

File Act 1007/004 #2 (8/9)

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PRICE RIVER COAL COMPANY

P.O. BOX 629 HELPER, UTAH 84526 (801) 472-3411

September 29, 1983

CERTIFIED RECEIPT REQUESTED
Certified No. 562080

RECEIVED
OCT 3 1983

Mr. Dave Maxwell
Office of Surface Mining
Western Technical Center
Brooks Towers, 1020 15th Street
Denver, CO 80202

**DIVISION OF
OIL, GAS & MINING**

Dear Mr. Maxwell:

Enclosed please find additional ground water data and modified ground water monitoring plan as provided by Vaughn Hansen Associates, Inc. These documents should provide the additional information requested by OSM.

Please advise if you have any additional questions.

Very truly yours,

PRICE RIVER COAL COMPANY

R. L. Wiley
Rob L. Wiley
Environmental Engineer

RLW:jp

- Enclosures: (11 copies each)
1. Vaughn Hansen Associates Letter dated 9/21/83
 2. Plate 1, Ground and Surface Water Monitoring Stations

cc: T. Tetting, DOGM



**VAUGHN
HANSEN
ASSOCIATES**WATERBURY PLAZA - SUITE A
5620 SOUTH 1475 EAST
SALT LAKE CITY, UTAH 84121
(801) 272-5263

September 21, 1983

Mr. Rob Wiley
Price River Coal Company
76 South Main Street
P.O. Box 629
Helper, Utah 84526

Dear Rob:

Outlined below is the additional ground water data and the ground water monitoring plan modified as requested in our August 29, 1983 meeting with OSM, DOGM, and Fred C. Hart Associates and as further documented in the September 1, 1983 letter from Allen D. Klein, Administrator Western Technical Center of OSM. Information to be provided by Vaughn Hansen Associates, Inc. indicated in the above referenced letter includes:

1. "A prediction of the flow rates of ground water to be intercepted for the next 5 years and for the anticipated life-of-mine."
2. "A proposed ground water monitoring plan which contains:
 - a) The locations of discharge points in existing and abandoned mines and identification of strata from which discharge occurs. At a minimum, PRCC must monitor:
 1. One of the alluvial springs in Spring Canyon Creek;
 2. The Crandall Canyon Spring; and,
 3. The flow and quality at all abandoned mine access points in the mining area and at one of the mines discharging into Spring Canyon Creek.
 - b) A discussion of the sampling frequency as well as the chemical parameters to be analyzed. In addition to the basic NPDES requirements, PRCC must analyze the major cations and anions and calculate the Sodium Absorption Ratio (SAR) semi-annually.

- c) A generalized monitoring plan to assure that no material damage to the hydrologic balance outside the permit area occurs."

Ground Water Intercepted by the Mine

On page 35 of "Ground Water Hydrology Carbon County Mines", impacts to the Price River drainage system from water intercepted in the mines were predicted for the existing No. 3 and No. 5 mines. In the above referenced meeting a request was made to extend this prediction to include the extent of the mining at the end of 5-years and the life-of-mine.

As indicated on page 35, inflow (50 gpm) into the No. 3 and No. 5 mines represents a depth of inflow across the contributing areas within the mines of approximately one inch which is in excess of predicted recharge of less than one inch. Therefore, much of this inflow is being removed from storage within the ground water system and actual impact to flows into the stream courses is much less than one inch. Under steady state conditions recharge to alluvial courses from the regional aquifer system would be equal to recharge to the regional aquifer system of much less than one inch. Assuming recharge to the regional aquifer system to be equal to the average depth of recharge to the abandoned mine works (which is felt to be still somewhat higher), annual recharge to the regional aquifer system might be on the order of 0.28 inches.

At the end of 5-years, the mine will have extended beneath approximately 3500 acres of recharge area, which at a rate of 0.28 inches per year would represent an impact to the Price River system of 51 gpm. Over the life of the mine, approximately 19,950 acres of recharge area will be disturbed, which at a rate of 0.28 inches per year would represent an impact to the Price River drainage system on the order of 289 gpm (0.64 cfs). From 37 years of historical streamflow records for the Price River near Heiner, Utah; the mean annual discharge of the Price River is 112 cfs. The 5-year impact of 51 gpm would represent a reduction in flow to the mean annual discharge of the Price River of only 0.1 percent and the life-of-mine impact of 289 gpm represents a reduction in flow to the mean annual discharge of the Price River of only 0.6 percent. Price River Coal Company holds some 1.7 cfs of water rights on the Price River which are more than adequate to mitigate impacts resulting from the minor reduction in yield discussed above.

Mr. Rob Wiley
Price River Coal Co.
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Ground Water Monitoring Plan

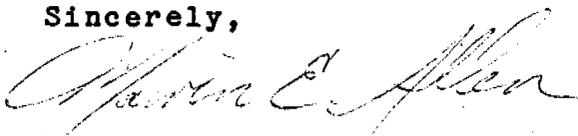
Existing and proposed ground and surface water monitoring sites are illustrated on Plate 1. Abandoned mine workings accessible from the outside and which are discharging water have been added to the ground water monitoring plan. These sites include the old Kennilworth Mine (BM-29) located in the A-seam; the Utah Fuel No. 1 Mine (BM-30) which receives drainage from the A, C, and D seams; and the abandoned mine near Mutual (BM-31) in Spring Canyon, which is located in Sub Seam No. 1. As requested, Gravel Spring in Spring Canyon has also been added to the monitoring plan.

Surface water monitoring sites are located upstream and downstream of all surface disturbance areas within the coal property boundary.

The monitoring frequency for surface and ground water monitoring sites is outlined in Table 1. The parameter list to be used in the analysis of water quality samples is presented on Table 2.

This should provide the additional information requested by OSM.

Sincerely,



Marvin E. Allen, P.E.
Executive Vice President

MEA/jd

Table 1. Monitoring site identification and frequency

Site No.	Site Identification	Frequency
<u>Ground Water</u>		
B-22	Crandall Canyon Spring	Biannually
BM-29	Discharge from the abandoned Kennilworth Mine	Biannually
BM-30	Discharge from the abandoned Utah Fuel No. 1 Mine	Biannually
BM-31	Discharge from the abandoned mine near Mutual in Spring Canyon	Biannually
BM-32	Gravel Spring in Spring Canyon	Biannually
<u>Surface Water</u>		
B-3	Willow Creek below Mine #6	Biannually
B-27	Willow Creek above Mine #6	Biannually
B-5	Price River below coal processing area	Biannually
B-6	Price River above coal processing area	Biannually
B-11	Hardscrabble Canyon below Mine #3	Biannually
B-12	Hardscrabble Canyon above Mine #3	Biannually
B-17	Sowbelly Creek below No. 5 Mine	Biannually
B-28	Sowbelly Creek above No. 5 Mine	Biannually
B-25	Crandle Canyon above mine facilities	Biannually
B-26	Crandle Canyon below mine facilities	Biannually

Table 2. List of water quality parameters for which ground and surface water samples will be analyzed.

<u>Field Parameters</u>	<u>Lab Parameters</u>	
Water Level or Flow	pH	Calcium
pH	TDS	Magnesium
Specific Conductance	TSS*	Sodium
Temperature	Alkalinity, Total	Potassium
	Iron, Total	Bicarbonate
	Manganese, Total	Chloride
	Oil and Grease	Sulphate

*Surface water only
