

TECHNICAL MEMORANDUM

Utah Coal Regulatory Program

February 11, 2009

TO: Internal File

THRU: Steve Christensen, Senior Environmental Scientist 

FROM: David Darby, Senior Environmental Scientist, P.G. 

RE: Zero Zero North Panel Mine Amendment, Consol Coal Company, Emery Deep, C/015/0015, Task ID #3099

SUMMARY:

Consolidation Coal Company (Consol) submitted an amendment (Task 3099) to their Mining and Reclamation Plan on December 18, 2009. The amendment details an additional panel on the northeast side of the mine consisting of 74 acres. The panel will be full extraction room and pillar design. Consol intends to increase coal recovery by using the pillar splitting coal recovery plan.

ENVIRONMENTAL RESOURCE INFORMATION

Regulatory Reference: Pub. L 95-87 Sections 507(b), 508(a), and 516(b); 30 CFR 783., et. al.

GEOLOGIC RESOURCE INFORMATION

Regulatory Reference: 30 CFR 784.22; R645-301-623, -301-724.

Analysis:

The Permittee has submitted information in Chapter V that describes the regional and local geology around the mine. More information is presented in the Hydrologic Section of Chapter VI. Plate VI-5 shows the General geology around the mine Figure 1 in Chapter VI shows a generalized stratigraphic section at Emery Mine.

The geology of the coal beds and adjacent units is described in V.A.3. The combined I-J coal zones are the targeted commercial horizon for the present application. Various coal layers of the coal zone will be extracted during the permit life. Geophysical logs and well completion

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logs in Appendix VI-2 show the lithology and water monitoring zones. The Permittee describes characteristics of the coal zones in Section V.A.4 and the acid and toxic characteristics in Section V.A.6. Roof and floor materials of the I Zone mine are interbedded sandstones and shales. The pH of the roof and floor range from 5.0 to 9.1 and have a net basic or alkaline potential. Trace element analyses are generally less than one, but boron is higher in salty strata. Electrical conductivity values are typically below 4.0 mmhos/cm. Samples evaluated from the roof, floor and coal seam show there is low potential for groundwater contamination. Groundwater monitoring information is submitted in Appendix VI-1. The Permittee has also submitted groundwater (spring and well) monitoring data to the DOGM Water quality database. Appendix VI-3 provides a research report by Petry and Owili-eger, 1987, conducted to evaluate the aquifer transmission characteristics and resistivity of the upper Ferron Sandstone.

Alluvial Valley Floor investigations have been conducted and are presented in Appendix XI-1. Four stream valleys in the proximity to existing and proposed Emery Mine operations were evaluated: Christiansen Wash, Muddy Creek, Ivie Creek and Quitchupah Creek. Of these four valleys lying near the permit area, none were designated as an alluvial valley floor.

Findings

The Permittee has submitted sufficient information to address the Geologic Resource Information Section.

MAPS, PLANS, AND CROSS SECTIONS OF RESOURCE INFORMATION

Regulatory Reference: 30 CFR 783.24, 783.25; R645-301-323, -301-411, -301-521, -301-622, -301-722, -301-731.

Analysis:

Coal Resource and Geologic Information Maps

Maps showing the geomorphology and alluvial deposits are provided in Plates 1 and 2, Chapter XI. Geological cross-sections are supplied in Plates V-7, V-8 and V-9. These Plates are confidential material.

Existing Surface Configuration Maps

General geology around the mine Figure 1 in Chapter VI shows a generalized stratigraphic section at Emery Mine.

Mine Workings Maps

Plate VI-6 shows the historic and planned mining sequence.

Monitoring and Sampling Location Maps

A pre-subsidence survey maps are supplied in Plates V-1 through and V-6.

Findings:

The information provided by the Permittee meets the minimum requirements of the regulations.

TECHNICAL ANALYSIS:

OPERATION PLAN

COAL RECOVERY

Regulatory Reference: 30 CFR 817.59; R645-301-522.

Analysis:

The proposed amendment will increase coal recovery by extracting more coal from each pillar. The mining, or removal, of the major portions of the pillars greatly increases the potential for subsidence. Consol has planned for potential subsidence by conducting a pre-subsidence survey, Appendix V-7, of the future mining and adjacent areas and analyzing the impacts to surface structures and natural resources. Figure 1 shows an updated plan for the life of mine. It identifies the areas to be fully extracted, surface structures and hydrologic features. Plate IV-2 shows the underground operations plan for past and future mining. The map shows some forecast panels, northeast of the 4th east Portal area, that lie outside the current permit area and will require new permitting action. Plate V-5 shows the location of subsidence monitoring stations to monitor subsidence. The change in plan to mine pillars will increase coal recovery at the mine.

Findings

The Permittee has met the minimum requirements of the coal recovery section of the regulations.

MAPS, PLANS, AND CROSS SECTIONS OF MINING OPERATIONS

Regulatory Reference: 30 CFR Sec. 784.23; R645-301-512, -301-521, -301-542, -301-632, -301-731, -302-323.

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Analysis:

Affected Area Maps

Several maps show the mine permit area and potential affected area.

Findings:

Information provided by the Permittee meets the minimum requirements of the regulations.

RECOMMENDATIONS:

The geologic related sections of this amendment are recommended for approval.