

Document Information Form

Mine Number: C/007/004

File Name: Incoming

To: DOGM

From:

Person N/A

Company PRICE RIVER COAL COMPANY

Date Sent: N/A

Explanation:

APPARENT COMPLETENESS REVIEW: RESPONSE DOCUMENT.

cc:

File in: CI 007 004 , Incoming

Refer to:

- Confidential
- Shelf
- Expandable

Date _____ For additional information

APPARENT COMPLETENESS REVIEW

Price River Coal Company
Price River Complex
ACT/007/004, Carbon County, Utah

and

#2

Price River Coal Company

RESPONSE DOCUMENT

771.23 Permit Applications: General

Nowhere in the application is it clearly stated for which mines this application applies, and which mines are excluded.

See pages 3-7 for mine plan area location. See sections 3.1-1 through 3.1-7 for existing and proposed mines.

We have explained on pages 4 and 5 and section 1.1 that we intend to develop all mineable seams. Explanations on pages 70-89 clearly identify active and proposed portions of the operations. We are obviously permitting all active mines and surface operations. We are doing this within the unreasonable constraints of the five year permit period. We are also placing in the record all proposed surface additions during the life of the mine, in order to develop all coal seams. This method of presentation was recommended by OSM officials during a meeting in their offices on 5-19-82. The intent was to aid in re-permitting and provide a basis for submitting detailed modifications for additional surface facilities, as needed.

We are seeking a permit to develop all coal properties for which we have a legal right to mine. We wish a recognition by the regulatory authority of the extent of our coal reserves and the needed unity of their development. We have or are prepared to post bond for all existing, active surface areas and will post additional bond prior to disturbance of any new areas. The final permit should include our entire mine complex with restrictions on activity to those areas where we are currently operating.

The Price River Coal Complex is one, contiguous mining unit. All potential mines are included; none are excluded. How else can we truthfully propose our long-term mining plans within the limits of a five-year permit?

The applicant must provide a map showing where underground coal mining activities occurred both prior to and after August 3, 1977. Mining prior to and after May 3, 1978; as well as prior to the approval of the regulatory program, and after the estimated date of issuance must also be shown.

Exhibits 3-3 through 3-20 show all areas which occurred prior to 1977. Maps showing mining in period between 8-3-77 and 5-3-78 will be prepared in separate fashion. Information on mining related to period of regulatory approval are unnecessary since we have neither requested nor obtained a small operators exemption (see UMC 771.23 (e)(2)).

File in:
 Confidential
 Shelf
 Expandable
Refer to Record No. 0058 Date _____
In CI 007, 004, Incoming
For additional information _____

APPARENT COMPLETENESS REVIEW

Price River Coal Company
Price River Complex
ACT/007/004, Carbon County, Utah

and

Price River Coal Company

RESPONSE DOCUMENT

#2

771.23 Permit Applications: General

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See pages 3-7 for mine plan area location. See sections 3.1-1 through 3.1-7 for existing and proposed mines.

We have explained on pages 4 and 5 and section 1.1 that we intend to develop all mineable seams. Explanations on pages 70-89 clearly identify active and proposed portions of the operations. We are obviously permitting all active mines and surface operations. We are doing this within the unreasonable constraints of the five year permit period. We are also placing in the record all proposed surface additions during the life of the mine, in order to develop all coal seams. This method of presentation was recommended by OSM officials during a meeting in their offices on 5-19-82. The intent was to aid in re-permitting and provide a basis for submitting detailed modifications for additional surface facilities, as needed.

We are seeking a permit to develop all coal properties for which we have a legal right to mine. We wish a recognition by the regulatory authority of the extent of our coal reserves and the needed unity of their development. We have or are prepared to post bond for all existing, active surface areas and will post additional bond prior to disturbance of any new areas. The final permit should include our entire mine complex with restrictions on activity to those areas where we are currently operating.

The Price River Coal Complex is one, contiguous mining unit. All potential mines are included; none are excluded. How else can we truthfully propose our long-term mining plans within the limits of a five-year permit?

The applicant must provide a map showing where underground coal mining activities occurred both prior to and after August 3, 1977. Mining prior to and after May 3, 1978; as well as prior to the approval of the regulatory program, and after the estimated date of issuance of a permit by the Division must also be shown.

Exhibits 3-3 through 3-20 show all areas where underground mining activities occurred prior to 1977. Maps showing mining in the No. 3 and No. 5 Mines for the period between 8-3-77 and 5-3-78 will be prepared and submitted in a timely fashion. Information on mining related to periods associated with initial of final regulatory approval are unnecessary since we have neither requested nor obtained a small operators exemption (see UMC 771.23 (e)(2)).

UMC 783.14 Geology Description

The applicant must provide analyses for pyrite content of the coal as well as the stratum immediately above and below the coal. The information provided in Tables 6-1, 6-2 and 6-3 does not include pyrite.

Table 6-1 must include analyses of all nine target coal seams rather than the six presented.

We have most of the pyrite content information but the roof and floor analyses would be difficult to obtain. Until we begin mining operations, sample collection from many seams would not be possible.

We can provide the information from the No. 3 and No. 5 Mines. It is suggested that since we will not likely begin mining in other seams during the obligatory five-year permit period, that it is feasible to obtain the required pyrite data later on...

It is well known and generally accepted that the extreme buffering capacity of the alkaline strata reduce the possibility for oxidation of pyrite and subsequent acid water or high iron discharge to near zero.

UMC 783.15 Ground Water Information

To be discussed.

UMC 783.16 Surface Water Information

The applicant should provide a description of the design and construction of the surface water monitoring stations, including the type of flow gauges in use.

There has been no construction involved. A sample has merely been obtained at designated points on stream channels. Flows have been measured using various hand held meters chosen by our water monitoring consultants; Vaughn Hansen Associates.

Does the request for this information fall under the criteria of identifying seasonal variation in such other information as the Division determines is relevant?

The applicant should identify the watershed areas for all the principal drainages which are located in the mine plan area. For example, the drainage areas for the Price River (above the downstream limit of the mine complex), Willow Creek, Hardscrabble Canyon, Sowbelly Gulch, Spring Canyon, Bear Canyon, Crandall Canyon, Sulfur Canyon Creek and Fork Creek should be provided.

At a minimum, long-term mean annual yield for Willow Creek, Spring Canyon Creek and the Price River (the three perennial streams in the study area) should be provided. If such information is available for the nonperennial tributary drainages also, it should be provided.

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 AREA CODE 312 726-8434

WESTERN DIVISION MANAGER
LLOYD W. TAYLOR, JR.



PLEASE ADDRESS ALL CORRESPONDENCE TO:
10775 EAST 51st AVE., DENVER, COLO. 80239
OFFICE TEL. (303) 373-4772

UTAH GEOLOGICAL AND MINERAL SURVEY
606 Black Hawk Way
Salt Lake City, Utah 84108

January 18, 1980

Sample identification
by

Kind of sample reported to us	Coal	Utah Geological & Mineral Survey
Sample taken at	xxxxxx	Sample No. 255
Sample taken by	Utah Geological & Mineral Survey	Core Hole No. MC-206
Date sampled	xxxxxx	785.1' - 786.0'
Date received	12-14-79	Kenilworth (A.E.P.)

Analysis report no. 72-89275

PROXIMATE ANALYSIS

	<u>As Received</u>	<u>Dry Basis</u>
% Moisture	3.27	xxxxxx
% Ash	13.19	13.64
% Volatile	38.76	40.07
% Fixed Carbon	44.78	46.29
	<u>100.00</u>	<u>100.00</u>
Btu/lb.	11951	12355
% Sulfur	0.62	0.64

ULTIMATE ANALYSIS

	<u>As Received</u>	<u>Dry Basis</u>
% Moisture	3.27	xxxxxx
% Carbon	66.87	69.13
% Hydrogen	4.76	4.92
% Nitrogen	1.39	1.44
% Chlorine	0.11	0.11
% Sulfur	0.62	0.64
% Ash	13.19	13.64
% Oxygen (diff)	9.79	10.12
	<u>100.00</u>	<u>100.00</u>

SULFUR FORMS

	<u>As Received</u>	<u>Dry Basis</u>
% Pyritic Sulfur	0.02	0.02
% Sulfate Sulfur	0.00	0.00
% Organic Sulfur (Diff)	0.60	0.62
% Total Sulfur	0.62	0.64

FUSION TEMPERATURE OF ASH

	<u>Reducing</u>	<u>Oxidizing</u>
Initial Deformation	xxxxxx °F	xxxxxx °F
Softening (H=W)	xxxxxx °F	xxxxxx °F
Softening (H=1/2W)	xxxxxx °F	xxxxxx °F
Fluid	xxxxxx °F	xxxxxx °F

HARDGROVE GRINDABILITY INDEX = xxxxx at xxxxx % Moisture

% EQUILIBRIUM MOISTURE = xxxxx

FREE SWELLING INDEX = xxxxx
GDP/md/vt

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

G. D. PALMER, Manager, Denver Laboratory



Charter Member

Final Copy Watermarked
For Your Protection



Department of Energy
 COAL-ANALYSIS REPORT *USBM #697*
UGS #79 *MC-181*

LAB NO. K89050

ORGANIZATION: METHANE CONTROL & VENTILATION
 SAMPLE ID: MC&V, #697, COAL

SET SEC 28 T125 R9E

CAN NO: -

PR: AMERICAN ELECTRIC POWER CO.
 STATE: UT COUNTY: CARBON
 OWN: -

MINE: -
 BED: CASTLEGATE "D"

DATE OF SAMPLING: 10-24-78 DATE RECEIVED: 1-18-79 DATE OF REPORT: 1-30-79
 COLLECTOR: A. D. SMITH

	COAL (AS RECD.)	COAL (MOIST FREE)	COAL (MOIST, ASH FREE)
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PROXIMATE ANALYSIS

MOISTURE	1.6	N/A	N/A
VOLATILE MATTER	40.2	40.8	42.7
FIXED CARBON	53.8	54.8	57.3
ASH	4.4	4.4	N/A

ULTIMATE ANALYSIS

HYDROGEN	5.9	5.8	6.1
CARBON	78.9	78.1	81.7
NITROGEN	1.5	1.8	1.8
SULFUR	5	5	5
OXYGEN (IND.)	10.8	9.6	10.0
ASH	4.4	4.4	N/A

HEATING VALUE (BTU/LB)	13749	13987	14017
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SULFUR FORMS

SULFATE	0.0	0.0	0.0
PYRITIC	0.3	0.3	0.3
ORGANIC	4.8	4.7	4.9

COMMERCIAL TESTING & ENGINEERING CO.

GENERAL OFFICES: 228 NORTH LA SALLE STREET, CHICAGO, ILLINOIS 60601 AREA CODE 312 726-8434

WESTERN DIVISION MANAGER
LLOYD W. TAYLOR, JR.



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10775 EAST 51st AVE., DENVER, COLO. 80239
OFFICE TEL. (303) 373-4772

UTAH GEOLOGICAL AND MINERAL SURVEY
606 Black Hawk Way
Salt Lake City, Utah 84108

January 11, 1980

Sample identification
by

Kind of sample reported to us	Coal	Utah Geological & Mineral Survey
Sample taken at	xxxxx	Sample No. 254
Sample taken by	Utah Geological & Mineral Survey	Core Hole No. MC-206
Date sampled	xxxxx	724.0' - 724.9'
Date received	12-14-79	C - Seam (A.E.P.)

Analysis report no. 72-89274

PROXIMATE ANALYSIS

	<u>As Received</u>	<u>Dry Basis</u>
% Moisture	2.62	xxxxx
% Ash	9.82	10.08
% Volatile	41.27	42.38
% Fixed Carbon	46.29	47.54
	<u>100.00</u>	<u>100.00</u>
Btu/lb.	12742	13085
% Sulfur	0.53	0.54

ULTIMATE ANALYSIS

	<u>As Received</u>	<u>Dry Basis</u>
% Moisture	2.62	xxxxx
% Carbon	71.94	73.88
% Hydrogen	4.98	5.11
% Nitrogen	1.28	1.31
% Chlorine	0.03	0.03
% Sulfur	0.53	0.54
% Ash	9.82	10.08
% Oxygen (diff)	8.80	9.05
	<u>100.00</u>	<u>100.00</u>

SULFUR FORMS

	<u>As Received</u>	<u>Dry Basis</u>
% Pyritic Sulfur	0.02	0.02
% Sulfate Sulfur	0.00	0.00
% Organic Sulfur (Diff)	0.51	0.52
% Total Sulfur	0.53	0.54

FUSION TEMPERATURE OF ASH

	<u>Reducing</u>	<u>Oxidizing</u>
Initial Deformation	XXXXX °F	XXXXX °F
Softening (H=W)	XXXXX °F	XXXXX °F
Softening (H=1/2W)	XXXXX °F	XXXXX °F
Fluid	XXXXX °F	XXXXX °F

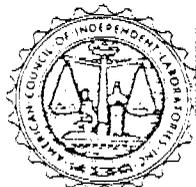
HARDGROVE GRINDABILITY INDEX = xxxxx at xxxxx % Moisture

% EQUILIBRIUM MOISTURE = xxxxx

FREE SWELLING INDEX = xxxxx
GDP/md/vt

Respectfully submitted,
COMMERCIAL TESTING & ENGINEERING CO.

G. D. PALMER, Manager, Denver Laboratory



Charter Member

COAL ANALYSIS REPORT

UNITED STATES
DEPARTMENT OF ENERGY
COAL ANALYSIS

LAB NO. K82402

ORGANIZATION: METHANE CONTROL & VENTILATION

SAMPLE ID: MC&V., COAL, USBM#495
CAN. NO: -

UGS
#85

OPERATOR: AMERICAN ELECTRIC POWER
STATE: UT COUNTY: CARBON
OWNER: -

MINE: -
BED: CASTLEGATE "B"

DATE OF SAMPLING: - DATE RECEIVED: 5-16-78 DATE OF REPORT: 6-7-78

COLLECTOR: A. SMITH

	COAL [AS RECD.]	COAL [MOIST FREE]	COAL [MOIST, ASH FREE]
PROXIMATE ANALYSIS			
MOISTURE	4.0	N/A	N/A
VOLATILE MATTER	40.8	42.5	45.8
FIXED CARBON	48.3	50.3	54.2
ASH	6.9	7.2	N/A

	COAL [AS RECD.]	COAL [MOIST FREE]	COAL [MOIST, ASH FREE]
ULTIMATE ANALYSIS			
HYDROGEN	5.1	4.8	5.2
CARBON	71.1	74.1	79.9
NITROGEN	1.4	1.4	1.6
SULFUR	.3	.4	.4
HYDROGEN [IND]	15.1	12.0	12.9
ASH	6.9	7.2	N/A

HEATING VALUE [BTU/LB] 12441 12965 13972

SULFUR FORMS BY ATOMIC ABSORPTION

SULFATE	.01	.01	.01
PYRITIC	.05	.05	.05
ORGANIC	.28	.29	.32



COAL-ANALYSIS REPORT

UGS # 73 MC 172

SBM # 717

LAB NO. K89070

NE⁴ SEC 28 T12S R9E

ORGANIZATION: METHANE CONTROL & VENTILATION

SAMPLE ID: MC&V.#717, COAL

CAN NO: -

OWNER: AMERICAN ELECTRIC POWER CO.

STATE: UT COUNTY: CARBON

MINE: -

BED: CASTLEGATE "A"

DOWN: -

DATE OF SAMPLING: 10-27-79 DATE RECEIVED: 1-16-79 DATE OF REPORT: 2-5-79

COLLECTOR: SMITH & HAYHURST

	COAL [AS RECD.]	COAL [MOIST FREE]	COAL [MOIST, ASH FREE]
PROXIMATE ANALYSIS			
MOISTURE	1.2	N/A	N/A
VOLATILE MATTER	45.0	45.5	48.2
FIXED CARBON	48.3	48.9	51.8
ASH	5.5	5.6	N/A
ULTIMATE ANALYSIS			
HYDROGEN	6.1	6.0	6.4
CARBON	76.1	77.1	81.6
NITROGEN	1.3	1.4	1.4
SULFUR	3	3	3
OXYGEN (IND)	10.7	9.7	10.3
ASH	5.5	5.6	N/A
HEATING VALUE (BTU/LB)	13761	13931	14761
SULFUR FORMS			
SULFATE	00	00	00
PYRITIC	04	04	04
ORGANIC	23	23	25



COAL-ANALYSIS REPORT *USBM # 698*
UGS # 82 *MC-181*

LAB NO. K89051

ORGANIZATION: METHANE CONTROL & VENTILATION
 SAMPLE ID: MC&V, #698, COAL

SE⁴ SEC 28 T12S R9E

CAN NO: -

OWNER: AMERICAN ELECTRIC POWER CO.
 STATE: UT COUNTY: CARBON
 TOWN: -

MINE: -
 BED: UPPER SUBSEAM 1

DATE OF SAMPLING: 10-24-79 DATE RECEIVED: 1-16-79 DATE OF REPORT: 1-30-79
 COLLECTOR: HAYHURST

	COAL [AS RECD.]	COAL [MOIST FREE]	COAL [MOIST, ASH FREE]
PROXIMATE ANALYSIS			
MOISTURE	1.2	N/A	N/A
VOLATILE MATTER	45.6	46.2	49.1
FIXED CARBON	47.3	47.8	50.9
ASH	5.9	6.0	N/A
ULTIMATE ANALYSIS			
HYDROGEN	6.2	6.1	6.5
CARBON	76.0	77.0	81.9
NITROGEN	1.3	1.3	1.4
SULFUR	.6	.6	.6
OXYGEN [IND.]	10.0	9.0	9.6
ASH	5.9	6.0	N/A
HEATING VALUE [BTU/LB]	13900	14075	14974
SULFUR FORMS			
SULFATE	.01	.01	.01
PYRITIC	.03	.03	.03
ORGANIC	.54	.55	.56



COAL-ANALYSIS REPORT USBM # 824
UGS # 164

LAB NO. K91518

ORGANIZATION: METHANE CONTROL & VENTILATION *SENE SEC 29 T12S R9E*
 SAMPLE ID: MC&V, 824, UGS#164, COAL

CAN NO: - *MC 204*

PROPRIETOR: AMERICAN ELECTRIC POWER
 STATE: UT COUNTY: CARBON
 TOWN: -

MINE: -
 BED: SUBSEAM 2

DATE OF SAMPLING: 1-2-79 DATE RECEIVED: 3-27-79 DATE OF REPORT: 4-11-79
 COLLECTOR: A. SMITH

	COAL [AS RECD.]	COAL [MOIST FREE]	COAL [MOIST, ASH FREE]
PROXIMATE ANALYSIS			
MOISTURE	1.6	N/A	N/A
VOLATILE MATTER	41.6	42.3	45.3
FIXED CARBON	50.2	51.0	54.7
ASH	6.6	6.7	N/A
ULTIMATE ANALYSIS			
HYDROGEN	5.6	5.5	5.9
CARBON	76.4	77.6	83.2
NITROGEN	1.4	1.4	1.5
SULFUR	.6	.7	?
OXYGEN [INC.]	9.4	8.1	8.7
ASH	6.6	6.7	N/A
HEATING VALUE [BTU/LB]	13762	13990	14993
SULFUR FORMS			
SULFATE	.01	.01	.01
PYRITIC	.06	.06	.07
ORGANIC	.57	.58	.62

SAMPLE INTERVAL 2108.99 - 2109.99

AS RECD¹ Mm + 14,871



COAL-ANALYSIS REPORT

SBM # 699

UGS # 96

MC-188

LAB NO. K89052

NE 4 SEC 5 T13S R9E

ORGANIZATION: METHANE CONTROL & VENTILATION

SAMPLE ID: MC&V, #699, COAL

COAL ID: -

OWNER: AMERICAN ELECTRIC POWER CO.

MINE: -

STATE: UT COUNTY: CARBON

SUBSEAM #3

MINER: -

DATE OF SAMPLING: 10-24-78 DATE RECEIVED: 1-16-79 DATE OF REPORT: 1-30-79

COLLECTOR: SMITH & GARDNER

PROPERTY	COAL (AS RECD.)	COAL (MOIST FREE)	COAL (MOIST, ASH FREE)
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PROXIMATE ANALYSIS

MOISTURE	2.0	N/A	N/A
VOLATILE MATTER	43.6	44.5	47.6
FIXED CARBON	48.0	49.0	52.4
ASH	6.4	6.5	N/A

ULTIMATE ANALYSIS

HYDROGEN	5.9	5.8	6.2
CARBON	74.2	75.7	81.0
NITROGEN	1.6	1.6	1.7
SULFUR	.5	.5	.6
OXYGEN (IND)	11.4	9.9	10.9
ASH	6.4	6.5	N/A

HEATING VALUE (BTU/LB)	13480	13750	14710
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SULFUR FORMS

SULFATE	0.7	0.0	0.0
CRYSTALLIC	0.5	0.5	0.5
ORGANIC	4.6	4.7	5.0

The watersheds and yields of Willow Creek, Price River and Spring Canyon are matters of public record, available at the State Division of Water Rights. Why should we address or commit to this information in our mine permit?

Spring Canyon is an intermittent stream.

The drainage areas for Hardscrabble Canyon, Sowbelly Gulch and Crandall Canyon are identified on Exhibit 7-1. Bear Canyon, Sulfur Canyon and Ford Creek have no significance to our proposed permit area or any drainage control structures.

The applicant needs to provide a discussion of NPDES discharges to the surface water resources in the area. What is the result of past NPDES monitoring activities conducted to date?

Mostly we have had no discharge. See comments under 784.13.

UMC 783.22 Land-Use Information

The applicant has not provided a map which illustrates existing land-uses within the proposed permit area.

This information is shown on several maps. Exhibit 3-22 shows all utility corridors, roads, rail lines, etc. Exhibit 4-2 shows the Price River Recreation Area - the only designated recreation lands. Exhibit 9-1 shows vegetation types which is closely related to land usage. Exhibit 10-1 shows known and potential usage by wildlife. Exhibit 9-1 also shows all disturbed areas used by both mining and other activities (residential, industrial...). Exhibit 3-1 shows all known existing mine portals. All lands support grazing.

We do not appreciate the need for another map.

The applicant must describe previous mining activities on-site with respect to the criteria outlined in parts 783.22(b) (1) through (5) of this section of the regulations. Present references to the items required under this section are brief, general background statements which don't adequately address all five criteria in this section.

See Chapter V, Section 5.2.

The applicant must describe any land-use classifications of the permit area which exist under local law.

See Section 2.4-2. The Castle Gate and Willow Creek areas are also classed CE-2. Undisturbed lands on the east side of the property are CE-1.

UMC 783.24 Maps: General

Nowhere in the application is it concisely stated for which mines and associated surface disturbances this application applies. It appears that the current permit area includes mines 3 and 5 and existing surface disturbances, as well as the Castle Gate preparation plant and associated refuse pile. If this is so, Exhibit 3-20, showing mining in the Panther Mine area, should be revised to show the correct dates when mining will occur.

That which appears to be is...

Exhibit 3-20 will be updated.

The applicant must provide a map showing all sub-areas where it is anticipated that additional permits will be sought.

Exhibit 3-1A shows all existing and proposed facilities.

A map showing the location and use of all buildings in the permit area as well as those within 1,000 feet of the permit area must be included.

All buildings are shown on most maps. Facility maps show and name all buildings. The building names are indicative of usage such as: "Guard Shack", "Bathhouse", "UP&L Power Plant". Smaller scale maps (1" = 2,000') use standard map symbols which are solid squares for residences and empty squares for sheds and barns. Four structures do remain vague. Three of these are east of the mouth of Bear Canyon, designated "W.T." for water treatment plants. The remaining building in R9E, T. 13 S., in the south 1/2 of the SW 1/4 of Section 1, is the Utah Department of Transportation truck weigh station. This will be identified on Exhibit 3-22.

UMC 783.25 Cross-sections, Maps and Plans

The applicant should specify that the mines identified on Exhibit 3-1 constitute all of the active and inactive mine openings within the mine plan area and adjacent areas. It should be indicated just what kind of closing (type) or usage (sic) has been employed by the operation.

It is to specified that all known mines are shown on Exhibit 3-1.

We do not know the methods employed for permanent seals - we cannot get in. Temporary seals are mostly steel caging.

Cross-sectional slope measurements are lacking for areas critical to the mine plan, e.g., Schoolhouse Canyon-Castlegate Prep Plant area, Hardscrabble and Sowbelly canyons and Willow Creek. These should be developed in a representative fashion for areas that may be considered as reasonable examples of the disturbed area (e.g., the distance along the line between the Price River and the drainage ditch above Schoolhouse Canyon; portal areas in the canyons through refuse piles; across access roads; etc.).

We feel that the "existing land surface" is "adequately represented" by the use of contour maps.

Projections on cross-sections A-A' in the exhibit are too vast for practical use. For example, MC-53 is projected 5,100 feet from the north and MC-132 is projected 5,200 feet from the south, thus resulting in a shift of nearly two miles. Several holes appear to be more relevant to the nature of cross-sectional depiction (e.g., MC-170, MC-73, MC-77, MC-100, MC-61). What is the justification for the particular pattern of observation points referenced?

The cross-sections submitted are not intended for practical use but only to supply general information required by permitting regulations concerning geology.

There would be no practical use for another cross-section as recommended above from a mining standpoint. Correlation of test holes is difficult and not always precise. At least six different geologists or mining specialists have analyzed our test hole information and have generated slightly differing concepts for mining this very complex property. Does the regulatory agency wish to develop their own concept of a mining plan for this reserve?

UMC 784.11 Operating Plan

The location and areal extent of the topsoil storage area in Gravel Canyon must be shown on a map along with the surface water control structures. Reference the date of submittal if these have already been provided.

See Appendix 8A.

This information was submitted to the regulatory authority during the third week of May 1982 and approved as a modification on 6-7-82. All maps and plans were included.

UMC 784.12 Operating Plan: Existing Structures

Information for each of the existing structures utilized by PRCC must be provided as required by this part. In particular, the stability of any cuts and fills in the surface facilities areas must be identified; as well as areas where mine development waste, and shaft construction waste is, or has been, disposed of.

We can find no performance standards in subchapter K which relate to cuts and fills on pad areas. The construction of the fill in Crandall Canyon is well defined and approved in the Crandall Canyon modification. The refuse pile in Schoolhouse Canyon is discussed in other sections and additional information will be provided. An old refuse pile exists in Hardscrabble Canyon. It appears to have remained stable.

What is it that you want?

In the narrative description of the Willow Creek facilities (page 164, Section 3.6 of the permit application), the applicant discusses the failure potential for embankments, including piping and tension cracks. Some elaboration of this discussion is necessary: (1) which dike has failed, and was it repaired; and (2) have remedial measures been effective?

The descriptions referred to are only to explain the existing, pre-permitting condition of the site. We currently use only about 11 acres (shown on Exhibit 3.6-1) as a low use storage area. Should we proceed with 6 and 6A mine development we would propose some modifications to ensure the stability of the stream bank.

UMC 784.13 Reclamation Plan: General Requirements

The applicant must provide information on measures to be taken if temporary closure becomes necessary as required by UMC 817.131.

Should temporary closure become necessary we will comply with the requirements of 817.131. UMC 784.13 does not require a temporary closure plan prior to closure.

The applicant should define the boundaries of the proposed permit area (see UMC 771.23).

The boundaries of all areas are identified on Exhibits 3.2-1, 3.3-1, 3.4-1, 3.6-1 and 3.7-1.

The amount of proposed bond must include the cost for grading of the refuse pile and reclamation of the pile, for the worst case situation, if the site is abandoned prior to complete pile construction. In addition, the closure costs for the portals must be estimated in more detail along with building removal costs. References are available which provide reasonable data to make a more detailed estimate.

The grading cost is included on Table 3.4-4(A) and 3.4-4(B) and drawn from Section 8.4-2. Estimates are based on costs for a dozer and operator at 10 hours/acre.

Why do you assume the "worst case" is abandonment prior to completion? This would actually be most advantageous from a regulatory standpoint since there would be less area to reclaim.

Please make references available showing "reasonable data".

The specific dates anticipated for reclamation of the disturbed areas must be noted for all disturbances in the permit area, for each major step of the reclamation process.

The following chart provides anticipated dates for the various phases of reclamation. Exact timing may change due to availability of materials, market conditions or other factors beyond our control.

SITE OR FACILITY	BUILDING OR STRUCTURE REMOVAL	GRADING & BACKFILLING	RESOILING	RESEEDING	SHRUB OR TREE PLANTING
Sowbelly Gulch Substation and Portals	Spring 1985 Spring 2015	Summer 1985 Summer 2015	Summer 1985 Summer 2015	Fall 1985 Fall 2015	Early Spring 1986 Early Spring 2016
Hardscrabble Canyon Substation Portals #4 Access Road	Spring 1986 Spring 2016	Summer 1986 Summer 2016	Summer 1986 Summer 2016	Fall 1986 Fall 2016	Early Spring 1987 Early Spring 2017
Castle Gate Prep Plant	Winter * & Spring 2014	Summer 2014	Summer 2014	Fall 2014	Early Spring 2015
Crandall Canyon	Spring 2014	Summer 2014	Summer 2014	Fall 2014	Early Spring 2014
Willow Creek Storage Area	Spring 2014	Summer 2014	Summer 2014	Fall 2014	Early Spring 2014
Schoolhouse Canyon Refuse Pile	PROGRESSIVE STARTING IN SPRING OF 1984				
Utah Fuel #1	Spring 2014	Summer 2014	Summer 2014	Fall 2014	Early Spring 2015

* Depending on coal production and market conditions this facility may remain in operation until 2044.

Plans and cross-sections must be submitted showing the existing and final surface configuration of all areas disturbed by mining. Cross-sections of the sites are the only way to ensure that the disturbed areas are being returned to the most stable configuration reasonably possible.

We do not feel that cross-sections ensure stability but if this type of information is absolutely required we will attempt to supply it.

In general we do not intend to backfill any existing cuts since insufficient material remains with which to do so. We will backfill as part of portal sealing operations.

It should be considered that cross-sectioning of all sites will require 6-9 months.

A sketch of an MSHA approved seal has been submitted with the plan - double row of solid blocks hitched into the ribs, with mortar on the accessible side, gas surveillance tube; drain pipe for water if necessary. In cases where these are not practical (for instance in caving ground) tunnels will be sealed by dozing earth to fill the opening. Since past and current practice is to mine down-dip, the likelihood of a hydraulic head on any of the seals is extremely minute. Shaft seals at Crandall have been submitted and approved by the RA.

Specific plans should be provided showing how each portal and shaft will be closed to ensure that the design is adequate for each particular setting. Consideration of potential hydraulic heads on portal seals subsequent to closure must be taken into account.

The method of shaft sealing has been described and approved in the Crandall Canyon modification (p. 308). These are currently our only shafts.

The applicant has indicated that the sedimentation ponds are numbered according (sic) to their NPDES permits. A list is given on page 48, Section 2.7 in the permit application that includes three NPDES permits. The narratives given in Chapter 3 and information located on Exhibits 3.2-1, 3.3-1, 3.4-1 and 3.6-1 indicates that there are at least eight existing sediment ponds, a minimum of three proposed ponds and numerous, undescribed structures called sedimentation basins. The applicant must: (1) explain why there are not more NPDES permits; (2) supply a more complete list of NPDES permits if possible; (3) provide a narrative of the requirements (monitoring and effluent limitations) attached to the NPDES permits for each discharge point; and (4) provide a thorough discussion of any violations of NPDES effluent limitation requirements that may have occurred at any existing pond (or basin) and the remedial measures that have been implemented or proposed to correct the violations

Originally, we had three NPDES permits. #UT-0023086 was for all sediment pond discharges.* Discharge points are enumerated 001 through 019. Points 001 and 002 were never used and eliminated. Points 003, 004, 005 are for the ponds in Sowbelly Gulch. Points 006, 007, 008, 009 are for ponds in Hardscrabble Canyon. (Note: Pond 009 was never built - drain has been controlled by straw dikes.)

Point 010 is at Utah Fuel No. 1

Points 011 and 012 are for points at Castle Gate.

Point 013 is for a small topsoil sediment collection structure in Crandall Canyon.

* These are located points from which we could discharge. There has only been discharge from Point 014 intermittently during Crandall Canyon shaft construction.

Points 014, 015 and 016 are for points on the Crandall Canyon site.

Points 017, 018, and 019 are at Willow Creek.

#UT-0023141 was a single point discharge permit for the primary water intake pond for our water treatment plant at Castle Gate.

#UT-0023272 was for discharge from the new Peerless Mine should we ever need to de-water. There has been no discharge from this point to date and there may never be.

Our NPDES permits were modified during renewal (August 1982) to consolidate all permits into #UT-0023086. #UT-0023141 was deleted entirely. #UT-0023272 became point 002 on permit #UT-0023086. Recently point 020 has been added to discharge water from the No. 3 Mine during the slowdown.

Monitoring Requirements - UT-0023086

Sampling Frequency - 2/month or when flowing

Reporting - every 3 months

Effluent Limitations -

TSS - Daily Average - 25 mg/l; Weekly Average 35 mg/l; Daily Max. 70 mg/l

Total Iron - 2 mg/l

TDS - 2,000 mg/l or 1 ton/day

Oil and Grease - 10 mg/l

pH - 6.5 - 9.0

We have had no violations issued by EPA. We have had no discharge from any pond except 014. We have exceeded effluent limitations at or near point 014 on two occasions. The first when a water line cracked, which we reported and repaired the following day. The second was due to under sizing of original pond 014 caused by unanticipated operational flows during shaft construction. We rectified this by construction of a new pond.

The applicant's figures for disturbed areas that will be reclaimed do not match those that indicate the total amount of disturbance. This area should be clarified so a valid estimation of soil material required for reclamation can be made.

Site	Total Disturbed Area (Ac.)	Area to be Reclaimed (Ac.)	Explanation of Difference
Sowbelly Gulch #5 Mine Facilities	16	13.5	2.5 acres will remain as access road to up canyon grazing
Hardscrabble Canyon #3 Mine Facilities	28	24*	4 acres will remain as an access road
Castle Gate Refuse Pile Plant Site	23 34	23 34	--- ---
Gravel Canyon	3	3	---
Utah Fuel	1	1	---
Willow Creek **	11	11	---
Crandall Canyon	28	12	16 acres will remain as permanent access road
Total	144	121.5	

It requires about 807 yds³/acre 6" thick to resoil.

807 X 121.5 = 98,050 yds³ - This is the approximate quantity of topsoil required.

* On Table 3.3-4 we show all 28 acres as being reclaimed. Apparently we forgot to delete road acreage. We currently have about 20,000 yds³ in two piles at Crandall Canyon and about 45,000 yds³ in Gravel Canyon. We will possibly have to import the remaining 30,000 yds³.

** This is for the current storage facility only. Should we develop 6 and 6A Mines the entire ± 28 acres would be included, bonded and reclaimed.

Recommendation

Due to the severe lack of soil material for reclamation, the applicant should consider some type of study to determine the feasibility of using soil material present at the areas that are prelaw disturbance.

We have considered this option.

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance

The applicant must clearly indicate where all the sediment and sludge cleaned from every sediment pond or basin in the permit area is being disposed of.

We have yet to clean most ponds. Sediment accumulation has been minimal. Cleaning has occurred for ponds at Utah Fuel #1 and Castle Gate. The following disposal sites are specified:

Site	Pond	Disposal Area
Sowbelly Gulch	003,004,005	North end of outside storage area*
Hardscrabble Canyon	006,007,008	Old refuse pile - "Goose Island"*
Utah Fuel #1	010	Schoolhouse Canyon refuse pile
Castle Gate	011,012	Schoolhouse Canyon refuse pile
Willow Creek	017,018,019	East end of storage area
Crandall Canyon	014,015	During construction: Incorporated into lower site fill
	014	After site completion: All drainage area paved. Sediments, if any will be hauled to Schoolhouse Canyon
	013	Top soil pile - whence it came

* Stockpiled pond sediments will be used as either substitute resoiling material (after tests) or for refuse pile covering materials.

On page 125 of the permit application, the narrative on Hardscrabble Canyon explains that coal wastes and fines have been dumped into the stream channel, but that remedial measures will not be continued at present due to the limited life of the facility. The applicant should provide data on the significance of this contamination, i.e., the changes in surface water quality that have occurred since the material was dumped in the stream.

We have no background data on water quality prior to disturbance by mining. Mining has occurred continuously in Hardscrabble Canyon since the 1880's. The stream channel is severely contaminated with coal fines from "Goose Island" to about 3 miles down canyon.

Presently, additional contributions of coal fines and sediments to the stream channels have been significantly reduced by construction of drainage controls.

Cleanup of the stream channel within the permit area can only be achieved during reclamation by grading, resoiling and riprapping - covering the contaminated section. Excavation of contaminated materials is unrealistic. We have dug in some place 4-5 feet without finding uncontaminated soil. There would be no way of disposing of the massive quantity of contaminated soils.

Throughout Chapter 3 of the permit application, the applicant mentions that small area exemptions from sedimentation ponds are being requested. In order to evaluate these requests, the applicant must locate these areas on Exhibits 3.2-1, 3.3-1, 3.4-1 and 3.6-1. Additionally, acreages of the small area exemption requests should be provided in every case and the applicant should explain the alternative sediment controls that will be used in those areas.

Small area exemptions have been requested for only three portions of the permit area.

1. Southern end of Hardscrabble facilities. The area involved is thoroughly discussed on pages 132-133 of the MRP. The area is shown on Exhibit 3.3-1.
2. Clean coal stacking tube area at Castle Gate. This small area exemption request is withdrawn. Pond improvements submitted on 12-12-82 allow direction of drainage to new pond 011.
3. Guard shack and scale area - Castle Gate. This S.A.E. request is also withdrawn. A portion of old pond 012 will remain to catch drainage from this area.

The applicant has designed sedimentation ponds based on a sediment value derived initially from the Universal Soil Loss Equation (USLE) on pages 401-409, Chapter 7 of the permit application. Several questions arose during the review of this methodology:

1. On page 401, the applicant states that precipitation varies from 10 to 20 inches across the permit area. This fact is later used to support the contention that the sediment derivation for Crandall Canyon is a worst case analysis since that area receives the highest amount of rainfall. The applicant should discuss why Crandall Canyon was used as a worst case solely on the basis of precipitation since the R factor for the entire mine is 40 anyway and is not particularly affected by precipitation amount at the minesite according to Figure 1 of the permit application. In other words, could there be other areas of the mine that are yielding large sediment contributions to ponds based on parameters other than precipitation that are factored into the USLE?

Perhaps you are right about the R factor - but no, we do not think that there are other significant parameters - we really are not clear as to whether this is a question or just a comment.

2. According to the USLE calculations on page 405 presented as an example for arriving at the typical sediment contribution, .016 acre-feet per acre per year could be expected as a "worst case." According to UMC 817.46(1), annual sediment volumes calculated via the USLE or an equivalent methodology must be tripled to arrive at the required pond sediment storage volume. In this case, that requirement would dictate a sediment storage volume of .048 acre feet (.016 acre feet/acre/year X 3 years). This would contradict the applicant's argument presented on page 409 of the permit application that the calculated sediment contribution is less than .035 acre-feet/acre. Therefore, the applicant should re-evaluate the use of .035 acre-feet/acre as a conservative estimate and supply support data for the chosen methodology.

If you will look at the verbage and calculations again - the sample .016 acre-feet/year (Example No. 2) is for a fabricated soil sample. This shows that even if we had a large proportion of fine particals we would still not need to use 0.1 acre-feet per disturbed acre. The actual soil characteristics in Sample No. 1 - mostly sandy soil - yield a lower sediment contribution for three years - 0.02 acre-feet/acre. Soil descriptions for surface materials on all sites appear to be primarily of sandy-cobbley composition (see Chapter VIII).

Additional samples at each site could be analyzed if it is thought necessary.

Minimal contribution has been demonstrated by the accumulations in our 3-5 year old sediment ponds. Again, measurements can be made of the actual accumulation as soon as the weather clears up.

It is noteworthy that a regulatory hydrologist used about 0.0029 acre-feet/acre for sediment storage in approving ponds in Sowbelly Canyon (see attached DOGM letter of 4-20-82).

The applicant has sized all the sediment ponds based on the storm runoff and the sediment contribution. These quantities are presented in tables in Chapter 3 of the permit application under the respective surface facilities areas. These tables are confusing. Better column headings are necessary (see example on following page). Estimates of sediment produced from vegetated areas is lacking in all pond calculations. If they drain to sediment ponds, erosion from these areas must be included in sediment capacity estimates.

It seems that 817.46(b) requires that sediment storage be considered for disturbed areas only. The concept that all areas be included is new to us.

The applicant must provide a clear explanation of structures scattered throughout the surface facilities that are referred to as sedimentation basins and for which no design data were supplied. What distinguishes a sedimentation basin from a sedimentation pond? According to UMC 700.5, a sedimentation pond is also an excavated depression, as well as a barrier or dam. The applicant should provide a good definition of sedimentation basins as utilized at this minesite and provide plans, cross-sections and calaculations for each existing and proposed structure.



STATE OF UTAH
NATURAL RESOURCES & ENERGY
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Cleon B. Feight, Division Director

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

April 20, 1982



Mr. Rob Wiley
Environmental Engineer
Price River Coal Company
P. O. Box 629
Helper, Utah 84526

RE: NOV #82-4-4-2, #2 of 2
Evaporation Cells at Sowbelly
Canyon
ACT/007/004
Carbon County, Utah

Dear Rob:

Upon reviewing the April 8, 1982, submission detailing the rainfall runoff characteristics and required evaporation pond capacities for Sowbelly Canyon, the following items were emphasized.

Rather than review the total runoff occurrence in the Sowbelly Canyon disturbed area in relation to capacity requirements, the approximate runoff occurring from each sub-basin into each cell (003-004-005) was calculated. This is due to the fact of each cell serving separate drainage areas. The required holding capacity for the 25-year, 24-hour event and the excess storage capacity available was derived for each cell (see Attachment A).

An average curve number of 80 was utilized since the area is partially revegetated and unpaved. The required holding capacity was calculated for the 25-year, 24-hour storm with sediment storage. The excess capacity for storage was calculated. The 10-year, 24-hour required capacity was also calculated to provide that cells 004 and 005 can actually retain a 10-year, 24-hour event on top of the 25-year, 24-hour event. This, of course, means dewatering of cell 003 to the lower two will occur but at a rate and amount that may readily be assimilated in both the lower cells.

ATTACHMENT A

Curve Number = 80

25-year, 24-hour Q = .67 incnes 10-year, 24-hour Q = .44 incnes

Cell	Capacity	Drainage Area Acres	25 yr-24 hr Required Storage Capacity	Sediment Storage	Total	Excess Capacity	10 yr-24 hr Required Storage Capacity
003	11253	4.0	9728	508	10236	1017	6389
004	40460	7.5	18241	953	19194	21266	11979
005	16766	2.5	6080	318	6398	10368	3993

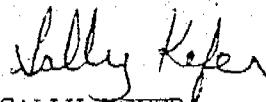
(All values in cubic feet.)

Mr. Rob Wiley
ACT/007/004
April 20, 1982
Page 2

The design for cells 003, 004 and 005 has proven to be sized in excess of that required for a sediment pond, UMC 817.42, in that the 25-year, 24-hour event plus a 10-year, 24-hour event can be contained at one time. The Division concurs with Price River Coal Company's request to call these evaporation cells. Considering the probability of a design storm occurrence and the fact that the average annual lake evaporation rate is 40 inches and pan evaporation 55 inches which by far exceeds the average annual precipitation of 18 inches, DOGM feels there is little likelihood for error in the assumption that the evaporation cells are adequate. In light of these findings, a discharge structure will not be required for any of these cells.

If you have any further concerns, please call me.

Sincerely,



SALLY REFER
RECLAMATION HYDROLOGIST

cc: OSM
Dave Lof, DOGM

SK/btb

Sediment and water holding structures from which we may discharge within effluent limitations are designated as ponds. There are 16 ponds on the property. Some are excavated; some have constructed embankments. Volume and discharge capacity for most ponds has been provided. Some additional clarification and data are forthcoming, however, all ponds are designed within spatial limitations to comply with performance standards.

Other structures are used to contain or reduce flow and sediment going to the ponds. These are combinations of small excavated sumps and straw dikes. Such devices are used because they are easier to clean and maintain than ponds. These minor structures, installed by choice to reduce the more expensive pond maintenance costs, surely cannot fall under the requirements of the 817.46 performance standards.

UMC 784.15 Reclamation Plan: Postmining Land-Use

The applicant must indicate what type of support activities will be required to achieve the proposed postmining land-use.

What do you mean? . . .

The applicant should evaluate the compatibility of the proposed land-use with any existing or proposed surface water plans, and with any applicable State and local land-use plans.

The proposed land use is the same as the premining land use; undeveloped, light grazing. We have stated all we know on pages 42 and 324.

We do not know of any existing surface water plans. Why should we evaluate proposed plans of any kind?

Comments submitted to the applicant by owners of the affected lands should be summarized by the applicant.

We are the owners of record for all lands upon which we have surface facilities.

UMC 784.16 Reclamation Plan: Ponds and Banks

Potential effects of subsidence from underground mining on the embankment structure for the refuse pile settling pond must be evaluated.

We do not expect or plan any subsidence in the area of the refuse pile pond. No longwalls are shown for this area. We have previously stated (page 70) that only first mining will occur within a 45° angle of draw of all surface facilities, especially in Price Canyon.

An inspection plan must be provided to meet the requirements of the design of the embankment structure for the refuse pile settling pond, and must be certified by a registered professional engineer.

To be provided

A detailed geotechnical analysis must be provided which shows the stability of the refuse pile settling pond embankment structure. This analysis must incorporate consideration of the following factors: (1) an analysis of the effects of the water flowing through the embankment, the anticipated phreatic surface must be identified; (2) the stability of the foundation material and the potential for seepage through the foundation.

To be discussed and provided if necessary.

Maintenance requirements for the embankment structure at the refuse pile settling pond must be identified.

???

The applicant has assumed that discharge structures are not required for some ponds that can retain the sediment and runoff from a 25-year storm event. According to UMC 817.46(d), every sedimentation pond (which includes excavated depressions per UMC 700.5) must be provided with a "nonclogging dewatering device or a conduit spillway approved by the Division." The applicant must upgrade existing sedimentation ponds to conform with this part of Subchapter K, and provide discharge structures for all proposed sedimentation ponds. The submitted information should include: plans, cross-sections; calculations; and, methodology used to design the discharge structure (refer to UMC 817.46[g][i]).

The applicant has received specific approval based on pond sizing for containment and evaporation/infiltration of 25-year storm runoff with no discharge pipe needed. See attached letter - S. Kefer, 4-20-82.

The applicant has provided locations for the majority of sedimentation ponds on Exhibit 3.2-1 (Sowbelly Gulch), 3.3-1 (Hardscrabble Canyon), 3.4-1 (Gastle Gate and Utah Fuels #1) and 3.6-1 (Willow Creek). There have not been any usable plans or cross-sections, however, save for a few insufficient cross-sections provided in Exhibit 3.2-2. An analysis of sediment pond adequacy requires that the following items be submitted for each existing and proposed sediment pond:

1. Outlines of the drainage areas to each pond shown on the above exhibits.
2. A plan view map for each pond or cross-sections through the entire structure to be used for calculating available storage; a cross-section of each embankment used to construct a sedimentation pond that is to-scale, showing the top width, height, side slopes and spillway locations; typical cross-sections or plan views of the principal and/or emergency spillways from which dimensions can be obtained; calculations showing that the emergency spillway is capable of adequately passing the runoff (keyed into peak flows in Table 7.5) from a 25-year, 24-hour storm event alone or in conjunction with the principal spillway; placement of erosion controls.

To be discussed and provided.

On Exhibit 3.4-1, the applicant shows proposed sedimentation ponds 27A and 27B. The explanation for these ponds is presented on page 146 of the permit application. The applicant should present a drainage area map that clearly shows how runoff formerly routed to ponds 011 and 012 will flow into these proposed ponds.

See Castle Gate drainage modification submitted 12-12-82 to DOGM.

On page 116 of the permit application, the applicant explains that three sedimentation ponds in the Sowbelly Gulch area are connected via an 18-inch corrugated metal pipe. What purpose does this serve? The volume analysis for these ponds should be re-evaluated to show that each pond, or one at a lower elevation, is capable of providing runoff and sediment storage for the designated drainage areas.

See S. Kefer approval letter of 4-20-82 for the Sowbelly pond system.

The applicant should specify what the design of the refuse disposal site will be and which of the design suggestions that Golder Associates has made will be utilized in the design of the refuse pile. Assuming that the design of the refuse pile will follow all aspects of the design criteria suggested by Golder, the following information is still required.

1. An estimate of the quality of the water draining from the refuse material must be made to assess potential hydrologic impacts.

To be provided

2. Details must be provided on the analysis utilized to determine the safety factors.

To be discussed and provided if necessary

3. If portions of the alluvium/colluvium are removed to cover the refuse pile (page 4-5), will there be enough left to act as a drain (page 6-12) and will it remain sufficiently uncompacted after equipment has traversed it to allow water to percolate through it?

The drain is installed. Most alluvium/colluvium is excessively rocky and inaccessible to store and use to resoil the pile. We plan to haul in resoiling material.

4. The applicant should provide for drainage of the pile during the initial stages of construction and then, subsequent to further testing, if drainage is not needed, delete the drain construction rather than the opposite as suggested on pages 6-12. This way, costly reconstruction of the pile might be avoided.

The subdrain was installed at the time of site development. Monitoring of the piezometers has indicated that the pile is free draining. Data will be provided.

5. The amount of time required to drain the refuse pile in order to ensure stability during construction should be incorporated into the construction requirements of the pile.

To be discussed.

6. The applicant should ensure that the refuse material will be compacted to 95 percent of the maximum dry density.

UMC 817.85 requires only 90% compaction. We will determine the compaction and provide results.

7. An inspection program must be developed showing compliance with UMC 817.82.

To be provided.

8. A materials handling plan should be provided showing the volume of material to be removed, stockpiled and replaced to achieve the required four feet of cover and required topsoil during various stages of construction.

Materials is not being removed as the pile is being constructed. Canyon walls are excessively rocky and steep for removal of pile covering materials. The materials available for reclamation are stored in Gravel Canyon or will be purchased (see Section 3.4-4).

9. A survey of springs and seeps in the disposal site must be made.

There are no seeps or springs in or near the disposal site.

10. The effect of subsidence on the stability of the pile must be evaluated (see related comments under UMC 784.20).

There will be no subsidence affecting the pile.

11. The applicant is required by UMC 817.81 to comply with UMC 817.71 - .73. As such, the applicant is required to construct a sub-drainage system. A plan must be submitted showing compliance with this requirement.

The drain is installed. Narrative and plans to be provided.

12. All plans for the design of the refuse pile must be certified by a registered professional engineer.

To be provided

13. A plan to ensure the mixing of fine and course (sic) refuse must be provided. Also, the applicant must specify if any of the thickener underflow be disposed of at the refuse pile site.

Adequate mixing has occurred. Mixing occurs on the output belt, in the storage bin and as a result of the dump and spread method of pile construction. Thickener underflow is included.

14. The application should include a plan specifying the maintenance schedule for sediment removal from sediment ponds.

Sediment is removed in accordance with UMC 817.46(h). Volume relationships will be determined by an instrument survey.

UMC 784.17 Protection of Public Parks and Historic Places

See comments in Attachment A.

Where is Attachment A?

UMC 784.20 Subsidence Control Plan

The applicant must provide justification that the Castle Gate Sandstone is capable of subsiding without cracking and as such will not cause surface cracking. An analysis should be provided relating subsidence in mined out areas to the percent of coal extracted in those areas. A relationship between coal extraction, seam depths, seam thicknesses and subsidence can be made which could be utilized to predict anticipated subsidence in longwall areas and areas where first mining will occur.

To be discussed.

It appears that the subsidence control points utilized in subsidence monitoring are located over previous mining and within the angle of draw of adjacent mining. The applicant must provide data showing that all measurements were made from point unaffected by mining.

To be discussed.

The table provided on subsidence data collected to date are mostly unreadable. A readable table must be provided.

Attached

UMC 784.22 Diversions

The applicant should locate the typical channel cross-sections for the Schoolhouse Canyon Refuse Pile diversion (Figure 5-3 of the Golder Report) on a plan view of the diversion, so that an evaluation of velocities in various segments of the channel is possible.

To be provided.

ORIGINAL PTS.									SEQUENCE NO. 11									DIFFERENCE		
INST. POINT	BACKSITE	BOOK	PAGE	DATE	STATION	NORTHING	EASTING	ELEVATION	INST. POINT	BACKSITE	BOOK	PAGE	DATE	STATION	NORTHING	EASTING	ELEVATION	NORTHING	EASTING	ELEVATION
76	TR #2	59	46	6/30/78	NE Ref. Pt.	510299.614	2172041.368	7739.42	CC#6	TR#2	125	55	7/14/82	NE Ref. Pt.	510300.000	2172040.986	7740.36	.386	-.382	1.24
76	TR #2	59	46	6/30/78	SE Ref. Pt.	510160.071	2172130.248	7788.86	CC#6	TR#2	125	54	7/14/82	SE Ref. Pt.	510160.605	2172130.075	7788.81	.534	-.173	-.05
76	TR #2	59	47	6/30/78	NW Ref. Pt.	509676.731	2169644.884	7765.99	CC#6	TR#2	125	58	7/14/82	NW Ref. Pt.	509676.814	2169645.051	7765.61	.103	.169	-.38
76	TR #2	59	47	6/30/78	SW Ref. Pt.	509506.930	2169615.023	7780.30	CC#6	TR#2	125	57	7/14/82	SW Ref. Pt.	509507.024	2169615.205	7780.95	.094	.182	.65
76	TR #2	59	40	6/30/78	"I"	509977.727	2171426.259	7178.63	CC#6	TR#2	125	63	7/14/82	"I"	509977.746	2171425.543	7177.68	.019	.716	-.95
76	TR #2	76	3	8/15/78	"B"	509778.333	2170034.185	7288.38	CC#6	TR#2	125	66	7/14/82	"B"	509778.569	2170034.828	7289.09	.216	.443	.71
76	TR #2	76	3	8/15/78	"J"	509928.010	2171234.918	7005.91												
76	TR #2	59	46	6/30/78	No. 1	509167.658	2172017.423	7880.87	CC#6	TR#2	125	54	7/14/82	No. 1	509167.802	2172017.474	7880.60	.144	.051	-.27
76	TR #2	59	46	6/30/78	No. 3	508629.942	2171337.611	7887.10	CC#6	TR#2	125	54	7/14/82	No. 3	508630.015	2171337.533	7886.71	.073	-.078	-.39
76	TR #2	59	46	6/30/78	No. 4	508864.882	2170850.275	7809.29	CC#6	TR#2	125	55	7/14/82	No. 4	508864.910	2170850.476	7809.29	.028	.201	.00
76	TR #2	59	47	6/30/78	No. 4A	511119.971	2172666.644	7585.49	CC#6	TR#2	125	55	7/14/82	No. 4A	511120.104	2172667.343	7585.35	.133	.699	-.14
76	TR #2	59	47	6/30/78	No. 4G	510855.088	2171679.689	7534.55	CC#6	TR#2	125	57	7/14/82	No. 4G	510856.885	2171677.770	7532.72	1.797	-1.919	-1.83
76	TR #2	76	3	8/15/78	No. 4K	510544.879	2170534.805	6900.12	CC#6	TR#2	125	67	7/14/82	No. 4-K	510547.812	2170535.082	6899.51	-.067	.277	-.61
76	TR #2	59	48	6/30/78	No. 4P	510222.943	2169320.713	7767.68	CC#6	TR#2	125	60	7/14/82	No. 4-P	510222.262	2169320.760	7767.21	-.681	.047	-.47
76	TR #2	59	46	6/30/78	No. 5	509164.707	2170459.797	7663.80	CC#6	TR#2	125	56	7/14/82	No. 5	509164.812	2170459.867	7663.44	.105	.070	.36
93	TR #2	76	33	8/18/78	No. 5-D	510532.170	2164001.365	7889.30	BZ-93	TR#2	95	47	5/26/82	No. 5-D	510532.086	2164001.330	7889.24	-.084	.025	-.06
76	TR #2	59	47	6/30/78	No. 6	509317.230	2170097.306	7702.09	CC#6	TR#2	125	56	7/14/82	No. 6	509317.294	2170097.432	7701.69	.064	.126	-.40
93	TR #2	76	33	8/18/78	No. 6-D	510359.645	2163079.204	7878.70	BZ-93	TR#2	95	47	5/26/82	No. 6-D	510359.218	2163079.103	7878.75	.073	-.101	.05
76	TR #2	59	47	6/30/78	No. 7	509345.986	2169734.645	7797.09	CC#6	TR#2	125	57	7/14/82	No. 7	509346.174	2169734.726	7796.87	.188	.081	-.22
93	BZ-49	76	31	8/17/78	No. 7-D	510234.476	2162148.057	8406.50	BZ-49A	BZ-49	95	43	5/25/82	No. 7-D	510234.402	2162147.947	8407.15	-.074	-.110	.65
76	TR #2	59	48	6/30/78	No. 8	509961.808	2169594.824	7739.91	CC#6	TR#2	125	58	7/14/82	No. 8	509961.829	2169595.179	7739.64	.016	.355	-.27
93	BZ-49	76	31	8/17/78	No. 8-D	512042.435	2159515.154	8069.05	BZ-49A	BZ-49	95	41	5/25/82	No. 8-D	512042.399	2159515.183	8069.11	-.036	.029	.06
76	TR #2	59	48	6/30/78	No. 9	510260.238	2169484.939	7733.09	CC#6	TR#2	125	59	7/14/82	No. 9	510259.565	2169485.083	7732.74	-.673	.144	-.35
93	BZ-49	76	32	8/17/78	No. 9-D	511279.325	2160818.490	8068.79	BZ-49A	BZ-49	95	43	5/25/82	No. 9-D	511279.301	2160818.513	8068.64	-.024	.023	-.15
93	TR #2	76	15	7/10/79	No. 10	512055.447	2168003.745	7236.28	BZ-93	TR#2	125	53	7/12/82	No. 10	512055.552	2168004.061	7236.05	-.125	.322	-.23
93	BZ-49	76	31	8/17/78	No. 10-D	511630.353	2161653.582	8468.74	BZ-49A	BZ-49	95	41	5/25/82	No. 10-D	511630.115	2161653.607	8468.51	-.248	.019	-.23
93	TR #2	76	5	11/9/78	No. 11	512563.776	2168576.504	6799.60	BZ-93	TR#2	125	53	7/12/82	No. 11	512564.283	2168576.320	6800.03	.507	-.184	.43
93	TR #2	76	33	8/18/78	No. 11-D	511111.178	2163921.589	7852.85	BZ-93	TR#2	95	46	5/26/82	No. 11-D	511111.074	2163921.347	7852.97	-.104	-.142	.12
93	TR #2	76	2	8/09/78	No. 12	513183.914	2167679.339	7462.25	BZ-93	TR#2	125	53	7/12/82	No. 12	513183.872	2167679.348	7462.27	-.042	.009	.02
93	TR #2	76	33	8/18/78	No. 12-D	511634.146	2163391.143	8170.70	BZ-93	TR#2	95	46	5/26/82	No. 12-D	511634.053	2163390.906	8170.61	-.093	-.237	-.09
76	TR #2	59	44	8/29/78	No. 13	511312.324	2171142.289	6898.45	CC#6	TR#2	125	60	7/14/82	No. 13	511313.269	2171141.119	6896.50	.945	-1.170	-1.95
93	BZ-49	76	31	8/17/78	No. 13-D	512099.144	2161834.735	8583.78	BZ-49A	BZ-49	95	42	5/25/82	No. 13-D	512098.782	2161835.292	8583.76	-.362	.557	-.02
76	TR #2	59	44	6/29/78	No. 14	510695.473	2168826.619	7577.04	CC#6	TR#2	125	62	7/14/82	No. 14	510695.624	2168826.673	7576.74	.151	.054	-.30
93	BZ-49	76	32	8/17/78	No. 14-D	512240.021	2160891.141	8135.91	BZ-49A	BZ-49	95	42	5/25/82	No. 14-D	512249.904	2160891.264	8135.76	-.117	.123	-.15
76	TR #2	59	44	6/29/78	No. 15	512192.440	2171329.470	6704.21												
93	BZ-49	76	32	8/17/78	No. 15-D	512551.700	2160052.109	8330.62	BZ-49A	BZ-49	95	42	5/25/82	No. 15-D	512551.767	2160052.547	8330.73	.057	.538	-.11
76	TR #2	59	44	6/29/78	No. 16	511184.128	2168396.444	7549.64	CC#6	TR#2	125	61	7/14/82	No. 16	511184.275	2168396.468	7549.47	.147	.024	-.17
76	TR #2	59	44	6/29/78	No. 17	512907.371	2172528.095	6632.18	BZ-60	BZ-52	125	70	8/10/82	No. 17	512907.209	2172528.070	6631.92	-.162	-.025	-.26
93	BZ-93	95	10	6/19/80	No. 17-D	512054.754	2163041.921	8425.34	BZ-93	TR#2	95	46	5/26/82	No. 17-D	512054.462	2163041.993	8425.16	-.292	.072	-.18
76	TR #2	59	45	6/29/78	No. 18	511549.208	2169808.836	6906.34	CC#6	TR#2	125	64	7/14/82	No. 18	511549.390	2169808.829	6906.29	.182	-.007	-.05
93	BZ-49	95	15	6/24/80	W.C.No. 18-D	512925.468	2161693.859	8593.99	BZ-49A	BZ-49	95	41	5/25/82	W.C.No. 18-D	512925.251	2161693.566	8593.95	-.217	-.293	-.04
76	TR #2	59	45	6/29/78	No. 19	512428.204	2172693.357	6905.44	CC#6	TR#2	125	62	7/14/82	No. 19	512428.401	2172693.163	6905.47	-.197	-.194	-.03
93	BZ-49	95	15	6/24/80	No. 19-D	510536.621	2160844.953	8029.67	BZ-49A	BZ-49	95	43	5/25/82	No. 19-D	510536.567	2160844.825	8029.72	-.054	-.128	.05
76	TR #2	59	45	6/29/78	No. 20	510800.865	2170318.455	6906.91	CC#6	TR#2	125	66	7/14/82	No. 20	510800.931	2170318.670	6906.62	.066	.215	-.29
93	BZ-49	95	44	5/25/82	No. 20-D	512880.885	2159798.402	8632.46	Original											
76	TR #2	59	45	6/29/78	No. 21	513181.995	2173557.120	6823.57	BZ-60	BZ-52	125	70	8/10/82	No. 21	513181.230	2173556.786	6823.47	-.765	-.334	-.10
93	BZ-49	95	44	5/25/82	No. 21-D	512859.603	2160930.044	8337.53	Original											
93	TR #2	76	1	8/09/78	No. 22	511509.507	2166882.894	7545.91	BZ-93	TR#2	125	52	7/12/82	No. 22	511509.489	2166883.223	7545.84	-.018	.329	-.07
93	BZ-49	95	45	5/25/82	No. 22-D	513327.290	2160874.421	8568.62	Original											
93	TR #2	76	1	8/09/78	No. 23	512508.501	2166476.626	7452.88	BZ-93	TR#2	125	52	7/12/82	No. 23	512508.481	2166476.683	7452.66	-.020	.057	-.22
93	BZ-49	95	45	5/25/82	No. 23-D	512638.625	2162089.709	8665.14	Original											
93	TR #2	76																		

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ST. NO.	BACKSITE	BOOK	PAGE	DATE	STATION	NORTHING	EASTING	ELEVATION	INST POINT	BACKSITE	BOOK	PAGE	DATE	STATION	NORTHING	EASTING	ELEVATION	NORTHING	EASTING	ELEVATION
6	TR#2	125	4	5/07/81	USBM#C-12	511586.747	2172201.036	7022.36	CC#6	TR#2	125	61	7/14/82	USBM #C-12	511586.020	2172200.979	7022.89	.073	-.057	.01
6	TR#2	125	3	5/07/81	USBM#C-14	511538.637	2172008.152	6948.29												
6	TR#2	125	5	5/07/81	USBM#C-15	511493.491	2171918.555	7039.39	CC#6	TR#2	125	60	7/14/82	USBM #C-15	511493.596	2171918.461	7039.36	.105	-.094	-.03
6	TR#2	125	6	5/07/81	USBM#C-17	511434.967	2171721.281	7221.33	CC#6	TR#2	125	59	7/14/82	USBM #C-17	511435.030	2171721.199	7221.35	.063	-.082	.02
6	TR#2	125	21	5/19/81	USBM#C-19	511422.519	2171552.793	7261.41												
6	TR#2	94	72	5/07/81	USBM#C-20	511415.420	2171466.581	7219.14												
6	TR#2	94	73	5/07/81	USBM#C-21	511392.223	2171344.032	7065.33	CC#6	TR#2	125	59	7/14/82	USBM #C-21	511392.332	2171344.072	7065.37	.109	.040	.04
6	TR#2	125	1	5/07/81	USBM#C-25	511261.467	2170944.317	6780.23	CC#6	TR#2	125	61	7/14/82	USBM #C-25	511261.557	2170944.353	6780.28	.090	.036	.05
6	TR#2	125	2	5/07/81	USBM#C-27	511211.716	2170750.647	6728.16												
6	TR#2	125	2	5/07/81	USBM#C-29	511161.561	2170562.036	6803.27	CC#6	TR#2	125	65	7/14/82	USBM #C-29	511161.907	2170562.286	6802.18	.346	.250	-1.09
6	TR#2	125	3	5/07/81	USBM#C-31	511107.838	2170365.573	6953.07												
6	TR#2	125	20	5/19/81	USBM#C-40	510896.082	2169514.541	7300.76	CC#6	TR#2	125	63	7/14/82	USBM #C-40	510896.044	2169514.592	7300.77	-.038	.051	.01
6	TR#2	125	20	5/19/81	USBM#C-43	510801.294	2169266.428	7350.29	CC#6	TR#2	125	62	7/14/82	USBM #C-43	510801.247	2169226.437	7350.34	-.047	.009	.05
6	TR#2	125	2	5/07/81	USBM#D-15	512088.491	2171767.370	6781.07	CC#6	TR#2	125	63	7/14/82	USBM #D-15	512088.749	2171767.501	6780.67	.258	.131	-.40
6	TR#2	125	1	5/07/81	USBM#D-17	512039.678	2171570.550	6898.84	CC#6	TR#2	125	64	7/14/82	USBM #D-17	512039.732	2171570.531	6898.74	.054	-.019	-.10
6	TR#2	94	73	5/07/81	USBM#D-19	511989.488	2171378.905	6847.00												
6	TR#2	94	72	5/07/81	USBM#D-21	511942.511	2171183.909	6809.25	CC#6	TR#2	125	64	7/14/82	USBM #D-21	511942.580	2171183.841	6809.22	.069	-.068	-.03
6	TR#2	94	72	5/07/81	USBM#D-22	511916.871	2171082.055	6784.74												
52	TR#2	94	64	5/04/81	USBM#D-23	511901.372	2170979.020	6769.82	CC#6	TR#2	125	65	7/14/82	USBM #D-23	511901.875	2170979.228	6769.56	.503	.208	-.26
52	BZ-93	94	64	5/04/81	USBM#D-24	511866.576	2170911.963	6727.34												
52	BZ-93	94	63	5/04/81	USBM#D-26A	511823.793	2170741.689	6647.04	CC#6	TR#2	125	65	7/14/82	USBM #D26A	511824.223	2170741.899	6646.90	.430	.210	-.14
60	TR#1	94	66	5/04/81	USBM#E-10	512792.492	2172104.544	6590.25	BZ-60	BZ-52	125	69	8/10/82	USBM #E-10	512792.627	2172104.640	6590.20	.135	.096	-.05
52	BZ-93	94	63	5/04/81	USBM#E-23	512464.586	2170841.642	6701.56	BZ-52	BZ-93	125	68	8/10/82	USBM #E-23	512464.823	2170841.867	6701.36	.237	.225	-.20
52	BZ-93	94	62	5/04/81	USBM#E-34	512189.815	2169775.959	6753.72	BZ-52	BZ-93	125	68	8/10/82	USBM #E-34	512190.144	2169776.266	6753.55	.329	.307	-.12

ORIGINAL PTS									SEQUENCE NO. 8									DIFFERENCE		
INST. POINT	BACKSITE	BOOK	PAGE	DATE	STATION	NORTHING	EASTING	ELEVATION	INST. POINT	BACKSITE	BOOK	PAGE	DATE	STATION	NORTHING	EASTING	ELEVATION	NORTHING	EASTING	ELEVATION
BZ-44	BZ-43	76	34	8/28/78	No. 1	509324.557	2160328.816	7406.49												
BZ-49	BZ-49	76	32	8/17/78	No. 2	509707.949	2161326.856	7307.03	BZ-93A	BZ-93	95	44	5/25/82	No. 2	509708.030	2161326.969	7307.04	.081	.113	
BZ-93	TR-2	76	34	8/18/78	No. 3	509513.394	2162648.448	8010.19	BZ-93	TR#2	95	48	5/26/82	No. 3	509513.518	2162648.426	8009.98	.124	-.022	
BZ-93	TR-2	76	34	8/18/78	No. 4	509827.185	2163950.079	7758.53	BZ-93	TR#2	95	47	5/26/82	No. 4	509827.211	2163950.109	7758.57	.026	.030	
BZ-93	TR-2	76	33	8/18/78	No. 5	510532.170	2164001.365	7889.30	BZ-93	TR#2	95	47	5/26/82	No. 5	510532.086	2164001.390	7889.24	-.084	.025	
BZ-93	TR-2	76	33	8/18/78	No. 6	510359.645	2163079.204	7878.70	BZ-93	TR#2	95	47	5/26/82	No. 6	510359.718	2163079.103	7878.75	.073	-.101	
BZ-49	BZ-49	76	31	8/17/78	No. 7	510234.476	2162148.057	8406.50	BZ-49A	BZ-49	95	43	5/25/82	No. 7	510234.402	2162147.947	8407.15	-.074	-.110	
BZ-49	BZ-49	76	31	8/17/78	No. 8	512042.435	2159515.154	8069.05	BZ-49A	BZ-49	95	41	5/25/82	No. 8	512042.399	2159515.183	8069.11	-.036	.029	
BZ-49	BZ-49	76	32	8/17/78	No. 9	511279.325	2160818.490	8068.79	BZ-49A	BZ-49	95	43	5/25/82	No. 9	511279.301	2160818.513	8068.64	-.024	.023	
BZ-49	BZ-49	76	31	8/17/78	No. 10	511630.363	2161653.582	8468.74	BZ-49A	BZ-49	95	41	5/25/82	No. 10	511630.115	2161653.601	8468.51	-.248	.019	
BZ-93	TR-2	76	33	8/18/78	No. 11	511111.178	2163921.589	7852.85	BZ-93	TR#2	95	46	5/26/82	No. 11	511111.074	2163921.447	7852.97	-.104	-.142	
BZ-93	TR-2	76	33	8/18/78	No. 12	511634.146	2163391.143	8170.70	BZ-93	TR#2	95	46	5/26/82	No. 12	511634.053	2163390.906	8170.61	-.093	-.237	
BZ-49	BZ-49	76	31	8/17/78	No. 13	512099.144	2161834.735	8583.78	BZ-49A	BZ-49	95	42	5/25/82	No. 13	512098.782	2161835.292	8583.76	-.362	.557	
BZ-49	BZ-49	76	32	8/17/78	No. 14	512250.021	2160891.141	8135.91	BZ-49A	BZ-49	95	42	5/25/82	No. 14	512249.904	2160891.264	8135.76	-.117	.123	
BZ-49	BZ-49	76	32	8/17/78	No. 15	512551.700	2160052.109	8330.62	BZ-49A	BZ-49	95	42	5/25/82	No. 15	512551.767	2160052.547	8330.73	.067	.438	
BZ-93	BZ-43	95	10	6/20/80	No. 17	512054.754	2163041.921	8425.34	BZ-93	TR#2	95	46	5/26/82	No. 17	512054.562	2163041.993	8425.16	-.292	.072	
BZ-49	BZ-49	95	15	6/24/80	W.C. No. 18	512925.468	2161693.859	8593.99	BZ-49A	BZ-49	95	41	5/25/82	W.C. No. 18	512925.251	2161693.566	8593.95	-.217	-.293	
BZ-49	BZ-49	95	15	6/24/80	No. 19	510536.621	2160844.953	8029.67	BZ-49A	BZ-49	95	43	5/25/82	No. 19	510536.567	2160844.825	8029.72	-.054	-.128	
BZ-49	BZ-49	95	44	5/25/82	No. 20	512880.885	2159798.402	8637.46												
BZ-49	BZ-49	95	44	5/25/82	No. 21	512859.603	2160930.044	8337.53	Original											
BZ-49	BZ-49	95	45	5/25/82	No. 22	513327.290	2160874.471	8568.62	Original											
BZ-49	BZ-49	95	45	5/25/82	No. 23	512638.625	2162089.709	8665.14	Original											
BZ-93	TR-2	76	1	8/09/78	No. 24-31	512409.538	2165128.806	7928.97	BZ-93	TR#2	125	51	7/12/82	No. 24-3	512409.417	2165128.962	7928.87	-.121	.156	
BZ-93	TR-2	76	1	8/09/78	No. 25-31	512723.149	2165162.407	8024.63	BZ-93	TR#2	125	51	7/12/82	No. 25-3	512723.237	2165162.813	8024.51	.088	.406	
BZ-93A	BZ-92	76	25	7/19/79	No. 26-3	512819.647	2163170.438	8306.18	BZ-93A	BZ-93	141	1	7/17/82	No. 26-3	512819.422	2163170.475	8306.13	-.225	.037	
BZ-93A	BZ-92	76	25	7/19/79	No. 27-3	513162.365	2163467.422	8007.49	BZ-93A	BZ-93	141	2	7/17/82	No. 27-3	513162.215	2163467.419	8007.47	-.150	-.003	
BZ-93	TR-2	94	20	6/23/80	No. 28-3	514160.220	2165194.476	7804.44	BZ-93	TR#2	125	52	7/12/82	No. 28-3	514160.032	2165194.610	7804.33	-.188	.134	
BZ-93	TR-2	94	20	6/23/80	No. 29-3	513397.444	2165402.763	8111.01	BZ-93	TR#2	125	51	7/12/82	No. 29-3	513397.162	2165402.745	8110.97	-.282	-.018	
BZ-93	TR-2	95	46	5/26/82	No. 30	511485.195	2162327.624	8314.16	Original											
BZ-93	TR-2	95	47	5/26/82	No. 31	510850.477	2162625.296	8089.11	Original											
BZ-93	TR-2	95	48	5/26/82	No. 32	510102.611	2162500.579	8172.56	Original											
BZ-93A	BZ-92	125	35	11/5/81	No. 40-3	514062.457	2163216.880	7864.97	BZ-93A	BZ-93	141	2	7/17/82	No. 40-3	514062.356	2163216.701	7864.99	-.101	-.179	
BZ-93A	BZ-92	125	26	6/28/81	No. 41-3	514094.760	2163627.781	7591.08	BZ-93A	BZ-93	141	2	7/17/82	No. 41-3	514094.790	2163627.523	7591.09	.030	-.258	
BZ-93A	BZ-92	94	48	11/5/80	No. 42-31	515560.511	2164507.018	7015.02	BZ-93A	BZ-93	141	3	7/17/82	W.C. No. 42-3	515560.213	2164507.101	7015.01	-.298	.083	
BZ-93A	BZ-92	94	48	11/5/80	No. 43-31	515239.200	2165332.436	7601.34	BZ-93A	BZ-93	141	1	7/17/82	No. 43-3	515239.222	2165331.965	7601.36	.022	-.471	
BZ-93A	BZ-92	94	69	5/5/81	No. 44-31	515059.441	2164828.032	7347.85	BZ-93A	BZ-93	141	1	7/17/82	No. 44-3	515059.827	2164827.940	7349.27	.386	-.092	
BZ-93	CC #6	125	8	6/13/81	No. 74-3	511724.503	2164790.528	8157.80	BZ-93	TR#2	125	51	7/12/82	No. 74-3	511724.636	2164790.452	8157.86	.133	-.076	

On page 5-4 of the Golder Report, a statement is made implying that some portions of the diversion might be constructed in unconsolidated material. This would be an unfavorable situation where the diversion makes a 90 degree swing to the northwest. Therefore, erosion controls must be placed at that juncture or the applicant should demonstrate that the bend in the diversion will be excavated in rock.

The diversion was installed in 1978. Cuts were primarily in rock. The bend has been heavily riprapped and has shown no signs of excessive erosion.

In Chapter 7, on Table 7.5, the applicant has presented peak flow calculations that could be used to size the existing and proposed ditches and culverts at the surface facilities areas. The applicant should confirm that these flows were indeed used for that purpose, then supply calculations showing that each diversion and culvert to be utilized during this permit term is capable of adequately passing its assigned peak flow. This could be handled via a table showing the Manning's Equation parameters utilized for each ditch design, its applicable Q-value and resulting velocity. A similar table could be used for each culvert, showing its required Q (again, from Table 7-5) and the designed pipe diameter. A typical cross-section for the ditches could be acceptable, providing that special cases were also provided with cross-sections. These calculations and cross-sections should be keyed into the appropriate plan view map (Exhibit 3.2-1, 3.3-1, 3.4-1 and 3.6-1).

To be discussed and provided.

Unless surface water monitoring data proves that these are ephemeral streams, longitudinal profiles should be provided for the larger stream channel diversions, such as Sowbelly Gulch showing pre-construction conditions (if available), existing conditions and proposed restoration.

The only perennial streams in the MPA are Price River and Willow Creek. Spring Canyon is intermittent. All others are ephemeral.

UMC 784.23 Operations Plan: Maps and Plans

It does not appear that pond 0ll has been shown on Exhibit 3.4-1 which depicts surface facilities for the Castle Gate area.

Sorry . . . See plans attached to drainage modification proposal submitted on 12-12-82 for Castle Gate.

The applicant has made a statement that berms are constructed around the surface facilities at the mine (page 413, Chapter II) as an integral part of controlling runoff from disturbed areas. These berm locations should be shown on Exhibits 3.2-1, 3.3-1, 3.4-1 and 3.6-1 so that a realistic evaluation of surface water control can be made. It is not possible to look at the exhibits and determine where runoff is flowing unless these berm locations are clearly shown on the exhibits.

To be provided

The small sumps mentioned on page 114 of the permit application should be shown on Exhibit 3.2-1.

To be provided

The culverts proposed for the access road in the Sowbelly Gulch area mentioned on page 114 should be located on Exhibit 3.2-1. Associated plans and calculations should also be submitted.

To be provided.

The applicant should provide stationing on the plan view lines of sedimentation pond cross-sections shown on the surface facilities maps so that some correspondence can be made between those plan views and the cross-sections on Exhibit 3.2-2.

To be provided.

The area of land for which the performance bond will be posted must be identified.

There is currently posted \$850,000 for performance bond. The total present disturbance is about 144 acres. See comments under 783.14 for disturbed area and area to be reclaimed.

Areas where underground development waste has been disposed of must be identified.

See approved Crandall Canyon plan.

Other disposals of waste were pre-SMCRA, random and are not currently active.

UMC 784.24 Transportation Facilities

Detailed descriptions and drawings have not been provided for conveyors and rail systems as required by this section.

Conveyors to be discussed. We have no rail systems.

UMC 805.11 Determination of Bond

See comments under UMC 784.13.

A breakdown of how bonding cost was computed should be compiled to a single breakdown table itemizing areas of reclamation with manpower and machinery as well as materials required, rather than referencing scattered portions of the submittal.

Why? . . . Bonding breakdowns are not scattered but placed within the most applicable sections.

Manpower is considered in all machinery usage cost..a dozer cannot operate itself. All materials are considered.

UMC 817-11 Signs and Markers

The applicant has provided signs and marker information for the Crandall Canyon site only. This information must be provided for all of the permit area and applicable mines.

To be discussed and provided.

UMC 817.43 Hydrologic Balance

The applicant must address the outlet structure for the Schoolhouse Canyon diversion. A stilling basin at the outlet of the diversion is depicted on Exhibit 3.4-1, but not mentioned in the MRP. The applicant should submit information regarding erosion at the outlet of the diversion since its construction. The applicant should submit evidence that this diversion will not increase the potential for landslides at the outlet. Alteration of the Barn Canyon channel and associated flow routing structures within the PRCC preparation plant area should be addressed in regards to the additional runoff contributed to this drainage by the diversion. Design adequacy for these structures must be demonstrated.

To be provided.

UMC 817.97 Protection of Fish, Wildlife and Related Environmental Values

Specific information must be provided concerning how the applicant intends to protect or enhance threatened or endangered species of plants or animals which may occur in the permit area.

Why? . . . State wildlife has reviewed and approved our plans as submitted. There is no requirement for a threatened and endangered species plan.