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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

August 23, 1985

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

Dear Mr. Klein:

RE: Special Condition No. 2, Beaver Creek Coal Company,
Huntington #4 Mine, INA/015/004, #2, Emery County, Utah

Enclosed please find ~~eight~~ (8) copies of Beaver Creek Coal Company's plans addressing Special Condition No. 2 for their Huntington #4 Mine in Emery County, Utah. This material is for your review, information, and to update your files.

If you have any questions or need additional information, please contact me or Tom Munson.

Sincerely,

John J. Whitehead

John J. Whitehead
Permit Supervisor/
Reclamation Hydrologist

btb
Enclosures
cc: Tom Munson
0341-102

Beaver Creek Coal Company

P.O. Box 1378

Price, Utah 84501

Telephone 801 637-5050



RECEIVED

August 15, 1985

AUG 19 1985

DIVISION OF OIL
GAS & MINING

Mr. Lowell Braxton,
Administrator
Utah Division of Oil, Gas, & Mining
355 North West Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

RE: Special Condition No. 2
Final Permit Approval, UT-0004
Huntington Canyon No. 4 Mine
ACT/0157004, #2 & #4
Emery County, Utah

Dear Mr. Braxton:

Please find enclosed fourteen (14) copies of additional information for Special Condition No. 2. This information was requested by Mr. Tom Munson of your staff.

The response consists of revised Plate Index Sheets and Page 3-58, 3-58a, and 3-58aa. These pages should replace those in the M.R.P.

If you have any questions or need any further information, please let me know.

Respectfully,

Dan W. Guy
Manager of Permitting and Compliance

DWG/sb

Enclosures

cc: K.S. Fleck
File 4-P-6-1
File 4-P-6-1-6-1
IBM D2

LIST OF PLATES

<u>Plate Number</u>	<u>Title</u>
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3-1A	Surface Facilities Map (with contours)
3-2a	Transportation Facilities. plan and Profiles
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3-4	Mine Development Plan - Hiawatha Seam
3-5	Mine Operations Map - Blind Canyon Seam
3-6	Mine Operations Map - Hiawatha Seam
3-7	Subsidence Monitoring Map
3-8	Postmining Topography
3-9	Postmining Topography - Portal & Pad Areas
3-10	Helco Mine Drainage Cross-Sections and Profiles
3-11	No. 4 Mine Portal and Loadout Area Proposed Drainage Reconstruction
6-1	Geologic and Drill Hole Location Map
6-2	Location of Drill Holes and Structure - Stratigraphic Section A-A
6-3	Isopach Map of the Hiawatha Seam
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6-5	Structure Contours of the Blind Canyon Seam
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6-8	Starpoint Sandstone Cross-Section
7-1	Surface Water Courses

LIST OF PLATES (continued)

<u>Plate Number</u>	<u>Title</u>
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7-3	Water Quality Monitoring Locations
7-4	Sedimentation & Drainage Control Plan - Upper Pad
7-5	Diversion Ditch Designs - Profile & Typical Cross-Section
7-6	Sediment Pond & Diversion Designs
7-6a	Cross-Section of Filter Dike
7-7	Filed Water Rights
7-8	Surface Drainage Map
8-1	Soil Inventory Map
9-1	Vegetation Map

3.5.2.3 Disposition of Dams, Ponds and Diversions

The diversions A and B on the upper pad will be removed during the backfilling and regrading of this area. This area will be recontoured to drain to the original natural drainage which will continue to go into the sedimentation ponds. The stream channel below diversions A and B will be restored to carry ephemeral flows now diverted around the mine site. The reclaimed channel is shown in Plate 3-9 with a channel longitudinal profile and cross sections shown on Figure 3-6a. Since the entire drainage area above the reclaimed reach is only 0.122 sq. miles, the channel is designed to accommodate the runoff from a ten (10) year, 24 hour precipitation event as required by U.M.C. (817.43(b)) for permanent diversions.

Special Condition No. 2 A study of the drainage near the Helco Mine was performed during the Spring of 1985. This was the most comparable, adjacent drainage to the No. 4 Mine. Based on the results of this study, a proposed drainage reconstruction plan was designed for the No. 4 Mine drainage. The cross-sections and profiles of the study area are on Plate 3-10, and the proposed reconstruction is on Plate 3-11. The proposed drainage is patterned after that of the study area, and since this is based on actual flow conditions, Beaver Creek Coal Company has requested that this design be approved and that a variance to the requirements of UMC 817.44(b)(2) be granted.

An estimate of the peak flow resulting from a ten (10) year, 24 hour precipitation event was derived using the computer model TR-20 with a Farmer-Fletcher rainfall distribution, a curve number of 75 and a time of concentration of 0.07 hours. The resulting peak flow is 5.1 cfs. Since the diversion structures were designed to convey a peak discharge of 8.4 cfs (as determined by Mike Thompson of the

Special Condition No. 2 (Continued)

Department of Oil, Gas, and Mining for a ten year, 24 hour storm), this larger estimate was used to design a pilot channel for ephemeral flows.

3.5.2.3 Disposition of Dams, Ponds, and Diversions (continued)

The channel will be reclaimed through the disturbed area at locations associated with the upper pad and the lower pad as shown on Plates 3-9 and 3-11. The reach through the upper pad was designed using Manning's Equation for channel slopes at 36% and 46% as shown below:

Bed Slope:	36%	46%
Side Slope:	2:1	2:1
Bottom Width:	3.0	3.0
Manning's n:	0.038	0.038
Normal Depth (ft):	0.27	0.25
Velocity (ft/sec):	8.8	9.5

*Actual channel restoration will be larger, as shown on Plate 3-11.

The channel will be lined with rip-rap having a median diameter (D50) of 9 inches and a maximum diameter of 18 inches. This size should be stable for channel bottom velocities as high as 11 ft/sec according to the Bureau of Reclamation approach (Simons and Sentark (1977), "Sediment Transport Technology").

3.5.2.3 Disposition of Dams, Ponds, and Diversions (continued)

The lower reach was designed using Manning's Equation for a channel slope of 20 % as shown below:

Bed Slope:	20%
Side Slope:	2:1
Bottom Width (ft)	3.0
Manning's n	0.035
Normal Depth (ft)	0.31
Velocity (ft/sec)	7.6

*Actual channel restoration will be larger, as shown on Plate 3-11.