STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

NEWS RELEASE
January 8, 1988

LOCAL COAL COMPANY NOMINATED FOR AWARD

The Utah State Division of Oil, Gas and Mining selected Beaver Creek Coal Company as its nominee for the Federal Excellence in Surface Mining Award. Beaver Creek's Gordon Creek No. 3 and 6 mine site was chosen as Utah's outstanding reclamation project. Division of Oil, Gas and Mining, Associate Director, Ken May, congratulates Beaver Creek for their efforts in reclaiming this site and participating in this year's awards program.

The awards program is part of the "Take Pride in America" campaign initiated by the U.S. Department of the Interior and the Office of Surface Mining. The program is designed to recognize exemplary performance by coal operators. It also helps transfer successful reclamation technology for wider use.

Beaver Creek will compete with nominees from other coal-producing states for the national award. Secretary of the Interior, Donald Hodel, will announce the national winner on April 27, 1988, at the American Mining Congress Spring Convention in Chicago, Illinois.

# # # # # #

Permit Binder

For further information contact:
Dotti Brockbank
Public Affairs
538-5508

an equal opportunity employer

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

January 6, 1988

Mr. Dan Guy, Manager
Permitting & Compliance
Beaver Creek Coal Company
P. O. Box 1378
Price, Utah 84501

Dear Mr. Guy:

Re: Excellence in Surface Mining Award Program

The Surface Mining Control and Reclamation Act (SMCRA), passed in 1977, created the Office of Surface Mining Reclamation and Enforcement and provided the basis for Utah's coal regulatory program under the "primacy" provisions. Utah must maintain regulations and conduct its program in a manner that is as effective as the federal program, but Utah has the authority to resolve specific technical surface mining problems, in a creative manner, by a cooperative effort with industry to develop innovative mining technologies. We hope to fulfill these opportunities and support the Excellence in Surface Mining Award program (ESMA).

At the November meeting of the Utah Coal Committee of the Utah Mining Association in Price, Utah, John Garr invited Utah coal operators to again, this year, submit completed reclamation projects to the Division for consideration in the Excellence in Surface Mining Award Program. The program is designed to recognize exemplary performance by coal mining operators under Title V of SMCRA. It is also an important mechanism to provide public recognition for the outstanding contributions made by coal operators, and to transfer successful reclamation technology for use in other areas of the nation.

We have conducted a screening competition for all coal mining company applications within the state, and have selected one of the projects for nomination at the national level to compete for the ESMA. At the national level, up to three companies will be selected to receive awards. The criteria considered in making the recommendation for the ESMA are creative development and application of new technology or technique, efficiency, safety, and voluntary effort.

Utah received applications from Beaver Creek Coal Company and Cyprus-Plateau Mining Corporation. After careful evaluation of each submittal by the criteria above, Beaver Creek Coal Company's application was submitted by Utah to OSMRE Director, Jed D. Christensen, to compete as a candidate for the Excellence in Surface Mining Award. Subsequently, the director will convene a Federal Awards Evaluation Committee to select up to three winners in the ESMA.

The Utah Division of Oil, Gas and Mining wishes to extend a vote of thanks and confidence to the coal mining industry in Utah for their efforts in achieving the level of compliance that makes them noteworthy among other states in the West. A vote of thanks is especially extended to Beaver Creek Coal Company and Cyprus-Plateau Mining Corporation for their participation in the Excellence in Surface Mining Awards program.

Sincerely,

Kenneth E. May

Kenneth E. May
Associate Director, Mining

vb
00800

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

January 4, 1988

Mr. R. D. Pick, President
Beaver Creek Coal Company
P. O. Box 1378
Price, Utah 84501

Dear Mr. Pick:

Re: Excellence in Surface Mining Award Program

The Division of Oil, Gas and Mining wishes to thank Beaver Creek Coal Company (BCCC) for their participation in the Second Annual Excellence in Surface Mining Award (ESMA) which was developed in concert with the National "Take Pride in America" stewardship campaign.

After careful evaluation of the criteria for selection, the Division has chosen Beaver Creek Coal Company's Gordon Creek No. 3 and 6 mine site reclamation project as the State of Utah's submittal to the ESMA program and on December 14, 1987, submitted BCCC's application to Office of Surface Mining Reclamation and Enforcement Director, Jed D. Christensen.

Congratulations on your excellent performance, and again this year for your application that has been selected as Utah's nomination for the Excellence in Surface Mining Award.

Sincerely,

Kenneth E. May

Kenneth E. May
Associate Director, Mining

vb
cc: D. Guy
0772Q-12

BEAVER CREEK Coal Company
Post Office Box 1378
Price, Utah 84501
Telephone 801 637-5050

November 30, 1987

Dr. Diane Nielson, Director
Utah Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: Application for Excellence in
Surface Mining Award

Dear Dr. Nielson:

Please find enclosed an application by Beaver Creek Coal Company for the "Excellence in Surface Mining Award", as allowed by the Office of Surface Mining Reclamation and Enforcement. The application is submitted for the final reclamation and techniques employed at the Gordon Creek No. 3 and 6 Mines, (INA/007/017, 9/86). The application is submitted in accordance with the guidelines from OSMRE.

Beaver Creek Coal Company is of the opinion that the quality of the work performed and the innovative techniques employed during reclamation at this site should qualify us for consideration for this award.

We appreciate the assistance we received on this project from you and your staff. It is our hope that the result of this cooperative effort can once again be recognized at the federal level through this award.

Thank you for your consideration.

Sincerely,

R.D. Pick
President

RDP/rs

EXCELLENCE IN SURFACE MINING AWARDS APPLICATION

Beaver Creek Coal Company	Price	Utah
Company Name	City	State

Describe the work done and cite specific techniques or technologies employed:

See Attached Narrative

Summarize the basis and highlights of the exemplary performance:

See Attached Narrative

Gordon Creek No. 3 & 6 Mines
Final Minesite Reclamation
by
Beaver Creek Coal Company

Background

The Gordon Creek No. 3 and 6 Mines are located in Coal Canyon approximately 13 miles northwest of Price, Utah. The No. 3 Mine opened in 1975 and the No. 6 Mine opened in late 1978. Except for conveyors and coal stockpiles, both mines shared the same surface facilities. Diversions, sedimentation ponds and culverts were installed in compliance with Utah Interim Regulatory Program performance standards.

The No. 6 Mine was temporarily closed in November 1980, and permanently closed in September 1983. The No. 3 Mine was exhausted and also permanently closed in September 1983. All portals in both mines were then sealed and structures were removed.

All facilities, environmental controls, and reclamation were covered by an approved Mining and Reclamation Plan, Utah Division of Oil, Gas and Mining (UDOGM) approval INA/007/017, 9/86.

All major disturbance was performed prior the the enactment of P.L. 95-87, the Surface Mining Control and Reclamation Act of 1977, and and methods of site selection and preparation were not conducted per existing regulation. Roads and pads were constructed with the cut and fill technique commonly used in mountainous terrain and no topsoil was saved.

The permit area is located on the eastern edge of the Wasatch Plateau and is characterized by steep, narrow canyons containing conspicuous sandstone cliffs. The area is drained primarily by ephemeral drainages, and is extremely dry. The complex geological and geomorphological conditions have produced a variety of site specific soils that support the Oak Scrub and Great Basin Sagebrush vegetation types. The habitats in turn support a variety of wildlife. The permit area covered 640 acres. Disturbed areas (roads, pads, etc.) amounted to 8.0 acres with an additional 20 acres of affected area around the minesite.

The minesite is located on privately-owned surface in the Gordon Creek drainage area. Coal was mined from both fee ownership and State and County Leases.

Coal was mined by continuous miners, with shuttle car and conveyor haulage out of the mine. Coal was conveyed into an open storage pile. The coal from this pile was loaded by front-end loader onto trucks and hauled some 25 miles to the preparation facility.

The Gordon Creek No. 3 & 6 Mine ceased operations in September, 1983. Portals were sealed and surface facilities were removed during Late-1983 and Early-1984. In September 1986, the earthwork and revegetation portion of the final reclamation was started. The reclamation of the

NON-FEDERAL
(February 1985)

Permit Number INA/007/017, 9/86

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, INA/007/017, is issued for the state of Utah by the Utah Division of Oil, Gas and Mining (DOGM) to:

Beaver Creek Coal Company
P. O. Box 1378
Price, Utah 84501

for the Gordon Creek #3 and #6 Mines, Beaver Creek Coal Company is the lessee of state coal lease 27342 and certain fee owned parcels. The permit is not valid until a performance bond is filed with the Division of Oil, Gas and Mining in the amount of or exceeding $337,967.00, payable to the state of Utah, Division of Oil, Gas and Mining and the DOGM has received 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 UCMRA.

Sec. 2 The permittee is authorized to conduct surface coal mining and reclamation operations on the following described lands within the permit area at the Gordon Creek 3 & 6 Mines situated in the state of Utah, Carbon County, and located:

Township 13 South, Range 8 East, SLBM

Section 8: SE 1/4 SE 1/4
Section 9: S 1/2 SW 1/4, SW 1/4 SE 1/4
Section 16: SE 1/4 NW 1/4, SW 1/4 NE 1/4, N 1/2 NW 1/4, SW 1/4, SW 1/4 NW 1/4
Portions of SW 1/4 SE 1/4, Portions of NW 1/4 SE 1/4
Section 17: NE 1/4 NE 1/4, SE 1/4 NE 1/4, NE 1/4 SE 1/4
Section 21: Portions of W 1/2 NE 1/4, Portions of SE 1/4 NW 1/4

This legal description is for the permit boundary (as shown on the permit area map) of the Gordon Creek 3 & 6 Mines. The permittee is authorized to conduct surface and reclamation operations connected with mining on the foregoing described property subject to the conditions of the leases, the approved mining plan, including all conditions and all other applicable conditions, laws and regulations.

Sec. 3 This permit is issued for a term of five (5) years commencing on the date the permit is signed by the permittee, except that this permit will terminate if the permittee has not begun the surface coal mining and reclamation operations covered herein within three (3) years of the date of issuance.

Sec. 4 The permit rights may not be transferred, assigned or sold without the approval of the Director, DOGM. Request for transfer, assignment or sale of permit rights must be done in accordance with applicable regulations including but not limited to UMC 788.17-.19.

Sec. 5 The permittee shall allow the authorized representative of the DOGM, including but not limited to inspectors, 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 UMC 840.12, and UMC 842.13; and,

B. be accompanied by private persons for the purpose of conducting an inspection in accordance with UMC 842.12, when the inspection is in response to an alleged violation reported by the private person.

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

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

A. accelerated monitoring to determine the nature and extent of noncompliance and the results of the noncompliance;

B. immediate implementation of measures necessary to comply; and

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

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

Sec. 9 The lessee 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 DOGM in approving alternative methods of compliance with the performance standards of the Act and the approved Utah State Program.

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

Sec. 11 The permittee shall comply with the provisions of UCA 26-11-1 et seq (Water Pollution Control) and UCA 26-13-1 et seq (Clean Air).

Sec. 12 Upon expiration, this permit may be renewed for areas within the boundaries of the existing permit in accordance with the Act and the approved Utah State Program.

Sec. 13 If during the course of mining operations, previously unidentified cultural resources are discovered, the applicant shall ensure that the site(s) is (are) not disturbed and shall notify the State Regulatory Authority (RA). The state RA shall inform the operator of necessary actions required.

Sec. 14 APPEALS - The lessee shall have the right to appeal Division actions as provided under UMC 787.

Sec. 15 SPECIAL CONDITIONS - In addition to the general obligations and of performance set out in the leases, and this permit, the permittee shall comply with the special conditions appended hereto as Attachment A.

The above conditions (Secs. 1-15) 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 grantor and the permittee at any time to adjust to changed conditions or to correct an oversight. The grantor may amend these conditions at any time without the consent of the permittee in order to make them consistent with any new federal or state statutes and any new regulations.

THE STATE OF UTAH

By: Dorine R. Nelson

Date: 9-11-86

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

Authorized Representative of the Permittee

Date: _____

APPROVED AS TO FORM:

BY: Barbara W Roberts
Assistant Attorney General

Date: September 11, 1986

0893R

Attachment A

STIPULATIONS

Beaver Creek Coal Company
Gordon Creek No. 3 and 6 Mines
INA/007/017
Carbon County, Utah

September 10, 1986

Stipulations UMC 817.46-(1,2)-JRF

1. The sediment ponds shall be constructed by October 31, 1986 so that at least 3.83 acre feet of sediment and runoff can be retained in the ponds and so that a 24 inch cmp riser is installed for the principle spillway.

2. Within 30 days of final pond construction, the applicant shall submit as-built pond designs certified by a Professional Engineer. The designs shall show pond contours with a contour interval no greater than two feet. The as-built designs shall at a minimum contain:

   a. sideslope characterizations
   b. section and plan views
   c. scale of 1" = 20'
   d. pond floor elevation and dimensions
   e. bank elevation
   f. complete spillway dimensions
   g. sediment levels and markers for both ponds

Stipulation UMC 817.48-(1)-DD

1. During the backfilling and grading portion of the reclamation at the Gordon Creek #3 and #6 mine site, but no later than October 31, 1986, the applicant shall bury the material which was the subject of Notice of Violation N85-8-17-1 with a minimum of 4 feet of non-toxic and nonacid-forming material

Stipulations UMC 817.52-(1,2)-JRF

Surface Water Figure 7-6, p. 7-36

1. Within 30 days of permit approval, the applicant shall submit a revised surface water parameter list that includes total dissolved solids.

p. 7-33, Fig. 7-5, Fig. 7-6, Plate 7-1.

2. Within 30 days of permit approval, the applicant shall submit a revised surface water monitoring program that incorporates an additional monitoring station at the sediment pond entrance. Sampling of this station shall be initiated upon permit approval utilizing the quarterly frequency for other surface water monitoring.

Stipulation UMC 817.113-(1)-KMM p. 3-37

1. Within 30 days of permit approval, the applicant shall submit amended pages 3-37 or 3-37b to clarify when planting of willow cuttings will occur.

Stipulation UMC 817.114-(1)-KMM p. 3-36g

1. On all areas to be mulched, the applicant shall apply no less that 3000 lbs/acre of wood fiber mulch after seeding during final reclamation of the site.

Stipulation UMC 817.150-.156-(1)-PGL p. 3-7b

1. Within 30 days of permit approval, the applicant shall provide amended page 3-37a which will specifically describe where the Class II road extending from within the permit area to the main Gordon Creek road will be graveled.

0888R

FINDINGS DOCUMENT

Beaver Creek Coal Company
Gordon Creek No. 3 and 6 Mine
INA/007/017, Carbon County, Utah

September 10, 1986

1. The plan and the permit application are accurate and complete and all requirements of the Surface Mining Control and Reclamation Act (the "Act"), and the approved Utah State Program have been complied with (UMC 786.19[a]).

2. The applicant proposes acceptable practices for the reclamation of disturbed lands. These practices have been shown to be effective in the short-term; there are no long-term reclamation records utilizing native species in the western United States. Nevertheless, the regulatory authority has determined that reclamation, as required by the Act, can be feasibly accomplished under the Mining and Reclamation Plan (MRP) (UMC 786.19[b]). (See Technical Analysis [TA], Section UMC 817.21-.25 and 817.111- .117.)

3. The assessment of the probable cumulative impacts of all anticipated coal mining activities in the general area on the hydrologic balance has been made by the regulatory authority. The reclamation plan proposed under the application has been designed to prevent damage to the hydrologic balance in the permit area (UMC 786.19[c] and UCA 40-10-11[2][c]). (See Cumulative Hydrologic Impact Analysis [CHIA] Section, attached to this Findings Document.)

4. The proposed permit area is:

   A. not included within an area designated unsuitable for underground coal mining operations;

   B. not within an area under study for designated lands unsuitable for underground coal mining operations;

   C. not on any lands subject to the prohibitions or limitations of 30 CFR 761.11(a) (national parks, etc.), 761.11(f) (public buildings, etc.) and 761.11(g) (cemeteries);

   D. not within 100 feet of the outside right-of-way line of a public road (UMC 761.11);

   E. not within 300 feet of any occupied dwelling (UMC 786.19[d]). (See MRP Section 782.16.).

5. The regulatory authority's issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800) (UMC 786.19[e]). (See attached letter from State Historic Preservation Officer [SHPO] dated September 8, 1986.)

6. The applicant has the legal right to enter and begin underground activities in the permit area through one state coal lease one county lease and fee coal and surface agreements (UMC 786.19[f]).

7. The applicant has shown that prior violations of applicable laws and regulations have been corrected (UMC 785.19[g]). (Memo of September 4, 1986 from Joe Helfrich, Division of Oil, Gas and Mining [DOGM], Inspection and Enforcement section.)

8. Neither Beaver Creek Coal Comapany nor its parent company, Atlantic Richfield Company, are delinquent in payment of fees for the Abandoned Mine Reclamation Fund for its active mining operations (UMC 786.19[h]) (personal communication, John Sender, OSM, Kansas City, September 4, 1986).

9. The applicant does not control and has not controlled mining operations with a demonstrated pattern of willful violations of the Act of such nature, duration and with such resulting irreparable damage to the environment as to indicate an intent not to comply with the provisions of the Act (UMC 786.19[i]) (See attached letters from OSM and other states).

10. Underground coal mining and reclamation 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 (UMC 786.19[j]).

11. A detailed analysis of the proposed bond has been made. The bond estimate is $311,873.00 in 1986 dollars. The regulatory authority has made appropriate adjustments to reflect costs which would be incurred by the state, if it was required to contract the final reclamation activities for the mine site. The bond shall be posted (UMC 786.19[k]) with the regulatory authority prior to final permit issuance. An interim bond in the amount of $346,000.00 is currently on file.

12. No lands designated as prime farmlands or alluvial valley floors occur on the permit area (UMC 786.19[l]).

13. The proposed postmining land-use of the permit area has been approved by the regulatory authority (UMC 786.19[n]). (See TA, Section UMC 817.133.)

14. The regulatory authority has made all specific approvals required by the Act, and the approved State Program (UMC 786.19[n]).

15. The proposed operation will not affect the continued existence of any threatened or endangered species or result in the destruction or adverse modification of their critical habitats (UMC 785.19[o]).

16. All procedures for public participation required by the Act, and the approved Utah State Program have been complied with (UMC 786.11-.15).

Prior to the permit taking effect, the applicant must agree to comply with the special stipulations in the permit and post the performance bond for reclamation activities.

John J. Whitehead 9/10/86
DOGM Lead Reviewer

Samuel P. Brayton 9/11
Administrator, Mineral Resource Development and Reclamation Program

Kenneth E. May 9/11/86
Associate Director, Mining

Dianne R. Nielson
Director

0893R

MINE PLAN INFORMATION

Mine Name: Gordon Creek #3 and #6 State ID: INA/007/017

Operator: Beaver Creek Coal Company County: Carbon

Controlled By: Atlantic Richfield Company
Contact Person(s): Dan Guy Position: Permitting and Compliance
Telephone:: (801) 637-5050

New/Existing: Existing Mining Method: Reclamation Only

Federal Lease No(s).: None
Legal Description(s): N/A

State Lease No(s).: 27342
Legal Description(s): See Attached

Other Leases (identify): Carbon County Lease, Purchase Agreement for fee Coal

Legal Description(s): See attached

Ownership Data:

Surface Resources (acres)	Existing Permit Area	Proposed Permit Area	Total Life Of Mine Area
Federal	- 0 -	- 0 -	- 0 -
State	40	40	40
Private	628	628	628
Other	- 0 -	- 0 -	- 0 -
TOTAL	668	668	668

Coal Ownership (acres):

Federal	- 0 -	- 0 -	- 0 -
State	40	40	40
Private	280	280	280
Other(Carbon County)	320	320	320
TOTAL	640	640	640

Coal Resource Data	Total Reserves (1981)	Total Recoverable Reserves (1981)
Federal		
State	N/A*	N/A
Private		
Other		
TOTAL		

Recoverable Reserve Data	Name	Thickness	Depth
Seam	N/A		
Seam			
Seam			
Seam			
Seam			
Seam			

*Not applicable as this is reclamation only.

Mine Life: Mining Has Ceased Permanently
Average Annual Production: N/A Percent Recovery: N/A
Date Projected Annual Rate Reached: N/A
Date Production Begins: N/A Date Production Ends: N/A
Reserves Recoverable By: (1) Surface Mining: N/A
(2)Underground Mining: N/A
Reserves Lost Through Management Decisions: N/A
Coal Market: N/A

Modifications that have been approved:	Date:

MINE LEASE DESCRIPTION

Gordon Creek No. 3 & 6 Mine

Carbon County Lease

Township 13 South, Range 8 East, SLBM

Section 8: SE 1/4 SE 1/4
Section 9: S 1/2 SW 1/4, SW 1/4 SE 1/4;
Section 16: SW 1/4 NE 1/4, N 1/2 NW 1/4;
Section 17: NE 1/4 NE 1/4

Fee Coal Purchase Agreement

Township 13 South, Range 8 East SLBM

Section 16: SW 1/4, SW 1/4 NW 1/4;
Section 17: SE 1/4 NE 1/4, NE 1/4 SE 1/4

State Coal Lease

Township 13 South, Range 8 East, SLBM

Section 16: SE1/4 NW1/4

Surface Use Agreement with Calvin Jacobs & Sons

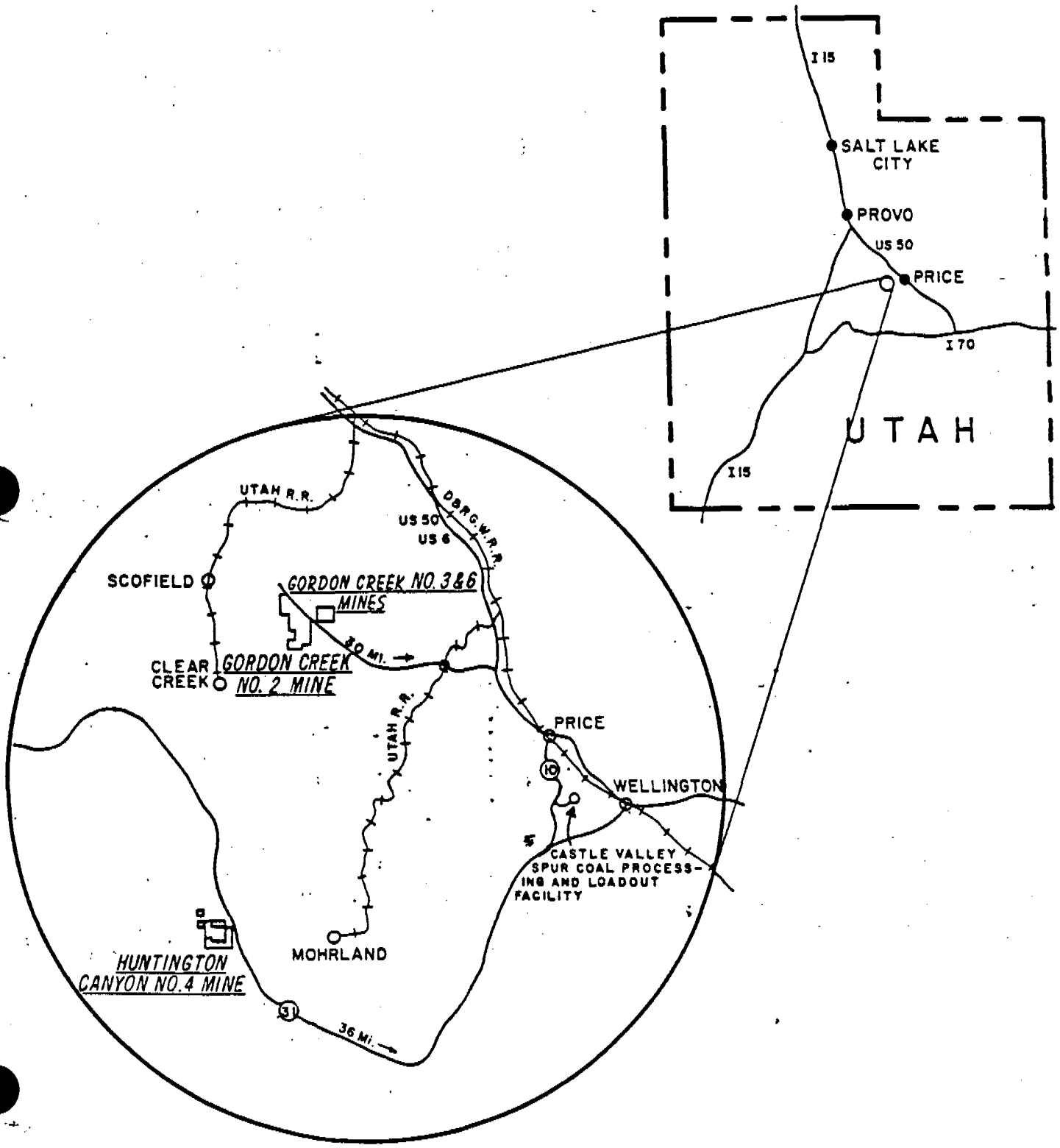
Township 13 South, Range 8 East SLBM

Section 16: portions of W1/2 SE1/4
Section 21: portions of W1/2 NE1/4
portions of SE1/4 NW1/4

Figure I-1

BEAVER CREEK COAL COMPANY

AREA OF OPERATIONS



CUMULATIVE HYDROLOGIC IMPACT ASSESSMENT

Beaver Creek Coal Company
Gordon Creek #3 and #6 Mines
INA/007/017, Carbon County, Utah

September 4, 1986

I. Introduction

The purpose of this report is to provide a Cumulative Hydrologic Impact Assessment (CHIA) for Beaver Creek Coal Company's Gordon Creek #3 and #6 Mines located in Carbon County, Utah (Figure 1). The assessment encompasses the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance and whether the operations proposed under the application have been designed to prevent damage to the hydrologic balance outside the proposed mine plan area. This report complies with federal legislation passed under the Surface Mining Control and Reclamation Act (SMCRA) and subsequent Utah and federal regulatory programs under UMC 786.19(c) and 30 CFR 784.14(f), respectively.

The Gordon Creek #3 and #6 Mines impacts are discussed in the "Cumulative Hydrologic Impact Assessment with Respect to the Gordon Creek #2 Mine" prepared for the U. S. Office of Surface Mining (OSM), Denver, Colorado, May 1984. It should be noted that the Gordon Creek #3 and #6 Mines are inactive and will be reclaimed in the 1986 field season. Therefore, impacts associated with active mine development have not been considered to apply to the Gordon Creek #3 and #6 Mines.

Beaver Creek Coal Company's Gordon Creek #3 and #6 Mines are located along the eastern margin of the Wasatch Coal Field approximately 13 miles northwest 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 9,000 feet.

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

Precipitation varies from 40 inches at higher elevations to less than 10 inches at lower elevations. The Wasatch Plateau may be classified as semiarid to subhumid.

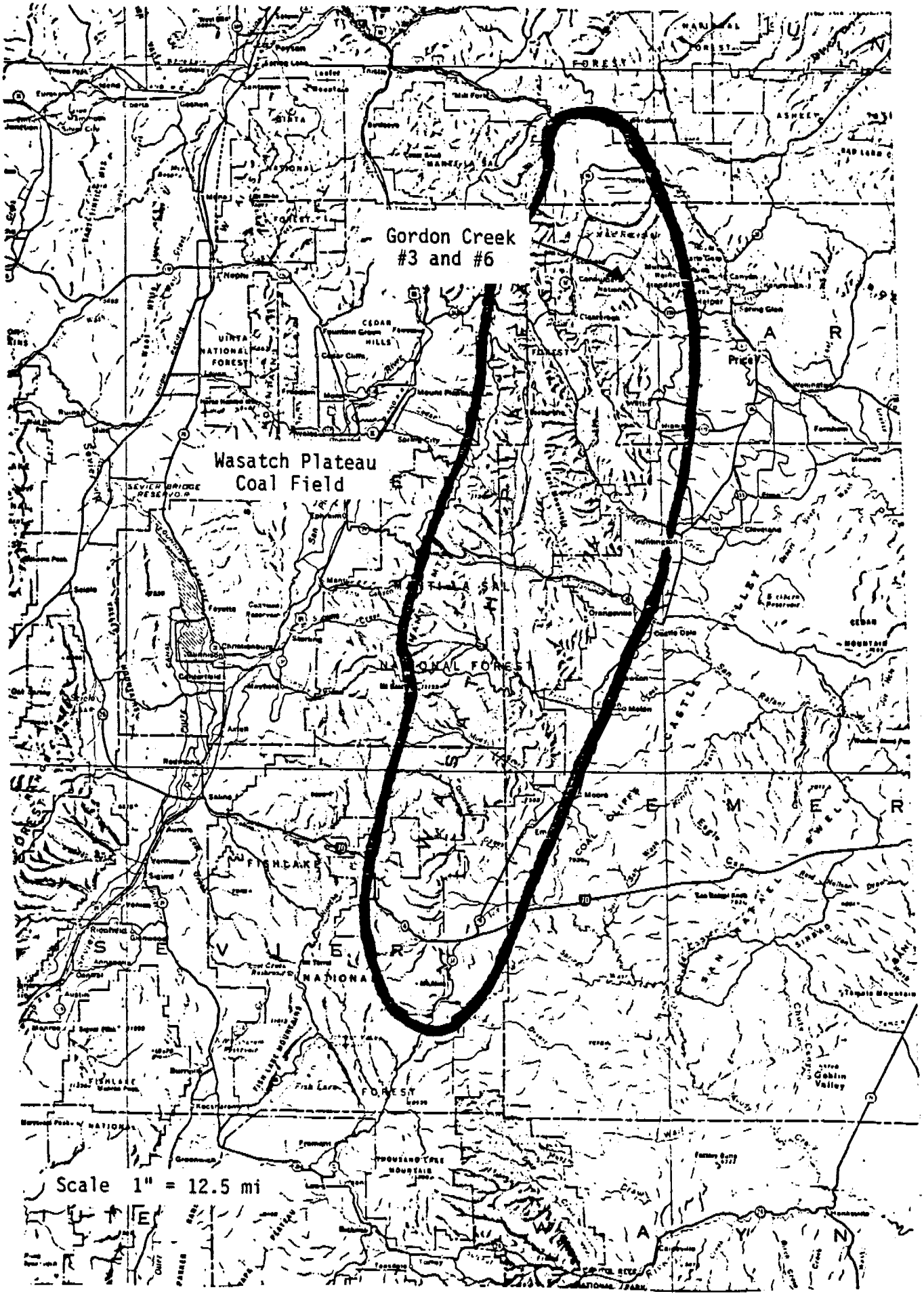


Figure 1. Wasatch Plateau Coal Field

Vegetation varies from the sagebrush/grass community type at lower elevations to the Douglas fir/aspen community at higher elevations. Other vegetative communities include mountain brush, pinyon-juniper, pinyon-juniper/sagebrush and riparian. These communities are primarily used for wildlife habitat and livestock grazing.

Coal Canyon Creek which flows through the Gordon Creek #3 and #6 permit area is an ephemeral tributary flowing south into the North Fork of Gordon Creek which is a tributary of the Price River. The Price River is a tributary to the Green River which in turn flows into the Colorado River. The total drainage area for the North Fork of Gordon Creek is about 12,000 acres of which Coal Creek encompasses 1,241 acres. The average channel gradient on the North Fork of Gordon Creek is 380 feet per mile in the upper reaches of the creek. A large portion of the drainage area is above 7,000 feet in the mountainous country of the Wasatch Plateau.

II. Potential Hydrologic Impacts

A. Ground Water

Occurrence of ground water within the Gordon Creek #3 and #6 Mines is discussed on pages 2-17 and 2-18 of the OSM CHIA. Ground water was encountered within both mines, although the occurrence of continuous water producing zones was not documented. No springs or seeps are known to exist within the permit area.

B. Surface Water

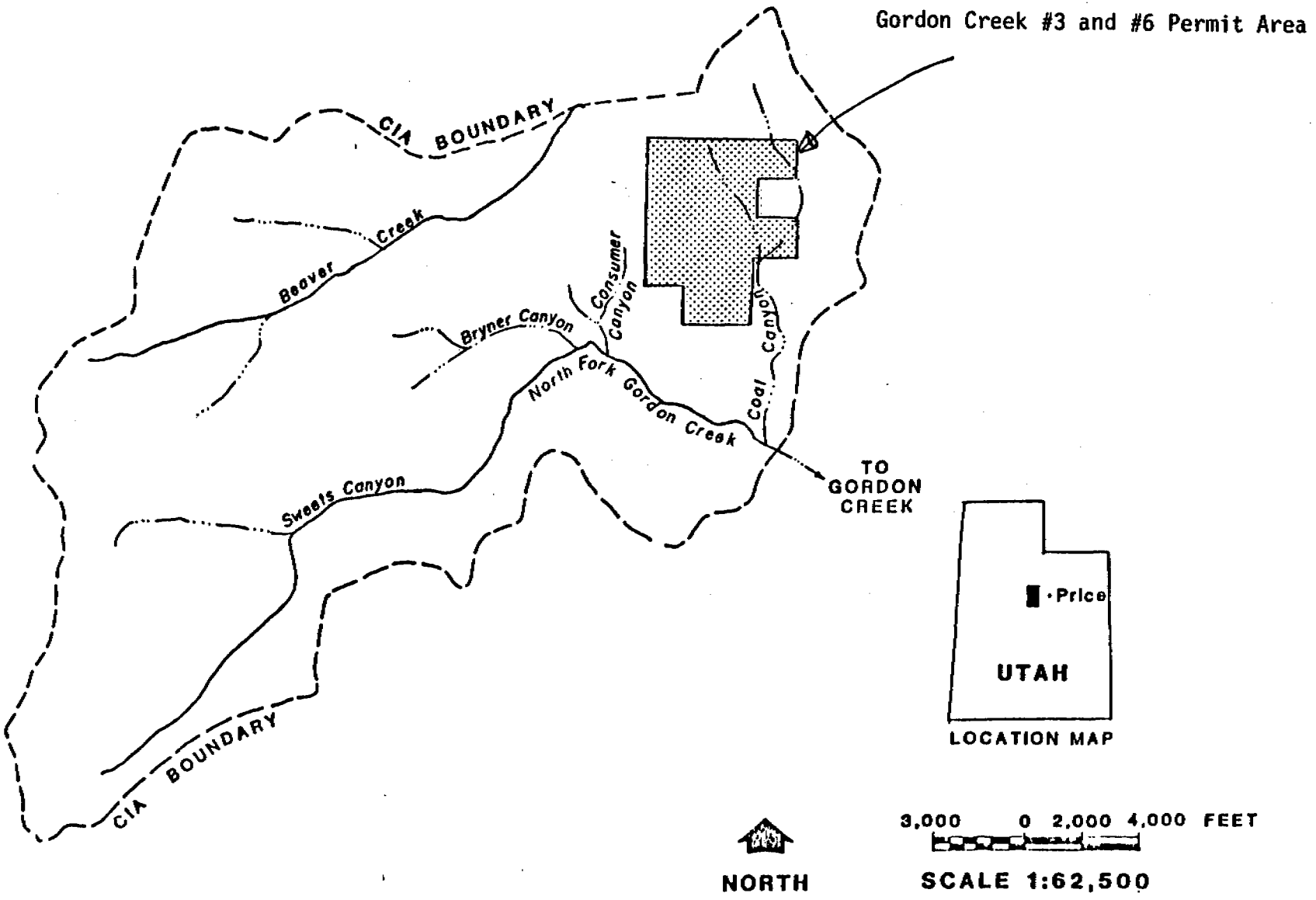
The impacts associated with surface water runoff in the area of Gordon Creek #3 and #6 Mines were discussed in Chapter 5 of the OSM CHIA for the mines identified within the Cumulative Impact Area (CIA) boundaries shown on Figure 2.

III. Summary

A. Ground Water

No material damage to ground water has been associated with the Gordon Creek #3 and #6 Mines, although Chapter 5 in the OSM CHIA indicated that two springs with water rights might be lost within the CIA area as indicated on Figure 2. These springs are not located within or adjacent to the Gordon Creek #3 and #6 permit area and, therefore, are not considered any further in this CHIA.

Figure 2
CUMULATIVE IMPACT AREA



B. Surface Water

No material damage to surface water has been associated with the Gordon Creek #3 and #6 Mines. Sediment control is currently in place and will remain in place until the reclamation bond is released. Therefore, any sediment loading to the North Fork of Gordon Creek from Gordon Creek #3 and #6 will decrease to background levels as vegetation becomes established following reclamation.

The conclusion found on page 6-4 of the OSM CHIA states that no material damage is anticipated during mining activities for total dissolved solids, chloride, sulfate and total suspended solids concentrations and loads of all anticipated mining in the Gordon Creek CIA area. It also mentioned that there was insufficient information to assess other water quality parameters, therefore, no material damage assessment was made for those parameters.

IV. Conclusion

Operations at the Gordon Creek No. 3 and No. 6 mines were designed to prevent damage to the hydrologic balance outside the permit area.

0581R

RECEIVED

MAR 15 1985

DIVISION OF OIL
GAS & MINING

NORMAN H. BANGERTER
GOVERNOR

STATE OF UTAH
DEPARTMENT OF COMMUNITY AND
ECONOMIC DEVELOPMENT

Division of
State History
(UTAH STATE HISTORICAL SOCIETY)

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

March 13, 1985

Lowel P. Braxton, Administrator
Mineral Resource Development
and Reclamation Program
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Attn: Mary Boucek and Richard Smith

RE: Response to Determination of Completeness and Technical Deficiencies Review, Beaver Creek Coal Company, Gordon Creek #3 and #6 Mines, INA/007/017, #2, Carbon County, Utah

In Reply Refer to Case No. E411

Dear Mr. Braxton:

The Utah Preservation Office has received your letter of March 6 concerning the above referenced project. After review of the letter and the attached material, our office notes that no changes, to our knowledge, have been made concerning cultural resource portions of the Beaver Creek Coal Company Gordon Creek #3 and #6 Mine plans. Therefore, our office has no comment on this response to determination of completeness and technical deficiencies review.

Consultation provided in this letter by authority of the 1966 Preservation Act as amended, does not indicate approval or comment concerning Tax Act regulations (reference ERTA, 1981, P.L. 97-34, U.S.C., Section 46).

Since no formal consultation request concerning eligibility, effect or mitigation as outlined by 36 CFR 800 was indicated by you, this letter represents a response for information concerning location of cultural resources. If you have any questions or concerns, please contact me at 533-7039.

Sincerely,

James L. Dykman
Cultural Resource Advisor
Office of State Historic
Preservation Officer

JLD:jrc:E411/1414V

State History Board: Milton C. Abrams, Chairman • Thomas G. Alexander • Phillip A. Bullen • J. Eldon Dorman • Elizabeth Griffith
Wayne K. Hinton • Dean L. May • William D. Owens • Helen Z. Papanikolas • Anand A. Yang

Nd orig mine file
~~cc t Braxton~~

STATE OF UTAH
NATURAL RESOURCES
Wildlife Resources

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
William H. Geer, Division Director

1596 West North Temple • Salt Lake City, UT 84116-3154 • 801-533-9333

John Whitehead

RECEIVED
AUG 13 1986
DIVISION OF
OIL, GAS & MINING

August 12, 1986

Dr. Dianne R. Nielson, Director
Utah Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

Attn: John Whitehead

Dear Dianne:

The Division has evaluated Beaver Creek Coal Company's June 25, 1986, permit update for reclamation of their No. 3 and 6 mines.

Page 3-376 — The applicant's plan to plant willow cuttings in the fall is a new method as compared to currently used technology. Current technology recommends cutting of willow shoots in a dormant stage, then cold storage to harden them followed by planting when dormancy should break. Discussion between the Division and the applicant's consultant (EIS) has resulted in an opinion that fall plantings may have potential for a higher level of willow shoot survival, since substantial root development should occur after planting while the shoot is seemingly dormant. Therefore, this non-traditional technique should be allowed, but only if the applicant commits to redoing the planting if a gross failure occurs.

Thank you for an opportunity to review the MRP and provide comment.

Sincerely,

William H. Geer

William H. Geer
Director

116 State Capitol Building
Salt Lake City, UT 84114
Telephone 801-533-5245

Orig mine file
cc D. Bratton
whitehead

office of planning and budget

Norman H. Bangerter, Governor Dale C. Hatch, C.P.A., J.D., Director Michael E. Christensen, Ph.D., Deputy Director

RECEIVED

DEC 06 1985

DIVISION OF O
GAS & MINI

December 5, 1985

Ms. Dianne Nielson
Division of Oil, Gas & Mining
355 West North Temple
3 Triad Center - Suite 350
Salt Lake City, Utah 84180-1203

SUBJECT: Determination of Completeness, Beaver Creek Coal Company, Gordon Creek #3 and #6 Mines, ACT/007/017, #2, Carbon County, Utah
State Application Identifier #UT851115-040

Dear Ms. Nielson:

The Resource Development Coordinating Committee of the State of Utah has reviewed this proposed action and no comments have been indicated.

Thank you for the opportunity to review this document. Please address any questions regarding this correspondence to Carolyn Wright (801) 533-4971.

Sincerely,

Michael E. Christensen

Michael E. Christensen
Deputy Director

MEC:CW

United States Department of the Interior
OFFICE OF SURFACE MINING
RECLAMATION AND ENFORCEMENT
219 CENTRAL AVENUE, NW
ALBUQUERQUE, NEW MEXICO 87102

RECEIVED
AUG 22 1986
DIVISION OF
OIL, GAS & MINING

AUG 20 1986

Mr. Joseph C. Helfrich, Compliance Coordinator
State of Utah Department of Natural Resources
Division of Oil, Gas & Mining
355 W. North Temple, 3 Triad Center
Salt Lake City, UT 84180-1203

Re: Compliance Record of Beaver Creek Coal Company, Subsidiarys thereof, the Parent Company, Corporate Officers or Principal Shareholders

Dear Mr. Helfrich:

As you requested on August 5, 1986, we have reviewed our records to determine whether any of the individuals or companies listed on your record check for Beaver Creek Coal Company have any outstanding Notices of Violation (NOV's) or Cessation Orders (CO's). In addition, the file search was conducted for patterns of violations.

The Albuquerque Field Office finds the enforcement record for the listed entities to be clear as of the date of this correspondence for the four-state area within our jurisdiction. However, our office maintains no records for civil penalties or forfeited bonds; that information is available through our Branch of Compliance in Washington, D.C. If you have not already checked with those people for their record review, call Ruth Stokes, Supervisory Program Specialist, at (202) 343-1867.

Sincerely,

Gary Fritz

Gary Fritz
Reclamation Specialist
Albuquerque Field Office

File INA/007/017 #6
c.c. J. Whitehead

DEPARTMENT OF NATURAL RESOURCES
David H. Getches, Executive Director

MINED LAND RECLAMATION DIVISION
DAVID C. SHELTON, Director

Richard D. Lamm
Governor

August 27, 1986

Mr. Joseph C. Helfrich
Compliance Coordinator
Division of Oil, Gas and Mining
355 W. North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

Re: Compliance Status of the Beaver Creek Coal Company's Gordon Creek No. 3 and No. 6 Mine

Dear Mr. Helfrich:

Per your request for a 510c Compliance check of the Beaver Creek Coal Company and its parent company Atlantic-Richfield Company I have the following comments. The West Elk Coal Company (WECC) of Somerset, Colorado currently operates the Mt. Gunnison No. 1 Mine. WECC is a subsidiary of Atlantic Richfield Company. The Colorado Mined Land Reclamation Division has no record of outstanding Notices of Violations, Cessation Orders, or Civil Penalties for the Mt. Gunnison No. 1 Mine. Further, there are no documented patterns of violations or forfeited bonds.

If I can be of further assistance, please feel free to call.

Sincerely,

Thomas A. Schreiner
Reclamation Specialist

TAS/vjr

3191F

RECEIVED
SEP 02 1986
DIVISION OF
OIL, GAS & MINING

STATE OF WYOMING

RECEIVED
SEP 02 1986
DIVISION OF
OIL, GAS & MINING

ED HERSCHLER
GOVERNOR

Department of Environmental Quality

LAND QUALITY DIVISION

HERSCHLER BLDG. - THIRD FLOOR
122 WEST 25TH

TELEPHONE 307-777-7756

CHEYENNE, WYOMING 82002

August 27, 1986

Joseph C. Helfrich
Compliance Coordinator
State of Utah Natural Resources
355 W. North Temple
3 Triad Center
Suite 350
Salt Lake City, UT 84180-1203

RE: Compliance Status of the Beaver Coal Creek Company (Atlantic Richfield, parent)

Dear Mr. Helfrich:

This is in response to your August 5, 1986 letter. The State of Wyoming has has issued two mining permits to a sister company, Thunder Basin Coal Company who is also owned by Atlantic Richfield.

Thunder Basin Coal is in good standing with the Wyoming Department of Environmental Quality.

Sincerely,

Vicki J. Bryan
Mine Permit Evaluation Specialist

VJB:kdg

cc: Dist. III w/ enclosure
Files 233-TI
483-TI

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Norman H. Bangerter, Governor
Dee C. Hansen, Executive Director
Dianne R. Nielson, Ph.D., Division Director

355 W. North Temple • 3 Triad Center • Suite 350 • Salt Lake City, UT 84180-1203 • 801-538-5340

September 4, 1986

TO: John Whitehead

FROM: Joseph C. Helfrich, Compliance Coordinator

RE: Compliance Status Review on Beaver Creek Coal Company

As of the writing of this letter, Beaver Creek Coal Company has no NOV's or CO's which are not corrected or in the process of being corrected. Any NOV's or CO's that are outstanding are in the process of administrative or judicial review. There are no finalized Civil Penalties which are outstanding and ovedue in the name of Beaver Creek Coal Company.

Finally they do not have a demonstrated pattern of willfull violations, nor have they been subject to any bond forfeitures for any operation in the state of Utah.

re
0422Q-25

BOND ESTIMATE FOR RECLAMATION

Beaver Creek Coal Company
Gordon Creek No. 3 and 6
INA/007/017
Carbon County, Utah

September 9, 1986

Summary of Reclamation Cost Estimate

a.	Mobilization	- - - -	$ 3,000.00
b.	Backfilling & Grading	- - - -	60,600.00
c.	Drainage	- - - -	70,275.00
d.	Seedbed Material Handling	- - - -	5,746.00
e.	Reseeding & Fertilizing	- - - -	42,000.00
f.	Mulching	- - - -	9,800.00
g.	Saplings, Seedlings & Cuttings	- - - -	10,412.00
h.	Fencing & Silt Fence	- - - -	22,918.00
i.	Road Surfacing	- - - -	19,045.00
j.	Maintenance & Monitoring	- - - -	20,000.00
k.	Foreman for 14 weeks	- - - -	19,725.00
	SUB-TOTAL		$283,521.00
	10% Contingency		28,352.00
	TOTAL (1986 Dollars)		$311,873.00

Escalate at 1.62%

1987	$316,925
1988	$322,060
1989	$327,277
1990	$332,579
1991	$337,967

Cost Estimate Detail for Final Reclamation

(a) Mobilization

$3,000.00 (lump sum)	$ 3,000.00	
Cat D-7G	$ 1,076.00/day	
Operator	$ 238.80/day	
	$ 1,314.00/day	
Ripper	$ 141.20/day	
Disk	$ 100.00/day	
Backhoe (Cat 235)	$ 1,476.00/day	
Operator	$ 238.80/day	
	$ 1,714.80/day	
Labor	$ 185.00/day	
Foreman	$ 263.00/day	

b. Soil Placement (Backfilling & Grading)

Upper Portal Pad

Backhoe + operator x $1,715.00/day x 10 days =	$17,150.00	
Cat + operator x $1,315.00/day x 10 days =	13,150.00	
SUBTOTAL	$30,300.00	

Lower Pad and Diversions

Backhoe + operator x $1,715/day x 10 days =	$17,150.00	
Cat + operator x $1,315/day x 10 days =	13,150.00	
SUBTOTAL	$30,300.00	$60,600.00

c. Pond & Channel Restoration

*Backhoe + operator X $1,715/day X 15 days	$25,725.00
Cat + operator x $1,315/day x 10 days	13,150.00

Labor

4 men X $185/day X 10 days	7,400.00	
Rip-rap - 1000 yds ^{3} @ $21/yd^3	21,000.00	
Concrete (in-place) 10 yds^3 @ $300/yd^3	$ 3,000.00	
Sub-Total	$70,275.00	$70,275.00

* Includes crushing of culvert

d. Seedbed Material Handling (7.98 ac)

Cat/Ripper + operator x $1,456/day x 2 days =	$ 2,912.00	
Cat/Disk + operator x $1,417/day x 2 days =	2,834.00	
Sub-Total	$ 5,746.00	$ 5,746.00

e. Reseeding & Fertilizing (28.0 ac)

Hydroseeder, Operator & Driver - $1,500/ac x 28 ac. (Includes Seed and Woody Plants)	$42,000.00	$42,000.00

f. Mulching (28.0 ac)

Hydromulcher, Operator & Driver - $350.00/ac x 28 aac.	$ 9,800.00	$ 9,800.00

g. Saplings, Seedlings and Cuttings

Saplings - 136 @ $10.50/sapling 36 - Mountain Maple 50 - Chokecherry 50 - Aspen	$ 1,428.00	
Labor = 5 days @ $184.40/day x 2 men	$ 5,920.00	
Willow Cuttings - 2332 cuttings @ $1.00/plant (planted)	$ 2,332.00	
Oak Seedlings - 1080 Seedlings @ $2.00/seedling (planted)	$ 2,160.00	
Sub-Total	$10,412.00	$10,412.00

h.	Protective Fencing (7000')		
	4 feet high x 7000 linear feet x $3.00/linear foot installed =	$21,000.00	
	1370 Feet of silt fence @ $1.40/ft (installed)	$ 1,918.00	
	Sub-Total	$22,918.00	$22,918.00
i.	Road Surface (Means Costs)		
	2844 Sy of - 3/4" minus gravel @$4.21/sy (installed)	$11,973.00	
	3200 sy - 3/4" minus gravel @$2.21/Sy (installed)	$ 7,072.00	
	Subtotal	$19,045.00	$19,045.00
j.	Foreman		
	15 weeks @ $1,315/wk	$19,725.00	$19,725.00
k.	Maintenance and Monitoring		
	10 years x $2,000/yr (includes vegetation, hydrologic subsidence, rills & gullies)	$20,000.00	$20,000.00
	GRAND TOTAL		$283,521.00

NOTES

1. Labor rates are from the 1986 Means Construction Cost Data.

2. Operationg costs are from the Rental Rate Bluebook, August 1986.

3. Inflate at 1.62 percent annually. The average of the preceding three years from the Means Historical Cost Index for the Salt Lake area.

4.* Machine Productivity:

   a. Backhoe - .75 acres/day on pads.
   b. Backhoe - 240 ft./day on roads.
   c. Cat - .75 acres/day on pads.

5. Machine cycle time is not considered since cut/fill work is in same area. (No haulage required).

6. Foundations buried against highwalls. Costs included in dozer time.

*Based on actual experience at Gordon Creek No. 2 and Huntington Canyon No. 4 Mines.

0896R

FINAL TECHNICAL ANALYSIS

Beaver Creek Coal Company
Gordon Creek No. 3 and 6
INA/007/017
Carbon County, Utah

September 10, 1986

UMC 785.19 Alluvial Valley Floors - JW

Existing Environment and Applicant's Proposal

Coal Canyon encompasses very limited area for any streamlaid deposits. Further, Coal Canyon Creek is characterized by ephemeral flow and thus sufficient water is not available to support agricultural activities.

Compliance

The Division therefore determines that no alluvial floor exists in the area to be affected by reclamation activities.

The applicant is in compliance with this section.

Stipulations

None

UMC 817.11 SIGNS AND MARKERS - PGL

Existing Environment and Applicant's Proposal

Sign specifications and locations are described in Section 3.3.5.1 and Plate 3.1

Compliance

The applicant's plans for signs and markers are acceptable. It should be noted that the location of the perimeter markers shown on plate 3-1 do not coincide with the bonded area shown. The markers are used to delineate the extent of disturbance within the bonded area. The applicant complies with this section.

Stipulations

None.

UMC 817.13-.15 Casing and Sealing of Underground Openings - PGL

Existing Environment and Applicant's Proposal

The four portals at the #3 mine were sealed on September 1, 1983 and the three portals at the #6 mine were sealed on September 6, 1983. The portals were backfilled with a minimum of 25 feet of backfill material (Section 3.5.3.1, p. 3-32).

Compliance

The Division and Mine Safety and Health Administration were notified of the permanent closure of the portals at the Gordon Creek #3 and #6 mine after the portals had already been backfilled. Division guidelines require concrete seals as well as a minimum of 25 feet of incombustible material. Due to the fact that the portals were backfilled, a smoke tube test was performed on May 28, 1986 to test for air intake at the backfilled portals. The results of the test indicated that there was no air movement, and therefore, did not require BCCC to remove the backfill and install concrete seals (Figure 3-4e, p. 3-32e). The applicant complies with this section.

Stipulations

None.

UMC 817.21 - 817.23 TOPSOIL REMOVAL AND STORAGE - DD

Existing Environment and Applicant's Proposal

The applicant states that they do not anticipate any additional areas at the Gordon Creek No. 3 and No. 6 Mine will be disturbed; therefore, no topsoil will be removed and stored. These sections are not applicable.

UMC 817.24 TOPSOIL REDISTRIBUTION - DD

Existing Environment and Applicant's Proposal

All disturbance at the Gordon Creek #3 and #6 Mine was performed prior to Public Law 95-87 (1978). Consequently, no topsoil was salvaged (p3-21, MRP). The disturbed area is comprised of roads and pads constructed by cut and fill methods. Beaver Creek Coal Company proposes to use the fill material as a substitute topsoil or growth medium since the original soil material remains in the fill and thus no "topsoil" is available.

Compliance

On May 28, 1986, Division Soils Specialist James Leatherwood assisted Beaver Creek Coal Company in sampling sites which would be used for topsoil substitute material. This identified any material which is unsuited for the proposed use. From the analyses of the material, all parameters tested meet Division guidelines for substitute topsoil. pH values were in appropriate ranges for calcarious soils. Ec values were surprisingly low. The sandy nature of the soils defined by texture and supported by the low saturation percentages of the material may explain the low Ec values. The low values confirm there are no salinity concerns. SAR is low for all material demonstrating there are no sodium problems. Boron is also low for all materials. The only concern with the materials are their sandy properties, but with the addition of the alfalfa mulch incorporated into the soil on all pad areas, as mentioned in the MRP page 3-36e, the organic matter content of the soil will increase and thus improve the water and nutrient holding capacity of the soil.

The applicant complies with this section.

Stipulations

None.

UMC 817.25 NUTRIENTS AND SOIL AMENDMENTS - DD

Existing Environment and Applicant's Proposal

Samples collected during the original soil survey of the No. 3 and No. 6 Mine were analyzed for N and P. The material in fill areas are very low in P. The applicant proposes to apply 50 lbs per acre of triple super-phosphate which has an analysis of 0-46-0. This will provide approximately 23 lbs per acre of P as P_2O_5. The addition of alfalfa incorporated into the soil on the pad areas as stated in the MRP page 3-36e will also provide, over time, a approximately 9.2 lbs per acre of P. Although, 40 lbs per acre of P is recommended, the proposed application rate should be sufficient to establish and maintain native vegetation. The applicant also proposes to apply an additional 50 lbs of triple super phosphate the following year if it appears necessary based on plant success. 50 lbs per acre of Ammonium nitrate with analysis of 32-0-0 will also be applied by the applicant. This is equivalent to approximately 16 lbs of N per acre. The alfalfa which will be incorporated into the soil will supply approximately 49 lbs per acre of N upon decomposition. The alfalfa has at least 1% N in the material therefore decomposition should not be problem. The ammonium nitrate which will be applied will also aid in microbial decomposition of the material. The applicant also proposes to apply 75 lbs/acre of Ammonium nitrate the following year if it appears necessary based on plant success (p3-36 MRP).

Compliance

The applicant meets the requirements of this regulation. The proposed soil amendment plan is adequate and should provide sufficient nutrients to establish and maintain native vegetation. The alfalfa mulch which will be incorporated into the fill material should improve the water and nutrient holding capacity of the material as well.

Stipulations

None.

UMC 817.41 HYDROLOGIC BALANCE: GENERAL REQUIREMENTS -JRF/RVS

Existing Environment and Applicant's Proposal

Surface Water - JRF

The regional surface water hydrology of the permit area and adjacent lands is described in Section 7.2 of the MRP. The permit area is drained by Coal Canyon Creek which is an ephemeral tributary of the North Fork of Gordon Creek. The North Fork of Gordon Creek drains into the Price River.

The MRP characterizes the baseline water quality and quantity of surface waters in and adjacent to the permit area in Table 7-1, Table 7-2, and Table 7-3.

The applicant proposes to minimize changes to the prevailing hydrologic balance in the permit and adjacent areas through the use of a combination of structures. Diversion berms and a culvert are used to route the disturbed and undisturbed drainages. The disturbed acreage drainage is treated through a series of sediment ponds before progressing downstream.

Reclamation measures for postmining drainage patterns are discussed briefly in Section 7.2.

Ground Water - RVS

The applicant provides information about aquifers, springs and mine inflows in Section 7.1 of the MRP. Supplementary ground-water information occurs in Figure 7-1, Table 7-1, Table 7-2, Table 7-3, Figure 7-5 and Plate 7-1.

The applicant describes the Star Point Sandstone as the "principal aquifer in the Gordon Creek area (Section 7.1.2, p. 7-3)." Water seeped through the floor as the Hiawatha seam was extracted in the No. 3 Mine. Permeable lithologies within the

Blackhawk Formation and the Price River Formation are considered localized and representative of perched aquifer conditions (Section 7.1.2, p. 7-4). A significant inflow (185-50 gpm) was encountered when mining intersected a fault in the No. 3 Mine (Plate 7-2 and Table 7-2). A portion of the ground water was utilized for dust abatement (Section 7.1.4 MRP).

Four seeps and no springs were identified within and adjacent to the permit area during a field reconnaissance (Section 7.1.2, p. 7-8, and Section 7.1.5, p. 7-18).

Ground-water quality was sampled at the No. 3 Mine discharge location 3-3-W (Plate 7-1). Discharge water was more mineralized than ground water from wells and springs located to the west of the North Fork of Gordon Creek and along the upper drainage of Beaver Creek (Section 7.1.3, p. 7-9). Excess ground water was discharged to the system of sediment ponds (Section 7.1.4, p. 7-17).

Mine portals were sealed in September 1983. Consequently, the No. 3 Mine and No. 6 Mine workings are no longer accessible.

Compliance

Surface Water -JRF

The proposed reclamation practices will minimize changes to and ultimately enhance the hydrologic balance in and adjacent to the permit area. Specific descriptions and analyses of the design measures proposed are contained in the following sections (UMC 817.42-57).

The MRP contains adequate discussion of the requirements of this regulation in Chapters 3 and 7. Analysis of the reclamation techniques for restoring the ephemeral channel are discussed in UMC 817.44.

The applicant is in compliance with this regulation.

Ground Water

Springs do not occur within or adjacent to the permit area. Moreover, mine inflow decreases through time indicating localized aquifer conditions (Table 7-2).

Underground mining activities were planned and conducted to minimize changes to the ground-water balance both within and adjacent to the mine plan area. Changes in ground-water quality and quantity and depth to ground water were minimized so that the postmining land use would not be affected. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.42 HYDROLOGIC BALANCE: WATER QUALITY STANDARDS AND EFFLUENT LIMITATIONS - JRF

Existing Environment and Applicant's Proposal

Portions of undisturbed drainage from the permit area are combined with disturbed area drainage and treated by sediment control structures.

Diversion of the undisturbed area runoff from the disturbed area would result in more environmental damage than accommodating and treating runoff from both areas. The contributing undisturbed area is 74.9 acres which is less than 10 percent of the watershed area (896 acres). The combined runoff will be routed to a two-cell sediment pond. Design specifications and location are shown on Plates 7-4, 3-1 and 3-1A respectively. A detailed analysis of the sediment pond system is contained in UMC 817.46 of this technical analysis. Plate 3-1A shows the installation of a silt fence or straw bales and loose rock check dams upslope from the diversion ditch D-1. Utilization of silt fence, straw bales and loose rock check dams will help to decrease the calculated sediment load to the sediment pond.

Compliance

The treatment methods proposed for the disturbed area drainage are acceptable procedures. The combination of silt fence or strawbales and a two-cell sediment pond will assure that effluent standards are maintained for the disturbed area. Loose rock check dams will serve two purposes. They will effectively reduce velocity of flow therefore reducing erosion as well as serving as sediment traps. The applicant complies with this section.

Stipulations

None.

UMC 817.43 HYDROLOGIC BALANCE: DIVERSIONS AND CONVEYANCES OF OVERLAND FLOW, SHALLOW GROUNDWATER FLOW, AND EPHEMERAL STREAMS - JRF

The applicant has proposed a permanent diversion system to intercept runoff from the disturbed area and a portion of the undisturbed area. The diversion ditch (D-1) is designed to safely pass the runoff from a 10-year, 24-hour precipitation event. The diversion system will route the disturbed area drainage to a two-cell sediment pond. In addition, an undisturbed area collection

system is proposed to route runoff to the existing ephemeral channel below the mine site. The design details for the undisturbed diversions and disturbed runoff collection system are contained in Chapter 7 and Plate 3-1A. Design specifications for loose rock check dams for the diversion ditch and disturbed area can be found on Figures 7.2a and 7.2b. Locations of these structures are given on Plate 3-1A.

The peak flow determinations in the MRP are from the Division's "Peak" program. "Peak" is a computer adaptation of the SCS unit hydrograph-curve number methodology. Protection measures for prevention of erosion in disturbed and undisturbed ditches are noted on Plate 3-1A and Figures 7-2a and 7-2b. The applicant shows velocity and design calculations for the D-1 ditch in Section 7.2 3.2, and on Table 7-6 of the MRP. The applicant proposes to use loose rock check dams with stilling basins as energy dissipators (Figures 7-2a and 7-2b).

The applicant commits to maintaining the sediment control features on the reclaimed mine site with an inspection program outlined in section 7.2.5 of the MRP.

The diversion ditch and 24 inch CMP are permanent structures. The land owner has requested that the portal pads, road and sediment ponds be reclaimed such that they can be utilized for stock and grazing capabilities.

Compliance

The applicant has provided an acceptable program for the conveyance of overland flow by utilizing a diversion ditch and sediment control features (i.e. silt fence). Erosion protection devices have been proposed (loose rock check dams and silt fence) for the diversion ditch and the disturbed area.

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.44 HYDROLOGIC BALANCE: STREAM CHANNEL DIVERSIONS - JRF

Existing Environment and Applicant's Proposal

The Coal Canyon ephemeral stream has a drainage area of 1.4 square miles. The stream was diverted under the mine site via a 48-inch culvert. In Section 7.2 applicant has committed to removing or crushing in place the 48-inch culvert.

The stream channel will be routed across the reclaimed mine site. Plate 3-1A presents the location of the stream. The left fork of the drainage is denoted as U-1 on Plate 3-1A. Calculations for U-1 and the reclaimed stream can be found in Section 7.2 3.2, on Figures 7-2c and 7-3, on Tables 7-4 and 7-6. The channels are designed for the 100-year, 24-hour runoff event. Riprap protection is provided for stream reaches that have erosive velocities. Stilling basins will be used for energy dissipation in reach R-3 and R-5. The calculation for riprap and stilling basin design are in Section 7.2.3 of the MRP. A loose rock check dam will be installed in Channel U-1, the dam will provide grade control and energy dissipation. Figure 7-2b provides the design methodology for the loose rock check dam.

Compliance

The reclaimed stream channel is designed in accordance with UMC 817.44. The design specifications for the riprap, stilling basins and loose rock check dams will result in a stable channel design. The natural stilling basin shown on Plate 3-1A will enhance riparian vegetation due to the ponding and holding of water and sediment. The reclaimed channel approximates the natural channel configuration. Figure 7-4 demonstrates that the natural channel above and below the mine site meanders very little. The width of Coal Canyon restricts meandering. The reclaimed channel has a pattern of drops, pools and slight gradient areas.

The applicant's proposal is in compliance with this section.

Stipulations

None.

UMC 817.45 HYDROLOGIC BALANCE: SEDIMENT CONTROL MEASURES - JRF

Existing Environmental and Applicant's Proposal

The MRP describes the methodologies needed to control erosion on site in Section 7.2 and in Section 3.5. The applicant proposes to control erosion during reclamation via straw dikes, silt fences, and sediment ponds. The sediment pond discussion may be found in 817.46.

Placement of erosion protection devices is denoted on Plate 3-1A and Figure 3-8. The applicant has committed to a regular inspection schedule and replacement of the erosion controls.

Compliance

The applicant's proposals for sediment control measures for the disturbed area will result in minimizing to the extent possible additional contributions of sediment to stream flow or to runoff outside the permit area. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.46 HYDROLOGIC BALANCE: SEDIMENTATION PONDS - JRF

Existing Environment and Applicant's Proposal

The MRP describes the sediment pond proposed for runoff from disturbed and undisturbed areas in Section 7.2.3.2, Figure 7-5, Plates 7-4, 3-1A, Tables 7-4, and 7-6. The sediment pond will be a two-celled structure. The ponds will be left as a permanent structures and will provide water for stock. For discussion of permanent impoundments see UMC 817.49.

The pond is designed to contain the 10-year, 24-hour storm event and pass the 100-year, 24-hour storm. The principal spillway design allows for dewatering after a twenty-four hour period. Water discharged from the principal spillway is monitored according to a NPDES permit approved by the EPA on August 24, 1977.

In Section 7.2.3.2 the applicant commits to quarterly inspection of the ponds for structural stability and to cleaning the sediment ponds when they reach 60 percent of the maximum level as shown on the sediment marker on Plate 7-4.

Compliance

According to Plates 7-4, 3-1 and Division calculations, the sediment ponds are undersized. As noted in the following table the contributing drainage area to the ponds includes 22 acres of disturbed area instead of the 8 acre figure used in the application. The principle spillway is also undersized. With the present design specifications the spillway will pass 12.25 cfs. The Division calculated design flow of 22.71 cfs will require a larger principle spillway.

In discussion with the operator, there are areas within the 22 acres indicated as disturbed on Plate 3-1 which are undisturbed. However, the application does not differentiate undisturbed areas within the disturbed area. Therefore, the Division assumed all acreage within the 22 acre area as disturbed area in calculating runoff volumes and peak flows. The Division calculations are as follows:

	Disturbed Ditch To Ponds	Undisturbed Drainage To Ponds
Area	22 Acres	74.9 acres
Slope length	2950 feet	4950 feet
Peak discharge (100-yr, 24-hr event)	43.64 cfs	10.89 cfs
Peak discharge (10-yr, 24-hr event)	22.15 cfs	o.56 cfs
Total Runoff (100-yr, 24-hr event)	4.14 ac. ft.	2.55 ac. ft.
Total Runoff (10-yr, 24-hr event)	2.08 ac. ft.	.378 ac. ft.

The operator will be in compliance when the terms of the following stipulations are met.

Stipulations UMC 817.46-(1, 2)-JRF

1. The sediment ponds shall be constructed by October 31, 1986 so that at least 3.83 acre feet of sediment and runoff can be retained in the ponds and so that a 24 inch cmp riser is installed for the principle spillway.

2. Within 30 days of final pond construction, the applicant shall submit as-built pond designs certified by a Professional Engineer. The designs shall show pond contours with a contour interval no greater than two feet. The as-built designs shall at a minimum contain:

   a. sideslope characterizations
   b. section and plan views
   c. scale of 1" = 20'
   d. pond floor elevation and dimensions
   e. bank elevation
   f. complete spillway dimensions
   g. sediment levels and markers for both ponds

UMC 817.47 HYDROLOGIC BALANCE: DISCHARGE STRUCTURES - JRF

Existing Environment and Applicant's Proposal

The sediment pond discharge structures are designed according to standard engineering design procedures. UMC 817.43 contains a description of culverts for the diversion ditch D-1 and the left fork of Coal Canyon. A complete description of design methodologies for discharge structures is contained in Section 7.2.3. of the MRP. All pond discharge structures are protected by rip rap. The applicant has committed to quarterly inspection of ponds for signs of structural weakness or erosion in Section 7.2.3 of the MRP.

Compliance

The pond discharge structures are designed to safely pass the predetermined peak flows. The emergency spillway will handle flows much greater than the design flow. Outlet protection is provided in the form of a grouted drop chute. The drop chute will be constructed according to the design specifications outlined in Barfield, Warner and Haan (1981) p. 528 and page 7-24b of the MRP. At the bottom of the drop chute a stilling basin will be installed to reduce erosive velocities. Design specifications for the stilling basin may be found in Section 7.2.3. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.48 ACID-FORMING AND TOXIC-FORMING MATERIALS - DD

Existing Environment and Applicant's Proposal

The applicant states there are no acid- or toxic-forming materials known to exist at this site. The applicant commits that if any are discovered, they will be disposed of on-site or removed to an approved permit area.

Compliance

The applicant proposed to bury material with less than 50 percent coal fines (material that may be potentially toxic) to a minimum depth of 4 feet with non-toxic and noncombustible material. Material with greater than 50 percent coal fines will be removed to the C.V. Spur refuse site. Analysis of materials deposited on the mine site from another mine which were the subject of Notice of Violation N85-8-17-1 indicate some toxicity problem areas exist. This material should be buried to a minimum depth of four (4) feet during backfilling operations. The applicant will be in compliance when the following stipulation is met.

Stipulations UMC 817.48-(1)-DD

1. During the backfilling and grading portion of the reclamation at the Gordon Creek #3 and #6 mine site, but no later than October 31, 1986, the applicant shall bury the material which was the subject of Notice of Violation N85-8-17-1 with a minimum of 4 feet of non-toxic and nonacid-forming material .

UMC 817.49 HYDROLOGIC BALANCE: PERMANENT AND TEMPORARY IMPOUNDMENTS - JRF

Existing Environment and Applicant's Proposal

The two-celled sediment pond will be left as a permanent structure. The pond will provide water for stock in accordance with the post-mining land use of grazing.. The water is protected by a private water right as noted on Figure 3-3a in the MRP. The quality of the water is governed by an NPDES permit. The applicant provides a full discussion of the requirements of this regulation beginning on page 7-22 of the MRP. The pond structure is not subject to the requirements of 30 CFR 77.216.

Compliance

The applicant has provided information suitable to meet all requirements of this regulation. Furthermore, the applicant has committed to quarterly inspections of the pond for structural stability. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.50 HYDROLOGIC BALANCE: UNDERGROUND MINE ENTRY AND ACCESS DISCHARGES - RVS

Existing Environment and Applicant's Proposal

The Hiawatha seam dips 5.3 degrees to the north-northeast. Accordingly, the No. 3 mine workings dip in a similar fashion and portals are located approximately 200 feet higher and 100 feet lower than the northwestern and southeastern portions of the mine, respectively (Plate 3.2). The Castlegate "A" seam dips 9.6 degrees to the northeast and No. 6 Mine portals are located approximately 20 feet higher and 100 feet lower than western and northern portions of the mine, respectively (Plate 3-3).

Water seeped through the floor as the Hiawatha seam was extracted and a significant inflow was encountered when mining intersected a fault in the No. 3 Mine (Plate 7-2 and Table 7-2).

The applicant proposes to monitor any unplanned portal discharges in accordance with the water quality standards required by UMC 817.42 and other appropriate state and federal regulations. If necessary, water will be treated during the period of discharge (Section 7.1.8, p. 7-19).

Compliance

Portals were designed and constructed to control gravity discharge of water from the mine. Inflow has occurred in the past and the applicant has provided an adequate mitigation plan for unplanned portal discharges.

Stipulations

None.

UMC 817.52 SURFACE AND GROUND WATER MONITORING - JRF

Existing Environment and Applicant's Proposal

Ground Water

The applicant provides information about groundwater in Section 7.1 of the MRP. A thorough discussion of groundwater is contained in UMC 817.41 - Ground Water of this technical analysis. Monitoring of ground water occurred at Station 3-3-W (see Plate 7-1 for location) while the mine was operating. Table 7-2 in Section 7.1 contains the water quality data for this station. Station 3-3-W is no longer accessible due to closure of the mine portals.

Surface Water

The applicant provides information about surface-water monitoring in Section 7.2.6, Figure 7-5 and 7-6 and Table 2 in Section 7.1. Plate 7-1 denotes the location of the three surface-water monitoring locations. The applicant will monitor stations 3-1-W and 3-4-W on a quarterly basis. Station 3-2-W will be monitored according to the NPDES permit.

Compliance

Ground Water

The applicant maintained an adequate monitoring program during active operations. Underground mining activities were planned and conducted to minimize changes to the ground water regime. The applicant is in compliance with this section.

Surface Water

The applicants surface water monitoring program should be altered to reflect the Division's updated water monitoring guidelines. The water quality parameters to be sampled should conform with the Division guidelines of January 1986. Also, a sample station at the entrance of the pond will be required to determine that effluent standards for bond release are achieved.

The applicant will be monitoring the left and right forks of Coal Canyon as well as the sediment pond discharge. With the addition of the above mentioned station and the addition of total dissolved solids to the water quality parameter list, the applicant will have an adequate surface water monitoring program.

Stipulations UMC 817.52-(1, 2)-JRF

Ground Water

None.

Surface Water

1. Within 30 days of permit approval, the applicant shall submit a revised surface water parameter list that includes total dissolved solids.

2. Within 30 days of permit approval, the applicant shall submit a revised surface water monitoring program that incorporates an additional monitoring station at the sediment pond entrance. Sampling of this station shall be initiated upon permit approval utilizing the quarterly frequency for other surface water monitoring.

UMC 817.53 HYDROLOGIC BALANCE: TRANSFER OF WELLS - RVS

Existing Environment and Applicant's Proposal

No wells occur within the permit or adjacent area.

Compliance

Inasmuch as no wells are available for transfer, the applicant is in compliance with this section.

Stipulations

None.

UMC 817.55 DISCHARGE OF WATER TO AN UNDERGROUND MINE - JRF

Existing Environment and Applicant's Proposal

The applicant states that no water will enter the sealed mine portals. All water in Coal Canyon will bypass the sealed mine locations (page 7-21 Section 7.2.2.2).

Compliance

A review of the surface water drainage plan does not indicate any diversion of water into underground workings. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.56 HYDROLOGIC BALANCE: POSTMINING REHABILITATION OF SEDIMENTATION PONDS, DIVERSIONS, IMPOUNDMENTS, AND TREATMENT FACILITIES - JRF

Existing Environment and Applicant's Proposal

The applicant proposes to leave the sediment pond and diversion ditch as permanent structures. Information is provided as to specific modification plans upon bond release in Section 7.2 3.2. The applicant proposes to revegetate the diversion ditch and the sediment pond slopes. The applicant commits to removal of silt fence and other temporary controls upon bond release.

Compliance

The applicant commits to renovation of the permanent sediment pond to achieve the desired post-mining land use (Section 7.2 3.2). The applicant is in compliance with this section.

Stipulations

None.

UMC 817.57 HYDROLOGIC BALANCE: STREAM BUFFER ZONE - JRF

Existing Environment and Applicant's Proposal

Coal Canyon Creek is the only drainage that occurs in the permit area. It is ephemeral (Table 2, Chapter 7) and therefore cannot support aquatic life.

Compliance

Neither perennial or intermittent streams exist within the permit boundary, therefore the applicant is in compliance with this section.

Stipulations

None.

UMC 817.59 COAL RECOVERY - RVS

Room and pillar mining commenced during December 1978 and terminated in November 1980 in the #6 Mine. Room and pillar mining commenced during February 1976 and retreat mining was initiated in January 1982 and continued into May 1982 in the #3 Mine. All portals were permanently sealed during September 1983.

The applicant requested permission to initiate retreat mining in the #3 Mine (Hiawatha seam) and described potential impacts to the #6 Mine (Castlegate "A" seam). The Division of State Lands and Forestry (DSLF) observed that the applicant's assessments of potential impacts to the Castlegate "A" seam were optimistic, and therefore, required submittal of a royalty bond in the amount of $4,227.00. Bond release is contingent upon either of the following:

1. When a mining operation commences in the Castlegate "A" seam through state leased lands; or

2. At the end of ten years providing state coal (ML 27342) in the Castlegate "A" seam has not been sterilized from recovery as a result of subsidence or shearing pursuant to the applicant's operations in the Hiawatha seam.

Neither of the bond release conditions have been satisfied to date. Moreover, DSLF has completed an audit on this matter and has requested royalty payments. This matter is currently in litigation.

Compliance

The room and pillar technique with secondary pillaring applied by the applicant in the #6 Mine and #3 Mine meet the requirements of maximizing the conservation of coal while utilizing the best technology currently available to maintain environmental integrity. However, the appropriateness of a secondary pillaring in the #3 Mine prior to complete recovery in the #6 Mine will be resolved and, if necessary, mitigated through pending litigation.

Stipulations

None.

UMC 817.61-68 USE OF EXPLOSIVES - RVS

Existing Environment and Applicant's Proposal

The applicant states that surface blasting is not associated with No. 3 Mine or No. 6 Mine operations (Section 3.3.5.4, p. 3-16).

Compliance

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.71-74 DISPOSAL OF EXCESS SPOIL AND UNDERGROUND DEVELOPMENT WASTE - PGL

Existing Environment and Applicant's Proposal

The applicant does not have any excess spoil located on site. The mine has been idle since November, 1980 and the portals were sealed in September, 1983. Any underground development waste was either left underground in "gob" storage areas or loaded out with the coal (Section 3.3.2.6, p. 3-12. Therefore, this section is not applicable.

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.81-.88 COAL PROCESSING WASTE BANKS - PGL

Existing Environment and Applicant's Proposal

Coal processing was not done at this mine site, therefore, this section is not applicable.

UMC 817.89 DISPOSAL OF NON-COAL WASTES - PGL

Existing Environment and Applicant's Proposal

All surface structures have been removed (Section 3.2.3, p. 3-4).

Compliance

Applicant complies with this section.

Stipulations

None.

UMC 817.91 COAL PROCESSING WASTE - PGL

Existing Environment and Applicant's Proposal

Coal processing was not done at this mine site, therefore, this section is not applicable.

UMC 817.95 AIR RESOURCE PROTECTION - KMM

Existing Environment and Applicant's Proposal

Air quality resources and problems of the permit area are described in Chapter 11 and Section 3.4.7.1. The principal pollutant during reclamation will be particulate matter from construction equipment, predominantly fugitive dust.

Compliance

The applicant has committed to enforcing speed limits and watering road surfaces on as needed basis to control fugitive dust and is, therefore, in compliance with this section.

Stipulations

None.

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

Existing Environment and Applicant's Proposal

Potential impacts on fish and wildlife resources are minor and are described in Sections 3.4.6, 3.4.6.1 and 10.4. Mitigation plans are described in 3.4.6.2 and 10.5. Threatened and endangered species of the permit area are described in Section 9.4 (plants) and 10.3.3 (animals).

The applicant proposes to revegetate the disturbed area by seeding and planting species valuable for wildlife food and cover. Shrubs and trees will be distributed in clumps to maximize edge and useful cover. The establishment of small areas of riparian habitat will constitute wildlife habitat enhancement. Riparian habitat development includes:

1. creation of a pond where the culvert is to be plugged,
2. reestablishment of Coal Creek in the pad area, and
3. conversion of sediment ponds to stock and wildlife watering areas.

Riparian area seeding will consist of the general area seed mix enhanced with three grass and one forb species. Shrub plantings in the riparian areas will include willow cuttings and six-foot saplings.

Compliance

Since the mine is in final reclamation, no additional disturbance is expected and no major adverse impacts on wildlife or vegetation resources are expected. Disturbance of the downstream aquatic system will be minimized by controlling sediment through silt fences and straw bales and a system of ponds until vegetation becomes established.

Implementation of the reclamation plan will improve wildlife habitat of the permit area, enhance natural riparian vegetation and be compatible with the post mining land use of wildlife and grazing. While site specific data are not available on raptor populations, construction activities which might disturb nesting birds will be delayed until after July 15 to avoid potential conflicts. Spring planting of shrubs and trees should not be a major disturbance to nesting activities.

The applicant is committed to notifying the Division if any threatened, endangered or sensitive species are identified in the permit area (9-6).

The applicant complies with this section.

Stipulations

None.

UMC 817.99 SLIDES AND OTHER DAMAGE - PGL

Existing Environment and Applicant's Proposal

The applicant states that "at any time a slide occurs which may have a potentially adverse affect on public property, health, safety or the environment, persons conducting the underground coal mining operations will notify the Division by the fastest available means and comply with any remedial measures required by the Division" (Section 3.3.2.5, p. 3-12).

Compliance

Applicant complies with this section.

Stipulations

None.

UMC 817.100 CONTEMPORANEOUS RECLAMATION - KMM

Since the mine has been idle since 1980, this section is no longer applicable.

UMC 817.101 BACKFILLING AND GRADING - DD, PGL

Existing Environment and Applicant's Proposal

The surface of the area was originally disturbed in 1975 (pre-law) by a previous owner. At that time, no major effort was made to save or store any soil material. Therefore, restoration to approximate original contour is impractical due to the lack of fill material. The surface of the site is privately owned and the postmining land use will be livestock grazing. A letter from the landowner (page 4-33, 4-34, MRP) approved the Beaver Creek Coal Company proposed backfilling and grading plan because it enhances the postmining land use for livestock grazing by providing level pad areas for loading pens, corrals and grazing.

The applicant states that the highwalls which will be left in place are similar in structural composition to the pre-existing cliffs in the surrounding area, and are compatible with the geomorphic processes of the area. The highwalls to be retained on Plate 3-1A are "stable" as stated on page 3-35a (#6). A stability analysis was performed on highwalls at the No. 3 and No. 6 Mine. Results given on page 3-35d and 3-35e show that the No. 3 mine highwall has a static safety factor of 5.01 for dry conditions and 4.62 for saturated conditions. The No. 6 Mine highwall has a static safety factor of 4.62 for dry conditions and 4.29 for saturated conditions. These are well above the 1.5 safety factor required.

Similar results on embankment stability analysis indicate a safety factor of 2.22 for dry conditions and 1.65 for saturated conditions. This meets the 1.30 safety factor requirement.

Compliance

The applicant submitted adequate backfilling and grading plans for the disturbed site in relation to the post mining land use. The applicant included calculations insuring a minimum static safety factor of 1.5 for all highwalls and 1.3 for embankment material. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.103 BACKFILLING AND GRADING: COVERING COAL AND ACID- AND TOXIC-FORMING MATERIALS - DD

Existing Environment and Applicant's Proposal

Material with less than 50 percent coal fines will be buried against the highwalls and covered with a minimum of four (4) feet of incombustible and non-toxic material. Material contaminated with oil and grease or greater than 50 percent coal fines will be disposed of at the C.V. Spur Refuse site.

Compliance

The applicant proposes to bury material with less than 50 percent coal fines with a minimum of four (4) feet of non-toxic and non-combustible material against the highwall. Material with greater than 50 percent coal fines and material contaminated with oil and grease will be disposed of at an approved permit area. The applicant has complied with this section.

Stipulations

None.

UMC 817.106 REGRADING OR STABILIZING RILLS AND GULLIES - PGL, JRF

Existing Environment and Applicant's Proposal

The applicant states that "if rills or gullies deeper than 9 inches form in areas that have been regraded and topsoiled, they will be regraded, filled or otherwise stabilized and the stabilized area reseeded or replanted" (Section 3.4.5, p. 3-24 and Section 3.5.6, p. 3-38).

Compliance

Applicant complies with this section.

Stipulations

None.

UMC 817.111 REVEGETATION: GENERAL - KMM

Existing Environment and Applicant's Proposal

The environment of the GCCC #3 and #6 Mines is described in portions of Section 9.3 of the MRP. Principal disturbed vegetation types are Sagebrush-Grassland and Oak Shrub.

Chapter 3 of the MRP describes the proposed reclamation of of roads, pads and the total affected area.

Revegetation plans for the area including soil preparation, seeding, fertilization, mulch, shrub/tree planting and monitoring are described in Section 3.5.5. A primary seed list and additional species proposed for the riparian zone are listed in Section 3.4.5. Shrub and tree species to be planted as cuttings, saplings and seedlings are described in Section 3.5.5.4.

Compliance

Seed bed preparation includes ripping to 12 to 24 inches to loosen the fill profile. The technique is specified for pad areas (3-36e) but should be used on all areas accessible to the ripping equipment. Two tons per acre of hay will be incorporated into the soil on all pad areas.

The revegetation species were chosen to provide a prompt and permanent vegetative cover appropriate to the post mining land use.

To verify that the designated mix of pure live seed is used in the revegetation, the operator should request that the Price area State Agricultural Inspector collect a seed sample and submit it for analysis. Results should be provided to the Division within 90 days of collection. Seeding/planting rates and locations are presented in the text and most plantings are schematically designated on Plate 3-1A. The locations of willow cuttings are not designated on Plate 3-1A but are adequately explained in the text.

The applicant complies with this section.

Stipulations

None.

UMC 817.112 USE OF INTRODUCED SPECIES - KMM

Existing Environment and Applicant's Proposal

Three introduced species are included in the applicant's proposed seed mix. Alfalfa and Yellow Sweetclover are desirable because they provide quick stabilizing cover, are of value to wildlife and can fix nitrogen since they will be innoculated with

appropriate rhyzobia before planting. Kentucky Bluegrass is a desirable species because it establishes easily, is a widely naturalized grass in western states (in both upland and riparian areas), is compatible with native species and is not overly competitive.

Compliance

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.113 REVEGETATION: TIMING - KMM

Existing Environment and Applicant's Proposal

The applicant proposes fall (September 1 through October 31) seeding and, at the Division's request, has agreed to spring planting of woody species (3-37). The MRP designates fall for willow harvest and planting (3-37b), Seedlings and saplings will be planted in early spring of 1987.

Compliance

The application contradicts itself (p. 3-37 and p. 3-37b) on the schedule for planting of willow cuttings. Since there are differing professional opinions on the best time to plant willow cuttings, the Division would like to compare Beaver Creek Coal Company's plantings with cuttings planted in the alternate season at the same location. The Division will be responsible for design and implementation of the experiment which will neither damage nor interfere with the Beaver Creek planted willows. This experiment is agreeable to BCCC (personal communications, Dan Guy). The applicant will be in compliance with this section when the following Stipulation is met.

Stipulation UMC 817.113-(1)-KMM

1. Within 30 days of permit approval, the applicant shall submit amended pages 3-37 or 3-37b to clarify when planting of willow cuttings will occur.

UMC 817.114 REVEGETATION: MULCHING - KMM

Existing Environment and Applicant's Proposal

The applicant states that 3,000 lbs/acre (3-36g) or 2000-3500 lbs/acre (3-37) of wood-fiber mulch will be applied after seeding.

Compliance

The applicant is in compliance with this section if 3000 lbs/acre are applied.

Stipulation UMC 817.114-(1)-KMM

1. The applicant shall apply no less that 3000 lbs/acre of wood fiber mulch after seeding during final reclamation of the site.

UMC 817.116 REVEGETATION: STANDARDS FOR SUCCESS - KMM

Existing Environment and Applicant's Proposal

A 5-acre reference area was established and sampled in 1980 for the two major vegetation types (Oak Shrub and Sagebrush-Grassland). It will be staked in fall of 1986. The approximate location of the site is designated on Plate 3-1A. The applicant describes sampling techniques which will be used to characterize both the reference areas and the reclaimed areas to determine revegetation success (Appendix 3).

Since riparian vegetation is being established as a wildlife habitat enhancement measure rather than to reestablish a significant pre-mining vegetation type, a riparian reference area is not necessary for determining vegetation success.

Plans to expand the GCCC #3 and #6 Mine riparian area to accommodate 0.5 acres of wetland mitigation area (off-site mitigation for disturbance at the GCCC #2 mine) have been abandoned with concurrence of the Division of Wildlife Resources. A program of supplying dam building materials for beaver and planting fish in the Sweets Canyon pond and upper Gordon Creek has been initiated instead.

A detailed timetable for reclamation monitoring is provided in Appendix 3.

Compliance

UMC 819.116 requires that ground cover and productivity equal (within 90%) the approved standard (i.e., the reference area) for the last two years of the responsibility period. The determination must be based on techniques approved by the Division. The techniques described in Appendix 3 are acceptable. A monitoring schedule is provided in Appendix 3, page 4. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.121-.126 SUBSIDENCE CONTROL - RVS

Existing Environment and Applicant's Proposal

The applicant utilized room and pillar methods with secondary pillaring in both the No. 3 Mine and No. 6 Mine (Section 3.3.1.3, p. 3-10). Overburden thickness ranges from 150 to 550 feet above the No. 6 Mine and 100 to 1,000 feet above the No. 3 Mine. Coal thickness averaged six feet in the No. 6 Mine and eight feet in the No. 3 Mine (Section 6.5.2, p. 6-6 and 6-7). Thus, the combined extracted thickness averaged from six (6) to fourteen (14) feet.

The applicant conducted a field inspection of the surface above the No. 3 Mine and No. 6 Mine workings (Section 3.4.8, p. 3-30a). Tension fractures from subsidence were identified and located on a map (Plate 3-5).

The applicant has installed six (6) monuments to monitor subsidence (Section 3.4.8, p. 3-30a and Plate 3-5). Monuments will be surveyed yearly until bond release to document vertical movement. Moreover, a yearly surface inspection will be conducted. The applicant commits to annually providing a map that shows the results of subsidence to the Division (Section 3.4.8, p. 3-30a).

Compliance

The applicant has provided information about mining methods and overburden thickness to indicate mining activities were planned and conducted in order to prevent subsidence from causing material damage to the surface (UMC 817.121).

An assessment of regulatory compliance with UMC 817.122 is not applicable due to permanent cessation of mining. The mine plan and adjacent area contain neither perennial streams, impoundments, aquifers significant to public water supplies or public buildings. The applicant is in compliance with UMC 817.126.

The applicant has identified areas of vertical movement and associated upward propagation of tension cracks to the surface that have caused a reduction in the reasonably foreseeable use of surface lands. Specifically, certain areas characterized by surface tension cracking pose a potential hazard to livestock grazing and/or wildlife. To comply with the requirements, of UMC 817.124 the applicant has committed (P. 3-30d) to repairing or compensation surface owner, for subsidence control surface impacts.

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.131 CESSATION OF OPERATIONS: TEMPORARY - DD

Existing Environment and Applicant's Proposal

This section is not applicable due to the permanent cessation of mining activities.

UMC 817.132 CESSATION OF OPERATIONS: PERMANENT - DD

Existing Environment and Applicant's Proposal

The applicant proposes to reclaim the disturbed site according to an approved reclamation plan after a permit has been issued in Section 817.132 of the MRP.

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.133 POSTMINING LAND USE - KMM

Existing Environment and Applicant's Proposal

Livestock grazing and wildlife habitat are the proposed post mining land uses. The applicant proposes to leave both the coal haul road and main access roads for access to the UP&L powerline road and livestock herding activities (Section 3.2.10). In addition, the applicant proposes to leave existing pad areas in their current configuration for use in livestock management. They further state that some highwalls will be left because their elimination would reduce or eliminate pad areas and access roads which would be incompatible with post mining land use plans (Section 3.5.4.2).

The MRP includes letters from the landowner supporting the proposed reclamation plan (p. 4-33, 34 MRP).

Compliance

The Division approves the post mining land use proposed. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.150-.156 ROADS: CLASS I - PGL

Existing Environment and Applicant's Proposal

The coal haul road extends over 5,000 feet within the permit area and was used for coal haulage by 28 to 40 ton trucks. This road connects to the Carbon County road in Gordon Creek Canyon. The road is located on privately-owned surface land and at the landowner's request, will be left in place to provide access to the Coal Canyon area as well as to the Utah Power and Light power line access (Section 3.2.10, p. 3-7).

The applicant requests that the haul road be downgraded to a Class II road because:

1. Coal is no longer hauled from the canyon; and

2. Access is controlled by a gate near the county road at the mouth of Cottonwood Canyon; and

3. The road is on privately owned surface lands and will have limited access.

The applicant will maintain drainage controls in place to insure Class II drainage standards are met. The road surface will be graveled and maintained at a 16-foot width in a stable condition during the bond liability period.

Compliance

The applicant's proposal to downgrade the haul road to Class II is acceptable. The applicant's proposal meets the standards for the Class II road. The applicant included the haul road in the permit area as shown on Plate 1-3, the permit area map.

The applicant has committed to gravel the haul road on p. 3-7b. However, in discussions with Dan Guy, the intent of BCCC is to gravel the haul road from the sediment pond north. Therefore, the applicant will be in compliance when the following stipulation is met.

Stipulation UMC 817.150-.156-(1)-PGL

1. Within 30 days of permit approval, the applicant shall provide amended page 3-37a which will specifically describe where the Class II road extending from within the permit area to the main Gordon Creek road will be graveled.

UMC 817.160-.165 ROADS: CLASS II - PGL

Existing Environment and Applicant's Proposal

The mine access road (approximately 2400 feet long) at Gordon Creek #3 and #6 was used for men and material access to the upper portals and is designated as a Class II road. This road originates on privately-owned surface land and crosses through a portion of state-owned surface to reach the upper portal pad which is on privately-owned surface land. This road will be left in place at the landowner's request to provide access to the Utah Power and Light Power Line road as well as to the upper pad area. The access road will be retained as a Class II road, as stated in Section 3.2.10, p. 3-7b, and will be maintained throughout the bond liability period.

Compliance

The access road meets the Class II road standards and will be retained as such during the bond liability period.

Stipulations

None

UMC 817.180 and .181 OTHER TRANSPORTATION FACILITIES AND SUPPORT FACILITIES AND UTILITY INSTALLATION - PGL

Existing Environment and Applicant's Proposal

All transportation and support facilities have been removed (Section 3.2.3, p. 3-4a). These facilities were removed in such a manner as to present damage to fish, wildlife and related environmental values as well as the prevention of additional contributions of suspended solids to streamflow.

Compliance

Applicant complies with this section.

Stipulations

None.

minesite was completed in late November, 1986. The following is a general description of the reclamation performed.

Reclamation Work Performed

A. 7 Portals Sealed and Backfilled
   1. Backfilled a minimum of 35' with incombustible material.

B. Structure Removal
   1. Removal and salvage/disposal of all structures on site:
      a. Concrete broken up and buried along highwalls.

C. Coal Waste Removal
   1. 3800 tons of coal waste hauled 25 miles to approved disposal site.
   2. Coal loadout spillage on hillside removed and hauled to disposal site.

D. Backfilling and Grading
   1. After sealing of the portals and removal of all structures, a backhoe (Cat 231) was brought to the upper (No. 6 portal) terrace.
   2. The backhoe began by reaching down over the fill bank and retrieving as much material as could be reached. This material was placed on the terrace.
   3. A dozer (Komatsu K-155A) worked with the backhoe, taking the retrieved material and spreading and compacting it from the highwall outward to reach the final configuration. Compaction of 90% or greater was accomplished by spreading the material in lifts not to exceed 24" and tracking over it with the dozer. The top 12"-18" was left in a roughened, loose condition to promote water infiltration and promote plant growth. Maximum, usable pad area was left at the landowner's request.
   4. Approximately 1500' feet of 48" culvert was removed, and replaced with a restored channel, engineered to carry a 100 year-24 hour precipitation event.
   5. The sedimentation ponds were reconstructed as permanent ponds to maximize water retention for stock and wildlife use.
   6. All roads were narrowed and regraveled. Note: Roads in the mine area serve as access to private land in the Beaver Creek area and for the Utah Power and Light Company power lines.

E. Revegetation
   1. Entire disturbed and affected area hydroseeded or drill-seeded and mulched according to plan.

2. Approximately 1500 oak seedlings and 150 Aspen, Mountain Maple and Chokecherry saplings were planted. In addition, approximately 3000 willows were planted along the reclaimed channel area.
3. Planted 100 additional Alpine Fir and Blue Spruce.

F. Fencing
1. Fence designed to preclude vehicle and stock access from the reclaimed area while allowing for wildlife access.

G. Final Site Inspection - 11/26/86
1. UDOGM Staff

H. Application for Phase I Bond Release - 1/5/87

I. Bond Release Inspection - 4/28/87
1. UDOGM
2 Utah State Land Board

J. Phase I Bond Release
1. UDOGM approved 60% bond release ($207,600) on June 26, 1987.

Specific Techniques

The reclamation of the Gordon Creek No. 3 and 6 Mine Site was the second steep slope, permanent mine reclamation performed by Beaver Creek Coal Company. Valuable information and successful techniques learned from the previous reclamation effort were employed in this project. The main difference in the projects was that the No. 3/6 Mine area is extremely dry, and special efforts were made here to maximize water retention and riparian area to enhance wildlife and stock utilization.

The original reclamation plan for the Gordon Creek No. 3 and 6 Mines included a commitment to restore 5 acres of riparian area during reclamation. A careful evaluation (by the agency and the operator) of the mine site and surrounding ephemeral drainages revealed that establishment of even 1/2 acre of riparian area here would be a major accomplishment. As a result of this study, Beaver Creek Coal Company set out to meet its commitment of establishing 5 acres of riparian area in a variety of ways:

(1) The Company contributed $8,600 to the construction of a new 3.5 acre marsh area at the Desert Lake Waterfowl Management Area;

(2) Beaver Creek Coal Company also initiated and funded a project to enhance beaver population and establish a cuthroat trout population in the North Fork of Gordon Creek near the #3/6 Mine area; This area has never been known to support a fish population, but after 2 years of work with the Utah Division of Wildlife Resources, shows a remarkable survival and growth rate for cuthroat trout;

(3) Although we had met our obligation in the above projects, we still made an effort to maximize riparian area at the reclaimed site by creating permanent sedimentation ponds for storage, and establishing a natural holding pond and subterranian drainage in the restored channel area to assist the riparian vegetation.

The Sedimentation ponds were redesigned and constructed to contain the runoff from a 100 year-24 hour precipitation event. The pond is a 2-celled system, in series, separated by a semi-permeable filter dike. This system was designed to allow for long-term water retention with minimal maintenance - the upper cell serves as a settling basin, the dike as a filter medium, and the lower cell as clean water storage for wildlife (and later for stock) watering. The system is equipped with adequately sized overflows, and is designed to allow the landowner the option of filling the ponds at his discretion upon bond release.

Another "natural" holding pond was created at the point where the natural drainage entered the 48" culvert. The culvert was removed, and the inlet area was covered with large rip-rap leading into the restored channel. The culvert had a 12' headwall, and once removed and replaced with a rip-rapped bank, a ponding area of approximately 1/4 acre was created in the natural incised drainage. This water now builds up near the overflow into the restored channel and then appears to slowly percolate through the channel area, creating a sub-terranian drainage and supplying water to the willows, saplings and other riparian vegetation.

The system appears to be working well at this point. After nearly a year, water has never flowed openly in the restored channel; however, water has been retained in the ponds throughout the year, and the willows and saplings show a survival rate of more than 75% and 90% respectively. Wildlife usage of the area has been commonly noted since reclamation.

FINAL TECHNICAL ANALYSIS

Beaver Creek Coal Company
Gordon Creek No. 3 and 6
INA/007/017
Carbon County, Utah

September 10, 1986

UMC 785.19 Alluvial Valley Floors - JW

Existing Environment and Applicant's Proposal

Coal Canyon encompasses very limited area for any streamlaid deposits. Further, Coal Canyon Creek is characterized by ephemeral flow and thus sufficient water is not available to support agricultural activities.

Compliance

The Division therefore determines that no alluvial floor exists in the area to be affected by reclamation activities.

The applicant is in compliance with this section.

Stipulations

None

UMC 817.11 SIGNS AND MARKERS - PGL

Existing Environment and Applicant's Proposal

Sign specifications and locations are described in Section 3.3.5.1 and Plate 3.1

Compliance

The applicant's plans for signs and markers are acceptable. It should be noted that the location of the perimeter markers shown on plate 3-1 do not coincide with the bonded area shown. The markers are used to delineate the extent of disturbance within the bonded area. The applicant complies with this section.

Stipulations

None.

UMC 817.13-.15 Casing and Sealing of Underground Openings - PGL

Existing Environment and Applicant's Proposal

The four portals at the #3 mine were sealed on September 1, 1983 and the three portals at the #6 mine were sealed on September 6, 1983. The portals were backfilled with a minimum of 25 feet of backfill material (Section 3.5.3.1, p. 3-32).

Compliance

The Division and Mine Safety and Health Administration were notified of the permanent closure of the portals at the Gordon Creek #3 and #6 mine after the portals had already been backfilled. Division guidelines require concrete seals as well as a minimum of 25 feet of incombustible material. Due to the fact that the portals were backfilled, a smoke tube test was performed on May 28, 1986 to test for air intake at the backfilled portals. The results of the test indicated that there was no air movement, and therefore, did not require BCCC to remove the backfill and install concrete seals (Figure 3-4e, p. 3-32e). The applicant complies with this section.

Stipulations

None.

UMC 817.21 - 817.23 TOPSOIL REMOVAL AND STORAGE - DD

Existing Environment and Applicant's Proposal

The applicant states that they do not anticipate any additional areas at the Gordon Creek No. 3 and No. 6 Mine will be disturbed; therefore, no topsoil will be removed and stored. These sections are not applicable.

UMC 817.24 TOPSOIL REDISTRIBUTION - DD

Existing Environment and Applicant's Proposal

All disturbance at the Gordon Creek #3 and #6 Mine was performed prior to Public Law 95-87 (1978). Consequently, no topsoil was salvaged (p3-21, MRP). The disturbed area is comprised of roads and pads constructed by cut and fill methods. Beaver Creek Coal Company proposes to use the fill material as a substitute topsoil or growth medium since the original soil material remains in the fill and thus no "topsoil" is available.

Compliance

On May 28, 1986, Division Soils Specialist James Leatherwood assisted Beaver Creek Coal Company in sampling sites which would be used for topsoil substitute material. This identified any material which is unsuited for the proposed use. From the analyses of the material, all parameters tested meet Division guidelines for substitute topsoil. pH values were in appropriate ranges for calcarious soils. Ec values were surprisingly low. The sandy nature of the soils defined by texture and supported by the low saturation percentages of the material may explain the low Ec values. The low values confirm there are no salinity concerns. SAR is low for all material demonstrating there are no sodium problems. Boron is also low for all materials. The only concern with the materials are their sandy properties, but with the addition of the alfalfa mulch incorporated into the soil on all pad areas, as mentioned in the MRP page 3-36e, the organic matter content of the soil will increase and thus improve the water and nutrient holding capacity of the soil.

The applicant complies with this section.

Stipulations

None.

UMC 817.25 NUTRIENTS AND SOIL AMENDMENTS - DD

Existing Environment and Applicant's Proposal

Samples collected during the original soil survey of the No. 3 and No. 6 Mine were analyzed for N and P. The material in fill areas are very low in P. The applicant proposes to apply 50 lbs per acre of triple super-phosphate which has an analysis of 0-46-0. This will provide approximately 23 lbs per acre of P as P_2O_5. The addition of alfalfa incorporated into the soil on the pad areas as stated in the MRP page 3-36e will also provide, over time, a approximately 9.2 lbs per acre of P. Although, 40 lbs per acre of P is recommended, the proposed application rate should be sufficient to establish and maintain native vegetation. The applicant also proposes to apply an additional 50 lbs of triple super phosphate the following year if it appears necessary based on plant success. 50 lbs per acre of Ammonium nitrate with analysis of 32-0-0 will also be applied by the applicant. This is equivalent to approximately 16 lbs of N per acre. The alfalfa which will be incorporated into the soil will supply approximately 49 lbs per acre of N upon decomposition. The alfalfa has at least 1% N in the material therefore decomposition should not be problem. The ammonium nitrate which will be applied will also aid in microbial decomposition of the material. The applicant also proposes to apply 75 lbs/acre of Ammonium nitrate the following year if it appears necessary based on plant success (p3-36 MRP).

Compliance

The applicant meets the requirements of this regulation. The proposed soil amendment plan is adequate and should provide sufficient nutrients to establish and maintain native vegetation. The alfalfa mulch which will be incorporated into the fill material should improve the water and nutrient holding capacity of the material as well.

Stipulations

None.

UMC 817.41 HYDROLOGIC BALANCE: GENERAL REQUIREMENTS -JRF/RVS

Existing Environment and Applicant's Proposal

Surface Water - JRF

The regional surface water hydrology of the permit area and adjacent lands is described in Section 7.2 of the MRP. The permit area is drained by Coal Canyon Creek which is an ephemeral tributary of the North Fork of Gordon Creek. The North Fork of Gordon Creek drains into the Price River.

The MRP characterizes the baseline water quality and quantity of surface waters in and adjacent to the permit area in Table 7-1, Table 7-2, and Table 7-3.

The applicant proposes to minimize changes to the prevailing hydrologic balance in the permit and adjacent areas through the use of a combination of structures. Diversion berms and a culvert are used to route the disturbed and undisturbed drainages. The disturbed acreage drainage is treated through a series of sediment ponds before progressing downstream.

Reclamation measures for postmining drainage patterns are discussed briefly in Section 7.2.

Ground Water - RVS

The applicant provides information about aquifers, springs and mine inflows in Section 7.1 of the MRP. Supplementary ground-water information occurs in Figure 7-1, Table 7-1, Table 7-2, Table 7-3, Figure 7-5 and Plate 7-1.

The applicant describes the Star Point Sandstone as the "principal aquifer in the Gordon Creek area (Section 7.1.2, p. 7-3)." Water seeped through the floor as the Hiawatha seam was extracted in the No. 3 Mine. Permeable lithologies within the

Blackhawk Formation and the Price River Formation are considered localized and representative of perched aquifer conditions (Section 7.1.2, p. 7-4). A significant inflow (185-50 gpm) was encountered when mining intersected a fault in the No. 3 Mine (Plate 7-2 and Table 7-2). A portion of the ground water was utilized for dust abatement (Section 7.1.4 MRP).

Four seeps and no springs were identified within and adjacent to the permit area during a field reconnaissance (Section 7.1.2, p. 7-8, and Section 7.1.5, p. 7-18).

Ground-water quality was sampled at the No. 3 Mine discharge location 3-3-W (Plate 7-1). Discharge water was more mineralized than ground water from wells and springs located to the west of the North Fork of Gordon Creek and along the upper drainage of Beaver Creek (Section 7.1.3, p. 7-9). Excess ground water was discharged to the system of sediment ponds (Section 7.1.4, p. 7-17).

Mine portals were sealed in September 1983. Consequently, the No. 3 Mine and No. 6 Mine workings are no longer accessible.

Compliance

Surface Water -JRF

The proposed reclamation practices will minimize changes to and ultimately enhance the hydrologic balance in and adjacent to the permit area. Specific descriptions and analyses of the design measures proposed are contained in the following sections (UMC 817.42-57).

The MRP contains adequate discussion of the requirements of this regulation in Chapters 3 and 7. Analysis of the reclamation techniques for restoring the ephemeral channel are discussed in UMC 817.44.

The applicant is in compliance with this regulation.

Ground Water

Springs do not occur within or adjacent to the permit area. Moreover, mine inflow decreases through time indicating localized aquifer conditions (Table 7-2).

Underground mining activities were planned and conducted to minimize changes to the ground-water balance both within and adjacent to the mine plan area. Changes in ground-water quality and quantity and depth to ground water were minimized so that the postmining land use would not be affected. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.42 HYDROLOGIC BALANCE: WATER QUALITY STANDARDS AND EFFLUENT LIMITATIONS - JRF

Existing Environment and Applicant's Proposal

Portions of undisturbed drainage from the permit area are combined with disturbed area drainage and treated by sediment control structures.

Diversion of the undisturbed area runoff from the disturbed area would result in more environmental damage than accommodating and treating runoff from both areas. The contributing undisturbed area is 74.9 acres which is less than 10 percent of the watershed area (896 acres). The combined runoff will be routed to a two-cell sediment pond. Design specifications and location are shown on Plates 7-4, 3-1 and 3-1A respectively. A detailed analysis of the sediment pond system is contained in UMC 817.46 of this technical analysis. Plate 3-1A shows the installation of a silt fence or straw bales and loose rock check dams upslope from the diversion ditch D-1. Utilization of silt fence, straw bales and loose rock check dams will help to decrease the calculated sediment load to the sediment pond.

Compliance

The treatment methods proposed for the disturbed area drainage are acceptable procedures. The combination of silt fence or strawbales and a two-cell sediment pond will assure that effluent standards are maintained for the disturbed area. Loose rock check dams will serve two purposes. They will effectively reduce velocity of flow therefore reducing erosion as well as serving as sediment traps. The applicant complies with this section.

Stipulations

None.

UMC 817.43 HYDROLOGIC BALANCE: DIVERSIONS AND CONVEYANCES OF OVERLAND FLOW, SHALLOW GROUNDWATER FLOW, AND EPHEMERAL STREAMS - JRF

The applicant has proposed a permanent diversion system to intercept runoff from the disturbed area and a portion of the undisturbed area. The diversion ditch (D-1) is designed to safely pass the runoff from a 10-year, 24-hour precipitation event. The diversion system will route the disturbed area drainage to a two-cell sediment pond. In addition, an undisturbed area collection

system is proposed to route runoff to the existing ephemeral channel below the mine site. The design details for the undisturbed diversions and disturbed runoff collection system are contained in Chapter 7 and Plate 3-1A. Design specifications for loose rock check dams for the diversion ditch and disturbed area can be found on Figures 7.2a and 7.2b. Locations of these structures are given on Plate 3-1A.

The peak flow determinations in the MRP are from the Division's "Peak" program. "Peak" is a computer adaptation of the SCS unit hydrograph-curve number methodology. Protection measures for prevention of erosion in disturbed and undisturbed ditches are noted on Plate 3-1A and Figures 7-2a and 7-2b. The applicant shows velocity and design calculations for the D-1 ditch in Section 7.2 3.2, and on Table 7-6 of the MRP. The applicant proposes to use loose rock check dams with stilling basins as energy dissipators (Figures 7-2a and 7-2b).

The applicant commits to maintaining the sediment control features on the reclaimed mine site with an inspection program outlined in section 7.2.5 of the MRP.

The diversion ditch and 24 inch CMP are permanent structures. The land owner has requested that the portal pads, road and sediment ponds be reclaimed such that they can be utilized for stock and grazing capabilities.

Compliance

The applicant has provided an acceptable program for the conveyance of overland flow by utilizing a diversion ditch and sediment control features (i.e. silt fence). Erosion protection devices have been proposed (loose rock check dams and silt fence) for the diversion ditch and the disturbed area.

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.44 HYDROLOGIC BALANCE: STREAM CHANNEL DIVERSIONS - JRF

Existing Environment and Applicant's Proposal

The Coal Canyon ephemeral stream has a drainage area of 1.4 square miles. The stream was diverted under the mine site via a 48-inch culvert. In Section 7.2 applicant has committed to removing or crushing in place the 48-inch culvert.

The stream channel will be routed across the reclaimed mine site. Plate 3-1A presents the location of the stream. The left fork of the drainage is denoted as U-1 on Plate 3-1A. Calculations for U-1 and the reclaimed stream can be found in Section 7.2 3.2, on Figures 7-2c and 7-3, on Tables 7-4 and 7-6. The channels are designed for the 100-year, 24-hour runoff event. Riprap protection is provided for stream reaches that have erosive velocities. Stilling basins will be used for energy dissipation in reach R-3 and R-5. The calculation for riprap and stilling basin design are in Section 7.2.3 of the MRP. A loose rock check dam will be installed in Channel U-1, the dam will provide grade control and energy dissipation. Figure 7-2b provides the design methodology for the loose rock check dam.

Compliance

The reclaimed stream channel is designed in accordance with UMC 817.44. The design specifications for the riprap, stilling basins and loose rock check dams will result in a stable channel design. The natural stilling basin shown on Plate 3-1A will enhance riparian vegetation due to the ponding and holding of water and sediment. The reclaimed channel approximates the natural channel configuration. Figure 7-4 demonstrates that the natural channel above and below the mine site meanders very little. The width of Coal Canyon restricts meandering. The reclaimed channel has a pattern of drops, pools and slight gradient areas.

The applicant's proposal is in compliance with this section.

Stipulations

None.

UMC 817.45 HYDROLOGIC BALANCE: SEDIMENT CONTROL MEASURES - JRF

Existing Environmental and Applicant's Proposal

The MRP describes the methodologies needed to control erosion on site in Section 7.2 and in Section 3.5. The applicant proposes to control erosion during reclamation via straw dikes, silt fences, and sediment ponds. The sediment pond discussion may be found in 817.46.

Placement of erosion protection devices is denoted on Plate 3-1A and Figure 3-8. The applicant has committed to a regular inspection schedule and replacement of the erosion controls.

Compliance

The applicant's proposals for sediment control measures for the disturbed area will result in minimizing to the extent possible additional contributions of sediment to stream flow or to runoff outside the permit area. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.46 HYDROLOGIC BALANCE: SEDIMENTATION PONDS - JRF

Existing Environment and Applicant's Proposal

The MRP describes the sediment pond proposed for runoff from disturbed and undisturbed areas in Section 7.2.3.2, Figure 7-5, Plates 7-4, 3-1A, Tables 7-4, and 7-6. The sediment pond will be a two-celled structure. The ponds will be left as a permanent structures and will provide water for stock. For discussion of permanent impoundments see UMC 817.49.

The pond is designed to contain the 10-year, 24-hour storm event and pass the 100-year, 24-hour storm. The principal spillway design allows for dewatering after a twenty-four hour period. Water discharged from the principal spillway is monitored according to a NPDES permit approved by the EPA on August 24, 1977.

In Section 7.2.3.2 the applicant commits to quarterly inspection of the ponds for structural stability and to cleaning the sediment ponds when they reach 60 percent of the maximum level as shown on the sediment marker on Plate 7-4.

Compliance

According to Plates 7-4, 3-1 and Division calculations, the sediment ponds are undersized. As noted in the following table the contributing drainage area to the ponds includes 22 acres of disturbed area instead of the 8 acre figure used in the application. The principle spillway is also undersized. With the present design specifications the spillway will pass 12.25 cfs. The Division calculated design flow of 22.71 cfs will require a larger principle spillway.

In discussion with the operator, there are areas within the 22 acres indicated as disturbed on Plate 3-1 which are undisturbed. However, the application does not differentiate undisturbed areas within the disturbed area. Therefore, the Division assumed all acreage within the 22 acre area as disturbed area in calculating runoff volumes and peak flows. The Division calculations are as follows:

	Disturbed Ditch To Ponds	Undisturbed Drainage To Ponds
Area	22 Acres	74.9 acres
Slope length	2950 feet	4950 feet
Peak discharge (100-yr, 24-hr event)	43.64 cfs	10.89 cfs
Peak discharge (10-yr, 24-hr event)	22.15 cfs	0.56 cfs
Total Runoff (100-yr, 24-hr event)	4.14 ac. ft.	2.55 ac. ft.
Total Runoff (10-yr, 24-hr event)	2.08 ac. ft.	.378 ac. ft.

The operator will be in compliance when the terms of the following stipulations are met.

Stipulations UMC 817.46-(1, 2)-JRF

1. The sediment ponds shall be constructed by October 31, 1986 so that at least 3.83 acre feet of sediment and runoff can be retained in the ponds and so that a 24 inch cmp riser is installed for the principle spillway.

2. Within 30 days of final pond construction, the applicant shall submit as-built pond designs certified by a Professional Engineer. The designs shall show pond contours with a contour interval no greater than two feet. The as-built designs shall at a minimum contain:

   a. sideslope characterizations
   b. section and plan views
   c. scale of 1" = 20'
   d. pond floor elevation and dimensions
   e. bank elevation
   f. complete spillway dimensions
   g. sediment levels and markers for both ponds

UMC 817.47 HYDROLOGIC BALANCE: DISCHARGE STRUCTURES - JRF

Existing Environment and Applicant's Proposal

The sediment pond discharge structures are designed according to standard engineering design procedures. UMC 817.43 contains a description of culverts for the diversion ditch D-1 and the left fork of Coal Canyon. A complete description of design methodologies for discharge structures is contained in Section 7.2.3. of the MRP. All pond discharge structures are protected by rip rap. The applicant has committed to quarterly inspection of ponds for signs of structural weakness or erosion in Section 7.2.3 of the MRP.

Compliance

The pond discharge structures are designed to safely pass the predetermined peak flows. The emergency spillway will handle flows much greater than the design flow. Outlet protection is provided in the form of a grouted drop chute. The drop chute will be constructed according to the design specifications outlined in Barfield, Warner and Haan (1981) p. 528 and page 7-24b of the MRP. At the bottom of the drop chute a stilling basin will be installed to reduce erosive velocities. Design specifications for the stilling basin may be found in Section 7.2.3. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.48 ACID-FORMING AND TOXIC-FORMING MATERIALS - DD

Existing Environment and Applicant's Proposal

The applicant states there are no acid- or toxic-forming materials known to exist at this site. The applicant commits that if any are discovered, they will be disposed of on-site or removed to an approved permit area.

Compliance

The applicant proposed to bury material with less than 50 percent coal fines (material that may be potentially toxic) to a minimum depth of 4 feet with non-toxic and noncombustible material. Material with greater than 50 percent coal fines will be removed to the C.V. Spur refuse site. Analysis of materials deposited on the mine site from another mine which were the subject of Notice of Violation N85-8-17-1 indicate some toxicity problem areas exist. This material should be buried to a minimum depth of four (4) feet during backfilling operations. The applicant will be in compliance when the following stipulation is met.

Stipulations UMC 817.48-(1)-DD

1. During the backfilling and grading portion of the reclamation at the Gordon Creek #3 and #6 mine site, but no later than October 31, 1986, the applicant shall bury the material which was the subject of Notice of Violation N85-8-17-1 with a minimum of 4 feet of non-toxic and nonacid-forming material .

UMC 817.49 HYDROLOGIC BALANCE: PERMANENT AND TEMPORARY IMPOUNDMENTS - JRF

Existing Environment and Applicant's Proposal

The two-celled sediment pond will be left as a permanent structure. The pond will provide water for stock in accordance with the post-mining land use of grazing.. The water is protected by a private water right as noted on Figure 3-3a in the MRP. The quality of the water is governed by an NPDES permit. The applicant provides a full discussion of the requirements of this regulation beginning on page 7-22 of the MRP. The pond structure is not subject to the requirements of 30 CFR 77.216.

Compliance

The applicant has provided information suitable to meet all requirements of this regulation. Furthermore, the applicant has committed to quarterly inspections of the pond for structural stability. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.50 HYDROLOGIC BALANCE: UNDERGROUND MINE ENTRY AND ACCESS DISCHARGES - RVS

Existing Environment and Applicant's Proposal

The Hiawatha seam dips 5.3 degrees to the north-northeast. Accordingly, the No. 3 mine workings dip in a similar fashion and portals are located approximately 200 feet higher and 100 feet lower than the northwestern and southeastern portions of the mine, respectively (Plate 3.2). The Castlegate "A" seam dips 9.6 degrees to the northeast and No. 6 Mine portals are located approximately 20 feet higher and 100 feet lower than western and northern portions of the mine, respectively (Plate 3-3).

Water seeped through the floor as the Hiawatha seam was extracted and a significant inflow was encountered when mining intersected a fault in the No. 3 Mine (Plate 7-2 and Table 7-2).

The applicant proposes to monitor any unplanned portal discharges in accordance with the water quality standards required by UMC 817.42 and other appropriate state and federal regulations. If necessary, water will be treated during the period of discharge (Section 7.1.8, p. 7-19).

Compliance

Portals were designed and constructed to control gravity discharge of water from the mine. Inflow has occurred in the past and the applicant has provided an adequate mitigation plan for unplanned portal discharges.

Stipulations

None.

UMC 817.52 SURFACE AND GROUND WATER MONITORING - JRF

Existing Environment and Applicant's Proposal

Ground Water

The applicant provides information about groundwater in Section 7.1 of the MRP. A thorough discussion of groundwater is contained in UMC 817.41 - Ground Water of this technical analysis. Monitoring of ground water occurred at Station 3-3-W (see Plate 7-1 for location) while the mine was operating. Table 7-2 in Section 7.1 contains the water quality data for this station. Station 3-3-W is no longer accessible due to closure of the mine portals.

Surface Water

The applicant provides information about surface-water monitoring in Section 7.2.6, Figure 7-5 and 7-6 and Table 2 in Section 7.1. Plate 7-1 denotes the location of the three surface-water monitoring locations. The applicant will monitor stations 3-1-W and 3-4-W on a quarterly basis. Station 3-2-W will be monitored according to the NPDES permit.

Compliance

Ground Water

The applicant maintained an adequate monitoring program during active operations. Underground mining activities were planned and conducted to minimize changes to the ground water regime. The applicant is in compliance with this section.

Surface Water

The applicants surface water monitoring program should be altered to reflect the Division's updated water monitoring guidelines. The water quality parameters to be sampled should conform with the Division guidelines of January 1986. Also, a sample station at the entrance of the pond will be required to determine that effluent standards for bond release are achieved.

The applicant will be monitoring the left and right forks of Coal Canyon as well as the sediment pond discharge. With the addition of the above mentioned station and the addition of total dissolved solids to the water quality parameter list, the applicant will have an adequate surface water monitoring program.

Stipulations UMC 817.52-(1, 2)-JRF

Ground Water

None.

Surface Water

1. Within 30 days of permit approval, the applicant shall submit a revised surface water parameter list that includes total dissolved solids.

2. Within 30 days of permit approval, the applicant shall submit a revised surface water monitoring program that incorporates an additional monitoring station at the sediment pond entrance. Sampling of this station shall be initiated upon permit approval utilizing the quarterly frequency for other surface water monitoring.

UMC 817.53 HYDROLOGIC BALANCE: TRANSFER OF WELLS - RVS

Existing Environment and Applicant's Proposal

No wells occur within the permit or adjacent area.

Compliance

Inasmuch as no wells are available for transfer, the applicant is in compliance with this section.

Stipulations

None.

UMC 817.55 DISCHARGE OF WATER TO AN UNDERGROUND MINE - JRF

Existing Environment and Applicant's Proposal

The applicant states that no water will enter the sealed mine portals. All water in Coal Canyon will bypass the sealed mine locations (page 7-21 Section 7.2.2.2).

Compliance

A review of the surface water drainage plan does not indicate any diversion of water into underground workings. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.56 HYDROLOGIC BALANCE: POSTMINING REHABILITATION OF SEDIMENTATION PONDS, DIVERSIONS, IMPOUNDMENTS, AND TREATMENT FACILITIES - JRF

Existing Environment and Applicant's Proposal

The applicant proposes to leave the sediment pond and diversion ditch as permanent structures. Information is provided as to specific modification plans upon bond release in Section 7.2 3.2. The applicant proposes to revegetate the diversion ditch and the sediment pond slopes. The applicant commits to removal of silt fence and other temporary controls upon bond release.

Compliance

The applicant commits to renovation of the permanent sediment pond to achieve the desired post-mining land use (Section 7.2 3.2). The applicant is in compliance with this section.

Stipulations

None.

UMC 817.57 HYDROLOGIC BALANCE: STREAM BUFFER ZONE - JRF

Existing Environment and Applicant's Proposal

Coal Canyon Creek is the only drainage that occurs in the permit area. It is ephemeral (Table 2, Chapter 7) and therefore cannot support aquatic life.

Compliance

Neither perennial or intermittent streams exist within the permit boundary, therefore the applicant is in compliance with this section.

Stipulations

None.

UMC 817.59 COAL RECOVERY - RVS

Room and pillar mining commenced during December 1978 and terminated in November 1980 in the #6 Mine. Room and pillar mining commenced during February 1976 and retreat mining was initiated in January 1982 and continued into May 1982 in the #3 Mine. All portals were permanently sealed during September 1983.

The applicant requested permission to initiate retreat mining in the #3 Mine (Hiawatha seam) and described potential impacts to the #6 Mine (Castlegate "A" seam). The Division of State Lands and Forestry (DSLF) observed that the applicant's assessments of potential impacts to the Castlegate "A" seam were optimistic, and therefore, required submittal of a royalty bond in the amount of $4,227.00. Bond release is contingent upon either of the following:

1. When a mining operation commences in the Castlegate "A" seam through state leased lands; or

2. At the end of ten years providing state coal (ML 27342) in the Castlegate "A" seam has not been sterilized from recovery as a result of subsidence or shearing pursuant to the applicant's operations in the Hiawatha seam.

Neither of the bond release conditions have been satisfied to date. Moreover, DSLF has completed an audit on this matter and has requested royalty payments. This matter is currently in litigation.

Compliance

The room and pillar technique with secondary pillaring applied by the applicant in the #6 Mine and #3 Mine meet the requirements of maximizing the conservation of coal while utilizing the best technology currently available to maintain environmental integrity. However, the appropriateness of a secondary pillaring in the #3 Mine prior to complete recovery in the #6 Mine will be resolved and, if necessary, mitigated through pending litigation.

Stipulations

None.

UMC 817.61-68 USE OF EXPLOSIVES - RVS

Existing Environment and Applicant's Proposal

The applicant states that surface blasting is not associated with No. 3 Mine or No. 6 Mine operations (Section 3.3.5.4, p. 3-16).

Compliance

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.71-74 DISPOSAL OF EXCESS SPOIL AND UNDERGROUND DEVELOPMENT WASTE - PGL

Existing Environment and Applicant's Proposal

The applicant does not have any excess spoil located on site. The mine has been idle since November, 1980 and the portals were sealed in September, 1983. Any underground development waste was either left underground in "gob" storage areas or loaded out with the coal (Section 3.3.2.6, p. 3-12. Therefore, this section is not applicable.

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.81-.88 COAL PROCESSING WASTE BANKS - PGL

Existing Environment and Applicant's Proposal

Coal processing was not done at this mine site, therefore, this section is not applicable.

UMC 817.89 DISPOSAL OF NON-COAL WASTES - PGL

Existing Environment and Applicant's Proposal

All surface structures have been removed (Section 3.2.3, p. 3-4).

Compliance

Applicant complies with this section.

Stipulations

None.

UMC 817.91 COAL PROCESSING WASTE - PGL

Existing Environment and Applicant's Proposal

Coal processing was not done at this mine site, therefore, this section is not applicable.

UMC 817.95 AIR RESOURCE PROTECTION - KMM

Existing Environment and Applicant's Proposal

Air quality resources and problems of the permit area are described in Chapter 11 and Section 3.4.7.1. The principal pollutant during reclamation will be particulate matter from construction equipment, predominantly fugitive dust.

Compliance

The applicant has committed to enforcing speed limits and watering road surfaces on as needed basis to control fugitive dust and is, therefore, in compliance with this section.

Stipulations

None.

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

Existing Environment and Applicant's Proposal

Potential impacts on fish and wildlife resources are minor and are described in Sections 3.4.6, 3.4.6.1 and 10.4. Mitigation plans are described in 3.4.6.2 and 10.5. Threatened and endangered species of the permit area are described in Section 9.4 (plants) and 10.3.3 (animals).

The applicant proposes to revegetate the disturbed area by seeding and planting species valuable for wildlife food and cover. Shrubs and trees will be distributed in clumps to maximize edge and useful cover. The establishment of small areas of riparian habitat will constitute wildlife habitat enhancement. Riparian habitat development includes:

1. creation of a pond where the culvert is to be plugged,
2. reestablishment of Coal Creek in the pad area, and
3. conversion of sediment ponds to stock and wildlife watering areas.

Riparian area seeding will consist of the general area seed mix enhanced with three grass and one forb species. Shrub plantings in the riparian areas will include willow cuttings and six-foot saplings.

Compliance

Since the mine is in final reclamation, no additional disturbance is expected and no major adverse impacts on wildlife or vegetation resources are expected. Disturbance of the downstream aquatic system will be minimized by controlling sediment through silt fences and straw bales and a system of ponds until vegetation becomes established.

Implementation of the reclamation plan will improve wildlife habitat of the permit area, enhance natural riparian vegetation and be compatible with the post mining land use of wildlife and grazing. While site specific data are not available on raptor populations, construction activities which might disturb nesting birds will be delayed until after July 15 to avoid potential conflicts. Spring planting of shrubs and trees should not be a major disturbance to nesting activities.

The applicant is committed to notifying the Division if any threatened, endangered or sensitive species are identified in the permit area (9-6).

The applicant complies with this section.

Stipulations

None.

UMC 817.99 SLIDES AND OTHER DAMAGE - PGL

Existing Environment and Applicant's Proposal

The applicant states that "at any time a slide occurs which may have a potentially adverse affect on public property, health, safety or the environment, persons conducting the underground coal mining operations will notify the Division by the fastest available means and comply with any remedial measures required by the Division" (Section 3.3.2.5, p. 3-12).

Compliance

Applicant complies with this section.

Stipulations

None.

UMC 817.100 CONTEMPORANEOUS RECLAMATION - KMM

Since the mine has been idle since 1980, this section is no longer applicable.

UMC 817.101 BACKFILLING AND GRADING - DD, PGL

Existing Environment and Applicant's Proposal

The surface of the area was originally disturbed in 1975 (pre-law) by a previous owner. At that time, no major effort was made to save or store any soil material. Therefore, restoration to approximate original contour is impractical due to the lack of fill material. The surface of the site is privately owned and the postmining land use will be livestock grazing. A letter from the landowner (page 4-33, 4-34, MRP) approved the Beaver Creek Coal Company proposed backfilling and grading plan because it enhances the postmining land use for livestock grazing by providing level pad areas for loading pens, corrals and grazing.

The applicant states that the highwalls which will be left in place are similar in structural composition to the pre-existing cliffs in the surrounding area, and are compatible with the geomorphic processes of the area. The highwalls to be retained on Plate 3-1A are "stable" as stated on page 3-35a (#6). A stability analysis was performed on highwalls at the No. 3 and No. 6 Mine. Results given on page 3-35d and 3-35e show that the No. 3 mine highwall has a static safety factor of 5.01 for dry conditions and 4.62 for saturated conditions. The No. 6 Mine highwall has a static safety factor of 4.62 for dry conditions and 4.29 for saturated conditions. These are well above the 1.5 safety factor required.

Similar results on embankment stability analysis indicate a safety factor of 2.22 for dry conditions and 1.65 for saturated conditions. This meets the 1.30 safety factor requirement.

Compliance

The applicant submitted adequate backfilling and grading plans for the disturbed site in relation to the post mining land use. The applicant included calculations insuring a minimum static safety factor of 1.5 for all highwalls and 1.3 for embankment material. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.103 BACKFILLING AND GRADING: COVERING COAL AND ACID- AND TOXIC-FORMING MATERIALS - DD

Existing Environment and Applicant's Proposal

Material with less than 50 percent coal fines will be buried against the highwalls and covered with a minimum of four (4) feet of incombustible and non-toxic material. Material contaminated with oil and grease or greater than 50 percent coal fines will be disposed of at the C.V. Spur Refuse site.

Compliance

The applicant proposes to bury material with less than 50 percent coal fines with a minimum of four (4) feet of non-toxic and non-combustible material against the highwall. Material with greater than 50 percent coal fines and material contaminated with oil and grease will be disposed of at an approved permit area. The applicant has complied with this section.

Stipulations

None.

UMC 817.106 REGRADING OR STABILIZING RILLS AND GULLIES - PGL, JRF

Existing Environment and Applicant's Proposal

The applicant states that "if rills or gullies deeper than 9 inches form in areas that have been regraded and topsoiled, they will be regraded, filled or otherwise stabilized and the stabilized area reseeded or replanted" (Section 3.4.5, p. 3-24 and Section 3.5.6, p. 3-38).

Compliance

Applicant complies with this section.

Stipulations

None.

UMC 817.111 REVEGETATION: GENERAL - KMM

Existing Environment and Applicant's Proposal

The environment of the GCCC #3 and #6 Mines is described in portions of Section 9.3 of the MRP. Principal disturbed vegetation types are Sagebrush-Grassland and Oak Shrub.

Chapter 3 of the MRP describes the proposed reclamation of of roads, pads and the total affected area.

Revegetation plans for the area including soil preparation, seeding, fertilization, mulch, shrub/tree planting and monitoring are described in Section 3.5.5. A primary seed list and additional species proposed for the riparian zone are listed in Section 3.4.5. Shrub and tree species to be planted as cuttings, saplings and seedlings are described in Section 3.5.5.4.

Compliance

Seed bed preparation includes ripping to 12 to 24 inches to loosen the fill profile. The technique is specified for pad areas (3-36e) but should be used on all areas accessible to the ripping equipment. Two tons per acre of hay will be incorporated into the soil on all pad areas.

The revegetation species were chosen to provide a prompt and permanent vegetative cover appropriate to the post mining land use.

To verify that the designated mix of pure live seed is used in the revegetation, the operator should request that the Price area State Agricultural Inspector collect a seed sample and submit it for analysis. Results should be provided to the Division within 90 days of collection. Seeding/planting rates and locations are presented in the text and most plantings are schematically designated on Plate 3-1A. The locations of willow cuttings are not designated on Plate 3-1A but are adequately explained in the text.

The applicant complies with this section.

Stipulations

None.

UMC 817.112 USE OF INTRODUCED SPECIES - KMM

Existing Environment and Applicant's Proposal

Three introduced species are included in the applicant's proposed seed mix. Alfalfa and Yellow Sweetclover are desirable because they provide quick stabilizing cover, are of value to wildlife and can fix nitrogen since they will be innoculated with

appropriate rhyzobia before planting. Kentucky Bluegrass is a desirable species because it establishes easily, is a widely naturalized grass in western states (in both upland and riparian areas), is compatible with native species and is not overly competitive.

Compliance

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.113 REVEGETATION: TIMING - KMM

Existing Environment and Applicant's Proposal

The applicant proposes fall (September 1 through October 31) seeding and, at the Division's request, has agreed to spring planting of woody species (3-37). The MRP designates fall for willow harvest and planting (3-37b), Seedlings and saplings will be planted in early spring of 1987.

Compliance

The application contradicts itself (p. 3-37 and p. 3-37b) on the schedule for planting of willow cuttings. Since there are differing professional opinions on the best time to plant willow cuttings, the Division would like to compare Beaver Creek Coal Company's plantings with cuttings planted in the alternate season at the same location. The Division will be responsible for design and implementation of the experiment which will neither damage nor interfere with the Beaver Creek planted willows. This experiment is agreeable to BCCC (personal communications, Dan Guy). The applicant will be in compliance with this section when the following Stipulation is met.

Stipulation UMC 817.113-(1)-KMM

1. Within 30 days of permit approval, the applicant shall submit amended pages 3-37 or 3-37b to clarify when planting of willow cuttings will occur.

UMC 817.114 REVEGETATION: MULCHING - KMM

Existing Environment and Applicant's Proposal

The applicant states that 3,000 lbs/acre (3-36g) or 2000-3500 lbs/acre (3-37) of wood-fiber mulch will be applied after seeding.

Compliance

The applicant is in compliance with this section if 3000 lbs/acre are applied.

Stipulation UMC 817.114-(1)-KMM

1. The applicant shall apply no less that 3000 lbs/acre of wood fiber mulch after seeding during final reclamation of the site.

UMC 817.116 REVEGETATION: STANDARDS FOR SUCCESS - KMM

Existing Environment and Applicant's Proposal

A 5-acre reference area was established and sampled in 1980 for the two major vegetation types (Oak Shrub and Sagebrush-Grassland). It will be staked in fall of 1986. The approximate location of the site is designated on Plate 3-1A. The applicant describes sampling techniques which will be used to characterize both the reference areas and the reclaimed areas to determine revegetation success (Appendix 3).

Since riparian vegetation is being established as a wildlife habitat enhancement measure rather than to reestablish a significant pre-mining vegetation type, a riparian reference area is not necessary for determining vegetation success.

Plans to expand the GCCC #3 and #6 Mine riparian area to accommodate 0.5 acres of wetland mitigation area (off-site mitigation for disturbance at the GCCC #2 mine) have been abandoned with concurrence of the Division of Wildlife Resources. A program of supplying dam building materials for beaver and planting fish in the Sweets Canyon pond and upper Gordon Creek has been initiated instead.

A detailed timetable for reclamation monitoring is provided in Appendix 3.

Compliance

UMC 819.116 requires that ground cover and productivity equal (within 90%) the approved standard (i.e., the reference area) for the last two years of the responsibility period. The determination must be based on techniques approved by the Division. The techniques described in Appendix 3 are acceptable. A monitoring schedule is provided in Appendix 3, page 4. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.121-.126 SUBSIDENCE CONTROL - RVS

Existing Environment and Applicant's Proposal

The applicant utilized room and pillar methods with secondary pillaring in both the No. 3 Mine and No. 6 Mine (Section 3.3.1.3, p. 3-10). Overburden thickness ranges from 150 to 550 feet above the No. 6 Mine and 100 to 1,000 feet above the No. 3 Mine. Coal thickness averaged six feet in the No. 6 Mine and eight feet in the No. 3 Mine (Section 6.5.2, p. 6-6 and 6-7). Thus, the combined extracted thickness averaged from six (6) to fourteen (14) feet.

The applicant conducted a field inspection of the surface above the No. 3 Mine and No. 6 Mine workings (Section 3.4.8, p. 3-30a). Tension fractures from subsidence were identified and located on a map (Plate 3-5).

The applicant has installed six (6) monuments to monitor subsidence (Section 3.4.8, p. 3-30a and Plate 3-5). Monuments will be surveyed yearly until bond release to document vertical movement. Moreover, a yearly surface inspection will be conducted. The applicant commits to annually providing a map that shows the results of subsidence to the Division (Section 3.4.8, p. 3-30a).

Compliance

The applicant has provided information about mining methods and overburden thickness to indicate mining activities were planned and conducted in order to prevent subsidence from causing material damage to the surface (UMC 817.121).

An assessment of regulatory compliance with UMC 817.122 is not applicable due to permanent cessation of mining. The mine plan and adjacent area contain neither perennial streams, impoundments, aquifers significant to public water supplies or public buildings. The applicant is in compliance with UMC 817.126.

The applicant has identified areas of vertical movement and associated upward propagation of tension cracks to the surface that have caused a reduction in the reasonably foreseeable use of surface lands. Specifically, certain areas characterized by surface tension cracking pose a potential hazard to livestock grazing and/or wildlife. To comply with the requirements, of UMC 817.124 the applicant has committed (P. 3-30d) to repairing or compensation surface owner, for subsidence control surface impacts.

The applicant is in compliance with this section.

Stipulations

None.

UMC 817.131 CESSATION OF OPERATIONS: TEMPORARY - DD

Existing Environment and Applicant's Proposal

This section is not applicable due to the permanent cessation of mining activities.

UMC 817.132 CESSATION OF OPERATIONS: PERMANENT - DD

Existing Environment and Applicant's Proposal

The applicant proposes to reclaim the disturbed site according to an approved reclamation plan after a permit has been issued in Section 817.132 of the MRP.

Compliance

The applicant complies with this section.

Stipulations

None.

UMC 817.133 POSTMINING LAND USE - KMM

Existing Environment and Applicant's Proposal

Livestock grazing and wildlife habitat are the proposed post mining land uses. The applicant proposes to leave both the coal haul road and main access roads for access to the UP&L powerline road and livestock herding activities (Section 3.2.10). In addition, the applicant proposes to leave existing pad areas in their current configuration for use in livestock management. They further state that some highwalls will be left because their elimination would reduce or eliminate pad areas and access roads which would be incompatible with post mining land use plans (Section 3.5.4.2).

The MRP includes letters from the landowner supporting the proposed reclamation plan (p. 4-33, 34 MRP).

Compliance

The Division approves the post mining land use proposed. The applicant is in compliance with this section.

Stipulations

None.

UMC 817.150-.156 ROADS: CLASS I - PGL

Existing Environment and Applicant's Proposal

The coal haul road extends over 5,000 feet within the permit area and was used for coal haulage by 28 to 40 ton trucks. This road connects to the Carbon County road in Gordon Creek Canyon. The road is located on privately-owned surface land and at the landowner's request, will be left in place to provide access to the Coal Canyon area as well as to the Utah Power and Light power line access (Section 3.2.10, p. 3-7).

The applicant requests that the haul road be downgraded to a Class II road because:

1. Coal is no longer hauled from the canyon; and

2. Access is controlled by a gate near the county road at the mouth of Cottonwood Canyon; and

3. The road is on privately owned surface lands and will have limited access.

The applicant will maintain drainage controls in place to insure Class II drainage standards are met. The road surface will be graveled and maintained at a 16-foot width in a stable condition during the bond liability period.

Compliance

The applicant's proposal to downgrade the haul road to Class II is acceptable. The applicant's proposal meets the standards for the Class II road. The applicant included the haul road in the permit area as shown on Plate 1-3, the permit area map.

The applicant has committed to gravel the haul road on p. 3-7b. However, in discussions with Dan Guy, the intent of BCCC is to gravel the haul road from the sediment pond north. Therefore, the applicant will be in compliance when the following stipulation is met.

Stipulation UMC 817.150-.156-(1)-PGL

1. Within 30 days of permit approval, the applicant shall provide amended page 3-37a which will specifically describe where the Class II road extending from within the permit area to the main Gordon Creek road will be graveled.

UMC 817.160-.165 ROADS: CLASS II - PGL

Existing Environment and Applicant's Proposal

The mine access road (approximately 2400 feet long) at Gordon Creek #3 and #6 was used for men and material access to the upper portals and is designated as a Class II road. This road originates on privately-owned surface land and crosses through a portion of state-owned surface to reach the upper portal pad which is on privately-owned surface land. This road will be left in place at the landowner's request to provide access to the Utah Power and Light Power Line road as well as to the upper pad area. The access road will be retained as a Class II road, as stated in Section 3.2.10, p. 3-7b, and will be maintained throughout the bond liability period.

Compliance

The access road meets the Class II road standards and will be retained as such during the bond liability period.

Stipulations

None

UMC 817.180 and .181 OTHER TRANSPORTATION FACILITIES AND SUPPORT FACILITIES AND UTILITY INSTALLATION - PGL

Existing Environment and Applicant's Proposal

All transportation and support facilities have been removed (Section 3.2.3, p. 3-4a). These facilities were removed in such a manner as to present damage to fish, wildlife and related environmental values as well as the prevention of additional contributions of suspended solids to streamflow.

Compliance

Applicant complies with this section.

Stipulations

None.