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Copy MAM, Hugh, Jonathan  
Reply to: 2820  
Jace, Susan,  
Henry, etc.

Date: February 25, 1993

Pamela Grubaugh-Littig, Permit Supervisor  
State of Utah, Division of Oil, Gas, and Mining  
355 West North Temple  
3 Triad Center, Suite 350  
Salt Lake City, Utah 84180-1203

RE: Technical Adequacy of the Co-Op Mining Company, Bear Canyon Mine Plan  
(Federal Lease Addition), ACT/015/025-93A, Folder #2, Emery County, Utah

Dear Mrs. Grubaugh-Littig:

We have reviewed the revised Bear Canyon Mine Plan. The following clarifications are needed, and deficiencies resolved, before the Forest Service can consent to the Plan.

1. The most northeasterly pillar section, shown plate 3-4A is tagged for mining in 1993. Is this the same section as the submains discussed in 3.4.2 (page 3-17) that would be left in place? Is any mining within Federal Lease U-024316 planned to occur within the Bear Canyon area to the southeast of this pillar section, as was shown on plate 3-4 of the previously submitted plan?
2. Coop's proposal to drop fall water monitoring, as described in paragraph 1, page 7M-9, because of hunting season is unacceptable. We consider fall monitoring essential.
3. Appendix H identified in the index appears to actually be Appendix 3C.
4. Page 3C-6 states that spring water sources do not exist within the Bear Canyon Permit. Springs do occur within proposed permit expansion area including the spring at the head of Bear Creek and numerous springs in the McCadden Hollow area. Although the mine plan does not show mining under any water sources in the short term, the statement should be corrected regarding the existence of these waters.
5. Page 9A-6 identifies the species *Pinus monophylla* for the Trail Canyon reference area. We don't think this species exists in Utah.
6. The area proposed for mining Federal lease U-024316 is considerably scaled back from what was proposed in the previous plan. Further the dates shown for expansion only extend to 1994. Surely more is being planned. Before we can consent to this plan we need at least a five year proposal so that we have some idea where development is headed. To approve a very limited plan may not meet Coops long term plans, if conflicts are identified later.

7. The following are comments regarding the adequacy of The Probable Hydrologic Consequences of Mining at Bear Canyon Mine, Emery County, Utah. Prepared by EARTHFAX ENGINEERING, INC.; prepared by G. Dennis Kelly, Hydrologist, Manti-La Sal National Forest. 2/18/93:

Generally the report describes the conditions in the area. However, it then jumps to conclusions without analyzing the available data to see what the data show. I don't generally disagree with the conclusions, but I think they could be presented in a stronger manner. Show us how the data supports the conclusions. Use your own monitoring data where you can to supplement or override the reports that are 12 years old. Consider again whether or not the report analyzes the Probable Hydrologic Consequences of mining. Have all of the issues been addressed?

Correct the inadvertent errors that may have occurred, because they compromise the rest of the report.

Page 2-8. The last two lines do not form a complete sentence.

Page 2-9. The first line does not form a complete sentence.

Page 2-9. Last two sentences: "The water flowing from these springs is absorbed by colluvium within 10 to 70 feet of each spring. These springs are not known to contribute to streamflow in the area."

Please define "the area". Where does the water go after it infiltrates? Could it move through the colluvium to reappear as streamflow? Does it drain into a ground water reservoir? Please discuss this phenomena a little more completely.

Page 2-13. First paragraph. From this it appears that ground water monitoring has been discontinued. What are Coop's plans to reestablish monitoring wells? Are monitoring wells needed to describe the effects of mining, if any, on the ground water system?

Page 2-18. The Chemical symbols in the columns of the table are not presented properly. Redo the table with correct presentations.

Page 2-27. The results of water quality testing should be compared with the State of Utah standards for water quality as well as any federal standards. The Federal Agencies and all of their permittees and leases are required to comply with the applicable local water quality standards.

Page 2-30. Last sentence in paragraph 1. On page 2-6 you state that there are faults within the permit that off set the layers by about 20 feet. As you cross these faults will waste rock be produced?

Page 2-31. First Paragraph. You say that the water used for dust suppression is returned to the ground water. To what extent does the ventilation system cause evaporation that would prevent contamination of the ground water?

Page 2-31. Last Paragraph. The relationship between the text and figure 2-4 is unclear. What would be the maximum drawdown in response to mining?

Page 2-33. Second paragraph. Here you say that the aquifers that supply springs above the Blind Canyon Coal Seam are perched. However, on page 2-31 second paragraph you define perched as not being connected to surface springs. Please provide a better description in both contexts.

Page 2-34. Item 5. Pollution of Birch Spring is an adverse impact whether it occurs soon or at some time in the future. Some mitigation or preventive measures should be installed to protect Birch Spring.

Page 2-35. Paragraph 2. You say that "Due to the relative dryness of the mine no increase in the TDS or sulfate concentrations in the ground water is expected." On page 2-31 you say that 1/3 of the water used for dust suppression is returned to the ground water. To what extent will the traffic in the mine contaminate the dust and then the ground water?

On page 2-31, paragraph 1, you say that the mine is making 300 GPM that must be discharged into Bear Creek. How is this the definition of a "relatively dry mine" reconciled to this discharge?

Page 3-1. Last line. The number here is the sum of the average daily discharge in CFS for the entire year and is meaningless in this context. This number is an interim number used in further calculations by the USGS and has no meaning.

Page 3-2. First paragraph. Why do you reference flows in 1992 on the previous paragraph and then switch to 1989 in this paragraph? These numbers that you present convert to 9.1 and 147 CFS respectively. The average number converts to 49 CFS. These are extremes of flow for a drought year and do not represent the normal conditions in the Huntington Creek. The range of flows in Huntington Creek over the period of record are more like 9.1 to about 2000 cfs. There are large variances in the stream flow between the wet and dry seasons. However, a better explanation of what you are presenting is needed.

Page 3-2. Last paragraph. As you stated, Danielson report two samples. The 8860 mg/l was collected on 10/25/78 and the 2140 was collected on 6/14/79. Also, in the CIA on page 11 you report a sample of 28,092 mg/l. Additional data may be available from the hydrologic monitoring. The use of an analysis of other available data may provide a better description of the background conditions within Bear Canyon. A discussion of the natural variation of the TSS parameter may easily show that the mining operation would have little effect on the conditions in the stream.

Page 3-5. Paragraph 2. You say that the source of sediment is unknown! There is a huge landslide in the headwaters of Bear Canyon. A discussion of the existing conditions should describe the effects of this natural phenomena on the water quality in Bear Creek. Then the assessment of the Probable Hydrologic Consequences might easily show that under the worst case of the mining operations, it is unlikely that there would be a significant impact to the TSS of the stream.

Page 3-9. Paragraph 5. Please define analytes. The monitoring data should also be compared with the Water Quality standards of the State of Utah. See comment of page 2-27.

Page 3-11. Last paragraph. In the first part of the report you show the data used in determining the design flood for these areas. Included in this is a Curve Number of 76 for Bear Canyon. In 1984 Spencer and Kelly determined the flood flows from this canyon and used a Curve Number of 83. This difference in curve numbers will cause a large difference in the calculated flows from the canyon. I suggest that you reevaluate this determination to be sure that the design flows are appropriate. The design criteria should be reviewed to see that the design flood is large enough to provide protection for the life of the structure.

Page 3-12. First paragraph. To what extent will the sediment control devices reduce peak flow?

Page 3-15. Second paragraph. Please define what is meant by a "relatively dry mine". On page 2-31 it states that there is a discharge of 300 GMP and using 200 GMP in the operations? Please explain how this condition can exist in a relatively dry mine.

Page 3-15. Item 1, 2 and 3. How does sediment control remove dissolved constituents from the water? How much salt is used on the roads? If all of this dissolves and flows into the stream to what extent will it increase the TDS of the stream? To what extent does this affect the salt loading problem in the Colorado River Drainage? How long will the mild winters last?

Page 3-16. Paragraph 1. At least three truck accidents have occurred in Huntington Canyon in the past 15 years. What is the occurrence of trucking accidents per ton/mile of coal? Based on this what is the likelihood that this operation will have an accident during the life of the operation?

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



For  
GEORGE A. MORRIS  
Forest Supervisor