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STATE OF UTAH
DEPARTMENT OF HEALTH

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February 18, 1986
533-6146

RECEIVED
FEB 26 1986

Richard H. Allison, Jr., P.E.
Manager, Environmental Engineering Design
AMAX Coal Company
105 South Meridian Street
Indianapolis, Indiana 46225

DIVISION OF
OIL, GAS & MINING

RE: Surface Facilities
Minor Modifications
Helper, Utah

Dear Mr. Allison:

We have reviewed the plans and specifications for the sewerline, lift station, package wastewater treatment plant and infiltration pond which were submitted on December 19, 1985.

We are concerned that in actual practice, the package treatment plant will not provide consistently high quality effluent to the percolation ponds and that insufficient data is available to insure proper long term functioning of a percolation pond. Other conventional alternatives such as a total containment lagoon, septic tank - drainfield systems or a sewer to the Price River Water Improvement District system should be given due consideration as viable alternatives for this project. It appears from the permeameter results in the soils report (2.5 inches per hour or 24 minutes per inch) that the soil in the area would fall within the allowable range of percolation rates for drainfield design. It also appears that there may be several sites at which to locate a septic tank-drainfield system. It is understood that trade offs must be considered in providing space for parking and heavy equipment travel versus providing adequate space for a drainfield. Consideration should be given to splitting the sewer into two separate systems if this would make system citing easier. One system could handle the flows from the office and bath houses #1 and #2, while the other system could handle flows from the remaining facilities. Using two separate systems could result in an added benefit, of eliminating over 1500 feet of sewer and would reduce the operations and maintenance cost as well as time spent. Citing of either drainfields or total containment lagoons may force the movement of proposed parking spaces or require placement some distance from the mining facilities. Parts III and V of the State Code of Wastewater Disposal Regulations should be consulted for design requirements of total containment lagoons and septic tank-drainfields, respectively.

KENNETH L. ALKEMA, DIRECTOR • DIVISION OF ENVIRONMENTAL HEALTH

We offer the following comments on the sewerline and lift station as presently designed:

A. Sewerline:

1. A profile drawing of the entire proposed sewerline should be submitted and should include the following details as a minimum.
 - a. All manholes and/or clean-outs should be numbered and labeled with station numbers.
 - b. The slope, distance, diameter, and invert elevations should be given for each section of sewer.
 - c. The existing ground profile and buried utilities (new and existing) should be shown on the profile.
2. Consideration should be given to the use of manholes at a 400-foot interval instead of the proposed clean-outs at a 50 foot spacing. Venting of the sewerline also needs to be considered. A typical manhole and drop manhole detail is required if used.
3. All waterline - sewerline crossings need to be identified and a note specifying the proper separation and special construction materials and methods should be given.
4. A sewerline and manhole testing procedure should be added to the specifications to insure a tight system.
5. A compaction specification should be written for the backfill material.
6. The 6-inch ABS-DWV pipe is not considered as a suitable material for gravity sewer pipe. An evaluation of suitability should be made.

B. Lift Station:

1. The force main and pump design calculations should be submitted.
2. A profile drawing of the type to be provided in A(1) above should also be provided for the force main.

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3. Pumps should be capable of passing spheres of at least three inches in diameter. Pump suction and discharge openings should be at least four inches in diameter.
4. The low water level control appears to be too low. Pumps should be so placed as to be self-priming, and should operate under positive suction head at all times.
5. Wet well ventilation should preferably be continuous with capacity for at least 12 air changes per hour, but may be intermittent if capacity is at least 30 changes per hour.
6. Power supply should be available from at least two independent generating sources, or emergency power equipment should be provided.
7. What flood protection measures are proposed?

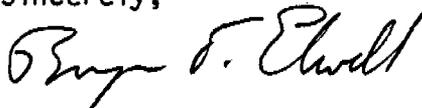
The Bureau of Public Water Supplies should be contacted for permitting requirements on the proposed 3-inch waterline and pump house.

We have not reviewed the details of the package treatment plant. Detailed comments on the package treatment plant and infiltration pond will not be provided unless the treatment alternative is approved in concept.

In summary, treatment alternatives should be carefully considered before an alternative like the infiltration pond will be considered. We also believe there is inadequate soil information to design a percolation pond at the present time.

We will continue our review of this project when all of the above issues and comments have been addressed. Please feel free to contact me, if there are any questions.

Sincerely,



Bryon O. Elwell
Environmental Engineer
Bureau of Water Pollution Control

BOE:jgh

cc: Kenneth Hutchinson, Price River Coal Company
Rick Summers, OG&M
Dave Ariotti, Southeastern District Health Department
Art May, Bureau of Public Water Supply