). (Consistent with visual quality objectives.)	Same as Alt. 2

TABLE 1, COMPARISON OF ALTERNATIVES (Cont.)

<u>ISSUE/RESOURCE</u>	<u>ALT. 1 NO ACTION</u>	<u>ALT. 2 PROP. ACTION W/MITIGATIONS</u>	<u>ALT. 3 MOD. PROP. ACTION W/MITIGATIONS</u>
Construction and use of Surface Facilities (Cont.)			
Recreation	No Effect	Decrease in visual quality and fan noise could decrease dispersed recreation quality in Rilda Canyon. (Potential slight decrease in use).	Same as Alt. 2
Riparian Vegetation/ RPN Management Unit	No Effect (Consistent with Mgt. Direction)	Approx. 4.3 acres of riparian vegetation (Narrow leaf Cottonwood/ dogwood community) would be removed for the life of operations. Temporary loss of an additional 0.6 acres. Condition of riparian vegetation in RPN Mgt. Unit below NEWUA springs could be improved by mitigations. (30 acres) (Consistent with Mgt. Direction)	Same as Alt. 2

CHAPTER 3  
AFFECTED ENVIRONMENT

I. INTRODUCTION

This chapter describes the existing environment or conditions which could be affected by the proposed action and the alternatives described in Chapter 2.

II. FOREST PLAN/RESOURCE MANAGEMENT PLAN DIRECTION

This analysis is tiered to the Forest Plan. The surface facilities, road construction and reconstruction, and the upper portion of the power transmission line are located in the RNG Management Unit as designated in the Forest Plan. The lower portion of the powerline is located in an MMA Management Unit. A portion of the proposed reconstruction of the Rilda Canyon Road above the NEWUA springs would be located within an RPN Management Unit (defined as the area within 100 feet from the edge of perennial waters. Management emphasis in RPN units is on management of riparian areas and the component ecosystems. Management emphasis in RNG units is for the production of forage for livestock and wildlife. Management emphasis for MMA unit is production of leasable minerals (coal/oil and gas).

Management prescriptions for mineral operations in RNG units include:

- (01) Provide appropriate mitigation measures to assure continued livestock access and use.
- (02) Those authorized to conduct developments will be required to replace losses through appropriate mitigations, where a site-specific development adversely affects long-term production and management.

Management prescriptions for mineral operations in MMA units include:

- (01) Coordinate the various leasable mineral activities to minimize or eliminate conflicts.
- (02) Upon completion of the planned surface use, restore disturbed sites to their pre-disturbance conditions unless otherwise directed in the document authorizing use.

Management prescriptions for minerals operations in RPN units include:

- (01) Avoid and mitigate detrimental disturbance to the riparian area by mineral activities. Initiate timely and effective rehabilitation of disturbed sites.
- (02) No surface occupancy or use is allowed in riparian units, or within 200 feet of riparian units, unless it can be demonstrated that operations can be conducted without causing unacceptable

impacts, in which case, the restriction can be waived, accepted, or modified on a site-specific basis.

A portion of the powerline route crosses public land under the management of BLM. Analysis of this portion of the powerline route is tiered to the Resource Management Plan (RMP). Management objectives for powerline rights-of-way on BLM lands call for allowance of discretionary rights-of-way only as long as RMP goals can be met. The area in question calls for rights-of-way avoidance due to critical soils. Management prescriptions for areas of critical soils call for surface restrictions. However, the proposed powerline would parallel the existing Mill Fork line, which was granted prior to the RMP. The proposed powerline would meet the objectives of the RMP since the existing powerline has stabilized the critical soils with grading and seeding.

### III. DESCRIPTION OF THE AFFECTED ENVIRONMENT

#### A. General Setting, Topography and Geology

The project area is located in Rilda Canyon and East Mountain. Rilda Canyon is a deeply incised east-west trending canyon that is tributary to Huntington Canyon. It is one of the many canyons that drain the east slope of East Mountain and drain into Huntington Creek. Huntington Canyon is a deeply incised, broad, northwest/southeast trending canyon that dissects and drains the Wasatch Plateau.

Coal seams of the Cretaceous Blackhawk Formation in the Wasatch Plateau Coal Field crop out along the steep canyon slopes in both Huntington and Rilda Canyons. The outcrops provide access to the coal seams that extend throughout the plateau.

Rilda Canyon splits into two forks (Left and Right Forks) approximately 2.5 miles west of it's confluence with Huntington Canyon. The slope of the south canyon wall averages approximately 45%. The north canyon wall is considerably steeper, with considerable area of vertical cliffs.

Rock units exposed in the project area include (from oldest to youngest) the Cretaceous Mancos Shale, Starpoint Sandstone, Blackhawk Formation, Price River Formation, and Cretaceous/Tertiary North Horn Formation. The coal bearing Blackhawk Formation is approximately 900 ft. thick and consists of discontinuous interbedded shale and sandstone units. It is a slope forming unit exposed along the middle portion of the canyon wall in the project area. The cliff forming Castlegate Sandstone lies directly above the Blackhawk Formation. This is a massive sandstone unit that is approximately 250 ft. thick. It crops out along the upper 1/3 of the canyon slope/escarpment. In the potentially affected area on the south canyon wall it forms vertical cliff outcrops at prominent points between small side drainages (54% of the outcrop area). Rock falls are common at cliff outcrops where the joint systems are well developed. The remainder of the Castlegate Sandstone outcrop area is

either a vegetated slope consistent with the slope above and below (35%) or rock rubble areas with minor cliff development (11%). The topography along the plateau top flattens forming a series of rounded ridges between canyons.

B. Coal Occurrence, Reserves, and Mining

The Wasatch Plateau (Manti Division, Manti-La Sal National Forest) contains vast reserves of mineable low sulfur bituminous coal in the Cretaceous Blackhawk Formation. Mining has occurred in the area since the late 1800's and is presently the dominant component of the economies in Carbon and Emery Counties. Coal mining is also an important component of the State economy.

PacifiCorp presently operates the Deer Creek Mine that is located in Deer Creek, approximately 4 miles southeast of the proposed new facilities. The approved permit area for the mine encompasses most of the southern and central portions of East Mountain. PacifiCorp also controls the coal leases in the Rilda Canyon area that are being evaluated for inclusion in the permit/mine plan area by the State of Utah Division of Oil, Gas and Mining and the Office of Surface Mining under SMCRA, MLA, Utah Coal Rules and other applicable Federal laws. PacifiCorp also operates the Cottonwood/Wilberg Mine located in Grimes Wash, approximately 6 miles south of the proposed facilities. The permit areas for the two mines overlap in the southern portion of East Mountain with the lower seam being mined through the Cottonwood Mine. In 1993 the Deer Creek Mine produced 3.2 million tons of coal and the Cottonwood/Wilberg Mine produced 2.8 million tons.

The coal produced from the PacifiCorp mines is transported to the Huntington Plant in Huntington Canyon, the Hunter Plant near Castle Dale, and the Price Plant in Price Canyon north of Helper. The coal is used to generate electricity transmitted to locations in Utah, Nevada, and California.

Coal reserves in the south Rilda Canyon area occur in two minable seams, the Blind Canyon (upper) seam and the Hiawatha (lower) seam. Portions of 6 proposed longwall panels in the Blind Canyon seam and 4 proposed longwall panels in the Hiawatha seam lie under the escarpment and the associated 15 degree angle-of-draw subsidence zone. It is estimated that this area contains 10.4 million tons of recoverable coal.

C. Transportation/Special Uses

Approximately 436 acres of the land is in private ownership within the Rilda Canyon drainage. The canyon area is served by two Forest Development Roads, FDR 50246 the Rilda Canyon Road for approximately 2.4 miles, FDR 50247 an unnamed road for approximately 0.4 miles, and one designated trail Forest Development Trail (FDT) 295 for approximately 0.6 miles (inventoried).

The road being considered for reconstruction to provide improved access to the facilities pad is FDR 50246 the Rilda-Canyon Road. Only that portion of this road from the NEWUA springs to the Forks of Rilda Canyon would need to be reconstructed because Emery County is already in the process of reconstructing this road from the Huntington-Fairview Highway (State Hwy. 31) to the springs. Approximately the first one mile (from Hwy. 31) is under jurisdiction of Emery County. The remaining 1.4 miles is under Forest Service jurisdiction. Emery County is in the process of replacing the existing one-lane bridge across Huntington Creek on private land with a two-lane bridge and reconditioning the traveled way and shoulder to provide for placement of a gravel running surface. The purpose of reconditioning this portion of road is to provide improved access to the NEWUA springs and to decrease erosion and maintenance costs. Damaged drainage structures and additional drainage features are being placed to remove water from the travelway and prevent ditch and embankment erosion. The travelway is being reconditioned to two 10-foot lanes through the first 2.1 miles (including 1.1 miles of County and 1.0 miles of Forest Service). This work would stay within the roadway limits except for the last 0.25 miles where curve widening and minor realignment is needed. A slight increase in existing traffic volumes could result.

The Road Management Objective for FDR 50246 is to provide a single lane native surface road to provide for high clearance vehicles at traffic service level "D" and operation maintenance level "2". The road is restricted to commercial haul by permit only. The expected intermittent use period is June 1 to October 30. Traffic prior to any mine facilities or timber utilization is expected to remain below 5 vehicles per day, with use by NEWUA averaging 3 to 5 trips per week. The area was identified in the Forest Plan for a coal production portal with potential for removal of 1 to 3 million tons per year.

Special-uses in the canyon include the culinary water springs under permit to NEWUA and water monitoring wells under permit to PacifiCorp (See discussions on ground and surface water below).

D. Surface Hydrology/Watershed

Rilda Creek is one of several east-west trending drainages that drain the east flank of East Mountain into Huntington Creek. Typical of the area, the erosive action of Rilda and Huntington Creeks has gouged deep canyons in the Wasatch Plateau. Huntington Creek is tributary to the San Rafael River. The San Rafael River drains into the Green River which in turn drains into the Colorado River.

The entire Rilda Creek watershed encompasses about 5,139 acres. Approximately two miles up from the confluence with Huntington Creek, Rilda Creek branches into the Left and Right Forks. The Right Fork watershed encompasses approximately 2,110 acres (3.3 square miles). The Left Fork watershed encompasses approximately 1,376 acres (2.2 square miles) which is about 40% of the watershed above the forks.

Rilda Creek has been determined to be perennial from the NEWUA springs to it's confluence with Huntington Creek. It is considered to be ephemeral above this point with water flowing underground in the alluvial system. Hydrologic monitoring and studies conducted by PacifiCorp indicate that ground water flows into the creek through east-west and north-south trending fracture or fault systems and alluvium. Alluvial fill in the drainage has been determined to be as thick as 75 feet in some areas. Only one other spring has been identified within the project area. This spring is located on the ridge between the Right and Left Forks. It is located at the contact between the Starpoint Sandstone and Blackhawk Formation. Water from this spring flows along the surface for only a short distance where it disappears underground into the alluvial material associated with the drainages.

During the monitoring period (1990-1992) there was no measurable flow in the Left Fork during 1990 and 1992. In 1991, the flow was measured from May through August with a peak flow of approximately 65 GPM at the end of May. Monitoring of the main channel above the springs showed that flow occurred during the months of May through June, with peak flow of 300 GPM in May and a base flow of 0.0 GPM during the months of January through April and July through December. Below the NEWUA springs, flow was monitored at two locations. Station RCF3 lies just below the springs. RCW4 lies in Rilda Creek just above it's confluence with Huntington Creek. During 1992 the peak flow occurring in June was 319 GPM for RCF3 and 402 GPM for RCW4. Base flows in 1992 were 9 GPM for RCF3 and 78 GPM for RCW4. Data suggests that the stream loses water to the alluvium above the springs. Flow again emerges to the surface at and below the springs.

Water quality is good and meets State water quality standards for parameters measured (for which standards have been developed). The predominant dissolved chemical constituents in tributaries to Huntington Creek are calcium, magnesium, and bicarbonate. During periods of base flow Danielson, ReMillard, and Fuller (Hydrology of the Coal-Resource Areas in the Upper Drainages of Huntington and Cottonwood Creeks, Central Utah, U.S. Geological Survey Water-Resources Investigations Open File Report 81-539, 1981) found that concentrations of sulfate in water at the mouths of Deer Creek and Rilda Canyon were significantly higher than sulfate concentrations in water in Huntington Creek. Total dissolved solids concentrations in Rilda Creek (1976-1979) ranged from 292 mg/l (July 1979) to 503 mg/l (October 1979). PacifiCorp's monitoring data is consistent with these findings.

#### E. Ground Water Hydrology

The stream in the upper reaches of Rilda Canyon is limited to sub-surface flow in the alluvial deposits. In the upper reaches surface flow occurs in periods of excess precipitation or heavy snow melt, therefore the stream is considered to be ephemeral. Water

monitoring in Rilda Canyon continues to determine the quality and flow characteristics.

Ground water above the coal seams mostly occurs in discontinuous perched aquifers consisting of permeable fluvial sandstone channels in the North Horn and Blackhawk Formations. Additional water occurs throughout the Wasatch Plateau in the Starpoint Sandstone and lower portions of the Blackhawk Formation. The USGS (Lines, Open File Report 84-067) reports that this is a regional aquifer known as the Blackhawk-Starpoint regional aquifer. PacifiCorp contends that ground water on East Mountain, other than stored water, only exists within this zone in areas of secondary permeability caused by fractures and faults because of the low permeability of the Starpoint sandstones and siltstones. Recharge is in higher elevations of the Wasatch Plateau. Snowmelt runs off as surface water and some enters the ground water regime through fractures in the Flagstaff Limestone, faults and fractures, and other permeable zones. It flows vertically until it becomes perched by impermeable rock layers and continues to flow laterally or becomes trapped as stored water. Since the rock layers in the area dip to the southeast, it is expected that recharge is from the north and west.

The Division (State of Utah Department of Natural Resources, Division of Oil, Gas and Mining) is currently analyzing PacifiCorp's PHC (Probable Hydrologic Consequences) determination for the East Mountain property which includes Rilda Canyon. Of particular interest are the culinary springs located in Rilda Canyon which are used by NEWUA. The East Mountain CHIA (Cumulative Hydrologic Impact Analysis) is being prepared by the Division and is scheduled to be completed in summer 1994.

Springs inventoried within the Rilda Canyon area include a spring that issues along the point of the ridge between the Left and Right Forks of Rilda Creek (PacifiCorp 80-50) and the NEWUA's springs that lie near Side Canyon approximately 1/2 mile downstream of the confluence of the left and right forks.

Spring 80-50 issues from the contact between the Blackhawk Formation and Starpoint Sandstone. It was last monitored in August of 1980 with a flow of 3 gpm.

The NEWUA springs were developed as a culinary water source to provide water to northern Emery County, currently serving 410 connections. They are located at the Starpoint Sandstone and include three distinct groups of springs (Side Canyon Springs, North Springs, and South Spring). The Side Canyon springs are located in Side Canyon and issue from the Blackhawk/Starpoint contact. The North Springs and South Spring are located immediately above the stream channel on the south slope of Rilda Canyon at the the confluence of the South Canyon and Rilda Creek.

Water monitoring wells were installed in the vicinity of the NEWUA springs and pump tests were conducted to determine water sources near these springs and volumes. Hydraulic conductivity of these alluvial

materials was calculated at a low of 6,100 up to 35,900 gallons per day per square foot. An average long-term transmissivity of 20,000 gallons per day was derived from these pump tests by averaging the various drawdown curve methods (See Volume 9A of the PacifiCorp PHC for complete pump tests report).

Resistivity surveys were also conducted along the canyon bottom and along several cross sections to identify geologic structures and other water bearing strata. Fractures in the rock strata provide rapid secondary porosity and serve as conduits for ground water movement. Many water producing fractures or anomalies were identified. These may contribute a portion of the flow to the springs and the stream.

Based on the well tests and the resistivity investigations, the water sources contributing to the NEWUA springs and the stream's base-flow are believed to originate from the alluvial deposits, a north-south trending fault or fracture system just west of the NEWUA springs, and an east-west trending fault or fracture system that lies to the north of the canyon floor.

Monitoring of flows in the NEWUA springs at the collection system meters from September 6, 1990 through April 7, 1992 shows a total maximum flow of 267.5 gpm on July 17, 1991 and a minimum flow of 61.7 gpm on April 7, 1992. Historical data shows a maximum flow in August 1987 to be just above 400 gpm and a minimum flow of 50 gpm in December/January of 1978. This data shows that maximum annual flows occur in July and August and minimum flows occur in November and December. The South Canyon Spring and South Spring contribute only a small proportion of the overall flow.

Ground water quality is good in strata above the highly saline Mancos Shale. The USGS reports a range in TDS (total dissolved solids) from 50 to 750 mg/l for samples from 140 springs in the region issuing from the Starpoint Sandstone and overlying formations (Danielson et. al., 1981). They also identified a regional trend of decreasing water quality from north to south and west to east across the Wasatch Plateau. Waters percolating through the underlying Mancos Shale quickly deteriorate, with TDS concentrations frequently exceeding 3,000 mg/l. PacifiCorp's monitoring confirms this information. The predominant dissolved chemical constituents of ground water from both surface springs and samples collected in the PacifiCorp mines are calcium, bicarbonate, magnesium, and sulfate. Concentrations of magnesium are normally about half the concentration of calcium. Sulfate concentrations are typically higher in water from springs issuing from the Starpoint-Blackhawk aquifer or confined aquifers intersected by mine workings.

Ground water in Rilda Canyon is of excellent quality and meets State water quality standards. PacifiCorp reports in the PHC that there are distinct groupings in regard to TDS concentrations and sulfate concentrations. These groupings indicate differences in the source of the ground water that reaches the surface at the NEWUA springs.

F. Vegetation

An inventory of the vegetation in the project area was conducted by Mt. Nebo Scientific for PacifiCorp in August-September 1990 with the report finalized in March 1994. The report contains a map of the vegetation communities and a description of each community.

According to the report, the vegetation on the north slope of Rilda Canyon is categorized as a Mtn. Brush/Salina Wildrye community. Vegetation along the south slope and along the ridge separating the left and right forks is categorized as a Spruce/Fir Coniferous Forest community. The vegetation along the canyon bottom, including the main channel and Left and Right Forks, is categorized as an Aspen/Fir/Dogwood community.

The Forest Service has categorized the vegetation in the canyon bottom to be a Narrow Leaf Cottonwood/Dogwood community which is considered to be a riparian community. The area within 100 feet of the edge of the perennial portions of Rilda Creek is managed as an RPN Management Unit under the Forest Plan with emphasis on management of the riparian area and component ecosystems. Rilda Creek is considered to be perennial from the NEWUA springs to the confluence with Huntington Creek.

The riparian vegetation diversity and density in the canyon has been altered by many years of man's activities including livestock grazing, diversion of water at the springs, recreation, timber harvest, and mining.

No Threatened, Endangered, or sensitive plant species have been identified in Rilda Canyon. The Biological Evaluation (BE) is contained in the project file.

G. Wildlife

The Rilda Canyon proposed project area is inhabited by a variety of wildlife species. Bear, cougar, deer, elk, birds, reptiles and amphibians are supported by habitats within the project area. The area is used as spring and winter foraging by deer and occasionally elk. Deer may also use this area for fawning. Raptors known to occur within the area include cooper's hawks, red-tails, sharp-shinned hawks, golden eagles, and a number of owl species. Within the Rilda Canyon area there are known cooper's hawk and golden eagle nesting and territory areas. Other terrestrial organisms present include bats, rodents, lagamorphs, upland ground birds, songbirds, coyotes, bobcats, and woodpeckers.

Listed threatened, endangered, and sensitive species that may occur in the area are bald eagles, northern goshawk, peregrine falcon, spotted bats, and northern three-toed woodpeckers. Bald eagles may occasionally pass through the area during winter migration. Northern goshawk and northern three-toed woodpecker are listed as sensitive species that may inhabit the project area. Surveys for the presence

of these species were conducted in June and July of 1994. No sensitive species were identified. A copy of the Biological Evaluation is included in the project file. No other threatened, endangered or sensitive species have been observed in the project area.

Riparian vegetation zones have been identified within the project area. These areas include the Right Fork and Left Fork of Rilda Canyon, and Rilda Creek. They provide important habitat for water dependent and terrestrial species. Even though Rilda Canyon Creek (a tributary to Huntington Creek which supports a number of fish species) is not an important fishery, it does have value for other aquatic resources. Rilda Canyon Creek supports aquatic invertebrates which are important to the fishery resources in Huntington Creek below and to terrestrial species which feed along the creek.

#### H. Visual Quality

According to the Forest Plan the proposed breakout facility, new access road, and a majority of the powerline and reconstructed road would be located in an area presently managed under the visual quality objective of modification. The term visual quality objective (VQO) may be defined as follows: A desired level of excellence based on physical and sociological characteristics of an area; refers to the degree of acceptable alteration of the Landscape.

Under the VQO of modification, management activities may visually dominate the original characteristic landscape. However, activities of vegetative and landform alteration must borrow from naturally established form, line, color, or texture so completely and at such a scale that its visual characteristics are those of natural occurrences within the surrounding area or character type. Additional parts of these activities such as structures and roads must remain visually subordinate to the proposed composition. Reduction in form, line, color, and texture should be accomplished in the first year or at a minimum should meet regional guidelines. More simply put; this broad objective allows for most forms of development associated with mining activities, however a reasonable attempt should be made to fit within the context of the natural surroundings as soon as is practically possible.

The reconstructed road and the parallel overhead powerline would also pass through a small portion (1/16 section) of Rilda Canyon that is presently managed under the VQO of partial retention.

Under partial retention, activities should remain visually subordinate to the landscape. Activities may repeat form, color, or texture; but changes in qualities of size, amount, intensity, direction, pattern, etc., should be accomplished as soon as possible after reconstruction/installation or within a minimum of the first year. In other words, partial retention objectives will also allow development associated with mining to occur, provided that revegetation, etc. restores disturbed areas to a natural appearing

condition. Mitigative steps to reduce visual contrast to an appropriate level should be accomplished right away or at most within a year of actual construction.

The area where the facilities pad is proposed is densely vegetated. It contains an evergreen screen that in concert with existing topography appears adequate enough to provide camouflage for long views year-round.

The road to be reconstructed on lands managed by the Forest Service in Rilda Canyon is not be visible from State Highway 31 which has been designated as a Scenic Byway.

There is an existing powerline in Huntington Canyon that leads from the Huntington Canyon Coal Fired Powerplant to Mill Fork and beyond over the ridge to Crandall Canyon (next canyon north of Mill Fork) to the Crandall Canyon Mine. The powerline in Huntington Canyon is highly visible from the Fairview-Huntington Highway (State Hwy. 31) which has been designated as a Scenic Byway. The proposed powerline would parallel the existing powerline. It would depart from the existing powerline just south of the Rilda Creek/Huntington Creek confluence where it would cross a small ridge, turn west, and proceed into Rilda Canyon.

#### I. Recreation

Recreation in this area is primarily limited to big game hunting during the autumn hunting seasons and occasional use by hikers and horseback riders during the summer months. According to the Manti-La Sal National Forest Land and Resource Management Plan the proposed breakout facility and approximately the upper one-half of the new access road would be located in an area designated as semi-primitive motorized. The remainder of National Forest System land through which the lower one-half of the new access road, the reconstructed road, and the overhead powerline pass would be within an area designated as roaded natural appearing.

The project area is located in a portion of Rilda Canyon that is used primarily as a corridor to access lands in the upper Rilda Drainage for big game hunting and to a lesser extent backpacking/hiking. Consequently, this route of access offers unrestricted recreational opportunities to the public and is managed accordingly. Safety would be a concern (although minimal) for those using the canyon near potential escarpment failures.

#### J. Socioeconomics

PacifiCorp is the lessee of the coal leases that encompass the Rilda Canyon area. Part of the south-east side of Rilda Canyon is in the Deer Creek Mine permit area. The west end of Rilda Canyon is not in the permit area and the proposal being evaluated is part of the process to obtain a permit to mine. However, the whole of the south

side of Rilda Canyon is analyzed in this EA due to the plan to mine under the escarpment of which a portion is permitted and a portion is not permitted. Approximately 10.4 million tons of recoverable coal lie beneath the escarpments on the south side of Rilda Canyon. This represents about 4 years of mine life. Another 16 million tons of recoverable coal in longwall panels and main entry development lie away from the escarpments but within the Rilda Lease Tract Extension area to be added to the Deer Creek Mine permit area. This represents another 6 years of mine life. The proposed ventilation fan would provide the needed ventilation requirements to access and mine the north property where potential reserves to the year 2015 are located. At current production and price of coal, over \$90 million in Federal royalty could be paid over the life of the mine serviced by the fan. These combined reserves could provide direct employment of about 300 miners for the life of the mine (year 2015). For this period, they would supply the coal requirements for the Huntington Power Station which generates 850 megawatts of electricity for the State of Utah. Indirect benefits to the economies of Carbon and Emery County are substantial as the direct economic state of these two counties are heavily dependent on the mining and burning of coal for energy production.

CHAPTER 4  
ENVIRONMENTAL CONSEQUENCES

I. INTRODUCTION

Chapter 4 discloses the potential environmental consequences that could result from implementation of the alternatives considered and evaluated. The environmental effects focus on the lands in the decision area and in some cases the surrounding lands.

This chapter discusses potential impacts by resource category in the same order that the resource categories are discussed in Chapter 3. Effects and consequences are described or grouped as follows:

**Direct and Indirect (secondary) Effects** - Direct effects are caused by the action occurring at the same time and place. Indirect effects are caused by the action and are later in time or farther removed in distance but are still reasonably foreseeable.

**Cumulative Effects** - Cumulative effects result from the incremental change over time where the action is added to other past, present, and reasonably foreseeable future actions (regardless of what agency or person undertakes such actions).

**Consistency with Forest Plan/Resource Management Plan** - This refers to the degree to which the implementation of an alternative conforms or conflicts with Forest Plan goals, direction, and goals.

The duration of impacts is often discussed in the following terms:

**Long-term Effects** - Effects that would be evident for a period of time that exceeds 5 years.

**Short-term Effects** - Effects that would be evident for a period of time not greater than 5 years.

II. AFFECTS OF IMPLEMENTATION BY RESOURCE/ALTERNATIVE

A. General Setting, Topography, Geology

Alternative 1 (No Action)

Under this alternative the surface facilities and mining as proposed would not be approved. The surface facilities would not be constructed and mining that would cause subsidence of the escarpments would not be allowed. The surface resources in Rilda Canyon would not be affected.

Alternative 2 (Proposed Action)

Under this alternative, the action as proposed would be approved with mitigations designed to minimize impacts. The construction and

operation of the proposed surface facilities would result in surficial changes to the topography (approximately 4.3 acres). The changes would be long-term lasting for the duration of mining in the area. The life of operations is predicted to be approximately 20 years.

Mining under the escarpments would be completed using the longwall mining method. Underground workings would include development entries and longwall panels. Extraction of the longwall panels would induce fracturing and collapse of the rock layers above the workings and subsidence of the ground surface. Mining of two overlapping coal seams is proposed. Approximately 9 feet of coal in each seam would be extracted for a total of approximately 18 vertical feet of extraction. As observed on East Mountain to the south, the amount of surface subsidence could reach 70% of the extracted height (subsidence factor). The maximum subsidence is therefore expected to be 12.6 feet. The longwall method ultimately results in the development of a gradual and even subsidence trough. Subsidence begins almost immediately as longwall mining begins and progresses at the approximate rate of extraction. Cracks in the ground surface could occur at the flanks of individual panels within the zone of extensional forces. The potential for cracks to occur is higher in areas of shallow overburden in the escarpment areas. Due to the steep/uneven topography, the subsidence would not result in a perceptible change in the topography. Cracks that occur where there is unconsolidated colluvial cover are expected to heal after a few years.

Studies conducted by PacifiCorp and the Bureau of Land Management have been completed to determine the potential for escarpment failure to occur. A copy of BLM's report for this EA is available in the project file. Factors considered to contribute to mining induced escarpment failure are:

- \* A pronounced escarpment or cliff formed by a thick section of Castlegate Sandstone along the rim of the canyon.
- \* Longwall panels oriented parallel to the strike of the cliff.
- \* A major set of fractures in the Castlegate Sandstone oriented parallel to the cliff face and longwall panels.
- \* Talus slopes below the Castlegate Sandstone which are sparsely vegetated.
- \* Convex cliff areas are zones of tension where tension cracks are more likely to occur and thus are more susceptible to escarpment failure. Conversely, concave cliff areas are zones of compression and thus are more stable.

It was determined that the highest potential for mining to cause spalling of the Castlegate Sandstone outcrop along the canyon slope or escarpment is at the prominent points (convex area with thick section of sandstone) between small side drainages that are within

the predicted subsidence (Map 2). The potential for failures has been determined to be moderate in these areas (25-75% probability of failure). Disruption of the already fractured sandstone and new fractures caused by subsidence could cause blocks of the sandstone to break-off from the outcrop and fall down the canyon slope. The BLM has determined that the potential for failure of the outcrop is low (10-25%) or negligible (less than 10%) in the remaining areas. It is not likely (low potential) that rock falls would reach the stream in Rilda Canyon or the Rilda Canyon Road because of the slope (45%), vegetation cover, and most likely travel path toward the side drainages. BLM estimates that less than (<) 10 acres would be disturbed by escarpment failure.

#### Alternative 3 (Proposed Action with Modifications)

The changes in topography from construction of the surface facilities described under Alternative 2 could occur. Since mining that would cause subsidence of the canyon slope and Left Fork of Rilda Creek would not be approved under this alternative, subsidence and changes to the topography in these areas would not occur.

#### B. Coal Occurrence, Reserves, and Mining

A discussion of how the alternatives could affect the recoverable coal reserves and life of the Deer Creek Mine is included in Section J, Socioeconomics.

#### C. Transportation/Special Uses

##### Alternative 1 (No Action)

Under this alternative the fan portal and new road in the Left Fork would not be constructed. Emery County would probably not reconstruct that portion of the road from the NEWUA springs to the forks and construct the turnaround area. This segment of the road would remain under Forest Service jurisdiction and maintenance.

Emery County is reconditioning and stabilizing the Rilda Canyon Road and realigning portions of roadway to a double lane width below the springs. This project lies within private lands and a road corridor on National Forest System lands under Emery County jurisdiction (Revised Statute 2477). A USDA easement will be granted on Forest Service segments to recognize and record their jurisdiction. They will become the primary operator. Construction of the new bridge and approach will result in new disturbance near Huntington Creek. This disturbance is on private lands and easements held by Emery County. This work will result in safer approaches to the highway and safer crossing of Huntington Creek. The bridge meets highway safety standards for sub-structure, super-structure, and deck. The hardening of the travelway and ditches will reduce sediment from run-off and dusting of the native surface. The armored fill

embankments will be stable during high stream flows. Present erosion rates would be reduced.

Reconditioning will require disturbance of approximately 0.2 acres of National Forest System lands to widen two sections of approximately 250 feet each in order to provide for two 10 foot finished surface lanes. The placement of enzyme stabilized aggregate on the recondition roadway will reduce the production of sediment from dust and run-off. The eroding cut ditch will be stabilized in steep grade section to reduce erosion and embankment within the flood plains will be armored to reduce erosion. The season of use will be extended for the forest user. NEWUA will have more dependable access to their springs. Maintenance costs and user cost will be reduced. Safety will be improved. Forest Service maintenance responsibilities and costs will be reduced.

#### Alternative 2 (Proposed Action)

The following would occur in addition to reconditioning of a portion of the Rilda Canyon Road discussed under Alternative 1.

The 1,426 feet of new road from the forks to the proposed portal would be constructed along the alignment of the crude trail and remnants of 4 wheel jeep trail in the Left Fork of Rilda Canyon. This trail parallels the drainage course and sets near the base of alluvium or colluvium deposit on the north slope of the canyon. The proposal is to provide a travelway of 12 feet, hardened with 6 inches of aggregate. Natural drainage would be conveyed in culverts and roadway drainage would be collected in ditches and crossed in culverts. The road would be gated and the traffic controlled, so no additional turnouts would be constructed in this restrictive section. The proposal indicates cut slope construction of 3/4:1 in the colluvium or alluvium deposit under the cliff forming sandstone/shales. The fill slope and the flood plain bound one-another along 40% of the proposed construction, from station 0+00 to 3+00, from 6+00 to 7+40, and from 9+50 to 11+00. The proposed grade is in excess of 8% from 0+91 to 6+50. The proposed traffic would be approximately 10 to 20 vehicles per day during the construction and reclamation periods. During the remaining periods the use is predicted to be below 1 vehicle per week. The six inches of aggregate should provide for adequate running surface for the proposed construction and reclamation traffic, if use is restricted to dry season (June 15 to October 1) when sub-grades are not saturated. The proposed cut slopes in colluvium or alluvium deposits would likely continue to ravel or sluff if unsupported and would require constant maintenance in order to assure a open travelway. There is almost no potential to re-establish vegetation on the cut slope of 3/4:1. Required support would mitigate this impact. Over the life of the mine portal, flood flow can be expected that could endanger the fill slopes. Required riprap would protect the fill slopes and prevent excessive sediment production. Less than 1.3 acres would be disturbed by the proposed roadway construction.

Emery County would upgrade the Rilda Canyon Road from the springs to the Left and Right Forks of Rilda Creek. Approximately 3,800 feet of existing 12 foot wide single lane road with natural turnouts and no permanent drainage structures would be improved. The roadway now affects approximately 2.4 acres. Work would consist of re-alignment of approximately one-third of the existing road to improve grades, sight distance, stability, and drainage. The improved road would be 3,500 feet in length with a single lane 14 foot finished travelway width. The travelway would be stabilized with 6 inches of aggregate. Both natural and roadway drainage would be carried across the road in culverts. Embankments and drainage structures within the flood plain would be armored with riprap. Turn-outs would be constructed and stabilized along the travelway at horizontal and vertical curves to improve safety. Approximately 4.2 acres would be within the roadway limits and about 1,000 feet of old roadway would be reclaimed. Approximately 260 feet of riprap armor would be placed along embankments. There would be a short-term increase in erosion/sediment during the construct period and for a short time after, then a long-term decrease in erosion/sediment would result because of the hardening of the travelway with gravel, removal of natural and surface water via culverts, and hardening of embankments with riprap. The proposed increase in traffic could be accommodated with increased safety and reduced sediment yield. The traffic could be supported during the current season of use and the use of light vehicle traffic could be extended earlier and later in the year.

Improvement of the road from the springs to the forks with a single lane travelway with turnouts and stable surface would allow passenger type cars access to the trailheads near the forks. Safety would improve by the construction of stabilized turnouts on vertical and horizontal curves rather than utilizing natural occurring non-stabilized open areas. The present primitive native surface travelway provides poor support for light vehicles during the fall hunting seasons when saturated from fall storms. Rutting from this use can concentrate water and increase sediment movement from the roadway to the drainages. Improvements to surface and ditches would reduce surface and ditch sediments. Additional culverts would reduce concentration of water and energy available to transport sediment. Armoring of the road embankment in the floodplains would reduce erosion during high runoff events. User cost and environmental costs would be reduced. The area of disturbance would increase by 2.4 acres, but 0.6 acres of this area would be reclaimed when road construction is completed for a long-term increase in the disturbed area of 1.8 acres.

#### Alternative 3 (Proposal with Modifications)

The impacts would be the same as discussed under Alternative 2 above since there would be no differences in the transportation situation.

D. Surface Hydrology/Watershed

Alternative 1 (No Action)

Under the no action alternative, the mining as proposed would not be approved. No underground mine development that could cause subsidence of the escarpment or surface construction would be allowed. Under this alternative surface water resources and the watershed in Rilda Canyon would not be affected beyond the impacts that could occur from already approved mining operations. The potential for development workings to affect the flow of the NEWUA springs and Rilda Creek is low because recharge is from the north and west and workings in this area have not encountered significant amounts of water.

Alternative 2 (Proposed Action)

Under this alternative, the proposal would be approved. This would allow for construction of the surface facilities and mining under the canyon slope/escarpments on the south slopes of Rilda Creek.

The water at the NEWUA springs and the flow in Rilda Creek have been identified for protection. Lease stipulations and provisions of the approved mining plan call for replacement of water in these sources if it is determined that mining adversely affects them.

PacifiCorp has entered into a formal agreement with NEWUA to construct a water treatment facility on land owned by PacifiCorp in Huntington Canyon, approximately two miles southeast and downstream of the Rilda Creek/Huntington Creek confluence, near the Huntington Power Plant. Water in the NEWUA culinary water system collected from the Rilda Canyon springs and other potential sources will be treated at this facility to mitigate any water quality impacts. Deep alluvial wells in this vicinity will be drilled to replace any loss of water at the springs.

Mining into the escarpment area and subsidence of the escarpment area could cause cracks and intercept ground water in fractures that could be contributing water to the NEWUA springs. The potential for affecting the flow is low because the majority of flow is attributed to alluvial water upstream of the springs and rock formations and fracture systems that lie to the north that would not be disturbed. There is, however, a low risk of decreasing the flow in the springs if there is any recharge from the south. This is most likely in the Side Canyon and South Springs that have the lowest flow of the three spring groups. If this occurs, there could be a corresponding decrease in flow in Rilda Creek. The potential for this to occur is also considered to be low. Development workings on the south slope have not encountered significant amounts of water, supporting that there is only a low risk of diverting ground water flow. If flow is diverted, it would remain underground and could be diverted into the mine workings and discharged back to the surface in Deer Creek or could continue to flow southward through the ground water system. It

is unlikely that water would be diverted from the Huntington Creek watershed or from the Colorado River system.

If subsidence results in rock spalling along the Castlegate Sandstone outcrop, there could be some short-term increase in sediment that could reach Rilda Creek. BLM estimates that less than (<) 10 acres would be disturbed.

Construction of the surface facilities would contribute to sediment in Rilda Creek. This would disturb approximately 4.3 acres of previously undisturbed ground. Best management practices required by the regulatory agencies and measures proposed by PacifiCorp would minimize the amount of sediment that would reach the drainage. This impact would be short-term lasting throughout the construction phase of operations. Once the facilities are completed, sediment control measures would be effective in controlling sediment produced and capturing sediment from the disturbed area on site. Sediment reaching the creek would be reduced from the present condition due to surfacing of the road (gravel), protection of the stream banks by riprap, and sediment control structures.

If there are any spills of diesel fuel or other potentially polluting substances during construction or operation of facilities, that are not adequately contained before they reach alluvial or surface water, water quality could be affected. The potential for this to occur is low and the duration of impacts would depend on the location of the spill, the timing and effectiveness of containment/removal actions taken, and the type of material spilled. PacifiCorp would be required to implement their Spill Prevention and Counter Control Plan in the event that a spill occurs.

#### Alternative 3 (Proposed Action with Modifications)

As discussed above under Alternative 2, there could be a short-term increase in sediment production due to construction of facilities and a long-term decrease in sediment in the creek due to measures for controlling erosion and sediment transport to the creek.

Under this alternative, mining that would cause subsidence of the escarpment areas would not be approved. The potential for mining to decrease the flow to the stream or springs associated would be minimized.

### E. Ground Water Hydrology

#### Alternative 1 (No Action)

Under the no action alternative the mining as proposed would not be approved. Subsidence of the canyon slope/escarpment and construction of the surface facilities would not be approved. Mining in the area that has already been approved could alter the ground water system but the potential would be low. Based on the results of

hydrologic monitoring, impacts to the flow in Rilda Creek and the NEWUA springs should be minimal.

#### Alternative 2 (Proposed Action)

Under this alternative the mining would be approved as submitted. This would allow construction of the surface facilities and subsidence of the canyon slope/escarpments.

The mining of longwall panels under the canyon slope/escarpment would cause subsidence and cracks in the ground surface. The potential for the development of cracks is highest where the overburden is shallow. Overburden above the area proposed for mining ranges from 2,000 feet at the ridgetop to 250 feet near the coal outcrop on the canyon slope. Some water runoff during snowmelt and rainstorms could be diverted underground until the cracks heal and allow this water to continue downslope. Most cracks heal within a period of just a few years.

Mining under the escarpments and subsidence increases the risk of interception of water bearing fractures associated with the springs. PacifiCorp's studies of the hydrology indicate that alluvial water in the Left and Right Forks of Rilda Creek contribute the majority of flow to the NEWUA springs. Additional water has been attributed to north-south trending and east-west trending fracture systems that intersect near the springs. The geologic structure and dip of the rock layers indicate that recharge is mostly from the area north of Rilda Canyon. Since the proposed mining is on the south slope of the canyon, there is some potential that the flow in the springs could be affected but the potential is low. The potential for decreased flow is greater for the Side Canyon and South Springs. These springs contribute the least amount of flow of the three groups of springs.

#### Alternative 3 (Proposal with Modifications)

This alternative would allow the construction of the surface facilities with mitigation measures to minimize impacts but not approve mining under the canyon slope/escarpments that could cause subsidence and escarpment failures.

This would reduce the potential for interception of water filled fractures due to subsidence. Assuming that water filled fractures extend into the mountain from the outcrop, mining could still intercept these fractures and the water associated within them. The degree of potential impact would be approximately the same as for Alternative 2 (Proposed Action), which is low.

F. Vegetation

Alternative 1 (No Action)

Under this alternative there would be no changes to vegetation except for the 0.2 acres of disturbance associated with reconstruction of the Rilda Canyon from State Hwy. 31 to the NEWUA springs by Emery County.

The potential for flow in the drainage that could also cause indirect changes in riparian vegetation is low.

Alternative 2 (Proposed Action)

Under this alternative vegetation would be removed for construction of the new road, pad, and turnaround area, as well as for improvement (widening to a 14 foot travel surface) of the existing road. Vegetation would be removed from a 1.2 acre area for the facilities pad and 1.3 acres for the new facilities pad access road. Reconstruction of the Rilda Canyon Road from the NEWUA springs to the forks would disturb approximately 1.8 acres of additional lands. Approximately 0.6 acres of the old road (already disturbed area) would be reclaimed and revegetated. Long-term disturbance would be 4.3 acres. Additional short-term disturbance would be 0.6 acres.

PacifiCorp would be required to fence the canyon near the mouth to prevent livestock grazing in the perennial reaches of Rilda Canyon. This would improve the riparian vegetation condition and diversity in the associated RPN Management Unit to mitigate the loss of riparian vegetation from construction/operations. The RPN Management Unit extends 100 feet on either side of the perennial stream, on National Forest System lands, from the springs to the private lands downstream. This area encompasses a 1.25 mile length of stream and an approximate area of 30 acres.

If mining under the escarpments intersects fractures that provide water to the NEWUA springs, there could be some decrease in flow in the springs and downstream in Rilda Creek. This could result in some decrease in the width and diversity of the riparian community in and adjacent to the stream channel over the long-term. The potential is low because the potential for decreasing the flow is low and the stream receives water from several sources. Flows should continue sufficient to support the riparian vegetation community.

Subsidence induced spalling of the Castlegate Sandstone outcrop could result in sandstone blocks breaking away and tumbling down the slope. There could be some loss of vegetation (Spruce/Fir Coniferous Forest) along the slopes below the outcrop, depending on the area affected. BLM estimates that the affected area would be less than (<) 10 acres. Some large trees could be knocked over and understory vegetation could be covered or destroyed by debris. This is expected to occur only along the prominent cliff outcrops along the points between side drainages.

### Alternative 3 (Proposed Action with Modifications)

Since subsidence of the canyon slope would not be approved, only the impacts discussed above under Alternative 2 for construction of the surface facilities are expected to occur.

#### G. Wildlife

##### Alternative 1 (No Action)

The proposed actions would not take place and the impacts discussed for the action alternatives below would not occur.

##### Alternative 2 (Proposed Action)

Activities associated with construction of the facilities pad and construction/reconstruction of the access roads could displace wildlife species into adjacent areas. This activity would be short-term. If species avoid a 1/2 mile area, the short-term habitat loss could be 1.5 square miles. Once construction is completed, there could be a long-term loss of habitat associated with the disturbed area (4.3 acres) due to vegetation removal, increased traffic (operations), and fan noise. Fan noise could continue to displace some species for the life of the mining operation. If a 1/2 mile area is avoided, the area would be less than 1 square mile. Most species, including big game species and birds would become accustomed to the noise and activity and slowly move back into the area. There would be a decrease in use by deer and elk for winter foraging, thermal cover, and security. Foraging, nesting, and cover use could decrease by other species. This impact would be consistent with Forest Plan direction because the activity would not result in a loss of crucial habitat needed to maintain viable populations or meet population goals.

Subsidence of the escarpment on the south slope of Rilda Canyon could cause failures of the Castlegate outcrop along the prominent points between small side drainages (less than 10 acres). This is not likely to alter habitat to any significant degree. Golden eagle Nest 296A could be at risk, however, the BLM has determined that there is negligible potential (less than 10%) for the outcrop to fail at the nest location because only first mining that is not expected to cause subsidence is planned under the nest. PacifiCorp would be required to obtain a permit to take the nest from the U.S. Fish and Wildlife Service. Mitigations would include taking appropriate measures to assure that the nest does not become active during the period that subsidence could take place in the area. There would be a negligible potential for impact to eagles. Raptor nesting habitat could be decreased until the escarpment areas stabilize.

There are no known threatened or endangered species in the area. The Northern Goshawk, Spotted bat, and Northern Three-toed woodpecker (and their habitat) are the most likely Sensitive species to exist within and adjacent to the project area. They were not found in Rilda

Canyon during the surveys conducted in June and July of 1994. Impacts to habitat are expected to be minimal. A copy of the Biological Evaluation is contained in the project file.

Loss of water due to mining could decrease the quality of riparian habitat. The potential for this to occur is expected to be low because the potential for decreasing water flow is low and remaining flows should be sufficient to maintain this habitat and provide adequate watering sources.

The short-term potential increase in sediment in Rilda Creek during construction could decrease the quality of habitat for aquatic invertebrate species in Rilda Creek and decrease populations. This could decrease habitat and food availability for trout in Huntington Creek and other species dependent on macroinvertebrates.

#### Alternative 3 (Proposed Action with Modifications)

Since subsidence of the canyon escarpment would not be approved under this alternative, only the impacts discussed under Alternative 2 above related to construction and operation of surface facilities would occur. The canyon escarpments would not be subsided and golden eagle Nest 296A would not be at risk.

### H. Visual Quality

#### Alternative 1 (No Action)

The impacts discussed below for the action alternatives would not occur. Reconstruction of the Rilda Canyon County road from the intersection with the Fairview-Huntington Highway (State Hwy. 31) and replacement of the bridge will temporarily decrease visual quality consistent with visual quality objectives for the short-term (1994 summer season). The activity is visible from Huntington Canyon and State Hwy. 31 and from the Rilda Canyon County Road.

#### Alternative 2 (Proposed Action)

The breakout facility would be located in a densely vegetated area which contains an evergreen screen that in concert with existing topography appears adequate enough to provide camouflage for long views year-round. The new access road would require cutting into the toe of the north slope of the canyon at various points and cursory observation indicates that revegetation of these cuts may prove unsuccessful.

The road to be reconstructed on lands managed by the Forest Service in Rilda Canyon would not be visible from State Highway 31 which has been designated as a Scenic Byway. The section of powerline to be installed parallel to this reconstructed road on the National Forest would also not be visible from Highway 31. However, the powerline would be readily seen from highway 31 as it leaves Rilda canyon and passes through adjacent BLM and private lands. At this location the

powerline crosses a ridge south of the Rilda Creek/Huntington Creek confluence and would be highly visible. This would be a new visual intrusion on the landscape. The powerline would then merge with the existing powerline in Huntington Canyon and parallel it. Since there is already a powerline along this corridor, the decrease in visual quality caused by installing a parallel line would be minimal. The visibility would be increased but the visual intrusion of the existing powerline already exists.

Escarpment failures could visually impact National Forest lands on or near the walls of the canyon. The new or subsequently larger talus slopes associated with these failures would appear to be natural but can be expected to be visible from within Rilda Canyon itself, from higher elevations in other adjacent drainages, and possibly from portions of State Highway 31.

The project would be consistent with visual quality objectives.

#### Alternative 3 (Proposed Action with Modifications)

Since subsidence of the canyon escarpment would not be approved, only the impacts associated with construction of the surface facilities discussed above under Alternative 2 are expected to occur.

### I. Recreation

#### Alternative 1 (No Action)

Under this alternative there would be no impacts to recreation in the area other than those expected from reconstruction of the Rilda Canyon Road from the intersection with State Hwy. 31 to the NEWUA springs. This would improve recreation access to the springs but not beyond. A negligible increase in recreation use in the canyon could occur due to the increased accessibility for passenger car traffic.

#### Alternative 2 (Proposed Action)

In addition to reconstruction of the road from the intersection with State Hwy. 31, Emery County would improve the Rilda Canyon Road from the springs to the forks and construct a turnaround area at the forks. This would improve access to the trails in the Left and Right Forks of Rilda Canyon and provide a parking area suitable for parking and turning large vehicles such as RVs. The improved access could increase motorized sight-seeing in the canyon during the summer season for two to three years until people become familiar with the road and facilities in the canyon.

The change in visual quality in the canyon, noise from the exhaust fan, and the musty mine odor that may be present during certain weather conditions could detract from the recreation experience in the canyon, depending on the sensitivity of individuals toward mining activities and the type of recreation experience sought after.

It is expected that hunting in the upper reaches of Rilda Canyon could decrease due to the perception by hunters that fan noise would decrease use of the area by big game species. This could be offset somewhat by the improvement of access to the area. Other recreational use of the trails, such as hiking and horseback riding, would probably slightly decrease or remain the same.

The decrease in visual quality in Huntington Canyon due to construction of the powerline is not expected to affect recreation because there is already one powerline along the proposed alignment. The presence of the powerline in Rilda Canyon would probably not affect use of the canyon by hunters.

Overall, recreation use in the canyon would probably decrease by a negligible amount in the long-term.

Failures of the Castlegate Sandstone outcrop on the south slope of Rilda Canyon is not expected to affect recreation because the failures would appear to be natural considering that this type of failure is common throughout the cliffs in Huntington Canyon. It is not likely that rocks would reach the road in the canyon bottom considering the distance, slope, and tree buffer. Monitoring would be done by the operator to assess the potential safety hazard. If the hazard becomes a concern appropriate measures would be taken to warn the public and control use in the areas where the hazard exists.

#### Alternative 3 (Proposed Action with Modifications)

The impacts would be the same as discussed under Alternative 2 resulting in some decrease in recreation use in Rilda Canyon. However, there would be no subsidence of the canyon escarpment and related safety concerns.

### J. Socioeconomics

#### Alternative 1 (No Action)

Under this alternative, the surface facilities and the mining plan as proposed would not be approved. Approximately 10.4 million tons of recoverable coal would not be mined from the longwall panels that are under the escarpments. No other mining methods are feasible for these areas as some sort of non-subsidence mining would require total reinvestment by PacifiCorp for an extra continuous mining machine and support equipment to produce enough coal to supply the Huntington Power Plant. This would force the company to possibly mine Federal coal at a loss contrary to the Mineral Leasing Act of 1920, as amended. Consequently, these reserves could be lost. At current coal prices, this represents an estimated loss of the value of the coal of \$260 million to PacifiCorp and a loss of \$20 million in Federal coal royalties of which half would not be returned to the State of Utah. This loss would prevent increasing the mine life by 4 years. This would equate to 300 jobs for 4 years or roughly \$42 million in direct wages and another \$20 million in indirect wages.

PacifiCorp would need to begin developing longwall panels in other areas of the mine. The current longwall panel could be mined-out long before new panels are developed in other mine areas and longwall production could cease until new panels are developed. Since roughly 3/4 of the mine's production capacity comes from the longwall section, PacifiCorp might be forced to obtain coal reserves from alternate supplies. In addition, without the proposed ventilation fan and portals in Rilda Canyon, much of the northern and western reserves could not be mined at rates to meet demand and still meet minimum ventilation requirements. This could jeopardize the reserves for an estimated 20 years of mine life. As the mine currently has about 300 employees, employment could decrease as the mine closes. This could have a multiplier effect on the economies of Carbon and Emery County as many of the service and support industries in these counties could have to curtail business.

#### Alternative 2 (Proposed Action)

Under this alternative, PacifiCorp would be allowed to continue developing and mining longwall panels north towards Rilda Canyon. The ventilation fan and portals would be constructed and additional air requirements for future mining areas would be met. With additional air from the Rilda Canyon ventilation fan and portals, PacifiCorp's future reserves to the west and north can be accessed and mined and the mine life would extend to the year 2015. Approximately 10.4 million tons of coal could be recovered under the escarpments on the south side of Rilda Canyon. Employment and associated socioeconomic benefits could continue.

#### Alternative 3 (Proposed Action with Modifications)

Under this alternative, longwall mining under the escarpments would not be allowed but the ventilation fan and intake portals would be allowed in Rilda Canyon. Approximately 10.4 million tons of recoverable coal under the escarpments could be lost to mining. This could result in a loss of \$20 million in Federal royalty. The opportunity to extend the mine life by 4 years and employment and associated socioeconomic benefits could be reduced. The instillation of the fan would allow access and future mining of PacifiCorp's leased reserves to the west and north.

### K. Short-term Use of Man's Environment vs. Long-term Productivity

#### Alternative 1 (No Action)

There would be no change from the current situation.

#### Alternative 2 (Proposed Action)

Mining of coal as proposed would extend the life of the Deer Creek Mine by approximately 20 years and provide 10.4 million tons of coal for the production of electricity. This would be a one-time short-term benefit since coal is a nonrenewable resource.

The long-term productivity of resources could be affected but not to a significant degree. Vegetation, wildlife habitat, and visual quality related to construction and operation of the surface facilities would be restored once reclamation is accomplished and determined to be successful. There could be some decrease in the flow of the NEWUA springs Rilda Creek if subsidence causes diversion of ground water. This could decrease the productivity of riparian vegetation and macroinvertebrate populations in Rilda Creek. Construction of the water treatment facility by PacifiCorp would replace any water loss to the NEWUA culinary springs and could result in an overall increase in the availability of the culinary water supply. The condition and diversity of riparian vegetation in the perennial section of Rilda Creek, at and below the springs, could be enhanced as a mitigation intended to offset the potential loss of riparian vegetation from construction of the facilities.

#### Alternative 3 (Proposal with Modifications)

The affects would be the same as discussed under Alternative 2 above, except that the potential for affecting the springs and flow in Rilda Canyon would be reduced by not allowing subsidence of the canyon slope (escarpment).

### L. Irreversible and Irretrievable Commitments of Resources

#### Alternative 1 (No Action)

The minable coal reserves not mined under this alternative would be irreversibly lost considering present mining technology. It would be bypassed. The associated loss of energy and economic benefits would be irreversible.

#### Alternative 2 (Proposed Action)

The loss of vegetation and associated wildlife habitat and impacts to visual quality from the surface facilities would be irretrievable but not irreversible. Once operations are completed (approximately 20 years), the disturbed area would be recontoured and reclaimed. It would take approximately 3-5 years to re-establish vegetation on the disturbed sites and 5-10 years for tree species to become established and vegetation to blend in with the surrounding areas.

Damage to vegetation from escarpment failure would be irretrievable and would take longer to naturally recover because of the steep slopes. Efforts to reclaim these sites are not planned because of the steep slopes, small extent of area expected disrupted, distance from the creek, and rocky nature of the slopes.

Any loss of flow in the springs, alluvial aquifer, and in Rilda Creek due to mining in the escarpment areas and along the ridge tops would be irretrievable and potentially irreversible. Various methods could be used to replace some flow and expanding clays are expected to seal

cracks and replace some flow paths but the change to the ground water system would probably be permanent.

Coal is not a renewable resource. Mining and burning of the coal to produce electricity would be an irreversible commitment of the coal itself and other energy resources used in the mining process.

#### Alternative 3 (Proposed Action with Modifications)

Irretrievable and irreversible impacts would be the same as discussed above under Alternative 2 except that there would be no irretrievable impacts to vegetation and wildlife habitat on the escarpment and the potential for irretrievable and irreversible impacts to the NEWUA springs and flow in Rilda Creek would be reduced from the already low potential under Alternative 2.

#### M. Cumulative Impacts

##### Alternative 1 (No Action)

Under this alternative, there would be no changes to the current situation.

The Rilda Canyon area and ecosystem has been continuously altered by natural flooding, erosion, glacial activity, fires, insect infestations, and other natural processes prior to encroachment by man. There is some evidence of long-term habitation by Formative (Fremont) Stage (AD 400 to AD 1300) peoples. Temporary occupation on a seasonal basis is suspected by Archaic and later populations. European settlement resulted in hunting/trapping of game, timber harvest, livestock grazing, and coal mining. Livestock grazing on the Wasatch Plateau was extensive in the late 1800s resulting in extensive watershed damage and erosion. Management of grazing by the Forest Service since 1906 has resulted in significant improvement of resource conditions. Rilda Canyon has not been as severely altered by grazing as many other areas on the plateau. Vegetation density is high and the range conditions are generally good.

Rilda Canyon is included within the Gentry Canyon (forks of Rilda Creek to Huntington Creek) and the Trail Mountain (Left Fork of Rilda Creek) Cattle and Horse Grazing Allotments). These allotments are grazed in early spring. Grazing has resulted in the decrease in native understory species and the introduction of non-native species and potentially the overall reduction of understory plant diversity. The present level of grazing will continue with some potential decreases in numbers in the future.

Coal prospecting and some limited mining probably occurred in Rilda Canyon in the late 1800s. Four coal mines have operated on and off between 1936 and 1969. The mines resulted in improvement of any prior existing access in the canyon and changes in the topography related to access to the portals and development of portals. Trees were harvested for mine support timbers. The old coal storage areas,

portals, and portal access roads were reclaimed in 1990 by the Utah Division of Oil, Gas and Mining under the abandoned coal mine reclamation program. Development of facilities and the human activity in the canyon undoubtedly caused increased erosion and sediment production, disturbance of wildlife, and decrease in water quality. Reclamation and revegetation have been monitored and have proven to be very successful. The springs later developed by NEWUA were probably developed to provide water for mining operations. The reclaimed mines were not producing water.

NEWUA developed the springs at the Side Canyon drainage in Rilda Canyon in 1972. The development includes the water collection systems and a 6 inch pipeline buried under the road. Water is diverted from the creek to serve approximately 421 families in northern Emery County with culinary water. This diversion decreases the surface flow in Rilda Creek by as much as 400 gpm, but flow continues to be perennial below the springs in amounts sufficient to sustain the stream integrity, riparian vegetation, and the overall health of the ecosystem.

The Rilda Canyon road (jurisdiction of Emery County from Hwy. 31 to the NEWUA springs under R.S. 2477) is a native surface road which is in poor condition resulting in severe erosion of the road surface and associated ditch during spring runoff and rainstorms. Sediment contributions to Rilda Creek and Huntington Creek is high during these periods. Reconstruction of the road by Emery County to a 20 foot travel width with designed drainage will decrease erosion and sediment production in the long-term, once construction is completed. The inside road ditch and culvert outlets will be armored with rock riprap to control water velocities and erosion. Existing ground and surface water quality and flow is described in Chapter 3, Items D and E.

Approximately 2,000 acres of vegetation burned on East Mountain in the Fall of 1993. The fire included the upper portion of the Right Fork of Rilda Canyon but did not encroach into the Left Fork. The fire burned mostly understory vegetation and conifer stands. The estimated burn within the fire perimeter is 50-60%. Water monitoring in Rilda Creek by PacifiCorp has shown that there is no measurable difference in water quality in Rilda Creek with the possible exception of sediment production during runoff from snowmelt and rainstorms. Ash from the burned vegetation has been observed in the creek during rainstorm runoff. A significant recovery of understory vegetation and aspen has been observed in the 1994 spring/summer season. Near complete recovery of understory vegetation is expected during the 1995 spring/summer season. Sediment increases have been negligible since the fire and are not expected to continue beyond the 1994.

A short-term increase in motorized sight seeing in Rilda Canyon is expected due to the road improvement.

No other management activities are planned for the canyon.

## Alternative 2 (Proposed Action)

The anticipated impacts to the existing environment (referred to as the affected environment in Chapter 3) were described throughout Chapter 4 by resource category. They would be cumulative, adding to changes that man's activities have already caused in Rilda Canyon.

Surface facilities are expected to cause some but an insignificant amount of vegetation removal and loss of wildlife habitat. The loss of habitat would contribute to cumulative losses but wildlife species have sufficient areas available to maintain populations.

It is unlikely that the cumulative impacts would cause significant impacts to flow, stream channel morphology, riparian vegetation, and wildlife species in the canyon, even though some changes could occur. Any potential loss of culinary water would be offset by development of the reservoir, deep water wells, and the water treatment facility near Deer Creek. Exclusion of livestock use in Rilda Canyon as a mitigation, should result in improved diversity and health of the riparian ecosystem from the springs downstream to private lands at the canyon mouth. Short-term increased sediment levels from road reconstruction and construction of the facilities should be offset by a long-term decrease in sediment production. Sediment production from the existing low standard road has been high.

Water intercepted during mining could enter the mine workings and be discharged into Deer Creek or could continue to flow down-dip to the south in the ground water system. It is not likely that water would be depleted from the Huntington Canyon watershed or the Colorado River system.

A decrease in the use of the trails in the Left and Right Forks is expected due to the fan noise, decrease in visual quality from the surface facilities pad, and increased human presence from mining related activities. Hunting in the canyon is also expected to decrease.

No additional disturbance for surface facilities is reasonably foreseeable at this time. PacifiCorp evaluated the potential for loading and hauling coal at the proposed breakouts for trucking to the Huntington Power Plant. This scenario would have involved parking areas for the miners, a bathhouse, coal storage and loading facilities, equipment storage, and paving the Rilda Canyon Road for hauling. This scenario was replaced with the current proposal due to Forest Service concerns and available mineable reserves. It was determined that the proposed facilities would provide for the reasonably foreseeable needs of the operator for mining.

## Alternative 3 (Proposed Action with Modifications)

The impacts would be the same as discussed under Alternative 2 except that there would be no mining induced failures of the canyon slope/escarpment and associated loss of vegetation. The potential

for mining to cause a decrease in flow at the NEWUA springs and in Rilda Creek would be decreased.

CHAPTER 5  
LIST OF PREPARERS

The following is a list of interdisciplinary team members who directly participated in conducting the environmental analysis and preparing the environmental assessment. The title resource area represented and role on the team is indicated for each person. Other employees of the Forest Service, Bureau of Land Management, and Office of Surface Mining provided comments.

<u>Name</u>	<u>Analysis Skills/Specialty</u>	<u>Role</u>
Carter Reed	Geology/Minerals	Team Leader
Brent Barney	Engineering/Transportation	Core Team Member
Dennis Kelly	Surface Water Hydrology	Core Team Member
Steve Romero	Wildlife	Core Team Member
Paul Burns	Wildlife (Aquatic)	Extended Team Member
Kevin Draper	Visual Quality/Recreation	Core Team Member
Bob Thompson	Vegetation/Reclamation	Extended Team Member
Steve Falk	Mining Engineer/BLM Rep.	Core Team Member
Ken Wyatt	Ground Water Hydrology	Core Team Member
Floyd McMullen	OSMRE Rep.	Extended Team Member

CHAPTER 6  
REFERENCES

The following is a list of tiering and reference documents:

Danielson, Terence W., et. al., 1981, Hydrology of the Coal-Resource Areas in the Upper Drainages of Huntington and Cottonwood Creeks, Central Utah, U.S.G.S. Water-Resources Investigations Open-File Report 81-539.

Lines, G.C., 1985, The Ground-Water System and Possible Effects of Underground Coal Mining in the Trail Mountain Area, Central Utah, U.S.G.S. Water-Supply Paper 2259

PacifiCorp, 1993, Deer Creek Coal Mine Permit Application, Deer Creek (ACT/015/018)/Cottonwood (ACT/015/019), Des-Bee-Dove (ACT/015/017), Hydrologic Section, Volume 9, Revised March 41, 1993.

USDA, Forest Service, 1986, Final Environmental Impact Statement and Land and Resource Management Plan, Manti-La Sal National Forest, Price, Utah (Forest Plan).

USDI, Bureau of Land Management, 1988, Final Environmental Impact Statement, San Rafael Resource Management Plan, 1988 (RMP).

USDA, Forest Service, 1986, Environmental Assessment for Readjustment of Consolidated Federal Coal Lease SL-050862/U-24069/U-24070, Price Ranger District, Manti-La Sal National Forest, Emery County, Utah, December, 1986

USDA, Forest Service, 1976, Environmental Analysis Report/Part 23 Technical Examination, Peabody Coal Company, Federal Leases U-06039, SL-051221, and U-014275, Lease Readjustment, October 4, 1976.

USDA, Forest Service, 1992, Decision Notice and Finding of No Significant Impact for the Readjustment of Federal Coal Lease U-06039, Price Ranger District, Manti-La Sal National Forest, Emery County, Utah, May 15, 1992 (See Attachment B, Environmental Analysis Summary Matrix).

USDA, Forest Service, 1990, Environmental Assessment for the Readjustment of Federal Coal Lease U-7653, Price Ranger District, Manti-La Sal National Forest, Emery County, Utah, January, 1990.

USDA, Forest Service, 1980, Environmental Assessment, 40 CFR 1500, 43 CFR 3521, 1-4, Proposed Coal Lease Tract, Section 32, T. 16 S., R. 7 E., SLM, Emery County, Utah, October 8, 1980 (This lease was officially assigned No. U-47977 when it was leased in 1982).

USDA, Forest Service, 1989, Environmental Assessment for the Readjustment of Federal Coal Lease U-024319, Price Ranger District, Manti-La Sal National Forest, Emery County, Utah, July, 1989.

## APPENDICES

- APPENDIX 1 - Public Scoping Letter with Mailing List
- APPENDIX 2 - Public Notices
- APPENDIX 3 - Mitigations
- APPENDIX 4 - Role of Office of Surface Mining Reclamation and Enforcement in the Regulation of Coal Mining

Appendix 1

United States  
Department of  
Agriculture

Forest  
Service  
Manti-La Sal  
National Forest

Price Ranger District  
599-West Price River Dr.  
Price, Utah 84501

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Reply to: 2820

Date: May 5, 1994

m01n

m02n

PacifiCorp has submitted a mine plan amendment to the Utah Division of Oil, Gas and Mining proposing to construct a breakout on the south slope of the Left Fork of Rilda Canyon and to mine and subside the south slope of Rilda Canyon and the upper reaches of the Left Fork drainage channel on their existing coal leases. The breakout would provide air ventilation for the Deer Creek Mine. The 1.2 acre facilities pad would contain three portals, a ventilation fan on the easternmost portal, an electric substation, water storage tank, and pumphouse. The existing Rilda Canyon road (Forest Development Road 50246) would be improved to a 14 foot gravelled travel width from the intersection with the county road at the North Emery Water Users Association springs to the forks (0.5 mile). A turnaround area would be constructed at the forks. A new (gravelled, restricted access) road would be constructed from the forks to the facilities pad, a distance of 1,350 feet (1.3 acres). A new 25KV overhead power line would be constructed along the Rilda Canyon road to the substation on the facilities pad.

As the surface management agency for the majority of the lands involved, the Forest Service will take the lead on conducting the environmental analysis of the proposal under the National Environmental Policy Act of 1969 (NEPA). The Bureau of Land Management, and Office of Surface Mining Reclamation and Enforcement will cooperate in conducting the analysis.

You are invited to provide comments and identify issues. Please send any comments to Charlie Jankiewicz, District Ranger, Price Ranger District, Manti-La Sal National Forest, 599 West Price River Drive, Price, Utah 84501. To obtain additional information or comment on the proposed action by telephone, contact Carter Reed or Jeff DeFreest at 801-637-2817. Comments must be received by the close of business on June 3, 1994.

Sincerely,

/s/ Charlie J. Jankiewicz

CHARLIE JANKIEWICZ  
District Ranger

J.Defreest:dm

m01nKen Phippen  
Division of Wildlife Resources  
455 W. Railroad Avenue  
Price, UT 84501  
m02nDear Ken:

m01nEmery County Commissioners  
c/o Dixie Thompson  
P.O. Box 629  
Castle Dale, Utah 84513  
m02nDear Dixie:

m01nDick Carter  
Utah Wilderness Association  
455 E. 400 S.  
Salt Lake City, Utah 84111  
m02nDear Dick:

m01nHuntington Cleveland Irrigation  
c/o J. Craig Smith  
P.O. Box 11808  
Salt Lake City, Utah 84147  
m02nDear Craig:

m01nEmery County Water Conservancy District  
c/o Jay Mark Humphrey  
P.O. Box 998  
Castle Dale, Utah 84513  
m02nDear Jay:

m01nPacifiCorp  
c/o Interwest Mining Co.  
ATTN: Property Administration  
One Utah Center, Suite 2000  
201 South Main Street  
Salt Lake City, Utah 84140  
m02nDear Sir:

m01nHuntington Cleveland Irrigation  
c/o Varden Willson  
P.O. Box 327  
Huntington, Utah 84528  
m02nDear Varden:

m01nNorth Emery Water Users Association  
c/o Jack Stoyanoff  
P.O. Box 160  
Elmo, Utah 84521  
m02nDear Jack:

m01nCrandall Ridge S&G Allotment  
c/o John Larsen  
1665 E. 1280 N. #84  
Mt. Pleasant, Utah 84647  
m02nDear John:

m01nLee Lemmon  
Huntington Cattlemen's Association  
P.O. Box 193  
Huntington, UT 84528  
m02nDear Lee:

Appendix 2

For publication in the Sun Advocate on Thursday, May 5 and  
the Emery County Progress on Tuesday, May 10.  
For further information contact: Carter Reed at 637-2817.

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LEGAL NOTICE

USDA Forest Service  
Intermountain Region  
Manti-La Sal National Forest  
Price Ranger District  
Emery County, Utah

The Price Ranger District of the Manti-La Sal National Forest is evaluating a proposal by PacifiCorp to construct a breakout on the south slope of the Left Fork of Rilda Canyon and to mine and subside the south slope of Rilda Canyon and the drainage channel in the upper reaches of the left fork. The breakout would provide air ventilation for the Deer Creek Mine. The 1.2 acre facilities pad would contain 3 portals, a ventilation fan on the easternmost portal, a substation, water storage tank, and pumphouse. The existing Rilda Canyon road (Forest Development Road 50246) would be improved to a 14 foot gravelled travel width from the intersection with the county road at the North Emery Water Users Association springs to the forks (0.5 mile). A turnaround area would be constructed at the forks. A new low standard gravelled restricted access road would be constructed from the forks to the facilities pad, a distance of 1,350 feet (1.3 acres). A new 25KV overhead power line would be constructed along the Rilda Canyon road to the substation on the facilities pad.

The Forest Service, Bureau of Land Management, and Office of Surface Mining Reclamation and Enforcement will cooperate in conducting an environmental analysis for the proposal.

The public is invited to provide comments and identify issues. To obtain additional information or comment on the proposed action, contact Carter Reed or Jeff DeFreest at the Manti-La Sal National Forest Supervisor's Office, 599 West Price River Drive, Price, Utah 84501, (Phone 801-637-2817). Comments must be received by the close of business on June 3, 1994.

## APPENDIX 3

### MITIGATIONS FOR ALTERNATIVES 2 AND 3

Mitigations that will be required for operations if one of the two action alternatives (Alternatives 2 and 3) is selected are discussed in this appendix. The mitigations common to both alternatives are discussed as well as those specific to Alternative 2 are discussed under separate headings. Operations are subject to adherence to the stipulations attached to the individual coal leases affected by operations and to provisions of the approved mine plan and mine permit.

#### A. Mitigations Common to Alternatives 2 and 3

1. The operator must construct a fence and cattleguard at the mouth of Rilda Creek to exclude livestock use in the canyon. Maintenance of this facility during the life of operations would be the operator's responsibility. This would prevent damage to the riparian vegetation and enhance the area for wildlife to offset the loss of riparian vegetation from facilities pad and road construction. The fence and cattleguard designs and specific location are subject to Forest Service review and approval.
2. The facilities pad must be fenced to provide for public safety and prevent access by livestock and big game species.
3. Facilities must be painted with a color that blends naturally with the surrounding environment. The color is subject to approval by the Forest Service.

#### B. Mitigations Specific to Alternative 2

1. In the event that rocks or other debris from the escarpment reach Rilda Creek and cause blockage or alteration of the natural flows, the operator will be required to remove the materials causing the blockage, take necessary measures to prevent sediment production, replace riparian vegetation through reclamation of other means, and replace the the natural flow patterns. The method of conducting these required activities are subject to approval of the regulatory authority with consent from the Forest Service.
2. Any damage to fences, roads, spring developments, etc. caused by escarpment failures or other operations must be repaired or replaced as soon as possible. Methods for repair or replacement of such facilities are subject to approval of the regulatory authority with consent from and Forest Service.
3. The operator must take necessary measures to prevent raptors from building and occupying nests in the escarpment area during periods that they would be at risk from subsidence. Golden eagle nest 296A must be protected from subsidence unless the operator obtains a take permit from the U.S. Fish and Wildlife Service.

4. The operator must monitor subsidence and escarpment areas to determine the extent of escarpment failures that occur and to determine when they stabilize. The operator is responsible to ensure public safety in the areas where escarpment failures are likely to occur until it is determined that subsidence is substantially complete and the escarpments have stabilized. Methods of providing for public safety and for monitoring escarpment failures (including the frequency of monitoring) are subject to approval of the regulatory authority with consent from the Forest Service.
  
5. Should escarpment failures occur to an extent beyond that predicted and cause functional impairment of surface resources (impacts that are not consistent with management prescriptions in the Forest Plan), additional operations that could cause escarpment failures must be suspended pending evaluation by the regulatory authority in consultation with the Forest Service.

#### Appendix 4 - Role of Office of Surface Mining Reclamation and Enforcement in the Regulation of Coal Mining

The Surface Mining Control and Reclamation Act of 1977 (SMCRA) gives the Office of Surface Mining Reclamation and Enforcement (OSM) primary responsibility to administer programs that regulate surface coal mining operations and the surface effects of underground coal mining operations. In January 1981, pursuant to Section 503 of SMCRA, the Utah Division of Oil, Gas, and Mining (DOG M) developed, and the Secretary of the Interior approved, a permanent program authorizing Utah DOGM to regulate surface coal mining operations and surface effects of underground mining on non-Federal lands within the State of Utah. In March 1987, pursuant to Section 523 (c) of SMCRA, Utah DOGM entered into a cooperative agreement with the Secretary of the Interior authorizing Utah DOGM to regulate surface coal mining operations and surface effects of underground mining on Federal lands within the State.

Pursuant to the cooperative agreement, Federal coal lease holders in Utah must submit permit application packages (PAP's) to OSM and Utah DOGM for proposed mining and reclamation operations on Federal lands in the State. Utah DOGM reviews the PAP to ensure that the permit application complies with the permitting requirements and that the coal mining operation will meet the performance standards of the approved permanent program. If it does comply, Utah DOGM issues the applicant a permit to conduct coal mining operations. OSM, the Bureau of Land Management (BLM), the Forest Service (FS), and other Federal agencies review the PAP to ensure that it complies with the terms of the coal lease, the Mineral Leasing Act of 1920, the National Environmental Policy Act of 1969, and other Federal laws and their attendant regulations. OSM recommends approval, approval with conditions, or disapproval of the mining plan to the Assistant Secretary--Land and Minerals Management. Before the mining plan can be approved, BLM and the surface-managing agency (in this case FS) must concur with this recommendation.

Utah DOGM enforces the performance standards and permit requirements during the mine's operation and has primary authority in environmental emergencies. OSM retains oversight responsibility for this enforcement. BLM and FS have authority in those emergency situations where Utah DOGM or OSM inspectors cannot act before significant environmental harm or damage occurs.

United States  
Department of  
Agriculture

Forest  
Service

Manti-La Sal  
National Forest

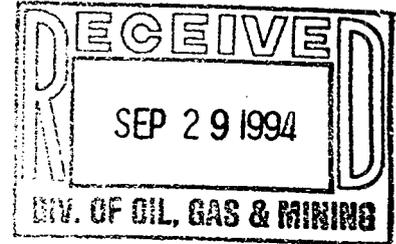
599 West Price River Dr.  
Price, Utah 84501

DRAFT

Reply to: 2820

Date: September 27, 1994

Utah Coal Regulatory Program  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
Attention: Pamela Grubaugh-Littig



RE: Rilda Canyon Lease Extension and Surface Facilities, Deer Creek Mine,  
PacifiCorp, ACT/015/018-94A, Folder #~~2~~<sub>3</sub>, Emery County, Utah *Copy Pam (all)*

Dear Ms. Littig:

We hereby consent to addition of the extension area into the permit area for the Deer Creek Mine, construction of surface facilities in Rilda Canyon, and mining under the south canyon escarpment in Rilda Canyon by PacifiCorp. Enclosed are a copy of the Environmental Assessment (EA) and Decision Notice/Finding of No Significant Impact (DN/FONSI) for PacifiCorp's proposed surface facilities and mining under the south canyon escarpment. This approval is contingent upon the mitigations attached to the DN/FONSI.

The decision to consent to addition of the extension area is effective immediately, however, the decision to consent to surface facilities and to subside the escarpment is subject to Forest Service appeal regulations 36 CFR 215 and 271. Any appeals must be filed within 45 days of the date that the Forest Service decision is published in the Sun Advocate, which was September 27, 1994. Depending on the results of the appeal process, the earliest that surface operations may begin would November 21, 1994.

If you have any questions, contact us at the Forest Supervisor's Office in Price, Utah.

Sincerely,

*George A. Morris*  
for

GEORGE A. MORRIS  
Forest Supervisor

Enclosures

cc:

D-3

Floyd McMullen, Office of Surface Mining  
Val Payne, PacifiCorp

94-12-12-16

Moab District  
P. O. Box 970  
Moab, Utah 84532

3482  
SL-070645  
U-024319  
(UT-066)

Mr. Daron R. Haddock  
Permit Supervisor  
State of Utah  
Division of Oil, Gas and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

DEC 6 1991

Re: Rilda Canyon Lease Extension, PacifiCorp, Deer Creek Mine, ACT/015/018-S4A

Dear Mr. Haddock:

The Bureau of Land Management (BLM) recommended to your office in a letter dated February 28, 1991, approval of the subject mine plan modification. The approval for full extraction longwall mining under the Rilda Canyon escarpment was contingent upon ongoing studies to determine the possible impacts to the escarpment from longwall mining subsidence.

The BLM has determined that the proposed mining plan submitted by PacifiCorp, which includes the mining under the escarpment, will not significantly impact the surface and will be in compliance with the Forest Service lease stipulations.

We have determined that the subject plans are consistent with the R2P2 that was evaluated in 1991, which is in compliance with the Mineral Leasing Act of 1920, as amended, the regulations at 43 CFR 3480, Federal lease terms and conditions, and will achieve maximum economic recovery. We recommend approval of the R2P2 for this permit action.

If you have any questions or need further information, please contact George Tetreault at 637-4584.

Sincerely,

/s/ Katherine Mitchell

District Manager

Enclosure

Copy of Letter to UDOGM dated 02/28/91 (2pp)

cc: UT-066, AM, Price (w/encl.)  
UT-921, SD, Utah (w/encl.)  
Office of Surface Mining, Denver (w/encl.)  
PacifiCorp (w/encl.)  
One Utah Center  
201 South Main, Suite 2100  
Salt Lake City, Utah 84140-0021

SFalk:sf:ks:12/05/94 WP RILDAFNL.LTR

OSMRE-WSC

1991 MAR -4 AM 10:35

WESTERN SUPPORT CENTER

Moab District  
P.O. Box 970  
Moab, Utah 84532

3482  
SL-070645  
U-02292  
(U-065)

FEB 28 1991

91/03/04-06

Pamela Grubaugh-Littig, Permit Supervisor  
State of Utah  
Division of Oil, Gas and Mining  
355 West North Temple Street  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

Dear Ms. Grubaugh-Littig:

On February 21, 1990, the Bureau of Land Management (BLM) received PacifiCorp's proposed Rilda Canyon Lease Tract addition for the Deer Creek Mine Permit Application Package (PAP). The BLM was asked to review the resource recovery and protection plan (R2P2) and submit our findings which are discussed below.

PacifiCorp plans to enlarge the Deer Creek Mine Permit Area (Act/015/018) by adding an adjacent tract to the north. The tract includes one State of Utah coal lease (ML-22509), three Federal coal leases (U-7652, U-47977, and SL-050862) and the southern portion of Federal coal lease U-06039.

The R2P2 calls for the development of main entries in a north-northwest direction beyond the Roan's Canyon Fault. Longwall panels are projected on both sides of these main entries. A number of longwall panels located along the south side of Rilda Canyon will undermine portions of the canyon escarpments (see enclosed highlighted map). This has prompted an in-depth review of potential escarpment failure.

The Manti-LaSal National Forest (FS) has asked BLM to evaluate the R2P2 and determine if the mining plan provides adequate protection of surface resources in accordance with the Federal lease terms and conditions. The BLM is currently working on a response to the FS regarding our analysis of the escarpment issue. Final approval of mining zones that may affect sensitive escarpment areas is contingent on the completion of the technical studies currently underway. Because the mine plan provides adequate flexibility for any necessary future adjustments in these areas, development as proposed for the remainder of the R2P2 is recommended for approval.

We have determined that the R2P2 as submitted is complete and technically adequate. The R2P2 is also in compliance with the Mineral Leasing Act, as amended, the regulatory provisions of 43 CFR 3480, Federal lease terms and conditions, and will achieve maximum economic recovery (MER) of the Federal coal. Therefore, we recommend partial approval of the R2P2 for this permit action.

Sincerely yours,

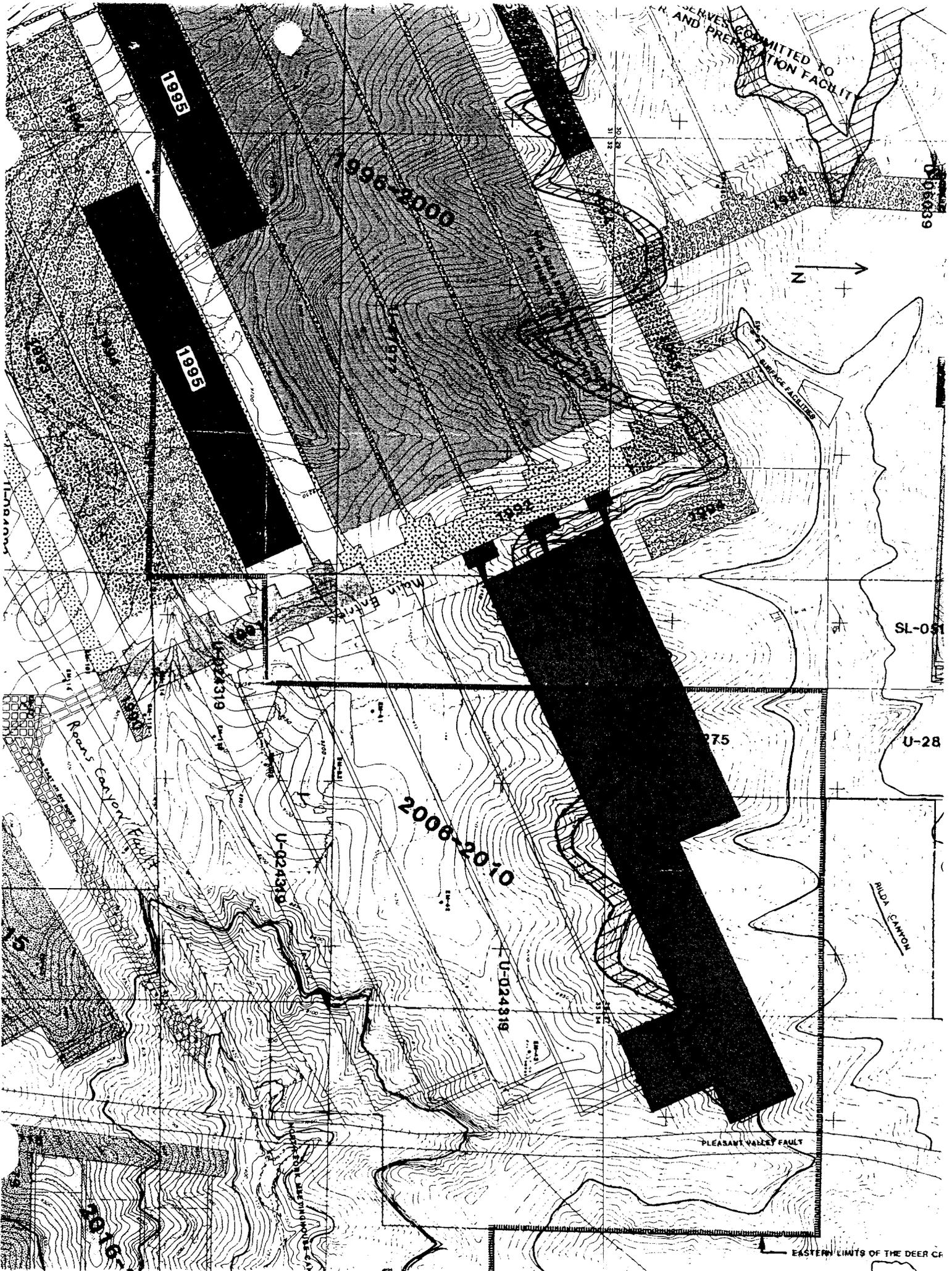


Assistant District Manager  
Mineral Resources

Enclosure:  
Mine Projection Map

cc: SD, Utah (U-921), w/enclosure  
DM, Moab (U-065), w/enclosure  
Office of Surface Mining, Denver, w/enclosure  
PacifiCorp, SLC, Utah, w/enclosure  
Nanti-LaSal NF, Price, Utah, w/enclosure

SFalk:ks:2/15/91  
Wang 2015D





United States Department of the Interior

FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE  
LINCOLN PLAZA  
145 EAST 1300 SOUTH, SUITE 404  
SALT LAKE CITY, UTAH 84115

In Reply Refer To  
(ES)

November 4, 1994

Division of Oil, Gas, and Mining  
Utah Department of Natural Resources  
3 Triad Center, Suite 350  
355 West North Temple  
Salt Lake City, Utah 84180-1203

Re: **Rilda Canyon Lease Extension, PacifiCorp, Deer Creek Mine, ACT/015/018-94A,  
Folder #2, Emery County, Utah**

This is in response to your letter concerning the above lease. The Fish and Wildlife Service has reviewed the material provided and believes no significant impacts to wildlife resources would be expected.

We appreciate the opportunity to comment on this project.

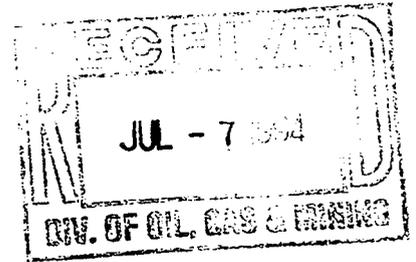
Sincerely,

Robert D. Williams  
Assistant Field Supervisor



United States Department of the Interior  
FISH AND WILDLIFE SERVICE

UTAH FIELD OFFICE  
LINCOLN PLAZA  
145 EAST 1300 SOUTH, SUITE 404  
SALT LAKE CITY, UTAH 84115



In Reply Refer To

July 6, 1994

Daron R. Haddock  
Division of Oil, Gas, and Mining  
Utah Department of Natural Resources  
3 Triad Center, Suite 350  
355 West North Temple  
Salt Lake City, Utah 84180-1203

Re: **Rilda Canyon Lease Extension, PacifiCorp, Deer Creek Mine, ACT/015/018-94A,  
Folder #2, Emery County, Utah**

Dear Mr. Haddock:

*ACT/015/018-94A #3  
Copy Pam*

This is in response to your letter of June 27, 1994 concerning the above lease. The Fish and Wildlife Service has reviewed the material provided and believes no significant impacts to wildlife resources would be expected. This is based on the following facts:

- 1) no surface waters exist in the area above the Third and Fourth East panels and no significant groundwater sources were encountered during entry development mining in these areas;
- 2) no goshawks or three-toed woodpeckers were found above the proposed panel extraction and the nearest golden eagle and red-tailed hawk nests are located beyond the limits of potential subsidence impacts; and
- 3) no threatened, endangered or sensitive plant or animal species are known to inhabit the area.

We appreciate the opportunity to comment on this project.

Sincerely,

*for Roy R. Madsen*  
Robert D. Williams  
Assistant Field Supervisor



Department of Community & Economic Development  
 Division of State History  
 Utah State Historical Society

cc: JWC  
 JPB  
 PGJ

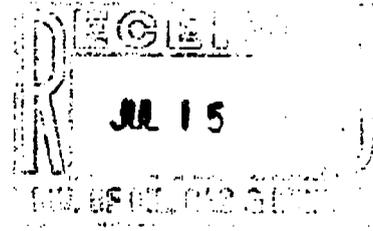
orig.  
 E. Kingfile



Michael O. Leavitt  
 Governor  
 Max J. Evans  
 Director

300 Rio Grande  
 Salt Lake City, Utah 84101-1182  
 (801) 533-3500  
 FAX: (801) 533-3503

July 13, 1994



James W. Carter, Director  
 Division of Oil, Gas and Mining  
 355 Triad Center, Suite 350  
 Salt Lake City, Utah 84180-1203

RE: Determination of Completeness, PacifiCorp, Deer Creek Mine,  
 Rilda Canyon Lease Addition, ACT/015/018-94A, Folder #2, #3  
 Emery County, Utah

In Reply Please Refer to Case No. 90-1579

*Copy PAM*

Dear Mr. Carter:

The Utah State Historic Preservation Office received information on the project referenced above on July 5, 1994. We have previously concurred with your recommendations for the project, and have no additional comment at this time. We appreciate being informed as to the progress of the project, and will be adding this information to the case file.

This information is provided on request to assist DOGM in identifying historic properties, as specified in 36CFR800, for Section 106 consultation procedures. If you have questions, please contact me at (801) 533-3555.

Sincerely,

*James Reed Campbell*

James L. Dykmann  
 Compliance Archaeologist

*for*

JLD:90-1579 OSM

Post-It™ brand fax transmittal memo 7671		# of pages > 1	
To <i>Rick Holbrook</i>	From <i>JAM G-L</i>	Co. <i>DOGM</i>	
Co. <i>OSM-WSC</i>	Co. <i>DOGM</i>	Phone # <i>801-533-5341</i>	
Dept.		Fax #	
Fax # <i>303-672-5641</i>			



Division of State History  
 (Utah State Historical Society)  
 Department of Community and Economic Development

Norman H. Bangertter  
 Governor 300 Rio Grande  
 Max J. Evans  
 Director Salt Lake City Utah 84101-1182  
 801-533-5755

February 22, 1990

FEB 28 1990  
 OFFICE OF THE DIRECTOR  
 DEPARTMENT OF COMMUNITY AND ECONOMIC DEVELOPMENT

Ms. Pamela Grubaugh-Littig  
 Permit Supervisor  
 Division of Oil, Gas and Mining  
 355 West North Temple  
 3 Triad Center, Suite 350  
 Salt Lake City, UT 84180-1203

RE: Rilda Canyon Lease Tract Addition, Permit Application Package, Utah Power and Light Company, Deer Creek Mine, ACT/015/018(90-1), Folder #2, Emery County, Utah

In Reply Please Refer to Case No. I794

# 3 Copy Pam

Dear Ms. Grubaugh-Littig:

The Utah State Historic Preservation Office received the above referenced report on February 16, 1990. After review of the additional information in the mine plan, our office believes that no additional comments concerning cultural resources are needed. Thank you for the opportunity to review the mine plan.

This information is provided on request to assist the Division of Oil, Gas and Mining with its Section 106 responsibilities as specified in 36 CFR 800. If you have questions or need additional assistance, please contact me at (801) 533-7039.

Sincerely,

James L. Dykman  
 Regulation Assistance Coordinator

JLD:I794/8392V OR

UNITED STATES

DEPARTMENT OF THE INTERIOR

This mining plan approval document is issued by the United States of America to:

PacifiCorp  
201 South Main, Suite 2100  
Salt Lake City, Utah 84140-0021

for the Deer Creek Mine mining plan for Federal leases U-7653, U-06039, U-47977, SL-050862 subject to the following conditions. PacifiCorp is hereinafter referred to as the operator.

1. Statutes and Regulations.--This mining plan approval is issued pursuant to Federal leases U-7653, U-06039, U-47977, SL-050862; the Mineral Leasing Act of 1920, as amended (30 U.S.C. 181 et seq.); and in the case of acquired lands, the Mineral Leasing Act for Acquired Lands of 1947, as amended (30 U.S.C. 351 et seq.). This mining plan approval is subject to all applicable regulations of the Secretary of the Interior which are now or hereafter in force; and all such regulations are made a part hereof. The operator shall comply with the provisions of the Water Pollution Control Act (33 U.S.C. 1151 et seq.), the Clean Air Act (42 U.S.C. 7401 et seq.), and other applicable Federal laws.
2. This document approves the Deer Creek Mine mining plan for Federal leases U-7653, U-06039, U-47977, SL-050862, and authorizes coal development or mining operations on the Federal leases within the area of mining plan approval. This authorization is not valid beyond

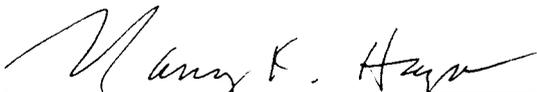
T. 16 S., R. 7 E., Salt Lake Baseline and Meridian

Sec. 28 W1/2 SW1/4  
Sec. 29 E1/2 SE1/4, SW1/4, W1/2 SE1/4  
Sec. 30 SE1/4  
Sec. 31 All  
Sec. 32 All  
Sec. 33 W1/2 NW1/4, NW1/4 SW 1/4

as shown on the map appended hereto as Attachment A.

3. The operator shall conduct coal development and mining operations only as described in the complete permit application package, and approved by the Utah Division of Oil, Gas and Mining, except as otherwise directed in the conditions of this mining plan approval.

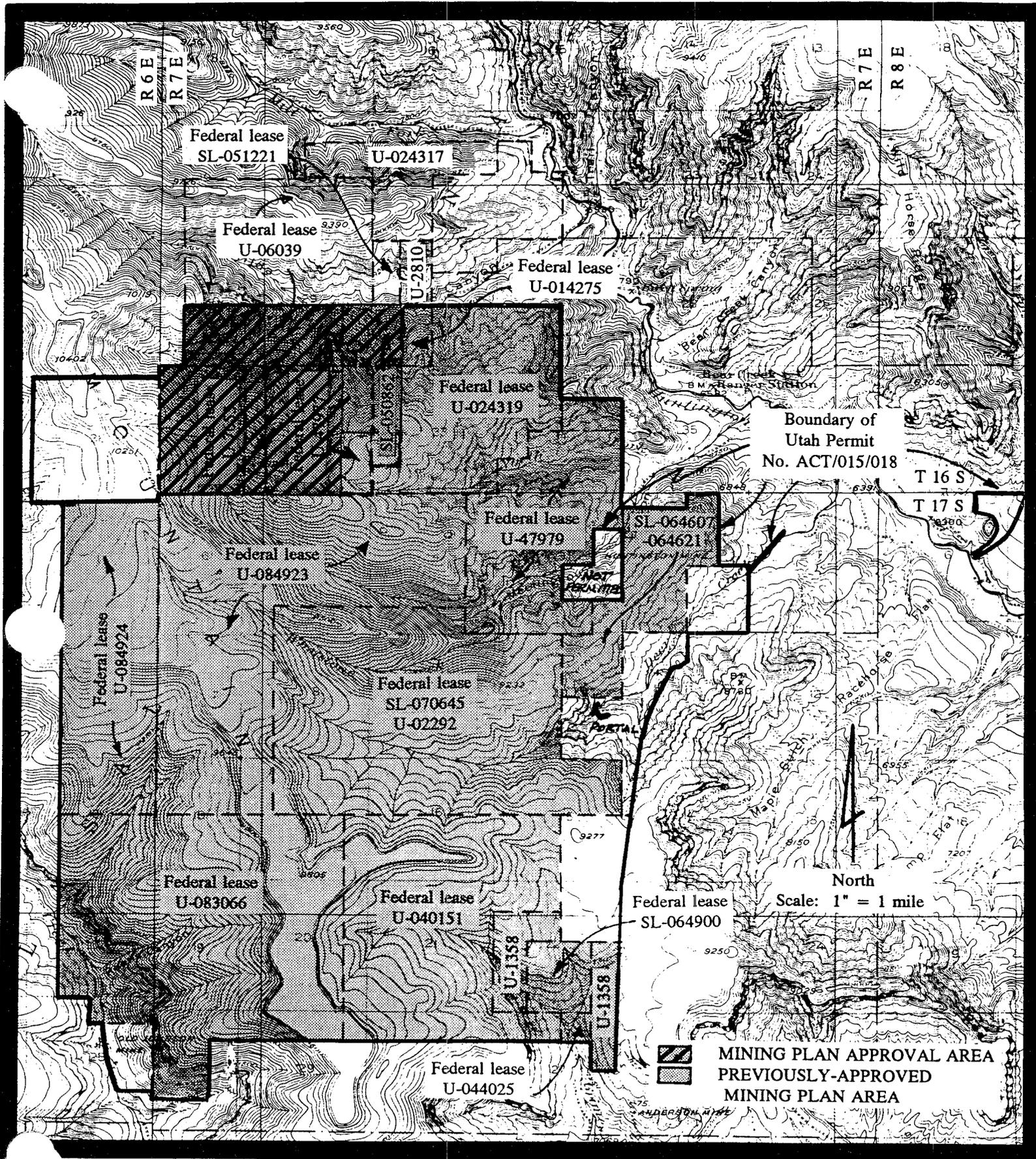
4. The operator shall comply with the terms and conditions of the leases, this mining plan approval, the special conditions appended hereto as Attachment B, and the requirements of the Utah Permit No. ACT/015/018 issued under the Utah State program, approved pursuant to the Surface Mining Control and Reclamation Act of 1977 (30 U.S.C. 1201 et seq.).
5. This mining plan approval shall be binding on any person conducting coal development or mining operations under the approved mining plan and shall remain in effect until superseded, cancelled, or withdrawn.
6. If during mining operations unidentified prehistoric or historic resources are discovered, the operator shall ensure that the resources are not disturbed and shall notify Utah Division of Oil, Gas and Mining and the Office of Surface Mining Reclamation and Enforcement (OSM). The operator shall take such actions as are required by Utah Division of Oil, Gas and Mining in coordination with OSM.

  
Nancy K. Hays

Acting Deputy Assistant Secretary, Land and Minerals Management

12-13-94

Date



Attachment A  
Mining Plan Approval Area  
Deer Creek Mine  
Emery County, Utah

ATTACHMENT B

Special Conditions

1. In the event that rocks or other debris from the escarpment above Rilda Creek reach Rilda Creek and cause blockage or alteration of the natural flows, the operator will be required to remove the materials causing the blockage, take necessary measures to prevent sediment production, replace riparian vegetation through reclamation or other means, and re-establish the natural flow patterns. The method of conducting these required activities must be approved in advance by the regulatory authority with consent from the Forest Service.
2. Any damage to fences, roads, spring developments, or other structures caused by escarpment failures or other operations must be repaired or replaced as soon as possible. Methods for repair or replacement of such facilities must be approved in advance by the regulatory authority with consent from the Forest Service.
3. The operator must take necessary measures to prevent raptors from building and occupying nests in the escarpment area during periods that they would be at risk from subsidence. Golden eagle nest 296A must be protected from subsidence unless the operator obtains a take permit from the U.S. Fish and Wildlife Service.
4. The operator must monitor subsidence and escarpment areas to determine the extent of escarpment failures that occur and to determine when they stabilize. The operator is responsible to ensure public safety in the areas where escarpment failures are likely to occur until it is determined that subsidence is substantially complete and the escarpments have stabilized. Methods of providing for public safety and for monitoring escarpment failures, including the frequency of monitoring, must be approved in advance by the regulatory authority with consent from the Forest Service.
5. Should escarpment failures occur to an extent beyond that predicted in the Forest Service's August 1994 environmental assessment or cause functional impairment of surface resources (impacts that are not consistent with management prescriptions in the Forest Plan), additional operations that could cause escarpment failures must be suspended until subsidence effects are re-evaluated by the regulatory authority in consultation with the Forest Service.

UTAH DIVISION OF OIL, GAS, AND MINING  
STATE DECISION DOCUMENT

PacifiCorp  
Deer Creek Mine  
ACT/015/018  
Rilda Canyon Lease Extension  
Emery County, Utah

October 27, 1994

CONTENTS

- \* Administrative Overview
- \* Location Map
- \* Permitting Chronology
- \* Findings
- \* Permit
- \* Environmental Assessments
- \* Letters of Concurrence
  - Bureau of Land Management, R2P2 - February 28, 1991
  - U.S. Fish and Wildlife Services, July 6, 1994
  - Division of State History, April 6, 1994
  - Forest Service, Manti La Sal, September 27, 1994
  - Section 510 (c), Memo to File, October 26, 1994,
  - Division Technical Analysis, October 3, 1994
  - Bureau of Land Management, Approved Assignments of Leases U-  
47977, SL-050862, U-06039, U-7653 and State Lease ML-22509
- \* Determination of Completeness
- \* Affidavit or Publication
- \* Surety

## ADMINISTRATIVE OVERVIEW

PacifiCorp  
Deer Creek Mine  
Rilda Canyon Lease Extension  
ACT/015/018  
Emery County, Utah

October 27, 1994

### PROPOSAL

PacifiCorp submitted an application for the Rilda Canyon Lease Extension (which included Leases U-7653, U-47977, U-06039, SL-050862, a part of federal lease U-06039, and state lease (ML-22509) for a total of 2371.6 acres on February 12, 1990 and resubmitted an application on February 8, 1994. This submittal was revised on June 27, 1994 as an incidental boundary change to include development mining only in U-06039, U-47977, and SL-050862 (approximately 100,000 tons) and longwall mining in the Second, Third and Fourth East panels and was approved July 28, 1994.

This proposal for mining in the Rilda Canyon Lease Extension would be done as an extension of current underground mining operations in the Blind Canyon seam and Hiawatha seam. The permit has been conditioned to reflect that mining under the south canyon escarpment will only be allowed after the appeals process for the Decision Notice/Finding of No Significant Impact (DN/FONSI) is resolved to the satisfaction of the Forest Service.

### BACKGROUND

The original permit for the Deer Creek Mine was issued February 7, 1986 for approximately 14,620 acres. The mining plan for Federal leases SL-064607-064621, SL-064900, SL-070645, U-1358, U-02292, U-084923, U-084924, U-083066, U-040151, U-044025, U-014275, U-024319, and U-47979 was approved on October 11, 1985 for the Deer Creek Mine. A Waste Rock Storage Facility was added September 1988. The permit was successively renewed on February 7, 1991. A reclamation surety bond in the amount of \$2,000,000 is currently posted for reclamation at the Deer Creek Mine.

The January 8, 1993 mining plan approval (IBC-1) added 120 acres of coal (80 acres in a portion of Lease No. U-47977 and 40 acres in a portion of Lease No. SL-050862). The July 22, 1993 mining plan approval (IBC-2) added 160 acres (80 acres in a portion of Lease U-47977 and 80 acres in a portion of Lease SL-050862).

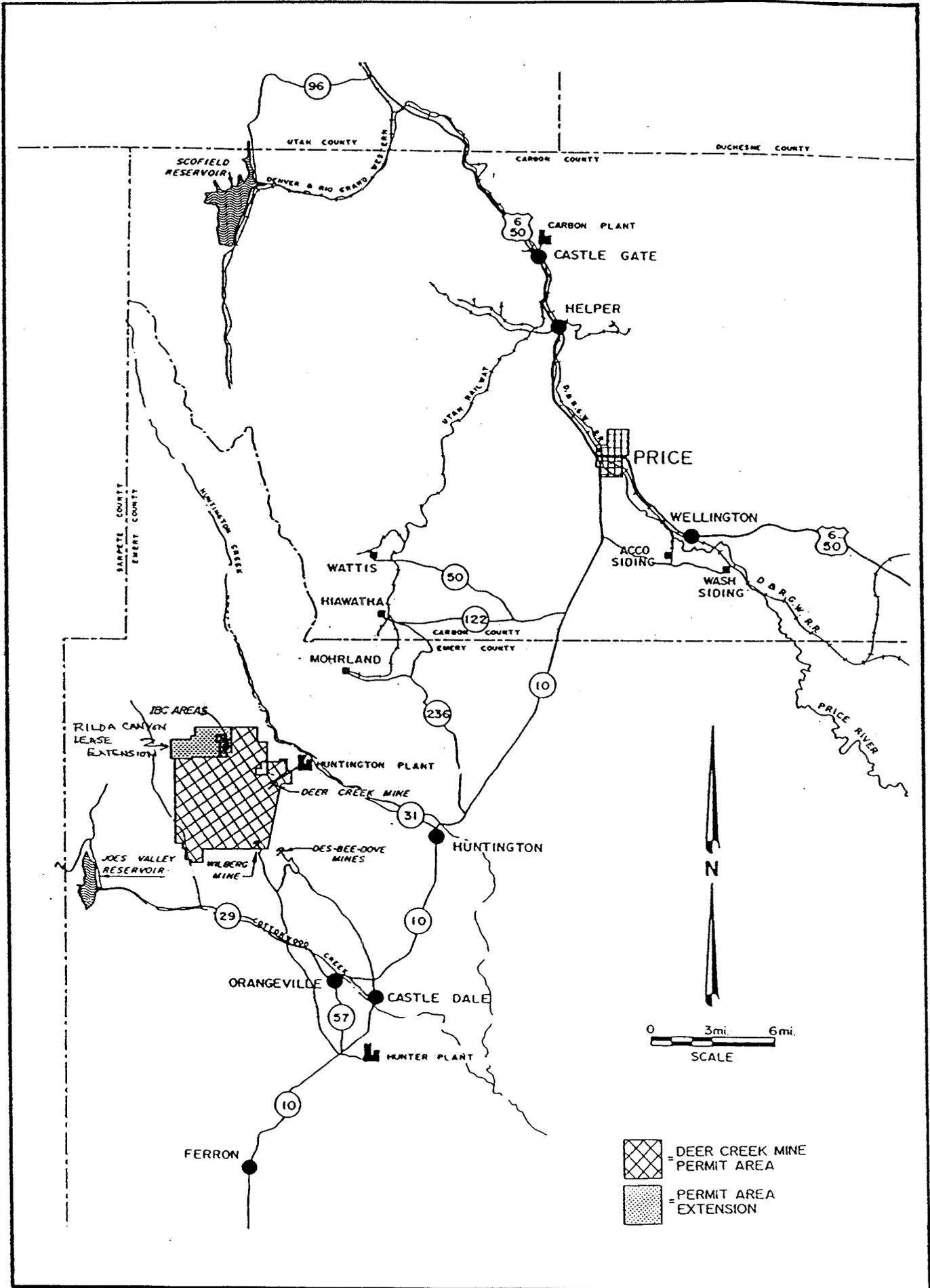
Page 2  
Administrative Overview  
ACT/015/018  
Rilda Lease Extension  
October 27, 1994

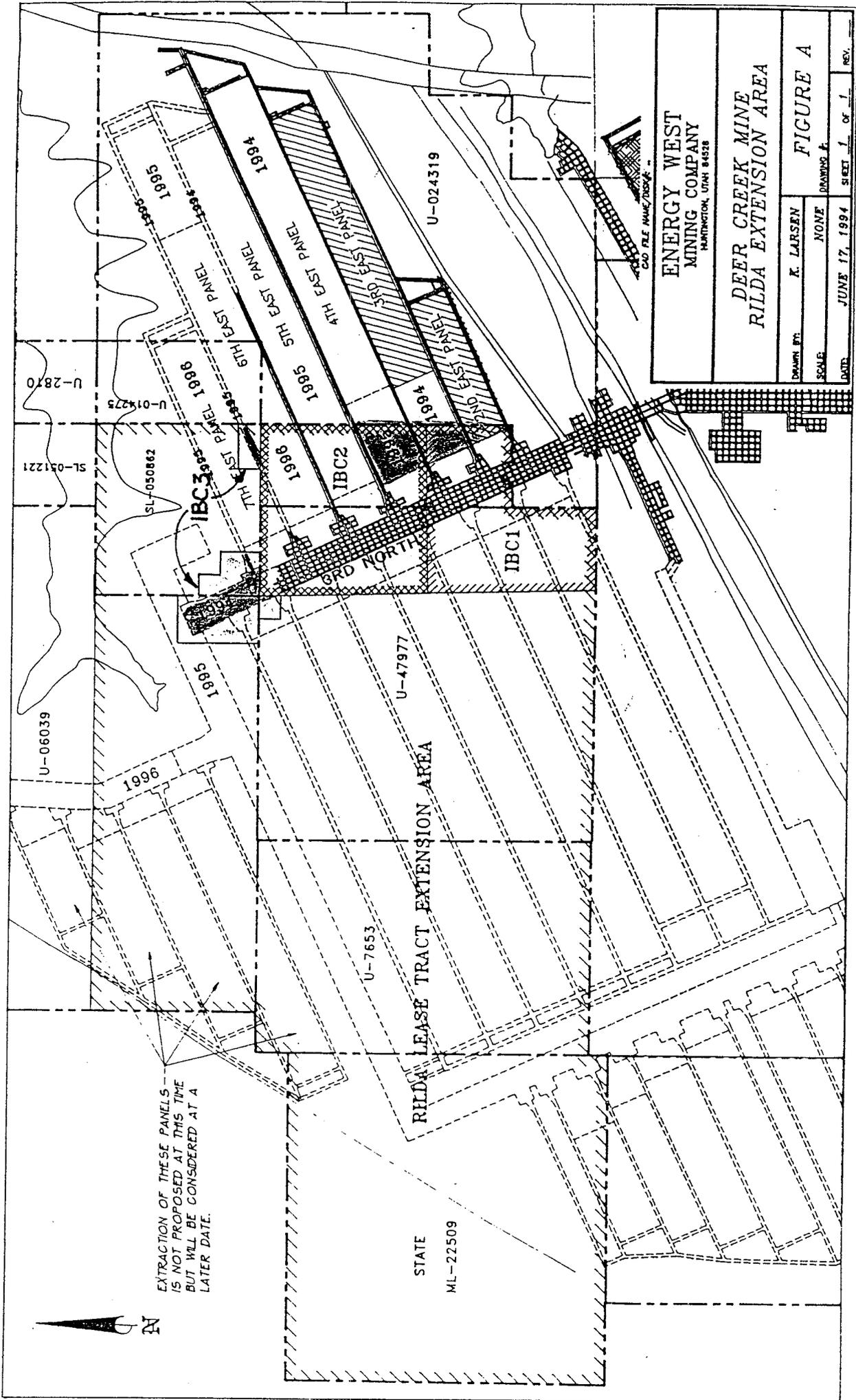
PacifiCorp submitted the original application for the Rilda Canyon Lease Extension which included Leases U-7653, U-47977, U-06039, and SL-050862 on February 12, 1990 and resubmitted an application on February 8, 1994. This submittal was revised on June 27, 1994 as an incidental boundary change (IBC-3) to include development mining only in U-06039, U-47977, and SL-050862 (approximately 100,000 tons). Included in the revised application was longwall mining the Second, Third and Fourth East panels and development mining in the Third North Mains and the Sixth East Gate. Longwall mining would proceed in areas that were previously approved as incidental boundary changes with mining plan approval dates of January 8, 1993 (IBC-1) and July 22, 1993 (IBC-2). Entry development mining in the Third North Mains and the Sixth East Gates entailed about 40 acres beyond the currently approved permit boundary in Leases U-06039, U-47977 and SL-050862. IBC-3 was approved July 28, 1994.

PacifiCorp has submitted an application to construct surface facilities in Rilda Canyon, which was included as part of the Environmental Assessment, and is currently under review by the Division and other state and federal agencies. The Environmental Assessment and Decision Notice/Finding of No Significant Impact (DN/FONSI) for the proposed surface facilities and mining under the south canyon escarpment is contingent upon the mitigations attached to the DN/FONSI and satisfactorily completing the appeals process.

#### RECOMMENDATION

The proposal to mine in the Rilda Canyon Lease Extension has been reviewed by the Division and other appropriate federal and state agencies. It is recommended that mining in the Rilda Canyon Lease Extension in federal leases U-7653, U-47977, SL-050862, parts of U-06039, and state lease ML-22509 be approved, with the condition that mining under the south canyon escarpment will only be allowed after the Forest Service is satisfied that the appeals process is resolved.





ENERGY WEST  
 MINING COMPANY  
 HARRINGTON, UTAH 84528

DEER CREEK MINE  
 RILDA EXTENSION AREA

DRAWN BY:	K. LARSEN	DATE:	JUNE 17, 1994
SCALE:	NONE	SHEET:	1 OF 1
		REV.	

FIGURE A

EXTRACTION OF THESE PANELS IS NOT PROPOSED AT THIS TIME BUT WILL BE CONSIDERED AT A LATER DATE.

STATE  
ML-22509

## PERMITTING CHRONOLOGY

PacifiCorp  
Deer Creek Mine  
Rilda Canyon Lease Extension  
Emery County, Utah

October 27, 1994

- February 12, 1990 PacifiCorp submits a permit application to mine in the Rilda Canyon Lease Extension area.
- January 8, 1993 Mining plan approval of 120 acres as an incidental boundary change (IBC-1) in portions of Leases U-47977 and SL-050862.
- July 22, 1993 Mining plan approval of 160 acres as an incidental boundary change (IBC-2) in portions of Leases U-47977 and SL-050862.
- February 8, 1994 PacifiCorp resubmits an application to mine in the Rilda Lease Extension Area, federal leases U-7563, U-47977, portions of U-06039, SL-050862 and State Lease ML-22509.
- April 6, 1994 Division of State History concurs with Rilda Lease Extension proposal.
- April 14, 1994 Daron Haddock, Division Permit Supervisor, authorized commencement of publication of the public notice to mine the Rilda Canyon Lease Extension. Published in Emery County Progress April 19, 26, May 3, and 10, 1994.
- April 20, 1994 Rilda Canyon Surface Facilities proposal (ACT/015/018-94E), submitted on March 29, 1994 is accepted for review and transmitted to appropriate agencies.
- June 27, 1994 PacifiCorp revises the Rilda Canyon Lease Extension mining proposal as an incidental boundary change to continue development in the Third North Mains and Sixth East Gate outside the currently approved permit boundaries. This revised application also included proceeding with longwall mining in the Third and Fourth East panels.

Page 2  
Permitting Chronology  
ACT/015/018  
Rilda Canyon Lease Extension  
October 27, 1994

- |                      |                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| June 29, 1994        | Determination of Completeness for Rilda Canyon Lease Extension sent to all interested parties for the Rilda Canyon Lease Extension area.                                                                                                                                                                                                                                                             |
| July 6, 1994         | United States Fish and Wildlife Service (USFWS) concurs with the June 27, 1994 revised proposal.                                                                                                                                                                                                                                                                                                     |
| July 11 and 13, 1994 | Manti La Sal Forest Service concurs with the June 27, 1994 revised proposal.                                                                                                                                                                                                                                                                                                                         |
| July 14, 1994        | Bureau of Land Management concurs with the June 27, 1994 revised proposal.                                                                                                                                                                                                                                                                                                                           |
| July 14, 1994        | Division completes technical review of the revised proposal.                                                                                                                                                                                                                                                                                                                                         |
| July 14, 1994        | The Division forwards State Decision Document for the incidental boundary change (IBC-3) to the Office of Surface Mining Reclamation and Enforcement for concurrence and secretarial signature.                                                                                                                                                                                                      |
| July 13, 1994        | State Historic Preservation Office concurs with Rilda Lease Extension.                                                                                                                                                                                                                                                                                                                               |
| July 28, 1994        | IBC-3 is approved by the Secretary.                                                                                                                                                                                                                                                                                                                                                                  |
| August 25, 1994      | Surface Facilities completeness review sent to PacifiCorp.                                                                                                                                                                                                                                                                                                                                           |
| August 31, 1994      | Determination of Completeness for Surface Facilities.                                                                                                                                                                                                                                                                                                                                                |
| September 23, 1994   | Cumulative Hydrologic Impact Assessment for Rilda Canyon is completed.                                                                                                                                                                                                                                                                                                                               |
| September 27, 1994   | Manti La Sal Forest Service consents to the addition of the extension area into the permit area for the Deer Creek Mine. Construction of the surface facilities and mining under the south canyon escarpment in Rilda Canyon is contingent upon the mitigation attached to the Decision Notice/Findings of No Significant Impact (DN/FONSI) and is subject to the Forest Service appeal regulations. |

Page 3  
Permitting Chronology  
ACT/015/018  
Rilda Canyon Lease Extension  
October 27, 1994

- October 3, 1994            Technical Analysis is prepared for mining only in the Rilda Canyon Lease Extension. The Surface Facilities Revision is ongoing.
- October 5, 1994            U.S. Fish and Wildlife concur with Rilda Canyon Surface Facilities.
- October 27, 1994           State Decision Document for the Rilda Canyon Lease Extension is prepared and forwarded to the Office Of Surface Mining Reclamation and Enforcement for concurrence and secretarial signature.

## FINDINGS

PacifiCorp  
Deer Creek Mine  
Rilda Canyon Lease Extension  
ACT/015/018  
Emery County, Utah

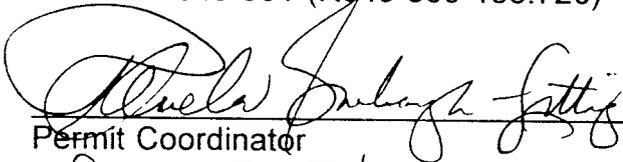
October 27, 1994

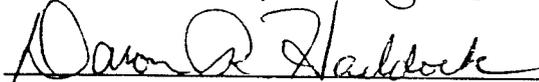
1. The revised plan and the permit application to mine development entries in the Rilda Canyon Lease Extension are accurate and complete and all requirements of the Surface Mining Control and Reclamation Act, and the approved Utah State Program (the "Act") are in compliance. Refer to October 3, 1994 Technical Analysis (R645-300-133.100)
2. No additional surface reclamation is currently required for the development entries for the Rilda Canyon Lease Extension. Rilda Canyon Surface Facilities associated with this lease extension is currently under review by the Division and subject to the mitigation attached to the Decision Notice/Findings of No Significant Impact and appeal process of the Manti La Sal Forest Service. Refer to September 27, 1994 FS approval. (R645-300-133.710)
3. An assessment of the probable cumulative impacts of all anticipated coal mining and reclamation activities in the general area on the hydrologic balance has been conducted by the Division and no significant impacts were identified. The Mining and Reclamation Plan (MRP) proposed under the revised application has been designed to prevent damage to the hydrologic balance in the permit area and in associated off-site areas. See CHIA dated July 1989 and updated September 1994 (R645-300-133.400 and UCA 40-10-11 (2)(c)).
4. The proposed lands to be included within the permit area are:
  - a. Not included within an area designated unsuitable for underground coal mining operation (R645-300-133.220);
  - b. not within an area under study for designated land unsuitable for underground coal mining operations (R645-300-133.210);

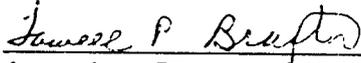
Page 2  
Findings  
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October 27, 1994

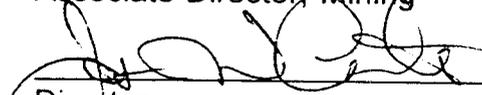
- c. not on any lands subject to the prohibitions or limitation of 30 CFR 761.11 {a} (national parks, etc), 761.11{f} (public buildings, etc.) and 761.11 {g} (cemeteries);
  - d. within 100 feet of a public road (R645-300-133.220); and
  - e. not within 300 feet of any occupied dwelling (R645-300-133.220).
5. The operation would not affect the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats as determined under the Endangered Species Act of 1973 (16 USC 1531 et seq.) See concurrence letter from United States Fish and Wildlife, dated July 6, 1994. (R645-300-133.500)
6. The Division's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800). See letter from State Historic Preservation Office, dated April 6, 1994. (R645-300-133.600)
7. The applicant has the legal right to enter and conduct mining activities in the Rilda Canyon Lease Extension through federal coal leases issued by the Bureau of Land Management (See attached Lease UTU-47977, assignment effective July 1, 1986 and Lease SL-050862, assignment effective July 1, 1986, Lease U-06039, assignment effective December 13, 1979, U-7653, assignment effective July 1, 1986, and ML-22509, assignment effective September 30, 1985.). (R645-300-133.300)
8. A 510 (c) report has been run on the Applicant Violator System (AVS), which shows that: prior violations of applicable laws and regulations have been corrected; neither PacifiCorp or any affiliated company, are delinquent in payment of fees for the Abandoned Mine Reclamation Fund; and the applicant does not control and has not controlled mining operations with demonstrated pattern of wilful violations of the Act of such nature, duration, and with such resulting irreparable damager to the damage to the environment as to indicate an intent not to comply with the provisions of the Act ( A 510 (c) report was run on October 26, 1994, see memo to file dated October 26, 1994. A condition has been added to the Deer Creek permit pending resolution of both appeals. (R645-300-133.730)

9. Underground mining operations to be performed under the permit will not be inconsistent with other operations anticipated to be performed in areas adjacent to the proposed permit area.
10. The applicant has posted a surety bond for the Deer Creek Mine in the amount of \$2,000,000. No additional surety will be required at this time, because this action does not include any additional surface disturbance. (R645-300-134)
11. No lands designated as prime farmlands or alluvial valley floors occur on the permit area. (R645-302-313.100 and R645-302-321.100)
12. The proposed postmining land-use of the permit area is the same as the pre-mining land use and has been approved by the Division and the surface land management agency, the United States Forest Service.
13. The Division has made all specific approvals required by the Act, the Cooperative Agreement, and the Federal Lands Program.
14. All procedures for public participation required by the Act, and the approved Utah State Program are in compliance. See Affidavit of Publication, dated May 10, 1994. (R645-300-120)
15. No existing structures will be used in conjunction with mining of the underground right-of-way, other than those constructed in compliance with the performance standards of R645-301 and R645-301 (R645-300-133.720)

  
Permit Coordinator

  
Permit Supervisor

  
Associate Director, Mining

  
Director

FEDERAL

PERMIT  
Permit Number ACT/015/018

OCTOBER 27, 1994

STATE OF UTAH  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
(801) 538-5340

This permit, ACT/015/018, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (Division) to:

PacifiCorp  
324 South State Street  
P.O. Box 26128  
Salt Lake City, Utah 84126-0128

for the Deer Creek Mine. A Surety Bond is filed with the Division in the amount of \$2,000,000, payable to the State of Utah, Division of Oil, Gas and Mining and the Office of Surface Mining Reclamation and Enforcement (OSM). The Division must receive a copy of this permit signed and dated by the permittee.

**Sec. 1 STATUTES AND REGULATIONS** - This permit is issued pursuant to the Utah Coal Mining and Reclamation Act of 1979, Utah Code Annotated (UCA) 40-10-1 et seq, hereafter referred to as the Act.

**Sec. 2 PERMIT AREA** - The permittee is authorized to conduct underground coal mining activities on the following described lands within the permit area at the Deer Creek Mine, situated in the state of Utah, Emery County:

The area to be mined is contained on the USGS 7.5-minute "Red Point", "Rilda" and "Mahogany Point" quadrangle maps. The areas contained in the permit area, approximately 17,000 acres, involve all or part of the following federal, state, and fee coal leases:

Lease No. SL-064607-064621

Issued to Clara Howard Miller 10/4/46

Township 17 South, Range 7 East, SLM, Utah

Containing 613.92 acres

Section 2: Lots 2, 5, 6, 7, 10, 11 and 12 and SW1/4

Section 3: SE1/4 SE1/4

Section 10: NE1/4

**ACT/0015/018**  
**Permit**  
**October 27, 1994**  
**Page 2**

Lease No. SL-064900  
Issued to Cyrus Wilberg 2/3/45  
Township 17 South, Range 7 East, SLM, Utah  
Containing 160 acres  
Section 22: SE1/4 SW1/4, SW1/4 SE1/4, NE1/4 SW1/4, NW1/4 SE1/4

Lease No. U-1358  
Issued to Castle Valley Mining Co. 8/1/67  
Township 17 South, Range 7 East, SLM, Utah  
Containing 320 acres  
Section 22: S1/2 NW1/4, W1/2 SW1/4, E1/2 SE1/4  
Section 27: E1/2 NE1/4

Lease No. SL-070645, U-02292  
Issued to Clara Howard Miller 4/1/52  
Township 17 South, Range 7 East, SLM, Utah  
Containing 2560 acres  
Section 4: SW1/4 SE1/4, S1/2 SW1/4  
Section 5: SE1/4 SW1/4, S1/2 SE1/4  
Section 8: E1/2, E1/2 W1/2  
Section 9: All  
Section 10: W1/2  
Section 15: N1/2  
Section 16: N1/2  
Section 17: NE1/4, E1/2 NW1/4

Lease No. U-084923  
Issued to Malcolm N. McKinnon 8/1/64  
Township 17 South, Range 7 East, SLM, Utah  
Containing 2252.42 acres  
Section 4: Lots 2, 3, 4, 5, 6, 7, 10, 11, 12, NW1/4 SE1/4, N1/2 SW1/4  
Section 5: Lots 1 thru 12, N1/2 S1/2, SW1/4 SW1/4  
Section 6: Lots 1 thru 11, SE1/4  
Section 7: Lots 1 thru 4, E1/2  
Section 8: W1/2 W1/2  
Section 17: W1/2 NW1/4  
Section 18: Lots 1 and 2, N1/2

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**Page 3**

Lease No. U-084924

Issued to Malcolm N. McKinnon 8/1/64

Township 17 South, Range 6 East, SLM, Utah

Containing 1211.48 acres

Section 1: Lots 1, 2, 3, S1/2 NE1/4, SE1/4 NW1/4, E1/2 SW1/4, SE1/4

Section 12: E1/2, E1/2 W1/2

Section 13: NE1/4, E1/2 NW1/4

Lease No. U-083066

Issued to Cooperative Security Corp. 3/1/62

Township 17 South, Range 6 East, SLM, Utah

Containing 2485 acres

Section 13: E1/2 SW1/4, SE1/4

Section 24: E1/2 W1/2, E1/2

Section 25: N1/2 NE1/4

Township 17 South, Range 7 East, SLM, Utah

Section 17: SW1/4, W1/2 SE1/4

Section 18: Lots 3 and 4, SE1/4

Section 19: Lots 1, 2, 3, 4, E1/2

Section 20: W1/2, W1/2 E1/2

Section 29: NW1/4 NE1/4, N1/2 NW1/4

Section 30: Lots 1, 2, 3, N1/2 NE1/4, SW1/4 NE1/4, NW1/4 SE1/4

Lease No. U-040151

Issued to Cooperative Security Corp. 3/1/62

Township 17 South, Range 7 East, SLM, Utah

Containing 1720 acres

Section 15: SW1/4

Section 16: S1/2

Section 17: E1/2 SE1/4

Section 20: E1/2 E1/2

Section 21: All

Section 22: N1/2 NW1/4

Section 27: N1/2 NW1/4

Section 28: N1/2 N1/2

Section 29: NE1/4 NE1/4

Lease No. U-044025

Issued to Cooperative Security Corp. 8/1/60

Township 17 South, Range 7 East, SLM, Utah

Containing 40 acres

Section 27: NW1/4 NE1/4

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Lease No. U-024319  
Issued to Huntington Corp. 5/1/60  
Township 16 South, Range 7 East, SLM, Utah  
Containing 1040 acres  
Section 27: SW1/4  
Section 28: SE1/4  
Section 33: E1/2, E1/2 NW1/4, NE1/4 SW1/4, S1/2 SW1/4  
Section 34: NW1/4, NW1/4 SW1/4

Lease No. U-014275  
Issued to John Helco 10/1/55  
Township 16 South, Range 7 East, SLM, Utah  
Containing 80 acres  
Section 28: E1/2 SW1/4

Lease No. U-47979  
Issued to Utah Power & Light Co. 10/1/81  
Township 16 South, Range 7 East, SLM, Utah  
Containing 1,063.38 acres, more or less  
Section 34: S1/2 NE1/4, NE1/4 SW1/4, S1/2 SW1/4, SE1/4  
Township 17 South, Range 7 East, SLM, Utah  
Section 3: Lots 1 thru 8, 10 thru 12, SW1/4, SW1/4 SE1/4  
Section 4: Lots 1, 8, 9, E1/2 SE1/4

Lease No. U-47977  
Township 16 South, Range 7 East, SLBM  
Containing 640 acres  
Section 32: All

Lease No. SL-050862 (consolidated to include U-24069 and U-24070)  
Township 16 South, Range 7 East, SLBM  
Containing 280 acres  
Section 28: W1/2 SW1/4  
Section 29: E1/2 SE1/4  
Section 33: W1/2 NW1/4, NW1/4 SW1/4

Lease No. U-06039  
Township 16 South, Range 7 East, SLBM  
Containing 400 acres  
Section 29: SW1/4, W1/2 SE1/4  
Section 30: SE1/4

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Lease No. U-7653  
Township 16 South, Range 7 East, SLBM  
Containing 411.6 acres  
Section 31: All

OWNERS OF COAL TO BE MINED OTHER THAN THE UNITED STATES

State Lease ML-22509  
Township 16 South, Range 6 East, SLBM  
Containing 640 acres  
Section 36: All

The Estate of Malcolm McKinnon  
Zions First National Bank, Trustee, Salt Lake City, Utah 84111  
Township 17 South, Range 7 East, SLM, Utah  
Section 10: SE1/4  
Section 11: W1/2 W1/2, NE1/4 NW1/4  
Section 14: W1/2 NW1/4

Cooperative Security Corp.  
115 East South Temple, Salt Lake City, Utah 84111  
Township 17 South, Range 7 East, SLM, Utah  
Section 15: SE1/4  
Section 22: NE1/4

Also:

Beginning at the SE corner of NE1/4 SE1/4 Section 25, T17S, R6E, SLM,  
thence North 160 rods, West 116 rods to center line of Cottonwood Creek;  
thence southerly along center line of said creek to a point 84 rods West of  
the beginning; thence East 84 rods to the beginning.

The above listed surface rights and coal owned or leased by PacifiCorp,  
successor in interest to Utah Power & Light Company.

PacifiCorp  
324 South State, PO Box 26128, Salt Lake City, Utah 84126-0128  
Township 17 South, Range 7 East, SLM, Utah  
Section 14: SW1/4 (West of the Deer Creek Fault)

ADDITIONAL LANDS TO BE AFFECTED BY MINING

Township 17 South, Range 7 East, SLM, Utah

State of Utah Special Use Lease Agreement No. 284 utilized for conveyor and power line right-of-ways located in the southeast quarter of Section 2

Township 17 South, Range 8 East, SLM, Utah

PacifiCorp fee land (successor to Utah Power & Light Company) utilized for a Waste Rock Disposal Site located within Lots 4 and 5 of Section 5 and Lot 1 and the Southeast quarter of the Northeast quarter of Section 6

This legal description is for the permit area of the Deer Creek Mine. The permittee is authorized to conduct underground coal mining activities and related surface activities on the foregoing described property subject to the conditions of all applicable conditions, laws and regulations.

**Sec. 3 COMPLIANCE** - The permittee will comply with the terms and conditions of the permit, all applicable performance standards and requirements of the State Program.

**Sec. 4 PERMIT TERM** - This permit expires on February 15, 1996.

**Sec. 5 ASSIGNMENT OF PERMIT RIGHTS** - The permit rights may not be transferred, assigned or sold without the approval of the Director, Division. Transfer, assignment or sale of permit rights must be done in accordance with applicable regulations, including but not limited to 30 CFR 740.13{e} and R645-303-300.

**Sec. 6 RIGHT OF ENTRY** - The permittee shall allow the authorized representative of the Division, including but not limited to inspectors, and representatives of the Office of Surface Mining Reclamation and Enforcement (OSM), 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 840.12, R645-400-220, 30 CFR 842.13 and R645-400-110;
- (b) be accompanied by private persons for the purpose of conducting an inspection in accordance with R645-400-100 and R645-400-200 when the inspection is in response to an alleged violation reported to the Division by the private person.

**Sec. 7 SCOPE OF OPERATIONS** - The permittee shall conduct underground coal mining activities only on those lands specifically designated as within the

permit area on the maps submitted in the approved plan and approved for the term of the permit and which are subject to the performance bond.

**Sec. 8 ENVIRONMENTAL IMPACTS** - The permittee shall take all possible steps to minimize any adverse impact to the environment or public health and safety resulting from noncompliance with any term or condition of the permit, including, but not limited to:

- (a) Any accelerated or additional monitoring necessary 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. 9 DISPOSAL OF POLLUTANTS** - The permittee shall dispose of solids, sludge, filter backwash or pollutants 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. 10 CONDUCT OF OPERATIONS** - 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 the Division in approving alternative methods of compliance with the performance standards of the Act, the approved Utah State Program and the Federal Lands Program.

**Sec. 11 EXISTING STRUCTURES** - As applicable, the permittee will comply with R645-301 and R645-302 for compliance, modification, or abandonment of existing structures.

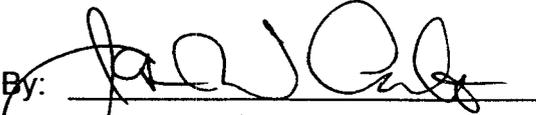
**Sec. 12 RECLAMATION FEE PAYMENTS** - The operator shall pay all reclamation fees required by 30 CFR Part 870 for coal produced under the permit, for sale, transfer or use.

- Sec. 13 AUTHORIZED AGENT** - 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. 14 COMPLIANCE WITH OTHER LAWS** - The permittee shall comply with the provisions of the Water Pollution Control Act (33 USC 1151 et seq.) and the Clean Air Act (42 USC 7401 et seq), UCA 26-11-1 et seq, and UCA 26-13-1 et seq.
- Sec. 15 PERMIT RENEWAL** - Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act, the approved Utah State Program and the Federal Lands Program.
- Sec. 16 CULTURAL RESOURCES** - If during the course of mining operations, previously unidentified cultural resources are discovered, the permittee shall ensure that the site(s) is not disturbed and shall notify the Division. The Division, after coordination with OSM, shall inform the permittee of necessary actions required. The permittee shall implement the mitigation measures required by Division within the time frame specified by Division.
- Sec. 17 APPEALS** - The permittee shall have the right to appeal as provided for under R645-300-200.
- Sec. 18 SPECIAL CONDITIONS** - There are special conditions associated with this permitting action as described in attachment A.

The above conditions (Secs. 1-18) 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. These conditions may be revised or amended, in writing, by the mutual consent of the Division and the permittee at any time to adjust to changed conditions or to correct an oversight. The Division may amend these conditions at any time without the consent of the permittee in order to make them consistent with any federal or state statutes and any regulations.

ACT/0015/018  
Permit  
October 27, 1994  
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THE STATE OF UTAH

By:   
Date: November 2, 1994

I certify that I have read, understand and accept the requirements of this permit and any special conditions attached.

\_\_\_\_\_  
Authorized Representative of  
the Permittee

Date: \_\_\_\_\_

Attachment A

**SPECIAL CONDITIONS**

1. If during entry development, sustained quantities of groundwater are encountered which are greater than 5 gpm from a single source in an individual entry, and which continue after operational activities progress beyond the area of groundwater production, PacifiCorp must monitor these flows for quality and quantity under the approved baseline parameters.

PacifiCorp will notify the Division within 24 hours prior to initiation of said monitoring.

2. This permit becomes effective for mining in the Rilda Canyon Lease Extension when the mining plan is approved by the Secretary of the Interior, except for mining under the south canyon escarpment which will be allowed when the Forest Service is satisfied that the appeals process is finalized and that any appeal has been satisfactorily resolved.
3. PacifiCorp must notify the Division within 14 days of the decision on the appeal of outstanding federal violation 93-020-190-05, 1 of 1.
4. PacifiCorp must notify the Division within 14 days of the decision on the appeal of outstanding cessation order 94-020-370-002, 1 of 1.

# TECHNICAL ANALYSIS RILDA LEASE EXTENSION

PacifiCorp  
Deer Creek Mine  
ACT/015/018

October 3, 1994

## ***INTRODUCTION***

This Technical Analysis discusses PacifiCorp's application to add the Rilda Lease to the current Deer Creek mining operation. The Rilda Lease consists of three complete federal leases (U-7653, U-47977, SL-050862), a part of federal lease U-06039, and a state lease (ML-22509) and comprises 2371.6 acres. Mining would be done as an extension of current underground mining operations. While PacifiCorp has plans to construct surface facilities in Rilda Canyon in the future, no surface facilities are being proposed or analyzed as part of this application. The current application calls for mining in the Rilda lease as an underground extension of existing mines.

## ***ADMINISTRATIVE***

Regulatory Reference: R645-300

The application for adding the Rilda Lease to the Deer Creek permit contains all the necessary information for processing. The application was determined to be administratively complete and a notice of administrative completeness was sent to interested agencies on June 29, 1994.

## ***SOILS***

Regulatory Reference: R645-301-200

### **Analysis:**

A soil survey for the Rilda Lease area was completed on October 10, 1990 by Thomas H. Furst, Soils Consultant.

### **Findings:**

Since this proposal is an underground extension of an existing operation no additional impacts to soil are anticipated.

***BIOLOGY***

Regulatory Reference: R645-301-300

**Analysis:**

Impacts to plant or animal species, as a result of the addition of the Rilda Lease, would be as a result of subsidence or interception of groundwater. Mining panels have been laid out in a manner which would prevent subsidence from impacting critical habitat such as escarpments. There are no known threatened or endangered species in the area, although bald eagles and peregrine falcon could occur on occasion. The Northern Goshawk, Spotted bat, and Northern Three-toed woodpecker are the most likely sensitive species to exist within and adjacent to the permit area. A Golden Eagle Nest (296a) is located within the proposed permit area. The nest is not considered at risk since only first mining that is not expected to cause subsidence is planned under the nest.

Subsidence of escarpments could result in blocks tumbling down the slope resulting in the loss of raptor nests or damage of some vegetation. Large rocks could block portions of Rilda Creek affecting aquatic or riparian habitat. The Applicant has designed the mine lay out to prevent subsidence to escarpments. Also mitigation for any damage resulting from subsidence has been committed to. In addition the Forest Service has provided stipulations in conjunction with their Decision Notice/Finding of No Significant Impact which provide for additional protection of raptor nests and mitigation for damage caused by escarpment failure.

Interception of ground water through mining activities could impact seeps and springs in the area resulting in decreased quality of the riparian habitat. The geologic structure indicates that recharge is most likely coming from the area north of Rilda Canyon or from alluvial water. This being the case, the potential for decreased flow is low. Remaining flows should be sufficient to maintain habitat and provide adequate watering sources.

**Findings:**

Since this proposal is an underground extension of an existing operation impacts would be associated with subsidence effects or effects due to interception of ground water. The applicant has provided for protection of Biological resources by designing mining methods to minimize subsidence impacts and by providing mitigation for unforeseen impacts.

***LAND USE AND AIR QUALITY***

Regulatory Reference: R645-301-400

**Analysis:**

An extensive investigation for the Rilda Lease Tract area was conducted by Archaeological-Environmental Research Corporation in August, 1990. A report and maps are provided in the application.

Three prehistoric sites were located. Of the three sites 42Em2223 has National Register quality significance. The current mining plan does not involve mining beneath it. The nearest area of longwall extraction is approximately 2800 feet from the site which will put it well beyond the area of possible subsidence related surface impacts. None of the three sites is considered susceptible to extensive damage through subsidence because of their low profile, lack of architecture, and lack of rock art.

**Findings:**

Since this is an underground extension of an existing operation the impacts which would effect land use or air quality would be associated with subsidence. No impacts are anticipated.

***ENGINEERING***

Regulatory Reference: R645-301-500

See specific section below.

***CERTIFICATION***

Regulatory Reference: R645-301-512

**Analysis:**

The maps which have been revised for the Rilda Lease Tract Extension are:

Map 1-1 - Coal Ownership Map	
Map 1-2 - Coal Ownership Map	
Map 1-3 - Mine Permit Area with Mine Development as of August 3, 1977	
Map 2-2 - Hiawatha Structure Contour	
Map 2-2A - Blind Canyon & Cottonwood Structure Contour Map	
Map 2-4 - Isopach Map of the Hiawatha Coal Seam	
Map 2-5 - Blind Canyon-Hiawatha Interburden Isopach Map	
Map 2-6 - Isopach Map of the Blind Canyon and Cottonwood Coal Seams	
	Map 2-6B - Hiawatha Coal Seam Overburden Isopach
	Map 2-6C - Blind Canyon & Cottonwood Coal Seams Overburden Isopach
	Map 2-14 - Vegetation Map
	Map 2-16 - General Soil Map
	Map 2-18A--Land Use Map
	Map 2-18B - Raptor Nesting Location and Habitat
	Map 2-19 - Mule Deer Habitat
	Map 3-6 - Life of Mine Plan/5-year Increments/Blind Canyon Coal Seam
	Map 3-7--Life of Mine Plan/5-year Increments/Hiawatha Coal Seam.

Of the maps listed above only Maps 2-2, 2-2A, 2-4, 2-5, 2-6, 2-6B, and 2-6C require certification by a registered professional engineer or land surveyor. These maps have the required certification.

**Location in Plan:**

Maps 1-1, 1-2, 1-3, 2-2, 2-2A, 2-4, 2-5, 2-6, 2-6B, 2-6C, 2-14, 2-16, 2-18A, 2-18B, 2-19, 3-6, and 3-7.

**Findings:**

The application fulfills the requirements of this section.

***COMPLIANCE WITH MSHA REGULATIONS AND MSHA APPROVALS***

Regulatory Reference: R645-301-513

**Analysis:**

The entire Rilda Lease Tract Extension will be underground. There are, therefore, no coal processing waste dams and embankments, sedimentation ponds, impoundments, spoil or waste disposal facilities, refuse piles, discharges into underground facilities, surface coal mining activities, or coal mine waste fires associated therewith, which require regulation and approval by MSHA.

**Findings:**

This section is not applicable to the application.

***INSPECTIONS***

Regulatory Reference: R645-301-514

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There are, therefore, no new excess spoil disposal facilities, refuse piles, or impoundments associated therewith.

**Findings:**

This section is not applicable to the application.

***REPORTING AND EMERGENCY PROCEDURES***

Regulatory Reference: R645-301-515

**Analysis:**

The entire Rilda Lease Tract Extension will be underground. There are, therefore, no impoundments and no slide potential associated therewith. The procedure to be followed in the event of temporary cessation of operations is that already stated in the approved plan.

**Findings:**

The application fulfills the requirements of this section.

***PREVENTION OF SLIDES IN SURFACE COAL MINING/RECLAMATION ACTIVITIES***

Regulatory Reference: R645-301-516

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There is, therefore, no surface mining associated therewith.

**Findings:**

This section is not applicable to the application.

***OPERATION PLAN***

Regulatory Reference: R645-301-520

See specific section below.

***GENERAL***

Regulatory Reference: R645-301-521

**Analysis:**

The maps which have been revised for the Rilda Lease Tract Extension are:

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Map 1-1 - Coal Ownership Map  
Map 1-2 - Coal Ownership Map  
Map 1-3 - Mine Permit Area with Mine Development  
as of August 3, 1977  
Map 2-2--Hiawatha Structure Contour Map  
Map 2-2A--Blind Canyon & Cottonwood Structure  
Contour Map  
Map 2-4 - Isopach Map of the Hiawatha Coal Seam  
Map 2-5 - Blind Canyon-Hiawatha Interburden  
Isopach Map  
Map 2-6 - Isopach Map of the Blind Canyon and  
Cottonwood Coal Seams

Map 2-6B - Hiawatha Coal Seam Overburden Isopach  
Map 2-6C - Blind Canyon & Cottonwood Coal Seams  
Overburden Isopach Map  
Map 2-14 - Vegetation Map  
Map 2-16 - General Soil  
Map 2-18A - Land Use Map  
Map 2-18B--Raptor Nesting Location and Habitat  
Map 2-19 - Mule Deer Habitat  
Map 3-6 - Life of Mine Plan/5-year Increments/Blind  
Canyon Coal Seam  
Map 3-7--Life of Mine Plan/5-year Increments /  
Hiawatha Coal Seam.

These maps have all been revised to show the anticipated mine layout, the surface and subsurface ownership, the surface configuration, and the geology associated with the new lease tract extension. As the entire Rilda Lease Tract Extension is underground, the rest of the mining operation remains as it is represented in the approved plan.

**Location in Plan:**

Maps 1-1, 1-2, 1-3, 2-2, 2-2A, 2-4, 2-5, 2-6, 2-6B, 2-6C, 2-14, 2-16, 2-18A, 2-18B, 2-19, 3-6, and 3-7.

**Findings:**

The application fulfills the requirements of this section.

***COAL RECOVERY***

Regulatory Reference: R645-301-522

**Analysis:**

The permittee is committed to maximum coal recovery. Mining in the Rilda Lease Tract Extension will be done mainly by longwall methods, which provide the highest coal recovery rates of any available technology. Continuous mining machinery will be used to do the entry development work for the longwall panels and to mine those areas where longwall panels cannot be used.

**Location in Plan:**

Pages 3-6, 4-69, 4-70.

**Findings:**

The application fulfills the requirements of this section.

***MINING METHOD(S)***

Regulatory Reference: R645-301-523

**Analysis:**

Mining in the Rilda Lease Tract Extension will be done mainly by longwall methods, which provide the highest coal recovery rates of any available technology. Continuous mining machinery will be used to do the entry development work for the longwall panels and to mine those areas where longwall panels cannot be used.

Mining will take place both in the Blind Canyon seam and the Hiawatha seam. Since the Blind Canyon seam lies above the Hiawatha seam, mining has been scheduled to take place first in the Blind Canyon seam.

**Location in Plan:**

Pages 3-5, 3-6, 4-69, 4-70. Maps 3-6, 3-7.

**Findings:**

The application fulfills the requirements of this section.

***BLASTING AND EXPLOSIVES***

Regulatory Reference: R645-301-524

**Analysis:**

The entire Rilda Lease Tract Extension will be underground. There is, therefore, no surface blasting associated therewith.

**Findings:**

This section is not applicable to the application.

***SUBSIDENCE***

Regulatory Reference: R645-301-525

**Analysis:**

The subsidence monitoring and control plan remains what it is in the approved plan.

The surface of the lease extension, like that of the present permit area, is used mainly for cattle grazing and wildlife habitat, and somewhat less for recreation. There are several natural springs. The only manmade structure in the area which could be adversely affected by subsidence is a 345 kV power line, and this will be protected by a barrier pillar of coal in which only entry development, but no mining, will take place.

To measure subsidence, the permittee will extend the present program of monitoring by aerial photogrammetry to include the lease extension area. The area will be photographed from the air once a year and the amount of subsidence which has occurred during the previous year will be calculated by photogrammetric methods. Cumulative subsidence will then be calculated by comparing the data from the previous year to baseline data which was gathered in August of 1986.

The permittee has taken especial precautions to prevent damage to the escarpment in Rilda Canyon. Volume 3, Appendix IV, of the plan contains the results of a large-scale study of the effects of longwall mining on escarpments in Newberry and Rilda Canyons. This study was commissioned by Interwest Mining Company and was done by W.G. Pariseau of the University of Utah Department of Mining Engineering. Morgan Moon of Energy West Mining Company prepared a summary of the results of this study and how those results were used in the design of the mine layout. This summary is also contained in Volume 3, Appendix IV. Among other things, the longwall panels were widened and their long axes laid out to bear approximately N60° E. Thus laid out, the panels are parallel to the prevailing joint and fault system in the area and oblique to the Rilda Canyon escarpment. This prevents the formation of continuous tension zones along the escarpment crest which might cause it to fail. Although this layout increases the likelihood of ground control problems (pillar bursts and floor heaving), it provides good protection for the escarpments.

The permittee also commits to the mitigation, in general, of subsidence damage. Where cracks or fissures occur which injure or endanger livestock, the permittee will repair the crack or fissure and reimburse the livestock owner for the lost livestock. Where groundwater sources are damaged or impaired by subsidence, the permittee will either directly repair and rehabilitate the water source or else develop an alternative water source in the same area.

**Location in Plan:**

Pages 4-75 through 4-78, Volume 3, Appendix IV, Maps 3-6, 3-7.

**Findings:**

The application fulfills the requirements of this section.

***MINE FACILITIES***

Regulatory Reference: R645-301-526

**Analysis:**

The entire Rilda Lease Tract Extension will be underground. There are, therefore, no surface facilities associated therewith.

**Findings:**

This section is not applicable to the application.

***TRANSPORTATION FACILITIES***

Regulatory Reference: R645-301-527

**Analysis:**

The entire Rilda Lease Tract Extension will be underground. There are, therefore, no surface transportation facilities associated therewith.

**Findings:**

This section is not applicable to the application.

***HANDLING AND DISPOSAL OF COAL, OVERBURDEN, EXCESS SPOIL, & COAL MINE WASTE***

Regulatory Reference: R645-301-528

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. No new waste disposal facilities are proposed or anticipated. The current Deer Creek Waste Rock site (approved in 1988) is designed for 30 years plus of mining. The design anticipated future leasing.

**Findings:**

This section has been complied with.

***MANAGEMENT OF MINE OPENINGS***

Regulatory Reference: R645-301-529

**Analysis:**

The entire Rilda Lease Tract Extension operation is an extension of the current underground operations. There are no new breakouts or other mine entries associated with the lease extension application. Pacificorp does have plans to construct ventilation portals in Rilda Canyon in the future, however the application being analyzed at this time does not include those. A separate analysis will be required for any surface facilities application.

**Findings:**

This section has been complied with.

***OPERATIONAL DESIGN CRITERIA AND PLANS***

Regulatory Reference: R645-301-530

See specific section below.

***SEDIMENT CONTROL***

Regulatory Reference: R645-301-532

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There are, therefore, no sediment control measures associated therewith.

**Findings:**

This section is not applicable to the application.

***IMPOUNDMENTS***

Regulatory Reference: R645-301-533

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There are, therefore, no impoundments associated therewith.

**Findings:**

This section is not applicable to the application.

***ROADS***

Regulatory Reference: R645-301-534

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There are, therefore, no roads associated therewith.

**Findings:**

This section is not applicable to the application.

***SPOIL***

Regulatory Reference: R645-301-535

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There are, therefore, no new spoil disposal or storage facilities associated therewith.

**Findings:**

This section is not applicable to the application.

***COAL MINE WASTE***

Regulatory Reference: R645-301-536

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There are no new coal mine waste disposal facilities associated therewith.

**Findings:**

See section R645-301-528.

***REGRADED SLOPES***

Regulatory Reference: R645-301-537

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There are, therefore, no regraded slopes associated therewith.

**Findings:**

This section is not applicable to the application.

***RECLAMATION PLAN***

Regulatory Reference: R645-301-540

See specific section.

***NARRATIVES, MAPS, AND PLANS***

Regulatory Reference: R645-301-542

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. Therefore, no reclamation narratives, maps, or plans are necessary.

**Findings:**

This section is not applicable to the application.

***RECLAMATION DESIGN CRITERIA AND PLANS***

Regulatory Reference: R645-301-550

See specific section below.

***CASING AND SEALING OF UNDERGROUND OPENINGS***

Regulatory Reference: R645-301-551

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There are, therefore, no new breakouts or other mine entries associated therewith. (See section R645-301-529 above). All drill holes or exploration holes will be plugged as per currently approved plans.

**Findings:**

This section has been complied with.

***PERMANENT FEATURES***

Regulatory Reference: R645-301-552

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There are, therefore, no permanent surface features associated therewith.

**Findings:**

This section is not applicable to the application.

***BACKFILLING AND GRADING***

Regulatory Reference: R645-301-553

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There is, therefore, no backfilling and grading associated therewith.

**Findings:**

This section is not applicable to the application.

***GEOLOGY AND HYDROLOGY***

Regulatory Reference: R645-301-600 and R645-301-700

**Analysis:**

The geologic and hydrologic impacts of this proposal are being analyzed in the Cumulative Hydrologic Impact Assessment (CHIA). This will be a separate document which the reader should refer to.

**Findings:**

The designs proposed for all anticipated mining operations within the Cumulative Impact Area are determined to be consistent with preventing damage to the extent possible to the hydrologic balance outside the proposed mine plan areas. Refer to the CHIA.

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***BONDING***

Regulatory Reference: R645-301-800

**Analysis:**

The entire Rilda Lease Tract Extension operation will be underground. There is, therefore, no additional surface disturbance which would require additional bond.

**Findings:**

This section is not applicable to the application.

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# EAST MOUNTAIN CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Cottonwood/Wilberg Mine, ACT/015/019

Deer Creek Mine, ACT/015/018

Des-Bee-Dove Mines, ACT/015/017

Huntington #4 Mine, ACT/015/004

Crandall Canyon Mine, ACT/015/032

Emery County, Utah

July 1989  
Updated September 1994

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## I. INTRODUCTION

This updated Cumulative Hydrologic Impact Assessment (CHIA) for East Mountain has been completed based on permit revisions and additional lease extensions for the Deer Creek and Crandall Canyon Mines. This document will include new drawings and information which changes permit areas, lease additions, and the cumulative impact area (CIA). It is not the intent of this document to recreate and change all of the information in the original CHIA because that CHIA was based on current information at that time. The applicable sections listed in the original document will be used in this document to reflect current hydrologic information.

This assessment encompasses the probable cumulative impacts of all anticipated coal mining in the East Mountain area on the hydrologic balance and whether the operations proposed under the applications have been designed to prevent damage to the hydrologic balance outside the proposed mine plan areas. Additional water quality and quantity data collected for ground-water and surface water sites are considered in this CHIA. This report complies with legislation passed under Utah Code Annotated 40-10-1- et seq. and the attendant State Program rules under R645-301-728.

## GENERAL INFORMATION

East Mountain is located in the Wasatch Plateau Coal Field, approximately 20 miles southwest of Price, Utah (Figure 1). The eastern margin of the Wasatch Plateau forms a rugged escarpment that overlooks Castle Valley and the San Rafael Swell to the east. Elevations along the eastern escarpment of the Wasatch Plateau range from approximately 6,500 to over 10,000 feet.

Precipitation varies from 40 inches at higher elevations to less than 10 inches at lower elevations. The area encompassed by the Wasatch Plateau is classified as semiarid to subhumid.

## GEOLOGY

Outcropping rocks of the Wasatch Plateau Coal Field range from Upper Cretaceous to Quarternary in age. The rock record reflects an overall regressive sequence from marine (Mancos Shale) through littoral (Star Point Sandstone) and lagoonal (Blackhawk Formation) to fluvial (Castlegate Sandstone, Price River Formation and North Horn Formation) and lacustrine (Flagstaff Limestone) depositional environments. Oscillating depositional environments within the overall regressive trend are represented by lithologies within the Blackhawk Formation which is the major coal-bearing unit within the Wasatch Plateau Coal Field.

## VEGETATION

Vegetation of the Wasatch Plateau area is classified within the Colorado Plateau floristic division<sup>4</sup>. The area occupies

parts of both the Utah Plateaus and the Canyonlands floristic sections. Vegetation communities of the area include desert shrub (shadscale) at the lowest elevations through sagebrush, sagebrush-grassland, pinyon-juniper, mountain brush, Douglas fir-white fir-blue spruce, and Engleman spruce-subalpine fir.

Desert shrub communities are sparsely vegetated shrublands that, depending on elevation and soils, may be dominated by shadscale (Atriplex confertifolia), fourwing saltbush (A. canescens), Castle Valley clover (A. cuneata) or mat saltbush (A. corrugata) and may include winterfat (Ceratoides lanata), Mormon tea (Ephedra spp.), budsage (Artemisia spinescens), miscellaneous buckwheats (Eriogonum spp.), Indian ricegrass (Stipa hymenoides), galleta grass (Hilaria jamesii), grama grass (Bouteloua spp.), needle and thread grass (Stipa comata), sand dropseed (Sporobolus cryptandrus) and squirreltail (Elymus elymoides). Greasewood (Sarcobatus vermiculatus) - saltgrass (Distichlis stricta) may dominate bottomlands.

Many sagebrush communities of the area are relatively dense shrub stands of (Artemisia tridentata) with very little understory growth. In relatively undisturbed sagebrush communities, rabbitbrush (Chrysothamnus nauseosus or C. viscidiflorus), Mormon tea, and several perennial grasses may be common, including thickspike and western wheatgrass (Elymus lanceolatus and E. smithii), basin wildrye (Elymus cinereus), Indian ricegrass and dropseed species.

In the sagebrush-grassland type, the typical big sage may give way to Artemisia tridentata var. vaseyana (mountain big sage) with a co-dominant perennial grass understory. Salina wildrye (Elymus salinus) may be co-dominant in these communities and may dominate an herbaceous grassland type. Black sage (A. nova) with Salina wildrye or western wheatgrass also common.

Pinyon-juniper woodlands occupy drier sites often with stoney to very rocky soils. Pinus edulis and Juniperus osteosperma are co-dominant in the overstory. Understory vegetation ranges from sparse to moderate ground cover on range sites in poor to excellent condition. Understory species include sagebrush, mountain mahogany (Cercocarpus montanus), snowberry (Symphoricarpus oreophilus), and several perennial grasses including slender wheatgrass (Elymus trachycaulus), Salina wildrye, junegrass (Koeleria cristata) and Indian ricegrass.

Dominant shrubs of the mountain brush communities will vary depending on elevation and aspect. The drier south and west-facing slopes may support dense stands of Gambel oak (Quercus gambellii). Other dominants of this community may include serviceberry (Amelanchier utahensis), mountain mahogany (Cercocarpus montanus or C. ledifolius), bitterbrush (Purshia tridentata) and snowberry.

The range of the Douglas fir-white fir-blue spruce community is about 8,000 to 10,000 feet. Douglas fir (Pseudotsuga mensiesii) usually the dominant tree with white fir (Abies concolor) and blue spruce (Picea pungens) usually limited to the most mesic sites, often along streams. With dense canopies, understory vegetation may be sparse. Common shrubs include serviceberry (Amelanchier spp.), Oregon grape (Mahonia repens), chokecherry (Prunus virginiana), Rocky Mountain maple (Acer glabrum), mountain lover (Pachistima myrsinites) and snowberry. Bluebunch wheatgrass (Elymus spicatum), mountain brome (Bromus carinatus), and Kentucky bluegrass (Poa pratensis) are common grasses. Aspen stands (Populus tremuloides) can be found throughout the zone, particularly in mesic sites and as successful communities.

Engelman spruce (Picea engelmannii) and subalpine fir (Abies lasiocarpa) dominate the spruce-fir zone at the highest elevations of the hydrologic impact area. While receiving about the same precipitation as the Douglas fir communities, lower evapo-transpiration with cooler temperatures can permit a more lush vegetation in the spruce-fir zone. Limber pine (Pinus flexilis) often occupies steep or rocky, drier sites of this zone.

Small riparian communities are found at all elevations within the impact assessment area. With greater water availability and cooler temperatures, the riparian zone often includes more mesic species, (e.g., those from a higher vegetation zone). Shrub species from the mountain shrub type may be found at most elevations.

Additional riparian zone shrubs include Narrowleaf cottonwood (Populus angustifolia), red osier dogwood (Cornus stolonifera), skunkbush (Rhus trilobata), river birch (Betula occidentalis) and various willows (Salix spp.). Grass species from the mesic zones may be represented (mountain shrub and higher zones) along with fescues (Festuca spp.) and miscellaneous sedges (Carex spp). Small wet areas around springs and seeps will often support a dense growth of grasses, sedges and willows.

#### HYDROLOGY

Surface runoff from the Wasatch Plateau flows either to the Price River or the San Rafael River, both tributaries to the Green River. The Price River Basin, which includes about 1,800 square miles in six counties, is located primarily in Carbon and Emery Counties in East-Central Utah. The San Rafael River Basin is about 2,300 square miles in three counties and is located mainly in Emery County to the south of the Price River Basin.

The Price River drainage originates in the Wasatch Plateau about 12 miles west and south of Scofield Reservoir. Downstream from the reservoir the river flows in a southeasterly direction.

The drainage is bounded by the Book Cliffs on the northeast, the Wasatch Plateau on the west and the San Rafael Swell on the south.

The San Rafael River Basin occupies parts of two physiographic sections of the Colorado Plateau - The High Plateaus to the north and west and Canyonlands to the south and east<sup>7</sup>. The San Rafael River originates as tributary streams in the upper Wasatch Plateau. Principal tributaries are Huntington Creek, Cottonwood Creek and Ferron Creek which merge to form the San Rafael River about six miles southeast of Castledale, Utah. The San Rafael River flows in a southeasterly direction through the San Rafael Swell joining the Green River about fifteen miles south of Green River, Utah.

The water quality of both the Price River and the San Rafael River is good in the mountainous headwater tributaries, but deteriorates rapidly as flow traverses the Mancos Shale. The shale lithology typically has low permeability, is easily eroded and contains large quantities of soluble salts which are major contributors to poor water quality. Depending upon the duration of contact, water quality degrades downstream with Total Dissolved Solids (TDS) levels of 4,000 milligrams per liter (mg/l) not uncommon. The predominant ion leached from the Mancos Shale is sulfate ( $SO_4$ ) with values over 1,000 mg/l common in the lower reaches of the Price River.

In the high mountain tributaries, the lowest dissolved solids concentrations occur during high flows associated with the spring snow melt. The highest dissolved solids concentrations occur during late summer when low flow conditions exist. The predominant ions found in the mountain streams during both high flows and low flows are: calcium, magnesium and bicarbonate.<sup>11</sup>

The lowland stream reaches contain the highest dissolved solids concentrations in late summer during low flow conditions and as irrigation return water is placed back into these streams.

The predominant ions during high flow are calcium, magnesium and bicarbonate and during low flow periods, the predominant ions are sodium, calcium and sulfate.<sup>11</sup>

Ground water is present in all lithostratigraphic units within the Wasatch Plateau Coal Field. Ground water occurs under localized conditions that often form a system of "perched" aquifers and associated springs and/or seeps. Significant localized ground-water resources are associated with the North Horn Formation and Price River Formation. The U.S. Geological Survey has identified and formally designated the Star Point-Blackhawk aquifer as the only regional ground-water resource occurring in the Wasatch Plateau Coal Field<sup>6, 10</sup>.

Ground-water is often associated with faulting and fracturing where these geologic structure provide secondary porosity and serve as conduits for rapid groundwater movement both vertically and horizontally. Surface waters readily infiltrate into these fault systems which may then rapidly migrate until contacting impervious material. These faults and fractures often have significant quantities of water stored within the fault gouge.

## II. CUMULATIVE IMPACT AREA (CIA)

Figure 2 delineates the CIA for current and projected mining in the East Mountain area. The CIA encompasses approximately 68 square miles and includes East Mountain. The western and eastern CIA boundaries are designated by Huntington Creek and Cottonwood Creek, whereas the southern extent is bounded by sections 8,9 and 10, T18S, R7E, and the northern boundary is defined by the Left Fork of Huntington Creek. The west side of the Crandall Canyon mine permit area was recently extended due to the acquisition of additional leases. This area drains several small ephemeral drainages to Indian Creek and Scad Valley Creek both perennial streams in Joe's Valley. The hydrologic connection between the drainages and Indian Creek is thought to be at the surface only due to the regional dip of the strata towards Huntington Creek.

## III. SCOPE OF MINING

The federal coal leases that are designated in the East Mountain "Logical Mining Units" are as follows:

### **Leases**

#### **PacifiCorp**

#### COTTONWOOD/WILBERG, DEER CREEK, AND DES-BEE-DOVE MINES

The Cottonwood/Wilberg Deer Creek, Des-Bee-Dove Mines represent three adjacent and overlapping permit areas encompassing about 29,000 acres.

#### Cottonwood/Wilberg

SL-64900, U-1358, U-083066, U-040151, U-44025, U-47978, and portions of SL-070645-U-02292, U-084923, and U-084924.

#### Deer Creek

SL-064607-064621, SL-064900, U-1358, SL-070645, U-02292, U-84923, U-084924, U-083066, U-040151, U-044025, U-014275, U-024319, and U-47979. Additional leases included in the Rilda lease extension include leases U-7653, U-47977 and SL-050862 and U-06039. Future coal leases on the north side of Rilda canyon which are not permitted are: U-024317, U-2810 and SL-051221.

#### Des-Bee-Dove

U-02664, SL-050133, and SL-066116.

**Genwal Coal Co.**

Crandall Canyon Mine

The Crandall Canyon Mine is isolated from the previous three mines. It includes leases ML-21569, U-66838, ML-21568 and UTU-69082 which total about 3200 acres.

**Mountain Coal Co.**

Huntington #4 Mine

The Huntington #4 Mine operated in Federal Lease No. U-33454 and SL-064903.

**SCOPE OF MINING**

Cottonwood/Wilberg Mine

Coal mining operations have been conducted since the 1890's in the Wilberg area. Utah Power and Light Company (UP&L) acquired the Wilberg Mine in September 1977 from the Peabody Coal Company, which had acquired the lease in 1958. Mining had previously been conducted under the original owner, Cyrus Wilberg, beginning in 1945. With the UP&L acquisition, the Wilberg Mine was redesigned. PacifiCorp acquired the UP&L properties in February 1990.

A tragic fire occurred in December of 1984. On July 1, 1985, it was decided to divide the Wilberg Coal Mine into two separate and independent coal mines; the Cottonwood and the Wilberg Coal Mines, each with a separate MSHA identification number. The mining and reclamation permit, however, was designated as ACT/015/019 for the Cottonwood/Wilberg Mine because the surface facilities were shared by each mine.

Longwall mining and limited room and pillar mining produces about 2.5 million tons from the Hiawatha and Blind Canyon seams. Mining is scheduled to cease around the year 2022.

Underground development waste, sediment from sedimentation ponds and trommel reject from the Des-Bee-Dove and Cottonwood/Wilberg Waste Rock Storage area approximately 1 mile south of the Cottonwood/Wilberg Mine. This disposal structure utilizes a maximum of sixteen acres and is part of approved BLM Right of Way: U-37642.

Deer Creek Mine

UP&L purchased the Deer Creek Mine in 1977 from Peabody Coal Company, which had acquired leases on the Deer Creek property and began operations in 1969. Coal mining operations had taken place on fee land in Deer Creek Canyon prior to 1946 when the first federal coal lease was issued in this area. PacifiCorp acquired the UP&L properties in February 1990.

Operations at the Deer Creek Mine overlap those of the Wilberg Mine, predominantly in the Blind Canyon Seam. The Deer

Creek Mine surface facilities are located on a 25-acre site at the junction of Deer Creek Canyon and Elk Canyon.

The Deer Creek Mine utilizes the longwall mining method and produces about 2.5 million tons per year from the Hiawatha and Blind Canyon seams. All underground operations are scheduled to cease around the year 2032.

Waste rock generated at the Deer Creek Mine has been placed into two areas at the main mine site. These two disposal sites are at capacity and the permittee has acquired a third site on the north side of Huntington Canyon. This site is located within the Gentry Mountain CIA and is discussed there.

#### Des-Bee-Dove Mine

The Des-Bee-Dove Mine complex (the Deseret, Beehive and Little Dove Mines) was acquired by UP&L in 1972 from the Deseret Coal Company, a Mormon Church enterprise. The Mormon Church and the Castle Valley Fuel Company mined the property from 1938 to 1947. From 1936 to 1938, the mine workings were operated by two men, Edwards and Broderick. Mining began in the canyon in 1898 as the Griffith Mine. PacifiCorp acquired the UP&L properties in February 1990.

The Des-Bee-Dove Mine permit area contains two mineable coal seams, the Hiawatha and Blind Canyon seams. The mining plan consists of a series of room and pillar continuous mine sections.

The Des-Bee-Dove Mine ceased operations on February 6, 1987. PacifiCorp is currently maintaining the site in an indefinite "temporary cessation" phase until the coal market improves. This mine may not be reactivated. Before UP&L temporarily ceased operations, the Des-Bee-Dove Mine produced 725,000 tons per year and projected that mining would end in the year 1998.

#### Huntington #4 Mine

The Huntington Canyon #4 Mine permit area contains 1,320 acres. The underground operations utilized room and pillar mining methods in the Blind Canyon and Hiawatha coal seams in Federal Lease No. U-33454 and SL-064903. All underground mine operations ceased November 1, 1984.

Beaver Creek Coal Company reclaimed the site from August 15, 1985 through September 30, 1985. Three portals and one opening were sealed, regrading and backfilling of the pad and road areas was completed, soil replaced, and reseeding done. The reclaimed site has been maintained since that time. Beaver Creek Coal Company was bought by Mountain Coal Company and the permit was transferred on September 12, 1991. In 1993, Mountain Coal Company applied to the Division for Phase II bond release. This application is under review and is still pending Division approval.

### Crandall Canyon Mine

Historically, mining had been conducted in Crandall Canyon from November 1939 through September 1955. Mining in Tract 1 by Genwal Coal Company began in 1983.

The permit area for the Crandall Canyon Mine contains approximately 158 acres in Huntington Canyon in Emery County, Utah. The current method of room and pillar mining for Federal Lease SL-062648 will be continued throughout Lease U-54762. Pillars will be removed upon abandonment of sections. Overall, an advance-retreat mining system is projected for the mine.

Other leases included in the permit area are ML-21569, U-66838 and ML-21568. Additional leases were acquired by Genwal to the west of the existing mine area in March 1994. This lease by assignment includes lease UTU-69082 which is about 3,000 acres.

## IV. STUDY AREA

### GEOLOGY

The East Mountain CIA is characterized by cliffs, steep slopes, narrow canyons and high plateaus. Stratigraphic units outcropping within the area include, from oldest to youngest, the Mancos Shale, Star Point Sandstone, Blackhawk Formation, Castlegate Sandstone, Price River Formation, North Horn Formation, Flagstaff Limestone and Quaternary deposits. Lithologic descriptions and unit thickness are given in Figure 3.

Rocks in the study area strike northeast and dip from one to three degrees to the southeast. The major structural features occurring within East Mountain are: Deer Creek Fault; Roans Canyon Fault Graben; Pleasant Valley Fault; the Mill Fork Graben; and the Straight Canyon Syncline. The Deer Creek Fault and Pleasant Valley Fault trend north - south, whereas Roan's Canyon Fault Graben, Mill Fork Graben and the Straight Canyon Syncline trend northeast - southwest. Fault displacements range from several feet to approximately 170 feet.

### HYDROLOGIC RESOURCES

#### GROUND WATER

The ground-water regime within the CIA is dependent upon climatic and geologic parameters that establish systems of recharge, movement and discharge.

Snowmelt at higher elevations provides most of the ground-water recharge, particularly where permeable lithologies such as fractured or solution limestone are exposed at the surface. Vertical migration of ground water occurs through permeable rock units and/or along zones of faulting and fracturing. Lateral migration initiates when ground water encounters impermeable rocks and continues until either the land surface is intersected (and spring discharge occurs) or other permeable lithologies or zones are encountered that allow further vertical flow.

The Star Point Sandstone and lower portion of the Blackhawk Formation, Castlegate Sandstone, Price River Formation, North Horn Formation, Flagstaff Limestone, and Quarternary deposits are potential reservoirs or conduits for ground water in the CIA. Reservoir lithologies are predominantly sandstone and limestone. Sandstone reservoirs occur as channel and overbank, lenticular and tabular deposits, whereas limestone reservoirs have developed through solution processes and fracturing. Shale, siltstone, mudstones and cemented sandstone beds act as aquacludes to impede ground-water movement.

The Mancos Shale is considered a regional aquaclude that limits downward flow within the CIA. Localized aquacludes include relatively thin, impermeable lithologies occurring within the stratigraphic sections above the Star Point Sandstone.

The Star Point-Blackhawk aquifer is present and represents the only identified regional ground-water resource in the study area<sup>6</sup>. Ground water associated with the Price River Formation and North Horn Formation may be characterized as occurring within an extensive system of "perched" aquifers and represents a significant hydrologic resource.

Faults and fractures act as effective conduits for ground water and allow unsaturated downward flow. Springs having significant discharges (10 gpm or greater) are most commonly located in proximity to north-south and northeast-southwest trending fault or fracture zones (Figure 4). In particular, the Roans Canyon Fault Graben appears to act as a significant conduit for ground water.

Drilling from the Deer Creek Mine identified two major hydrogeologic units associated with the Roan's Canyon Graben. Aquifer testing indicated the horizontal flow component within the graben is towards the east and suggests discharge occurs into the Huntington Creek drainages basin.

The Straight Canyon Syncline is also thought to direct ground-water movement towards the southwest into the Cottonwood Creek drainage basin.

Data from seven boreholes located within the Cottonwood/Wilberg Mine suggest that ground-water in the Star Point Sandstone is moving towards the northeast. This flow direction could be associated locally with the southern extent of the Straight Canyon Syncline. Other, more regional data indicate ground water moves from north to south.

Approximately 309 seeps and springs occur within the CIA. Total spring discharge exceeds 2,378 gpm (3,800 acre feet/year). Flow data is not available for all of these identified springs. The average flow was calculated for springs emanating from

specific formations and then total spring flow from each formation was estimated by multiplying the average flow by the number of springs. Spring discharge is distributed as follows:

<u>Lithologic Unit</u>	<u>Number of Springs</u>	<u>Total Discharge</u>
Flagstaff Limestone	8	25 gpm
Undifferentiated Flagstaff Limestone/North Horn Formation	5	34 gpm
North Horn Formation	125	1,325 gpm
Undifferentiated North Horn Formation/Price River Formation	3	25 gpm
Price River Formation	82	519 gpm
Castlegate Sandstone	17	55 gpm
Blackhawk Formation	52	135 gpm
Star Point Sandstone	15	260 gpm

Analysis from spring samples indicates that water quality progressively decreases from the Flagstaff Limestone to the Star Point Sandstone.

Mine inflow is estimated to total 1,500 gpm for the Deer Creek Mine and Cottonwood/Wilberg Mine and 100 gpm in the Crandall Canyon Mine. Mine water is discharged to the Left Fork of Grimes Wash and Miller Canyon from the Cottonwood/Wilberg Mine and to the Huntington Power Plant and Deer Creek from the Deer Creek Mine. Mine water is not discharged at the Crandall Canyon Mine or Des-Bee-Dove Mine. No discharge occurs at the reclaimed Huntington #4 Mine.

Mine water intercepted within the CIA represents ground-water depletion from storage in the Blackhawk Formation and Star Point Sandstone and/or interception of flow along faults/fractures or from fluvial channels in the mine roof.

#### SURFACE WATER

The CIA has been divided into fourteen major drainage basins. The CIA encompasses drainages to Huntington Creek and Cottonwood Creek, both tributaries to the San Rafael River Basin (see Figure 5).

#### Crandall Canyon (4)

Crandall Canyon drainage (4) includes the disturbed area associated with the Crandall Canyon Mine. The mine exists in the

lower reaches of this watershed which encompasses 3,332 acres. The average gradient of Crandall Creek is 16 percent. Crandall Creek is perennial and flows east into Huntington Creek.

Mining is centered in the lower reaches of the drainage area and involves approximately 162 acres, of which 9.7 acres is surface disturbance. All surface disturbance is treated by maintained sediment controls.

Additional leases have been acquired by Genwal Coal Company to the west of the existing mine workings. These leases extend the permit area north into Blind Canyon and Horse Canyon. These new lease additions abut the Joe's Valley Graben which creates a barrier to further mining to the west.

#### Little Bear Canyon and Mill Fork Canyon (5 and 6)

Approximately 3,869 acres drain from Little Bear Canyon and Mill Fork Canyon combined. The Huntington #4 Mine encompasses approximately 1,320 acres with these two canyons. Reclaimed surface disturbance involves 12.5 acres in Mill Fork Canyon. Little Bear Creek is considered ephemeral and Mill Creek is considered perennial in its lower reaches. The average gradient of Little Bear Creek is 30 percent and the average gradient for Mill Creek is 13 percent.

The Huntington #4 Mine was reclaimed in 1985 and has maintained sediment controls in place through the bonding period. Mountain Coal Company has applied for phase 2 bond release. PacifiCorp leases in the Rilda Canyon area extend into the south half of Mill Fork Canyon and includes 390 acres in Mill Fork.

#### Rilda Creek (7)

Approximately 4,119 acres drain into Rilda Canyon. Rilda Creek is perennial due to several large springs found in the middle reaches of the creek. The average gradient of Rilda Creek is 11 percent.

The permit area of the Deer Creek Mine includes areas in Rilda Canyon. Previous surface disturbances were associated with the Helco Mine Rominger Mine. The North Emery Water Users Association (NEWUA) controls several springs adjacent to the Helco Mine. These springs have been developed and are used as culinary water. Reclamation of the abandoned Helco Mine was done in 1988 by the Division's Abandoned Mine Reclamation Program. This work included six portal closures, removal and burial of coal waste piles followed by revegetation. PacifiCorp's permit area encompasses 2,417 acres in the Rilda Canyon drainage.

PacifiCorp has proposed constructing a ventilation breakout up the Left Fork in Rilda Canyon. This proposal includes construction of a 1.2 acre pad with three portals. The pad will support portal liners, a substation, ventilation fan, water

storage tank and a pumphouse. A 12 foot wide gravel road will connect the pad to the Rilda Canyon road. Approximately 1350 feet of road will be added in Rilda Canyon. This proposal has been submitted to the Division and is currently under review. Sediment controls will be installed and maintained during construction and operation.

#### Meetinghouse Canyon and Deer Creek Canyon (8 and 9)

Approximately 4,469 acres drain Meetinghouse Canyon and 3,218 acres drain Deer Creek Canyon. Meetinghouse Creek is considered ephemeral and Deer Creek is considered perennial. The average gradient of Meetinghouse Creek is 12 percent and the average gradient of Deer Creek is 13 percent. Approximately 56 acres of surface disturbance associated with the Deer Creek Mine is located in the middle of Deer Creek Canyon. The surface facilities are treated by sediment controls and all coal produced at the mine is conveyed to the Huntington Power Plant located adjacent to Huntington Creek near the bottom of Deer Creek Canyon.

Meetinghouse Canyon contains 4,090 acres and Deer Creek contains 2,998 acres of PacifiCorp's permit area. Mine ventilation breakouts have been established in Meetinghouse Canyon. No other mine related surface disturbance occurs in Meetinghouse Canyon.

#### Maple Gulch and Danish Bench (10 and 11)

Approximately 4,338 acres is associated with the drainage area of Maple Gulch and approximately 3,708 acres is associated with the drainage area of Danish Bench. Both areas are primarily Mancos Shale flats draining away from the southeastern end of East Mountain. The area lacks the steeply incised canyons found in some of the other drainages within the CIA. Danish Bench drains to Cottonwood Creek and has an average gradient of 12.5 percent. Maple Gulch drains to Huntington Creek and has an average gradient of 17 percent. Permit areas of the PacifiCorp mines encompasses 837 acres of Maple Gulch and 250 acres of Danish Bench. Neither area contains any surface disturbance associated with mining.

#### Grimes Wash (12)

Approximately 7,426 acres is associated with the Grimes Wash drainage. The Cottonwood/Wilberg Mine is situated within Grimes Wash and includes 31 acres of surface disturbance which is treated by sediment controls. The average gradient of Grimes Wash is 14 percent. PacifiCorp's Cottonwood/Wilberg Mine permit area encompasses 4,120 acres of the Grimes Wash drainage.

#### Cottonwood Creek (13)

This drainage encompasses 8,942 acres and includes all drainage to Cottonwood Creek along the western half of the CIA area. It has many small canyons and contains 12 acres of surface

disturbance associated with the Cottonwood Fan Portal area of the Cottonwood/Wilberg Mine. This area is treated by sediment controls and is partially reclaimed. The portion of PacifiCorp's permit area contained in this drainage is 5,120 acres. There is a portal in Miller Canyon which drains mine water from the Cottonwood/Wilberg mine to Cottonwood Creek.

Drilling conducted in August 1992 upward from the Cottonwood Mine into flooded panels of the Deer Creek Mine released significant quantities of water into the Cottonwood Mine. Portions of this water was discharged from the mine portals into Grimes Wash and portions were discharged from the breakout in Miller Canyon.

#### V. POTENTIAL IMPACTS

##### GROUND WATER

Dewatering and subsidence related to mining have the greatest potential for impacting ground-water resources in the CIA. The impact of changes in vegetation on ground-water recharge should be minimal since mining will create surface disturbance of less than 150 acres of the 44,000 acre CIA. Disturbance of phreatophytic vegetation (primarily cottonwood and some willow) is negligible.

The Cottonwood/Wilberg Mine Waste Rock Storage area is located below the coal resource on Quaternary sediment gravel that directly overlies the Masuk member of the Mancos Shale. Inasmuch as the Mancos Shale is considered a regional aquiclude, the storage facility presents a low risk for impacting ground-water resources.

##### Dewatering.

The Deer Creek Mine and Cottonwood Mine have discharged an average of 2,206 gpm (3,600 acre feet/year) since January 1990. This average is high due to large quantities of water encountered by the Deer Creek Mine in 1990. The volume of water has diminished significantly since its initial interception and in 1993 the average discharge rate was 1,342 gpm (2,200 acre feet/year). The Crandall Canyon Mine continues to intercept about 100 gpm (161 acre feet/year) with no discharge from the mine. The volume of water being discharged from mines within the CIA (3,700 acre feet/yr.) approximates the amount of water that is currently being withdrawn from the ground-water system. The volumes of water discharged from the Deer Creek and Cottonwood/Wilberg Mines are presented in the table below as an average discharge in gallons per minute (GPM)\*. The current withdrawal values may be totalled and compared to estimates of ground-water discharge and recharge within the CIA and thereby, allow an assessment of cumulative dewatering impacts.

MONTH	DEER CREEK & COTTONWOOD/WILBERG MINES Average Discharge Per Minute (GPM) <sup>18</sup>			
	1990	1991	1992	1993
January	1,683	2,985	1,901	1,939
February	2,433	2,634	1,796	1,775
March	2,287	2,088	1,710	1,347
April	3,190	2,817	1,872	827
May	3,339	2,653	1,890	770
June	2,958	2,629	853	788
July	3,189	2,467	2,325	985
August	3,248	2,267	3,433	1,156
September	3,367	2,464	3,268	1,254
October	3,085	2,204	2,211	1,455
November	2,873	2,128	2,210	1,340
December	3,087	2,176	2,073	1,133
AVERAGE	2,895	2,459	2,129	1,342

\* The Crandall Canyon Mine encounters about 100 gallons per minute. This water is utilized for in mine purposes and is not discharged from the mine.

Approximately 44,273 acres within the CIA overlie the Coal resource and represent a potential recharge area (Figure 6). Average annual precipitation is approximately 20 inches over the potential recharge area and hence, the total annual precipitation over the outcropping recharge is 73,803 acre-feet. Approximately 12 percent of the annual precipitation contributes to recharge.<sup>14</sup> Thus 12 percent of 73,803 produces about 8,900 acre feet of recharge water per year for the entire CIA area.

Table 1A gives estimates for the total annual discharge of springs from water-bearing rock units that overlie the coal resource.

Table 1a. Precipitation and Spring Discharge Estimates for Areas Above the Coal Resource. East Mountain CIA.

<u>Lithologic Unit</u>	<u>Outcrop Area (acres)</u>	<u>Precipitation on Outcrop (acre-feet)</u>	<u>Total Annual Discharge of Springs (Percent of annual precipitation on outcrop)</u>
Undivided Flagstaff Limestone, North Horn Formation, Price River Formation	27,007	45,021	3,100 (6.9%)
Castlegate Sandstone	5,020	8,368	100 (1.1%)
Blackhawk Formation, Star Point Sandstone	12,246	20,414	600 (3.1%)
TOTAL		73,803	3,800 (5.2%)

Discharge also occurs directly to perennial streams where channels intersect ground water within the Blackhawk Formation and Star Point Sandstone. The six perennial streams that occur within the CIA are: Crandall Creek, Mill Fork Creek, Rilda Creek, Grimes Wash Creek, Cottonwood Creek, and Huntington Creek. All of these streams intersect the lower Blackhawk Formation and Star Point Sandstone.

A study conducted along Miller Creek in the adjacent Gentry Mountain area indicated that streamflow substantially increased from 8 to 115 gpm) as a result of discharge from the Blackhawk Formation and Star Point Sandstone <sup>5</sup>. The results from the Miller Creek Study suggest perennial steams that traverse the regional aquifer sustain similar ground-water discharges (or base flow recharge). Accordingly, total base flow recharge to perennial streams is estimated to be 1,000 acre feet per year.

Table 1B lists estimated ground-water discharges to perennial steams and from mines.

Table 1B. Estimated Ground-water Discharge to Perennial Streams and from Mines. East Mountain CIA.

Discharge to Perennial Streams (6 total)	1,000 acre feet
Discharge from Mines (3 total)	5,000 acre feet
Total	6,000 acre feet

Table 1C approximates the amount of ground water discharged to the atmosphere by mine ventilation systems. Psychrometric formulas were utilized to derive ventilation discharge values and extrapolated to mine elevation. Average relative humidity data

from the Central Weather Station in the Manti-LaSal National Forest were also used in the psychrometric calculation.

Table 1C. Approximate Atmospheric Discharges from Active Mines, East Mountain, CIA.

<u>Mine</u>	<u>Approximate Discharge Rate (gpm)</u>
Cottonwood/Wilberg Mine	36
Deer Creek Mine	36
Crandall Canyon Mine	<u>10</u>
TOTAL	82

Total ground-water discharge within the CIA (summed from Tables 1A, 1B, and 1C) is currently about 9,900 acre-feet, where 48 percent (4,800 acre feet) of the total represents natural discharge to streams and springs and 52 percent (5,100 acre feet) results from mining activities.

Lines (1985) investigated the adjacent Trail Mountain area and indicated regional aquifer inflow to mines is derived from aquifer storage (80 percent) and aquifer discharge (20 percent). Extrapolating these percentages to the East Mountain CIA allows depletion of regional aquifer storage and discharge to be estimated at 4,100 acre feet per year and 1,000 acre feet per year respectively. Mining is progressing to the north away from the Straight Canyon Syncline and the Roans Canyon Fault. These two geologic structures were associated with the large quantities of water encountered. As mining progresses further north limited quantities of groundwater are not anticipated. This has already been observed in the Rilda Canyon area.

Recent mine plan proposals were changed in areas of Rilda Canyon where underground mining posed greater risk to damage the alluvial stream channels due to shallow overburden. Three longwall panels in the Left Fork of Rilda Canyon were removed until sufficient information is available to better determine potential impacts to the stream channel.

PacifiCorp is accessing coal reserves for the Deer Creek Mine through a rock tunnel across the Roans Canyon Fault Graben. A drilling and testing program identified two water-bearing zones within the graben. The permittee pressure grouted the water-bearing zones during development of the rock tunnel. It was not anticipated that the diversion of ground-water flow within the Roans Canyon Fault Graben would exceed a total of 100 gpm.

In the fall 1990, the Deer Creek Mine intercepted a fault associated with the Straight Canyon Syncline and the Roans Canyon Graben which initially produced about 2,000 GPM. This water flooded the mine and created a need for an emergency discharge of

mine water. This emergency discharge was granted to PacifiCorp by the Bureau of Water Pollution Control on November 16, 1990. The volume of water requiring discharge has continued to decrease during the last several years. The total mine water flow discharged from the Deer Creek Mine averaged 1,342 gallons per minute in 1993.

These flows have been reduced due to the reduction in mine water inflows following localized dewatering and because some mine water is being sumped into sealed abandoned mine workings or into the Cottonwood Mine.

Entry development north of the Roans Canyon Graben has encountered little additional inflows. Following the cessation of mining, the discharge of ground water to the Left Fork of Grimes Wash, Miller Canyon, Huntington Power Plant and the atmosphere will cease and the mine workings will begin to flood.

The impact associated with the reduction in surface flow is considered temporary. Mine flooding may conceivably recharge regional aquifer storage and re-establish the natural ground-water conduit system that was operational prior to mining. The maximum time span required for complete mine flooding may be derived by assuming the final workings (14,000 acres) will remain open (average 5 foot height) and caving will not occur. Accordingly, for workings that experience inflow (Cottonwood/Wilberg Mine, Deer creek Mine, Crandall Canyon Mine) an upper limit of 20 years may be derived for complete mine flooding. It should be noted that complete flooding will, undoubtedly, never be achieved because the hydraulic head generated as flooding proceeds will increase until the hydraulic properties of the roof, floor and rib are exceeded and flow into the rocks initiates. New seeps and springs may begin to appear as this mine water moves laterally towards the outcrops.

Subsidence. Subsidence impacts are largely related to extension and expansion of the existing fracture system and upward propagation of new fractures. Inasmuch as vertical and lateral migration of water appears to be partially controlled by fracture conduits, readjustment or realignment in the conduit system will inevitably produce changes in the configuration of ground-water flow. Potential changes include increased flow rates along fractures that have "opened", and diverting flow along new fractures or within permeable lithologies.

Subsurface flow diversion may cause the depletion of water in certain localized aquifers and potential loss of flow to springs that will be undermined. Springs situated below the mine elevation may also be reduced as water which normally flows downward past the coal seam to these springs is intercepted and diverted from the mine. Increased flow rates along subsidence fractures may reduce ground-water residence time and potentially

improve water quality. Water accumulating inside abandoned mine workings may pick up and dissolve rock dust and other constituents thereby decreasing water quality.

Mining will occur beneath approximately 13 springs that have a combined flow in excess of 625 gpm. Overburden thickness averages more than 1,000 feet beneath areas where springs are located. Diversion of spring flow is considered to be at overall low risk.

Investigations in 1993, by the U.S. Bureau of Mines indicates that springs situated above mine workings on East Mountain do not display impacts to the degree once anticipated. (personal communication, Liane Kadnuck, U.S Bureau of Mines) These springs are located in areas where maximum subsidence of 26 feet has been documented. Springs located at or below the mine workings elevations may be at higher risk of impact due to interception, dewatering and diversion of groundwater away from the spring's point of surfacing.

In August 1991, the Division received a citizen complaint regarding the loss of flow in the Cottonwood Spring located in Cottonwood Canyon upstream from the Trail Mountain Mine. This complaint implicated the Deer Creek Mine for the loss of flow. In response to this complaint, the Division began analyzing what data was available for this spring. Examination of water quality data which was gathered by the Trail Mountain Mine. Stiff diagram and trilinear plots were generated from these data. According to these plots, the water quality of the Cottonwood Spring was very stable over several seasons. The Stiff Diagrams did not vary between sampling times. This indicates that water from the spring was probably originating within a geologic strata and not from sub-surface flow in the canyon alluvium. The water associated with a stream and alluvial floor varies seasonally due to fluxes of higher quality water during spring snowmelt and more concentrated dissolved ions during low flow periods.

PacifiCorp, in response to Division requests, drilled monitoring wells at four sites in Cottonwood Canyon. At each site two wells were drilled. One was completed into the alluvial deposits near the surface. The second well penetrated the upper tongue of the Star-Point Formation.

Resistivity surveys were also conducted up Cottonwood Canyon along the axis of the streams and at various cross sections to the streams. The resistivity surveys have been used to help identify geologic anomalies and zones of potential water producing strata. According to the PacifiCorp report, the water in the Cottonwood Spring originated from water coursing through the alluvium which was then forced to the surface by the Roans Canyon Fault across Cottonwood Creek. The water levels in the Cottonwood wells has remained fairly stable.

Additional water may have contributed to this spring from geologic sources to the north. According to the analysis of the well monitoring and the resistivity the alluvial water in the canyon bottom was about 12 feet below the point where the spring originated. This is in response to the continuing drought which has been occurring for the last 7 years. PacifiCorp contends that should adequate precipitation occur to refill the alluvial system, then spring flow would commence. This phenomena has yet to occur.

#### SURFACE WATER

The cumulative impacts associated within the CIA will be summarized by individually discussing impacts associated with the Crandall Canyon Mine, Huntington #4 Mine, Deer Creek Mine, Cottonwood/Wilberg Mine and the Des-Bee-Dove Mine. Creeks and drainage areas which are referenced by (#) or discussed, are shown on Figure 5, Surface Water Drainage Map. Water monitoring locations within the CIA are shown on Figure 7, Water Monitoring Locations.

Cottonwood/Wilberg Mine. The Cottonwood/Wilberg Mine is located in Grimes Wash. Grimes Wash drainage water quality is greatly affected by the influx of the Right Fork. The Right Fork originates in the North Horn Formation (interbedded shale, siltstones, and sandstones), which is abundant with calcareous material. As a result, the Right Fork contributes a relatively high amount of suspended and dissolved solids to the Grimes Wash drainage. The greatest factor influencing the dissolved solids level in the Right Fork drainage during 1988 was the sudden increase in temperature.

As reported in 1985, the TDS level increased slightly at the location below the mine. Two possible factors stated for the rise were Cottonwood/Wilberg Mine Discharge and Mancos Shale seeps. Due to the fact that no water was discharged from the mine during 1985 through 1988 (one exception in August 1986), seeps emanating from the Mancos Shale probably have the greatest influence upon the TDS level. Periodic sampling during 1986 and early 1987 confirmed the seeps' contribution to the TDS level. The average TDS level for the four samples collected was 1,188 mg/l, representing a nearly 3.3 fold increase over the historical averages for the Right and Left Forks. <sup>17</sup> (Annual Hydrologic Monitoring Report for 1988, pg. 24).

All surface facilities are treated by sediment controls and as such, there is little potential impact from sediments generated within disturbed areas.

Waste rock generated from the Des-Bee-Dove and Cottonwood/Wilberg Coal Mines is disposed of in a series interconnected storage cells (Figure 4). The waste rock storage site is located at the 6,800 foot elevation. Annual

precipitation is approximately 14 inches, and the vegetation surrounding the waste rock storage area is the pinyon-juniper community type.

Each completed waste rock containment structure consists of over four feet of shot and crushed coal, sandstone, and mudstone rock. The expected waste rock encountered will be approximately 35 percent sandstone, 30 percent interbedded mudstone and siltstone, and 45 percent boney coal. Sediment pond clean out waste is also disposed of at this site.

Roof and floor materials are sandy loam to loamy sand in nature. Analyses of roof and floor material indicate high Sodium Adsorption Ratios (SAR) (Mean=17.36, Standard Deviation=25.14), and movement of sodic materials is typically associated with hygroscopic rise and leaching processes. High SAR in the waste rock storage area should not be a concern to water quality because drainage from the storage site flows into a sediment pond and discharges should be minimal.

Analyses from Drill Hole EM-23C, indicates low pH (3.3, 2.9, 3.7) within the mudstones and siltstones directly below the Hiawatha Coal Seam. Additionally, roof and floor analyses indicate high pyritic/marcasite levels (%Fe<sub>2</sub>, Mean=8.15, Standard Deviation=10.82). The colluvium and Mancos Shale which underlies the waste rock storage area is calcareous and should be sufficient to neutralize drainage or seepage from areas within the waste rock storage site, which could potentially become acidic.

Although most water associated with the Cottonwood/Wilberg Waste Rock Storage Area will evaporate, some water will inevitably percolate through the storage cells and underlying colluvium deposits. Eventually seepage would contact the Mancos Shale and further degradation (increased TDS and EC) of water quality would take place. Accordingly, drainage from the waste rock storage site would have little down gradient effect.

Deer Creek Mine. Referencing Table 1D, it is apparent that the quality of Deer Creek runoff degrades from the upper to lower sampling points. The upper stream site is dominated by a calcium, bicarbonate system. The quality of the lower point is affected by the Mancos Shale and is dominated by chloride, sulfate and sodium. Data from 1993 compared very well with the historical water quality information.<sup>19</sup>

Table 1D. Deer Creek Water Quality.

		<u>Calcium</u>	<u>Chloride</u>	<u>Conductivity</u>	<u>Magnesium</u>	<u>Sodium</u>	<u>Sulfate</u>	<u>TDS</u>	<u>TSS</u>
Above	Max	82.0	176.0	1580	183.9	111.6	255.0	897	3592.0
Mine	Mean	49.5	19.2	581	37.5	27.5	63.8	335.0	124.9
1993		51.2	56.2	790	41.3	43.9	137.4	496.3	14.1
Below	Max	112	420.0	2300	122.8	233.8	500.0	1544	20540.0
Mine	Mean	73	120.4	1153	67.0	114.9	215.8	684	490.9
1993		52.7	58.5	785	40.6	43.6	136.6	491	12.6

Deer Creek sediment pond discharge has been historically within UPDES limits, but discharges of high Total Dissolved Solids may degrade downstream water quality.

All surface drainage facilities are designed to safely control water and sediment runoff from all disturbed areas. In addition, all surface water originating from undisturbed lands upstream of the facilities area will be controlled and diverted through the mining operation in large Corrugated Metal Pipe. Storm runoff from within the mine facilities area is collected in a system of open ditches, bermed roadways and culverts, and diverted into the sediment pond prior to its discharge into Deer Creek below the facilities area.

The sediment pond is designed to detain the 10-year, 24-hour storm event. It should be noted that when the design event is exceeded (i.e. storms larger than the 10-year, 24-hour storm), sediment detention times will be reduced, leading to a slightly higher sediment load in Deer Creek. The UPDES permit for the sediment pond incorporates this into the monitoring requirements during storm events.

Runoff from 25 acres of disturbed land will be temporarily detained in the Deer Creek Mine sediment pond and will be released to Deer Creek within UPDES limitations. The surface-water impact associated with the Deer Creek Mine operations will be minimal.

Reclamation of the drainage at the Deer Creek Mine will consist of removing the temporary drainage system, diversion and sedimentation pond. The plan as currently approved allows for the construction of permanent channels over the refuse material and into a splash basin. The Utah program regulations currently require all diversions to be routed away from fill. A Division order is being prepared to address this permit deficiency. This reclamation plan will have negligible impact on water quantity or quality of Deer Creek and its tributaries.

Des-Bee-Dove Mine. The Des-Bee-Dove Mine complex ceased operations in February 1987 for economic reasons and is in an indefinite "temporary cessation". This mine is a dry mine and all surface drainage is treated by a sediment pond and released

to an ephemeral wash. Since all surface water is treated by a maintained sediment pond, the effects of the Des-Bee-Dove Mine operations on the hydrologic balance are negligible.

Huntington #4 Mine. The major aquatic habitats within the permit area are Mill Fork and Little Bear Creek. All reclaimed mine lands are within Mill Fork Canyon. Based on benthic macroinvertebrate and aquatic habitat surveys conducted by the operator and on data provided by the Utah Division of Wildlife Resources, neither creek supports game or non-game fish and both lack sufficient flow in most years to provide spawning sites. However, these streams probably contribute some invertebrate food items and a small amount of surface flow to Huntington Creek, an important fishery in the region.

The mine is currently reclaimed and all surface structures have been removed and all disturbed areas reseeded. Sediment controls are in place (i.e. sediment ponds) and there is no anticipated impact to Mill Creek from the Huntington #4 Mine due to the lack of potential sources of impact. Mountain Coal Company recently requested a Phase II bond release. This request is pending Division review and approval.

Crandall Canyon Mine. Crandall Canyon Mine is located in Crandall Canyon. The U.S. Geological Survey established a gauging station at the mouth of Crandall Canyon Creek in 1978. Flow data collected at the gauging station are not complete for the winter in most years, due presumably to data acquisition problems. However, the limited data indicate that most of the flow of Crandall Canyon Creek occurs in the period of May through July. Assuming an average of 30 acre-feet per month for the period when records were missing, the average annual flow for the six-year period of data was 2,740 acre-feet or 457 acre-feet per year.

Surface water quality data collected from Crandall Canyon Creek by Genwal Coal Company for the Tract 1 Lease from 1985 indicate that the dominant ions in Crandall Canyon Creek are calcium and bicarbonate. Total dissolved solids concentrations in the stream have varied from 180 to 286 milligrams per liter, with lower concentrations normally occurring during the high flow season. Total suspended solids concentrations in Crandall Canyon Creek have varied during the period of record from 0.5 to 208.0 milligrams per liter. As expected, the highest suspended solids concentrations generally occur during periods of highest flow.

The main concern in terms of impact to surface water is water quality deterioration downstream from the minesite, primarily in the form of suspended sediments. Typically the suspended sediment concentration in Crandall Canyon Creek since 1983 varied from approximately 205 mg/l to 0.5 mg/l. Low

suspended sediment values are associated with natural climactic and geologic process although a proportion may be attributed to surface disturbances from roads and the mine pad area. Sediment controls do exist for the disturbed surface areas. Therefore, the impact associated with mining in Crandall Canyon is minimized by surface controls (i.e., sediment pond, diversions, etc.).

#### VI. SUMMARY

Mine operations within the CIA currently intercept regional aquifer flow at an approximate rate of 5,100 acre feet per year. Of this total, approximately 300 acre feet are consumptively lost to mine ventilation and uses underground. Cooling and evaporation at the Huntington Power Plant consume another 2,400 acre feet/year (1,500 gpm). The remaining 2,300 acre feet (1,400 gpm) are discharged, with minimal interbasin transfer of water to streams. Mine water discharges generally meet required UPDES effluent limitations. The regulations require a mine operator to notify in writing whenever these limits are exceeded.

Mining operations have attempted to design the underground mine layout to avoid interception of fault conduit flow and interruption of stream channels. The operational portions of the mine are moving north away from the Straight Canyon Syncline and the Roans canyon Fault. Accordingly, inflow from the regional aquifer should remain stable. Barring interception of fracture related flow mine water inflow is expected to remain stable as old areas are abandoned and sealed. Approximately 80 percent of the flow will be derived from storage and 20 percent from discharge. Consumptive use is not anticipated to increase. Mine water discharge and ventilation losses will be discontinued upon cessation of mining. Concomitantly, flooding of abandoned workings will initiate. An upper limit of 20 years has been estimated for complete flooding of mine workings and re-establishment of the premining ground-water system. Some areas within the Deer Creek Mine have already been sealed following mining and are beginning to flood.

Diversion of spring flow from areas above the mine is considered to be at overall low risk. Interception of groundwater which feeds springs below the mine elevation are at greater risk for reduced flow.

Sediment control measures have been and will be designed, constructed and maintained to treat runoff from the minesite prior to discharge. These treatments will reduce contamination of surface waters.

Following cessation of mining, waste rock storage areas will be adequately covered with topsoil and all disturbed areas will be stabilized and revegetated to prevent surface water contamination.

The designs proposed for all anticipated mining operations within the CIA are determined to be consistent with preventing damage to the extent possible to the hydrologic balance outside the proposed mine plan areas.

## REFERENCES

1. Beaver Creek Coal Company, Huntington #4 Mine, Annual Report, 1987.
2. Beaver Creek Coal Company, Huntington #4 Mine, Permit Application Package, 1985.
3. Beaver Creek Coal Company, Huntington #4 Mine, Water Monitoring Data, 1980 through 1986.
4. Cronquist, A., Holmgren, A.H. Holmgren, N.H., and Reveal, J.L., 1972. Intermountain Flora, Volume I. Hafner Publishing Company.
5. Cyprus-Plateau Mining Company, Star Point Mine PAP, pages 700-25
6. Danielson, T.W., Re Millard, M.D., and Fuller, R.H. 1981. Hydrology of the Coal-Resources Areas in the Upper Drainages of Huntington and Cottonwood Creeks, Central Utah: U.S. Geological Survey, Water-Resources Investigations Report 81-539.
7. Fenneman, N.M., 1946. Physical Divisions of the United States: U.S. Geological Survey Map, Scale 1:7,000,000
8. Genwal Coal Company, Crandall Canyon Mine, Permit Application Package, 1989.
9. Laronne, J.B., and Schumm, S.A. 1977. Evaluation of the Storage of Diffuse Sources of Salinity in the Upper Colorado River Basin: Completion Report No. 79. Colorado State University. Fort Collins, 111 pp.
10. Lines, G., 1984. The Ground-Water System and Possible Effects of Underground Coal Mining in the Trail Mountain Area. Central Utah: U.S. Geological Survey, Open-File Report 84-067.
11. Lines, G., 1984. Hydrology of Area 56, Northern Great Plains and Rocky Mountain Coal Provinces, Utah. U.S. Geological Survey, Open-File Report 83-38.
12. Mundorff, J.D., 1972. Reconnaissance of Chemical Quality of Surface Water and Fluvial Sediment in the Price River Basin, Utah: State of Utah, Dept. of Natural Resources, Technical Publication No. 39, 55 pp.

13. Ponce, S.L., and Hawkins, R.H. 1978. Salt Pickup by Overland Flow in the Price River Basin: Utah Water Resources Bulletin, Vol. 14, No. 5.
14. Waddell K. M. et al; Hydrology of the Price River Basin, Utah with Emphasis on Selected Coal-Field Areas. U.S. Geological Survey Water Supply Paper 2246, 1986.
15. PacifiCorp, Cottonwood/Wilberg Mine, Permit Application Package 1986.
16. PacifiCorp, Deer Creek Mine, Permit Application Package 1986.
17. PacifiCorp, Des-Bee-Dove Mine, Permit Application Package, 1985.
18. PacifiCorp, Hydrologic Monitoring Annual Reports for 1979 through 1988.
19. PacifiCorp, 1993 Annual Report.

LETTERS OF CONCURRENCE



State of Utah  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

Michael O. Leavitt  
Governor  
Ted Stewart  
Executive Director  
James W. Carter  
Division Director

355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203  
801-538-5340  
801-359-3940 (Fax)  
801-538-5319 (TDD)

October 26, 1994

TO: File

FROM: Pamela Grubaugh-Littig, Permit Coordinator *pgl*

RE: Compliance Review for Section 510 (c) Findings, Deer Creek Mine, PacifiCorp, ACT/015/018, Folders #3 and #5, Emery County, Utah

As of the writing of this memo there is a conditional issue for the Deer Creek Mine permit. The Deer Creek Mine permit has been conditioned to reflect two outstanding enforcement actions that are under appeal by PacifiCorp:

- 1) PacifiCorp must notify the Division with 14 days of the decision on the appeal of outstanding federal violation 93-020-190-05, 1 of 1, and
- 2) PacifiCorp must notify the Division within 14 days of the decision on the appeal of outstanding cessation order 94-020-370-002, 1 of 1.

PacifiCorp does not have a demonstrated pattern of wilful violations, nor have they been subject to any bond forfeitures for any operations in the state of Utah.





# United States Department of the Interior



OFFICE OF SURFACE MINING  
Reclamation and Enforcement  
Applicant/Violator System Office  
1300 New Circle Road, NE  
Lexington, KY 40505-4215

## Memorandum

To: Pam Littig  
Utah Regulatory Authority

From: Colene Carlson *CAA*  
Lexington AVS Office

Date: October 26, 1994

Subject: Pacificorp Electric Operations

The recommendation for Pacificorp Electric Operations (118429) application ACT015018 is CONDITIONAL ISSUE. The recommendation is based on the outcome of the hearings on Federal CO 94-020-190-1.

A Recom Maint Applicant Violator System 26-Oct-1994 11:52:16

State : UT Permit No : ACT015018	Appl No : ACT015018
Permittee : 118429( PACIFICORP ELECTRIC OPERATIONS )	Seqno : 1
Applicant : 118429( PACIFICORP ELECTRIC OPERATIONS )	

SYSTEM : C (COND ISSUE)	Date : 10/26/94	Mode : VIEW
Reason : 0 AML, 0 AUD, 1 CMIS, 0 FORF, 0 STATE VIOLATION(S)		

OSMRE : C (COND ISSUE)	Date : 10/26/94	Mode : UPDATE
Reason : ON THE OUTCOME OF THE HEARING ON FEDERAL CO94-020-190-1		

FO :	Date :	Mode : VIEW
Reason :		

SRA :	Date :	Mode : VIEW
Reason :		

SAVE(F5)      DELETE(F8)  
 PRV SCR(F3)    QUIT(F4)    CHOICES(F10)

vsdg

11:47

# Appendix A

**AFFIDAVIT OF PUBLICATION**

STATE OF UTAH)

ss.

County of Emery,)

I, Kevin Ashby, on oath, say that I am the Publisher of the Emery County Progress, a weekly newspaper of general circulation, published at Castle Dale, State and County aforesaid, and that a certain notice, a true copy of which is hereto attached, was published in the full issue of such newspaper for 4 (Four) consecutive issues, and that the first publication was on the 19th day of April, 1994 and that the last publication of such notice was in the issue of such newspaper dated the 10th day of May, 1994.



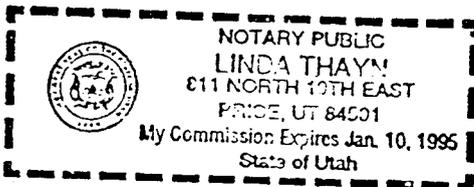
Kevin Ashby - Publisher

Subscribed and sworn to before me this 10th day of May, 1994.



Notary Public My commission expires January 10, 1995 Residing at Price, Utah

Publication fee, \$330.00



**NOTICE**

PacifiCorp, an Oregon Corporation, One Utah Center, 201 South Main, Salt Lake City, Utah 84140, hereby announces its intent to file an application for an amendment of a Coal Mining Permit for the Deer Creek Coal Mine with the Division of Oil, Gas and Mining under the laws of the State of Utah and the Office of Surface Mining. The amendment involves the addition of approximately 2,370 acres of leased property to the Deer Creek Mine permit area.

A copy of the complete application is available for public inspection at the Emery County Recorder's Office, Emery County Courthouse, Castle Dale, Utah 84513.

Written comments on the application should be submitted to the State of Utah, Division of Oil, Gas and Mining, 355 West North Temple, 3 Triad Center, Suite 350, Salt Lake City, Utah 84180-1203. Said comments must be submitted within thirty (30) days from the date of last publication of this notice.

The area to be mined is contained on the USGS 7.5-minute "Rilda Canyon" quadrangle map. A map depicting the general area of the Deer Creek Mine is published herewith.

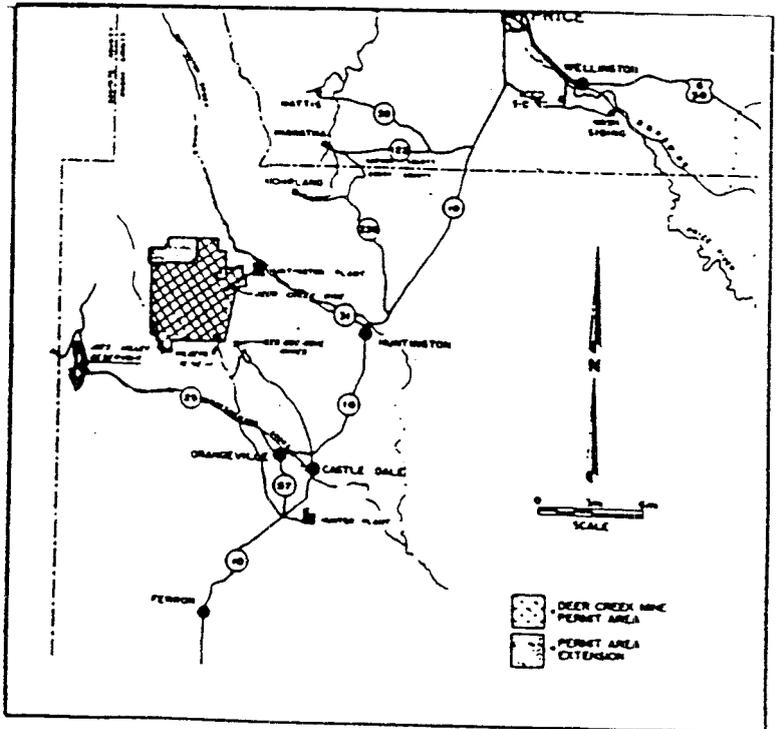
The Mine Permit Extension Area includes one (1) State of Utah Coal Lease (ML-22509), three (3) complete Federal Coal Leases (U-7653, U-47977 and SL-050862) and the southern portion of Federal Coal Lease U-06039.

The extension area is more particularly described as follows:

<u>Township 16 South, Range 7 East, SLM, Utah</u>		
Section 28	W1/2SW1/4	80 Acres
Section 29	S1/2	320 Acres
Section 30	SE1/4	160 Acres
Section 31	All	411.6 Acres
Section 32	All	640 Acres
Section 33	W1/2NW1/4, NW1/4SW1/4	120 Acres

<u>Township 16 South, Range 6 East, SLM, Utah</u>		
Section 36	All	640 Acres

All together containing 2,371.6 Acres, more or less. Published in the Emery County Progress April 19, 26, May 3 and 10, 1994.



REPLACES AMERICAN CASUALTY COMPANY  
BOND NO. 9272158

Bond Number: Bond file  
400 JN 6140  
Permit Number: ACT/015/018  
Deer Creek Mine

## EXHIBIT "B"

### SURETY BOND (FEDERAL COAL)

THIS SURETY BOND entered into and by and between the undersigned PERMITTEE, and SURETY company, hereby jointly and severally bind ourselves, our heirs, administrators, executors, successors and assigns unto the State of Utah, Division of Oil, Gas and Mining (DIVISION), and the U.S. Department of Interior, Office of Surface Mining Reclamation and Enforcement (OSM) in the penal sum of TWO MILLION & NO/100 ~~\$2,000,000.00~~ (Surety Bond Amount) for the timely performance of reclamation responsibilities of the permit area described in Exhibit "A" of this Reclamation Agreement.

This SURETY BOND will remain in effect until all of the PERMITTEE's reclamation obligation have been met and released by the DIVISION and is conditioned upon faithful performance of all of the requirements of the Act, the applicable rules and regulations, SMCRA, the approved permit and the DIVISION.

The SURETY will not cancel this bond at any time for any reason, including non-payment of premium or bankruptcy of the Principal during the period of liability.

The SURETY and their successors and assigns, agree to guarantee the obligation and to indemnify, defend, and hold harmless the DIVISION and OSM from any and all expenses which the DIVISION and OSM may sustain as a result of the PERMITTEE's failure to comply with the condition(s) of the reclamation obligation.

The SURETY will give prompt notice to the PERMITTEE and to the DIVISION and OSM of any notice or action involving insolvency or bankruptcy of the SURETY, or alleging any violations of regulatory requirements which could result in suspension or revocation of the SURETY's license in this state. In the event the Cooperative Agreement between the DIVISION and OSM is terminated, then the portion of the bond covering the Federal Lands will be payable only to the United States, Department of Interior, Office of Surface Mining.

Terms for release or adjustment of this BOND are as written and agreed to by the DIVISION and the PERMITTEE in the RECLAMATION AGREEMENT incorporated by reference herein, to which this SURETY AGREEMENT has been attached as Exhibit "B".

IN WITNESS WHEREOF, the PERMITTEE has hereunto set its signature and seal  
this 31<sup>st</sup> day of July, 1994.

PACIFICORP

PERMITEE

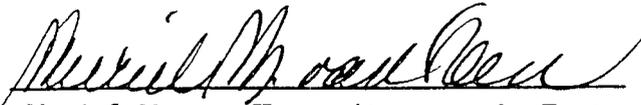
By: 

Title: President, Interwest Mining Company  
A wholly-owned subsidiary of PacifiCorp  
and Managing Agent

IN WITNESS WHEREOF, the SURETY has hereto set its signature and seal  
this 1st day of July, 1994.

ST. PAUL FIRE AND MARINE INSURANCE COMPANY

SURETY

By: 

Title: Muriel M. van Veen, Attorney-in-Fact

ACCEPTED BY THE STATE OF UTAH  
this 16<sup>th</sup> day of September, 1994.

  
James W. Carter, Director

Division of Oil, Gas and Mining

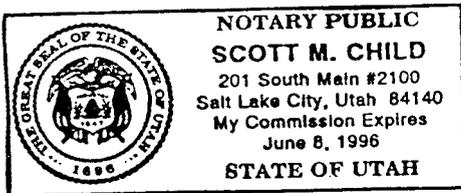
**NOTE:**

An Affidavit of Qualification must be completed and attached to this form for each authorized agent or officer. Where one signs by virtue of Power of Attorney for a company, such Power of Attorney must be filed with this Agreement. If the PERMITTEE is a corporation, the Agreement shall be executed by its duly authorized officer.

ACKNOWLEDGEMENT OF CORPORATION - PERMITTEE

On this 31<sup>ST</sup> day of JULY, 1994, before me, a Notary Public in and for the County of SALT LAKE, in the state of UTAH, appeared J. BRETT HARVEY to me personally known who, being by me duly sworn, did say that he/she is J. Brett Harvey, President of Interwest Mining Company, a wholly-owned subsidiary of PacifiCorp and managing agent, the corporation (PERMITTEE) named in and which executed the within instrument, and that the seal affixed to said instrument is the corporation seal of said corporation, and that said instrument was signed, sealed and delivered in behalf of said corporation by authority of its Board of Directors, and he/she as such officer, acknowledged said instrument to be the free act and deed of said corporation for the uses and purposes of said instrument as therein set forth.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal on the day, month, and year aforesaid.



Scott M. Child  
Notary Public in and for said  
County and State

My Commission Expires:

6-8-96

AFFIDAVIT OF QUALIFICATION  
FOR SURETY COMPANIES

STATE OF OREGON }  
COUNTY OF MULTNOMAH } SS

Muriel M. van Veen  
..... BEING FIRST DULY SWORN, ON OATH DE-  
POSES AND SAYS THAT HE IS THE ATTORNEY-IN-FACT OF SAID COMPANY,  
AND THAT HE IS DULY AUTHORIZED TO EXECUTE AND DELIVER THE  
FOREGOING OBLIGATIONS: THAT SAID COMPANY IS AUTHORIZED TO EXE-  
CUTE THE SAME AND HAS COMPLIED IN ALL RESPECTS WITH THE LAWS OF  
UTAH IN REFERENCE TO BECOMING SOLE SURETY UPON BONDS UNDER-  
TAKINGS AND OBLIGATIONS.

SUBSCRIBED AND SWORN TO BE-  
FORE ME, THIS 1st DAY OF  
July, A.D., 1994

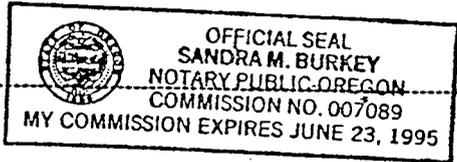
*Muriel M. van Veen*  
.....  
(SIGNATURE OF OFFICER OR AGENT)

*Sandra M. Burkey*  
.....  
(SIGNATURE OF NOTARY PUBLIC)

Troutdale, Oregon  
.....  
(RESIDENCE)

(SEAL)  
MY COMMISSION EXPIRES:

(SURETY SEAL)



(THIS FORM REQUIRED TO BE FILLED  
OUT BY SECTION 31-24-3, UCA 1953)

CERTIFIED COPY NO.

For verification of the authenticity of this Power of Attorney, you may telephone toll free 1-800-421-3880 and ask for the Power of Attorney Clerk. Please refer to the Certificate of Authority No. and the named individual(s)

1749236

E-112039

**GENERAL POWER OF ATTORNEY - CERTIFIED COPY**  
(Original on File at Home Office of Company. See Certification.)

OW ALL MEN BY THESE PRESENTS: That St. Paul Fire and Marine Insurance Company, a corporation organized and existing under the laws of the State of Minnesota, having its principal office in the City of St. Paul, Minnesota, does hereby constitute and appoint:

Daniel J. Sloan, Thomas M. Pearson, Muriel M. Van Veen, Richard A. Stevens, individually, Portland, Oregon

its true and lawful attorney(s) in fact to execute, seal and deliver for and on its behalf as surety, any and all bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, which are or may be allowed, required or permitted by law, statute, rule, regulation, contract or otherwise.

NOT TO EXCEED IN PENALTY THE SUM OF FIFTY MILLION DOLLARS (\$50,000,000) EACH

and the execution of all such instrument(s) in pursuance of these presents, shall be as binding upon said St. Paul Fire and Marine Insurance Company, as fully and amply, to all intents and purposes, as if the same had been duly executed and acknowledged by its regularly elected officers at its principal office.

This Power of Attorney is executed, and may be certified to and may be revoked, pursuant to and by authority of Article V, Section 6(C), of the By-Laws adopted by the Shareholders of ST. PAUL FIRE AND MARINE INSURANCE COMPANY at a meeting called and held on the 28th day of April, 1978, of which the following is a true transcript of said Section 6 (C):

The President or any Vice President, Assistant Vice President, Secretary or Service Center General Manager shall have power and authority

- (1) To appoint Attorneys-in-fact and to authorize them to execute on behalf of the Company, and attach the Seal of the Company thereto, bonds and undertakings, recognizances, contracts of indemnity and other writings obligatory in the nature thereof, and
- (2) To appoint special Attorneys-in-fact, who are hereby authorized to certify to copies of any power-of-attorney issued in pursuance of this section and/or any of the By-Laws of the Company, and
- (3) To remove, at any time, any such Attorney-in-fact or Special Attorney-in-fact and revoke the authority given him.

Further, this Power of Attorney is signed and sealed by facsimile pursuant to resolution of the Board of Directors of said Company adopted at a meeting duly called and held on the 5th day of May, 1959, of which the following is a true transcript:

Now therefore the signatures of such officers and the seal of the Company may be affixed to any such power of attorney or any certificate relating thereto by facsimile, and any such power of attorney or certificate bearing such facsimile signatures or facsimile seal shall be valid and binding upon the Company and any such power so executed and certified by facsimile signatures and facsimile seal shall be valid and binding upon the Company in the future with respect to any bond or undertaking to which it is attached.

IN TESTIMONY WHEREOF, St. Paul Fire and Marine Insurance Company has caused this instrument to be signed and its corporate seal to be affixed by its authorized officer this 30th day of November, A.D. 1990.

ST. PAUL FIRE AND MARINE INSURANCE COMPANY

MICHAEL B. KEEGAN, Secretary



STATE OF NEW JERSEY ) ss  
County of Somerset )

*Michael B. Keegan*

On this 23rd day of February, 1994, before me came the individual who executed the preceding instrument, to me personally known, and, being by me duly sworn, said that he/she is the therein described and authorized officer of St. Paul Fire and Marine Insurance Company; that the seal affixed to said instrument is the Corporate Seal of said Company; that the said Corporate Seal and his/her signature were duly affixed by order of the Board of Directors of said Company.

IN TESTIMONY WHEREOF, I have hereunto set my hand and affixed my Official Seal, at the township of Bedminster, New Jersey, the day and year first above written.



LINDA SMETHERS, Notary Public, Middlesex, NJ  
My Commission Expires December 16, 1996

*Linda Smethers*

**CERTIFICATION**

I, the undersigned officer of St. Paul Fire and Marine Insurance Company, do hereby certify that I have compared the foregoing copy of the Power of Attorney and affidavit and the copy of the Section of the By-Laws of said Company as set forth in said Power of Attorney, with the ORIGINALS ON FILE IN THE HOME OFFICE OF SAID COMPANY, and that the same are correct transcripts thereof, and of the whole of the said originals, and that the said Power of Attorney has not been revoked and is now in full force and effect.



IN TESTIMONY WHEREOF, I have hereunto set my hand this

1st day of July, 1994

ROY F. SEYMOUR, Asst. Secretary

*Roy F. Seymour*

Only a certified copy of Power of Attorney bearing the Certificate of Authority No. printed in red on the upper right corner is binding. Photocopies, carbon copies or other reproductions of this document are invalid and not binding upon the Company.

ANY INSTRUMENT ISSUED IN EXCESS OF THE PENALTY AMOUNT STATED ABOVE IS TOTALLY VOID AND WITHOUT ANY VALIDITY.

**EXHIBIT "A"**  
**PERMIT AREA**  
**LEGAL DESCRIPTION**

## EXHIBIT "A"

### PERMIT AREA

In accordance with the RECLAMATION AGREEMENT, the PERMITTEE intends to conduct coal mining and reclamation activities on or within the PERMIT AREA as described hereunder:

Total acres within the approved PERMIT AREA: 14,911.77

Total acres of DISTURBED AREAS within the Permit Area: 93.29

Map(s) showing the approved PERMIT AREA are attached and provided as:

General Location Map (Drawing No. CM-10860-DR)  
Map 1-3: Mine Permit Area (Drawing No. CM-10367-DR)

Map(s) showing the DISTURBED AREAS within the approved Permit Area are attached and provided as:

Map 1-4: Disturbed Area Boundary (Drawing No. CM-10882-DR)  
Map 1A: Surface Yard Map (Drawing No. DS202E)  
Map 2: Waste Rock Storage Site (Drawing No: none)

Legal Description of BONDED AREA:

<u>Area</u>	<u>Location</u>	<u>Surface Owner</u>	<u>Acreage</u>
1. Mine Complex (Including overland conveyor, sediment pond, sewer absorption field, yard extension, truck loadout facilities in Elk Canyon, etc.)	Located in Deer Creek Canyon and situated within the NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 1, SE $\frac{1}{4}$ SE $\frac{1}{4}$ SW $\frac{1}{4}$ Section 2, E $\frac{1}{2}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ NW $\frac{1}{4}$ SW $\frac{1}{4}$ Section 11 and SE $\frac{1}{4}$ SE $\frac{1}{4}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ Section 10, T.17S., R.7E., SLM	Private, BLM, USFS, St. of Utah	44.6
2. Waste Rock Storage Site	Located approximately 1 mile East of the Huntington Power Plant off of state road 31 and situated within the E $\frac{1}{2}$ NE $\frac{1}{4}$ Section 6, NW $\frac{1}{4}$ NW $\frac{1}{4}$ Section 5, T.17S., R.8E., SLM	Private	48.69

**NOTE:** In the event that more than one bond is provided for the Permit Area, the Permittee must provide a map and legal description for each sub area of the Permit Area for which each bond is provided.