



**Coastal States
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Subsidiary of
The Coastal
Corporation

March 12, 1986

Lowell P. Braxton, Administrator
Mineral Resource Development & Reclamation Program
Division of Oil, Gas and Mining
355 West North Temple
3 Triad Center, Suite 350
Salt Lake City, UT 84180-1203

RECEIVED
MAR 24 1986
DIVISION OF
OIL, GAS & MINING
ACT 1001005
#2

RE: DETERMINATION OF COMPLETENESS, LEASE MODIFICATION,
SKYLINE MINE

Dear Mr. Braxton:

The attached information is submitted in response to the completeness review as outlined in your correspondence dated February 4, 1986. We recognize that some of our responses are subjective in nature and reflect a lack of total understanding in some areas. We have, however, attempted to summarize the available information and to address areas of uncertainty with the opinions of experts in the field. Our responses reflect the best information available at this time.

Please feel free to contact either myself or Keith Welch should you have additional questions.

Sincerely,


Vernal J. Mortensen
Senior Vice President

JVM:KWW/ak

enclosure

cc: Glen Zumwalt
Keith Welch

Determination of Completeness Review Responses
Lease Modification
Skyline Mine
ACT/007/005
Carbon County, Utah

March 10, 1986

Item:

UMC 783.13 Description of Hydrology and Geology: General
Requirements and
UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance -
RS, DD

Existing baseline data for seeps, springs, and streams in the new lease and adjacent area (i.e. Winter Quarters Canyon) should be presented (or referenced) and the hydrologic connection between any aquifers and springs in the lease area should be established. A description of the probable hydrologic effects relative to the mining of the new lease based upon that data should be included. Based upon the data and geologic description to be submitted, additional baseline data may be required.

The applicant shall describe the attitude of the formation in the vicinity of lease area U-0142235.

Response:

Available water quality data for seeps, springs and streams in the new lease and adjacent areas are included in the lease modification documents and in the water quality data tabulations which are submitted quarterly. Only two sources in the original M&RP, 12-1 and S13-7, are specific to the Winter Quarters drainage. (See also water Quality Monitoring Station Location Map Vol. A-1, Hydrology of Skyline M&RP)

The question of probable hydrologic effects was also raised by Manti-LaSal Forest Service personnel. Attachment A was prepared for and was used by the Forest Service in the development of their EAR, and is herewith appended for your consideration. This report represents the best information available on the matter at this time.

Mining adjacent to the new lease area shows that the attitude is consistent with the information provided in the approved M&RP.

Item:

UMC 784.14 Reclamation Plan: Protection of Hydrologic Balance -
RS, DD

- (b)(2) A Narrative should be submitted describing any anticipated production of increased mine water and plans for treatment of that water (UMC 817.42).
- (b)(3) Existing water monitoring points in the area should be presented. The monitoring plan should be updated to include all (or representative) springs and streams in the area of projected subsidence, potentially impacted water sources based on the dip and geologic description of the area, and water sources in the area which have baseline data collected. Proposed monitoring point 004 should reference to a specific spring (the map of springs simply shows the point near "numerous seeps & springs from 0.1 to 5 gpm"). All proposed monitoring should be in accordance with the attached guidelines.

Response:

Available data on the production of mine water are also included in Attachment A. No change in the method of treatment of the mine water is anticipated at this time. The mine water will continue to be collected and settled in an underground sump and then discharged via the sedimentation pond. Other options will continue to be evaluated to assure compliance with permit conditions.

Existing water monitoring points in the new lease and adjacent areas are discussed in the response to Item 784.14 above.

The recommendation to add one more monitoring site, which is specific to the expansion area, is consistent with the approved monitoring plan currently in effect over the project area. The practice of monitoring only representative springs was implemented because the large number of spring sources make monitoring of all springs impractical. Proposed monitoring of a new station S11-1 at the point identified as 004 is intended to reflect the addition of one new representative source. The exact location of this spring will be identified when the area is again accessible in the Spring of 1986. The new site will be selected based on its potential for perennial flow and will be identified by an iron post marker with the site number permanently affixed. This new site will be added to the Water Quality Monitoring Station Location Map after the site has been firmly identified. Monitoring at this site will be on the same basis as the other springs in the project area.

Item:

- (c) Data submitted in the application indicates that stream flow still occurs on the area in September. This information suggests that the stream might be a perennial stream instead of an intermittent stream as shown in the mine plan. If the stream is perennial, the applicant will be required to adhere to regulation UMC 817.126.

Response:

Available data indicate that the stream flowing northward from Section 11 is intermittent in nature. Flow observation data made by Hydrometrics, and presented as supporting information to the proposed lease modification, indicate a variable flow from an estimated 50-75 GPM at site 004 near the center of Section 11 to 0.1 GPM immediately to the north and finally to zero flow near the north center of the section. This intermittent condition is not expected to change.

Item:

UMC 784.20 Subsidence Control Plan - DD

- (b) The applicant shall submit a subsidence monitoring plan that indicates results of pre-subsidence surveys and methods for monitoring the impacts from subsidence.

Response:

Subsidence monitoring in this expansion area will be on the same basis as all of the other subsided areas at the mine. The subsidence monitoring program as approved in Section 4.17.5 of the M&RP will be followed along with any approved modifications thereto.

A T T A C H M E N T A

Keith W. Zobell
2/18/86

CURRENT HYDROLOGIC INFORMATION FROM SKYLINE MINE - FEBRUARY 1986

The Skyline #3 Mine is currently pumping a monthly average of approximately 267,000 gallons per day of mine water discharge. There is a reasonably good correlation between the amount of mine water discharged and the amount of coal mined. This correlation is shown in Chart One, and we expect this trend to continue.

The formation which is producing the water in the mine is the Blackhawk, and we are mining in the very bottom of this formation. The floor of the mine is the top of the Star Point formation. On January 20, 1982, we received a report from Roy P. Full, a Mining Geologist, on the subject of "Ground Water in Eccles Canyon" (copy attached). Although this report is basically dealing with well water in the Star Point Formation, we believe the information also applies to the adjoining Blackhawk formation.

In Mr. Full's report he states:

"Monitoring during 1980 of the water level in drill holes extending from Huntington Canyon in the west to Mud Creek in Pleasant Valley on the east has given a substantial amount of data relative to the water table in the Star Point sandstone. Even though the formation in the area is dipping generally to the west at a low angle, the water gradient in the Eccles Canyon drainage suggests a normal movement of the water to the east into the Scofield drainage area.

While it is reasonable to assume that the Star Point sandstone does act as an aquifer, water well tests in Eccles Canyon have shown that the movement of water in the undisturbed sandstone is minor. The rock is sufficiently cemented to substantially reduce the lateral movement within the formation. This has been demonstrated at hole W13-1 at the Skyline surface plant site and in a recently drilled hole at the loadout site near the mouth of Eccles Canyon where essentially dry holes were drilled. Currently water is being obtained from well W13-2 near the mouth of the South Fork of Eccles Canyon where the sandstones are fractured along the Connelville fault zone. Considering all of the existing records, it appears evident that the water currently being pumped in Eccles Canyon is water that would naturally contribute to the flow in Eccles Canyon under uninterrupted conditions."

This information agrees with the flow data that we have collected in our water monitoring program, which was started in 1979. We have found no evidence that would indicate that our mine dewatering is affecting any surface springs, seeps or creeks. This is expected

since we appear to be dewatering thin, lenticular strata immediately overlying the coal bed. These strata are approximately three to thirty feet thick, and at their closest point to the surface (in Huntington Canyon) are approximately 700-1000 feet deep. Even though the strata do not surface in the vicinity of the mine permit area, they undoubtedly surface at some point many miles from here. In this area, the Blackhawk Formation covers hundreds of square miles, and our mine is involved in a very small percentage of total formation area. The effect that we may have on the aquifer in total is probably negligible, except over a long geological period of time.

Our experience is showing that the migration of water through the aquifer is extremely slow to the extent that the water should be considered "perched or trapped water." This is demonstrated in that as we are mining or roof bolting, we will experience considerable water at the working face. As the face advances, most inflow water tends to stop within 100-200 feet of the face. We have, however, experienced a few bolt holes that have continued to flow up to 1-2 GPM for an extended period of time. With the slow migration of water through this lenticular sandstone, we expect that it will be thousands of years before any change to the surface hydrology occurs and that due to the long time period, the change will not be measurable.

We do know that we are enjoying a positive streamflow effect from our dewatering. In talking with personnel from the DWR in Price they have told us that any good quality water that we add to Eccles Creek will have a beneficial affect on the fisheries. We also augmented the Colorado River drainage system during 1985 by approximately 188 acre feet.

All of the water that we have pumped out of the mine has been discharged into Eccles Creek. The water has always met NPDES discharge standards.

During the construction phase of the minesite and the access roads to it, the fish populations in Eccles Creek experienced a significant reduction. Utah Fuel Company has done extensive stream rehabilitation work in Eccles Creek to restore the fish population. The results of this effort are now becoming apparent as shown in the attached report on fish population studies conducted by the DWR.

Data gathered to date shows no surface effects due to underground mining and furthermore, mine water discharge is augmenting flow to Eccles Creek, enhancing fisheries and supplementing water for downstream beneficial use.

CHART 1

PRODUCTION - TONS PER MONTH

60,000
50,000
40,000
30,000
20,000
10,000

MINE WATER DISCHARGE - GALLONS PER DAY

320,000
280,000
240,000
190,000
140,000
110,000

SKYLINE MINE MINING PRODUCTION VS WATER DISCHARGE

MINE PRODUCTION - - - -
MINE WATER DISCHARGE - - - -

2/18/86 K.W.Z.

OCT. 1984 DEC. 1984 FEB. 1985 APR. 1985 JUN 1985 AUG. 1985 OCT. 1985 DEC. 1985 FEB. 1986

