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STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

July 6, 1984

Mr. Allen D. Klein, Administrator
Western Technical Center
Office of Surface Mining
Brooks Towers
1020 Fifteenth Street
Denver, Colorado 80202

RE Final Technical Analysis and
State Decision Package
Beaver Creek Coal Company
Gordon Creek #2 Mine
(Including Southwest Lease)
ACT/007/016, Folders #2 and #4
Carbon County, Utah

Dear Mr. Klein:

Enclosed please find the Final Technical Analysis and State Decision Package for the above-referenced Mining and Reclamation Plan (MRP).

The Division technical staff has thoroughly reviewed the application and review documents, incorporating all appropriate recommendations and/or changes noted during the TA review phase by the Western Technical Center. These documents have also been reviewed by the Associate Director for Mining and the Administrator for the Mineral Resource Development and Reclamation Program, in accordance with the Division's established quality control review policy, and all subsequent changes have been incorporated into the documents where necessary. The Division is now satisfied with the Final Technical Analysis and Findings and Supporting Documents and is prepared to issue its approval and State permit for the Emery Deep Mine PAP, with Stipulations (see enclosure).

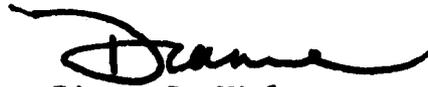
The required Cumulative Hydrologic Impact Analysis (CHIA), as related to UMC 786.19(c), is currently being prepared by the OSM. The Division has been kept apprised of the status of this document by the Western Technical Center staff and understands that a final summary of the CHIA is close to completion. The Division expects that when this summary is completed, the Western Technical Center will attach it to the Division's enclosed review documents before the decision package is forwarded to Washington, D.C., for Secretarial approval. Concurrently, the Division expects that a copy of the final CHIA summary, as well as the final decision package, will be sent to the Division for our records.

Mr. Allen D. Klein, Administrator
ACT/007/016
April 26, 1984
Page 2

The Division appreciates the assistance provided by the Western Technical Center during our review of this MRP and the formulation of the Technical Analysis and Findings Document. We now look forward to a timely approval of this MRP, not only from a State and Federal perspective, but from the operator's perspective as well.

Should you have any questions regarding these documents, please contact the Division as soon as possible.

Best Regards,



Dianne R. Nielson
Director

DRN/MMB:btb

Enclosures

cc: Barbara Roberts, Attorney General's Office
R. Daniels, DOGM
J. Smith, DOGM
M. Boucek, DOGM
S. Cox, DOGM

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FINDINGS DOCUMENT

Beaver Creek Coal Company
Gordon Creek #2 Mine (includes Southwest Lease)
ACT/007/016, Carbon County, Utah

July 6, 1984

1. The plan and the permit application are accurate and complete and all requirements of the federal Surface Mining Control and Reclamation Act (the "Act"), and the approved Utah State Program have been complied with (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) (see Technical Analysis [TA], Section UMC 817.111-.117) (UMC 786.19[b]).
3. The assessment of the probable cumulative impacts of all anticipated coal mining in the general area on the hydrologic balance has been made by the regulatory authority. The mining operation proposed under the application has been designed to prevent damage to the hydrologic balance in the permit area and in the associated off-site areas (UMC 786.19[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 (see attached Bureau of Land Management [BLM] letter dated September 13, 1983).
 - B. Not within an area under study for designated lands unsuitable for underground coal mining operations (see attached BLM letter dated September 13, 1983).
 - 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. Within 100 feet of the outside right-of-way line of a public road, however, that portion of the mine inside the right-of-way was in operation prior to August 3, 1977 (UMC 761.11).
 - E. Not within 300 feet of any occupied dwelling (UMC 786.19[d]).

5. The issuance of a permit is in compliance with the National Historic Preservation Act and implementing regulations (36 CFR 800) (UMC 786.19[e]). See letters from SHPO dated August 25 and November 7, 1983 attached to TA.
6. The applicant has the legal right to enter and begin underground mining activities in the permit area through two Federal leases (#U-8319 and #U-47975), one USGS permit to mine (letter from U. S. Department of the Interior, Geological Survey dated November 28, 1972) and one fee lease (see MRP, Section 4.3.4) (UMC 786.19[f]).
7. The applicant has shown that prior violations of applicable law and regulations have been corrected (MRP, Section 2.3.3, Table 2-3) (UMC 786.19[g]).
8. Neither Beaver Creek Coal Company nor its parent company, Atlantic Richfield Company, are delinquent in payment of fees for the Abandoned Mine Reclamation Fund for any active mining operation (UMC 786.19[h]) (personal communication, John Sender, OSM, Albuquerque, December 9, 1983 and April 19, 1984).
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 MRP, Section 2.3).
10. Underground coal mining and reclamation operations to be performed under the permit will not be inconsistent with other such operations anticipated to be performed in areas adjacent to the proposed permit area (UMC 786.19[j]). The C & W #1 Mine and the Gordon Creek #3 and #6 Mines are immediately to the east of Gordon Creek #2. Neither mine is currently operating.
11. A detailed analysis of the proposed bond had been made. The bond estimate is \$461,638.00 (1984 dollars). The DOGM 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 minesite, and the regulatory authority considers this amount adequate. The bond shall be posted (UMC 786.19[k]) with DOGM prior to final permit issuance. An interim bond in the amount of \$58,814.00 is currently on file.
12. No lands designated as prime farmlands or alluvial valley floor occur on the permit area (MRP, Section 8.4, Figure 8-1; Section 7.27) (UMC 786.19[l]).
13. The proposed postmining land-use of the permit area has been approved by the regulatory authority (see TA, Section UMC 817.133) (UMC 786.19[n]).
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 (MRP, Section 9.4, Section 10.3.3.1; see attached U. S. Fish & Wildlife Service [USFWS] letter dated September 2, 1983) (UMC 786.19[o]).
16. All procedures for public participation required by the Act, and the approved Utah State Program have been complied with (UMC 741.21[a][2][11]).

Prior to the permit taking effect, the applicant must forward a letter stating its compliance with the special stipulations in the permit and post the performance bond for reclamation activities.

Mary M. Boucek
Permit Supervisor

James W. Smith Jr. by M.M. Boucek
Administrator, Mineral Resource
Development and Reclamation Program

Ronald W. Davis
Associate Director

Diana P. Nelsen
Director

STIPULATIONS

Beaver Creek Coal Company
Gordon Creek #2 Mine
ACT/007/016, Carbon County, Utah

July 6, 1984

Stipulation 817.21-.25-(1)-EH

1. If upon receipt and evaluation of the soil samples taken on June 20, 1984 the substitute material proves to be of poor quality, the applicant must submit, within 30 days of notification, plans that address section UMC 817.22. The applicant must be in compliance of section UMC 817.22 within 60 days of notification by the Division of the quality of the topsoil substitute.

Stipulation 817.43-.44-(1)-JW

1. The applicant shall, within 30 days of permit approval, provide acceptable measures (accompanied by supporting calculations) which will be used for erosion protection for undisturbed ditch DU-3. If the regulatory authority notifies the permittee that these measures are not acceptable, the permittee must submit revised plans within 30 days of notification, and adequate protection measures for DU-3 must be in place by July 31, 1984.

Stipulation 817.47 (1)-JW

1. Based on the results of the bedrock study to be performed by the applicant prior to June 30, 1984, the applicant will submit design and installation measures, within 30 days of the study, for the erosion protection measures in the Bryner Canyon bypass ditch and the disturbed area ditch which parallels it at the points identified in the compliance section of UMC 817.47. The design and installation measures submitted will contain flow velocity calculations, riprap sizing and depth of placement, channel bedding or lining materials to be used under the riprap and drawings showing configuration, location and size of gabions if used. If the regulatory authority notifies the applicant that the design and installation measures submitted are not adequate, the applicant shall submit revised plans within 30 days of notification and within 90 days of such notification shall achieve compliance with the applicable standards.

Stipulation 817.52-(1-2)-JW

1. The applicant shall monitor all inflows of 1 gpm or greater in the "in-mine" water monitoring program. If more than 1 gpm or larger inflow occurs within 100 feet in any direction from the source of the flow, the applicant will forward to the regulatory authority information outlining the number, source area, flow rate and locations of such inflows. The number and location of sampling points at the multiple inflow areas will then be determined by the regulatory authority.
2. The applicant shall quarterly monitor sampling sites 2-10-W and 2-11-W and utilize the field measurements and chemical parameters on page 7-83 of the Gordon Creek MRP.

Stipulation 817.97-(1-2)-SC

1. The applicant shall establish a riparian area at the Gordon Creek #3 Mine site not only under BLM, USFWS and DWR permits, but also as part of the wildlife mitigation plan for the Gordon Creek #2 Mine, and shall abide by the provisions of the October 13, 1983 Division of Wildlife Resources Certificate of Registration.
2. The applicant shall amend the statement on page 10-18 of the Southwest Lease MRP to show that Beaver Creek Coal Company had permits from U. S. Fish & Wildlife Service and Division of Wildlife Resources for removal of one nest in the area of exploration.

Stipulation 817.99-(1)-PGL

1. If there is movement of material in the mine permit area, the applicant will notify the Division immediately and within 30 days of such notice submit mitigation plans for the slide area. Within 60 days of such notice, the applicant shall achieve compliance with the applicable standards.

SUPPORTING DOCUMENTATION

Beaver Creek Coal Company
Gordon Creek #2 Mine
ACT/007/016, Carbon County, Utah

July 6, 1984

1. Memorandum from U. S. Fish & Wildlife Service to Office of Surface Mining dated September 2, 1983.
2. Memorandum from Branch of Solid Minerals, Bureau of Land Management to Office of Surface Mining dated August 12, 1983.
3. Letter from Division of State History to Division of Oil, Gas and Mining dated August 25, 1983.
4. Letter from Division of State History to Division of Oil, Gas and Mining dated November 7, 1983.
5. Memorandum from Bureau of Land Management to Office of Surface Mining dated September 13, 1983.

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*Copies of supporting documents are
contained in the Apr. 26, 1984
TA & findings package*

MB

BOND ESTIMATE

Beaver Creek Coal Company
Gordon Creek #2 Mine
Southwest Lease
ACT/007/016, Carbon County, Utah

July 6, 1984

3.5.7 Schedule of Reclamation

3.5.7.1 Detailed Timetable for Completion of Major Reclamation Processes

The following schedule of reclamation is proposed to be initiated within 90 days (weather permitting) of final abandonment of the mining operation:

	<u>Acc. Time</u>
1. Seal Portals - 1 week	1 week
2. Remove Structures - 4 weeks	5 weeks
3. Backfilling & Grading	
a. Pad - 2 weeks	7 weeks
b. Channel Restoration - 2 weeks	9 weeks
c. Road & Diversions - 2 weeks (including road)	11 weeks
4. Seedbed Material Handling - 1 week	12 weeks
5. Fertilizing - 1 week	13 weeks
6. Reseeding & Mulching - 2 weeks	15 weeks
7. Protective Fencing - 2 weeks	17 weeks

The above reclamation tasks are therefore proposed to be complete within 17 weeks following the start of reclamation activities.

1. Loader - \$128.88/hr (with operator)
2. Crane - \$120.05/hr (with operator)
3. Truck - \$89.27/hr (with operator)
4. Cat D-7G - \$1,182.94/day (with operator)

- 5. Backhoe (Cat 235) - \$1,873.96/day (with operator)
- 6. Scraper (621B) - \$1,210/day + \$290.40 (OP cost) = \$1,500.40 X 1.1 = \$1,650.44 + \$227.60 = \$1,878.04
- 7. Foreman \$31.35/hr X 8 = \$1,254/week

SUMMARY OF RECLAMATION COST ESTIMATE

(a) Seal Portals (5 seals)	\$ 17,500.00
(b) Removal Structures	\$ 21,973.54
(c) Soil Placement (backfilling & grading)	\$103,667.00
(d) Seedbed Material Handling	\$ 22,528.32
(e) Reseeding and Fertilizing	\$ 16,915.00
(f) Mulching	\$ 3,300.00
(g) Protective Fencing	\$ 6,000.00
(h) Sedimentation Pond Site	<u>\$ 6,113.80</u>
(i) Monitoring (included in Gordon Creek #2 Estimate for whole area)	
(j) Foreman for 17 Weeks	<u>\$ 21,318.00</u>
	\$219,315.66
10% Contingency	<u>\$ 21,931.57</u>
	\$241,247.23

3.5.8 Reclamation Cost Estimate

(a) Seal Portals - 5 seals X \$3,500/seal (AMR costs)	\$17,500.00	\$17,500.00
(b) Removal Structures		
<u>Fan</u>		
Labor - 2 men X \$174/day X 2 days	\$ 696.00	
Equipment (hauling) - 1 truck + operator X 4 hrs X \$89.27/hr	\$ 357.08	

20 T Crane X 2 hrs X \$120.05/hr \$ 240.10

SUBTOTAL \$1,293.18

Structures and Conveyor

Labor - 3 men X \$174/day X 5 days \$ 2,610.00

Equipment (hauling) - 1 truck + operator
X 40 hrs X \$89.27/hr \$ 3,570.80

1 loader + operator X 40 hrs X \$128.88/hr
(950 B - 2 1/2 cu yd bucket) \$ 5,155.20

SUBTOTAL \$11,336.00

Substation

Labor - 2 men X \$174/day X 2 days \$ 696.00

Hauling - 1 truck + operator X 16 hrs
X \$89.27/hr \$1,428.32

Loader - 4 hrs X \$128.88/hr \$ 515.52

SUBTOTAL \$2,639.84

Water System

Labor - 2 men X \$174/day X 1 day \$348.00

Hauling - 1 truck + operator X 4 hrs X
\$89.27/hr \$357.08

Loader - 2 hrs X \$128.88 \$257.76

SUBTOTAL \$962.84

Clean-Up

Labor - 2 men X \$174/day X 4 days \$1,392.00

Hauling - 1 truck + operator X 8 hrs X
\$89.27/hr \$ 714.16

Loader - 4 hrs X \$128.88 \$ 515.52

Mobilization and Demobilization \$3,120.00

SUBTOTAL \$5,741.68 \$21,973.54

(c) Backfilling & Grading

Pad

Backhoe + operator X \$1,873.96/day X 10 days	\$18,739.60	
Cat + operator X \$1,182.94/day X 10 days	<u>\$11,829.40</u>	
SUBTOTAL	\$30,569.00	

Road and Channel Restoration

Backhoe + operator X \$1,873.96/day X 10 days	\$18,739.60	
Cat + operator X \$1,182.94/day X 10 days	\$11,829.40	
Labor - 4 men X \$174/day X 10 days	\$ 6,960.00	
Riprap	<u>\$ 5,000.00</u>	
SUBTOTAL	\$42,529.00	

Diversions

Backhoe + operator X \$1,873.96/day X 10 days	\$18,739.60	
Cat + operator X \$1,182.94/day X 10 days	<u>\$11,829.40</u>	
SUBTOTAL	\$30,569.00	\$103,667.00

(d) Seedbed Material Handling (8 acres)

Cat/Ripper + operator X \$1,873.96/day X 2 days	\$ 3,747.92	
Scraper + operator X \$1,878.04/day X 5 days	\$ 9,390.20	
Cat/Disk + operator X \$1,873.96/day X 2 days	<u>\$ 3,747.92</u>	
SUBTOTAL	\$22,528.32	\$22,528.32

(e) Reseeding & Fertilizing (8 acres)

Hydroseeder, operator and driver -		
Seed = \$1,662/acre		
Labor = \$ 100/acre		
<u>\$1,762/acre X 8 =</u>		
(allow for 20% reseeding)		
	\$14,096.00 X 1.2 =	
	\$16,915.00	

(f) Mulching (8 acres)

Hydromulcher, operator and driver - \$350/acre X 8 acres	\$2,800.00	
Straw bales for sediment control	\$ 500.00	\$3,300.00

(g) Protective Fencing (8 acres)

6 foot high X 3,000 linear feet X \$2.00/foot installed	\$6,000.00	\$6,000.00
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(h) Sedimentation Pond Site

Backhoe + operator X \$1,873.96/day X 2 days	\$3,747.92	
Cat + operator X \$1,182.94/day X 2 days	<u>\$2,365.88</u>	
SUBTOTAL	\$6,113.80	\$6,113.80

(i) Maintenance and Monitoring (included in Gordon Creek #2 bond estimate)

(j) Foreman for 17 weeks at \$1,254/week	\$10,200.00	\$21,318.00
Subtotal	\$219,315.66	
10% Contingency	<u>\$ 21,931.57</u>	
TOTAL	\$241,247.23	

Operating costs are from the Rental Rate Bluebook (1984).

Labor costs are from the 1984 Means Building Construction Cost Data (subcontractor costs - including O & P)

Portal sealing costs are from actual AMR costs.

The inflation factor is from the Historical Cost Index (January 1981 to January 1984, Salt Lake City, Utah).

Table 3-6 Species mix, seeding rates and planting rates for species to be used in permanent reclamation. Seeding rates are based on drill-seeding.

SPECIES	POUNDS OF PLS PER ACRE*	COST/POUND
SEEDING MIX		
<u>Perennial Grasses</u>		
Streambank wheatgrass (<u>Agropyron riparium</u>)	3.5	
Bluebunch wheatgrass (<u>Agropyron spicatum</u>)	2.0	\$7.50 - \$15.00
Slender wheatgrass (<u>Agropyron trachycaulum</u>)	3.5	\$2.55 - \$8.92
Salina wildrye (<u>Elymus salina</u>)	4.5	\$53.00 - \$238.50
Indian ricegrass (<u>Oryzopsis hymenoides</u>)	2.0	\$8.15 - \$16.30
<u>Forbs</u>		
Cicer milkvetch (<u>Astragalus cicer</u>)	2.0	\$4.20 - \$8.40
Little sunflower (<u>Helianthella uniflora</u>)	2.0	Not Available
Rocky Mountain penstemon (<u>Penstemon strictus</u>)	0.25	\$27.00 - \$6.75
<u>Shrubs</u>		
Rubber rabbitbrush (<u>Chrysothamnus nauseosus</u>)	0.5	\$68.00 - \$34.00
SUBTOTAL	18.75	\$327.87

Table 3-6 (continued)

CONTAINERIZED STOCK

	PLANTS/ACRE	COST/POUND
<u>Tall Shrubs (\$.79/plant; \$.65 over 1,000)</u>		
Gambel's oak (<u>Quercus gambelii</u>)	375	\$ 296.25
Mountain mahogany (<u>Cercocarpus montanus</u>)	438	\$ 346.02
Serviceberry (<u>Amelanchier alnifolia</u>)	125	\$ 98.75
Antelope bitterbrush (<u>Purshia tridentata</u>)	125	\$ 98.75
Mountain snowberry (<u>Symphoricarpos oreophilus</u>)	188	\$ 148.52
<u>Low Shrubs (\$.79/plant)</u>		
Oregon grape (<u>Mahonia repens</u>)	188	\$ 148.52
Mountain lover (<u>Pachystima myrsinites</u>)	<u>63</u>	<u>\$ 198.29</u>
SUBTOTAL	1,502	\$1,335.10/acre
TOTAL		\$1,662.97

*Seeding rates for hand broadcasting and hydroseeding will be twice the value listed.