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State of Utah

DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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June 2, 1989

TO: File

FROM: David Darby, Geologist

RE: Review, Addition of New Lease ML- 44365, Soldier Canyon Mine, Soldier Creek Coal Company, ACT/007/018, Folder #2, Carbon County, Utah

Summary

Soldier Creek Coal Company (SCCC) submitted a proposal to add state lease ML-44365 to their approved permit area. SCCC intends to develop and mine at least two seams within this lease area.

Analysis

Initial hydrologic concerns for this proposal stemmed from plans which called for developing entries under and parallel to Soldier Creek. The following evaluation concludes that sufficient information has been presented to show that mining intended during the interim of this lease will incur a low potential of effecting the stream channel or structures.

On May 15, 1989 Soldier Creek Coal Company submitted pillar strength and sizing calculations of two (2) for overburden up to 2000 feet thick. A static safety factor of two (2) exceeds the minimum standards which indicate that the pillars and roof span are adequate to support the overlying rock.

Mining of the ICB will take place where overburden is 1100 feet to 1250 feet thick (see Map E 032). A buffer zone has been established (Map E 052) using a 25 degree angle of draw. No secondary mining will take place within the buffer zone.

Soldier Creek Coal Company submitted pillar sizing and strength calculations (on May 15, 1989) which indicate that the pillars and roof span are adequate to support the overlying rock. A static safety factor of two (2) has been calculated for pillar strength, which exceeds the minimum standards.

The extraction ratio is 0.4375. It is unlikely that filling of this void space will be transmitted to surface over a short period of time given the amount of cover. Long term effects are unknown at this time due to the lack of regional subsidence information. Speculation provides the scenario for long term effects from pillar decay. Under deep overburden pillars slowly decay and crumble the overlying rock sags and sometimes fractures. It is expected that if this situation occurs the thickness of the overburden will buffer any connections or movement between the mine and the surface.

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If vertical displacement takes place it is presumed that it will occur gradually over time. Subsidence monitoring should be placed at strategic locations to detect signs of rapid or unusual movement which could alter the existing conditions along the stream, road or gas pipeline.

Recommendations

The applicant should provide and incorporate the following information into the MRP.

UMC 784.20 Subsidence

The applicant should incorporate a subsidence monitoring station in the vicinity of the confluence of Soldier Creek and Pine Creek. The elevation of this station should be established during the summer of 1989. Continuous monitoring of the station should be consistent with the established monitoring schedule and should commence the first year after mining reaches the monitoring site.

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cc: S. Linner
M. DeWeese

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