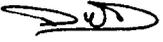


March 15, 1988

TO: File

FROM: David W. Darby, Geologist 

RE: Technical Deficiencies Review, Skyline Mine, ACT/007/005, Utah Fuel Company, Folder #2, Carbon County, Utah

Synopsis

A technical review of Utah Fuel Company's Skyline Mine plan has been conducted with respect to ground water and subsidence issues. Comments outlined in the Division's Determination of Completeness document were addressed by the applicant and returned to the Division on September 21, 1987.

A major issue of contention exists for the life of mine operations. The issue confronts the effects subsidence will have on springs and streams on the mine plan area throughout the life of mining. The Division has expressed its concern for the potential of transbasin diversion of water and still affirms its opinion that there is good potential that multiple seam and maximum extraction mining can cause caving fractures which may intercept ground water storage in perched aquifers of the Blackhawk Formation and interrupt baseflow to springs and streams in Huntington Canyon.

The applicant states in their response to the Determination of Completeness that transbasin diversion of ground water is not substantiated by either the consultant's reports (Vaughn Hansen report in Appendix Volume A-1 and the Roy Fuller report in Appendix A-3) or by existing underground conditions (see sections of Volume 1 and 3).

However, with respect to the proposed mining methods and plans, mining taking place on the west side of the permit area will have the potential to intercept perched aquifers, especially where multiple seam mining is planned and overburden is not substantial to provide a caving buffer between the cracks and perched aquifers. The applicant's statement (February 1981 Vaughn Hansen report, Appendix Volume A-1, page 6.) contending that "Subsidence fractures extending into the Blackhawk Formation will quickly self seal" is speculative and not substantiated by data or scientific studies.

Summary of Permit Review

The Division was able to conduct an evaluation of the potential mining effects to ground water for the next 5-year mine permit term with the submission of new information detailing the proposed mining sequence. Findings show that subsidence effects for this time period will not result in transbasin diversion of ground water, since very little mining will occur on the western portion of the mine plan property under shallow overburden.

Subsidence effects will be minimized for next 5-year mine permit term except where mining is planned under the South Fork of Eccles Canyon during 1990 to 1992.

Full extraction mining (mining height of ten to thirteen feet from longwall mining) will take place where overburden ranges from 200 feet at the coal outcrop barrier to 800 feet at the watershed divide. Mining in this area is expected to subside the land surface and intercept ground water supply to springs.

Total effects to the springs cannot be determined at this time. Plate 5 shows nine springs in the vicinity of the South Fork of Eccles Creek that were monitored during the fall of 1978. For the most part the discharges from these springs appear small. Table 17, Volume 1-A page 104 indicates that there are no water rights allocated from this area.

Conclusion

To ensure minimal impacts for the next 5-year permit and life of mine the operator will be required to provide the following information.

UMC 817.41 and UMC 817.52

The operator will be required conduct a complete inventory of springs in the South Fork of Eccles Canyon where mining will take place and measure the seasonal flow (at least one year) from the tributary fed by the springs.

UMC 817.121 and UMC 817.124

The operator will be required to conduct a scientific study to show that subsidence fractures are self sealing. Protection of the hydrologic balance within and adjacent to the permit area is based on that premise. The Division is concerned that the areas proposed for mining beyond the 5-year permit term will be affected by subsidence. Especially, those aquifers that contribute baseline flow to springs and streams in Huntington Canyon.

dwd

cc.

S. Linner  
R. Harden