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Mine file
S. Linner

United States
Department of
Agriculture

Forest
Service

Manti-LaSal
National Forest

599 West Price River Dr.
Price, Utah 84501

Reply to: 2820

Date: February 9, 1989

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Lowell Braxton
State of Utah Natural Resources
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, Utah 84180-1203

**DIVISION OF
OIL, GAS & MINING**

RE: Five-Year Permit Renewal and New Lease Response, Genwal Coal Company,
ACT/015/032, Emery County, Utah

Dear Lowell:

We have reviewed the Bureau of Land Management's letter to your office, dated January 27, 1989, which discusses their evaluation of the Resource Recovery and Protection Plan (R2P2) and escarpment protection. The evaluation was in response to review of the Five-Year Permit/New Lease Application and deficiencies identified by the Forest Service and the Utah Division of Oil, Gas and Mining.

The Forest Service determined that mining induced slope/escarpment failures in Huntington Canyon would not be acceptable due to the sensitive nature of resource values and management objectives for the area. The Huntington Canyon corridor is a high use access route (State Highway 31) and recreation area. Huntington Creek is an important, high quality fishery. The visual quality objective for the canyon area which can be viewed from State Highway 31, is Partial Retention. This means that the area will be managed to provide natural appearing scenery in the foreground and middleground as viewed from the canyon bottom and slopes. Any exception to Special Coal Lease Stipulation #13, which requires that mining be conducted in such a manner as to prevent surface subsidence that would cause escarpment failure and landslides, will not be considered for this lease.

In their letter, the Bureau stated that escarpment/slope failure should not be induced by mining as approved in the R2P2. They used rock mechanics theory and analytical estimations supported by the U.S. Bureau of Mines published report entitled "Stability of Mountain Slopes Undercut by Coal Mines, March 1983" to calculate that the 200' barrier pillar would provide a safety factor of 1.5 against slope failure. In addition to the calculations, the Bureau used empirical data based on field observations and aerial photographs to verify that similar mining operations in the area have extracted pillars under similar

slopes and have not caused escarpment/slope failures. We agree that based on present available empirical data and theoretical methods presented in the Bureau's determination, the probability of inducing escarpment/slope failure in Huntington Canyon is low.

The uncertainties which become obvious, however, involve the accuracy of theoretical calculations considering the complexities of evaluating nonhomogeneous rock materials, the lack of data regarding the extent to which subsidence has progressed in the mines used for comparison, and the possible north-west trending fault on the eastern portion of the lease.

In their letter, the Bureau recommended close subsidence and cliff monitoring, which would include installation of EDM prisms on the slope. In addition to monitoring, they stated that if signs of failure appear during pillar extraction, operations in the remaining areas under the escarpment could be limited to first mining. After discussing the approved R2P2 with the Bureau, we do not feel that installation of the prisms would provide the necessary warning that escarpment/slope failure will occur prior to an actual failure. Frequent inspections of the area during recovery mining and Genwal Coal Company's photogrammetric subsidence monitoring plan should, however, provide adequate detection of failures.

Considering the above information, we consent to second mining in the area under the escarpment/slope which involves less than 500 feet of overburden (up to 200 feet of the coal outcrop) as approved in the R2P2 and proposed in the Mining and Reclamation Plan. Our consent is, however, conditional upon the provisions that the escarpment areas will be inspected frequently during and after recovery mining and that recovery mining will be discontinued in areas with less than 500 feet of overburden, in the event that mining induced failures occur.

If you have any questions, please contact the Forest Supervisor's Office in Price, Utah.

Sincerely,



for
GEORGE A. MORRIS
Forest Supervisor