

Development of the mine is accomplished with seven or eight entry mains with entries on 80 foot centers and crosscuts on 100 foot centers. The submains for panel development typically use a five entry system with similar entry centers. Panels are developed off the mains or submains with a four or five entry system with rooms driven on either side of the development entries. The Emery Mine does not use maximum extraction techniques, but instead uses a system of partial secondary extraction (except in the First South panel where full extraction will occur) which leaves the roof intact (see Chapter V Part B).

During the term of this permit the planned production for the Emery Mine is 1.7 million tons per year. The mine will produce this coal with five continuous miner sections. Producing at this rate, the mine will continue operations until 2010 at which time the IJ Zone will be mined out. At that time final reclamation will begin as discussed in Chapter III.

#### 4 EAST PORTAL

##### Site Description

The site is entirely within the surface area owned by Consolidation Coal Company. Coal ownership is also in Consolidation Coal Company's name.

##### Geology:

Drill hole FC 702, located on the site, was cored from the surface to below the IJ seam. It provides a detailed stratigraphic sequence and geochemical analyses to characterize the overburden to be stockpiled on the site. The following three pages show the lithology of the overburden and contain the geochemical test results on strata intervals. The portal excavation does not go any deeper than the top eleven (11) feet of the IJ seam.

##### Acid-Forming Potential:

Sulphur values (PS, SO4S, OS, and TS) are low throughout the strata. Moreover, pyritic sulphur, a potential acid former, is present in very low concentrations (less than 0.01 percent), so the acid-forming potential is quite small. As a result, acid production is not anticipated to be a problem within the proposed construction area.

##### Alkalinity-Forming Potential:

High pH and/or high SAR can cause piping, surface crusting, soil structure problems, and plant toxicities. The only samples with alkaline pH (8.1-8.3) occurred below the coal seams. Likewise the floor strata samples tested distinctly more sodic than the overburden. Since the excavation does not go this deep, alkaline material production is not anticipated.

Mine # C/015/0015  
File Shoring  
Record # 0015  
Doc. Date 4-10-05  
Recd. Date 5-20-05

### IV.A.3 MAXIMUM ECONOMIC RECOVERY

#### UMC 784.13(b)(6), 817.59

The mining operation at the Emery Mine maximizes the recovery of the IJ Zone while maintaining safety as a primary priority. The following criteria are used to determine the mineability of the coal:

1. The minimum required mining height is 5 feet.
2. Two feet of combined roof and floor coal is left. The shale under the coal has a high clay content making it susceptible to water requiring a minimum 1.5 feet of floor coal to be left in place to prevent floor heaving. In areas of shale top, top coal must be left to maintain roof stability.
3. The maximum mining height will be 10 feet from a safety standpoint to provide stable coal pillars (see Chapter V Part B).

The Emery Mine uses a partial extraction technique during secondary mining, except in the First South panel, to maintain a stable top. Partial and full pillar extraction plans for the mine are described in Chapter V, Section V.B.1. In those areas where protection must be given to prevent subsidence (see Chapter V Part B), no secondary mining will take place. By leaving larger pillars in these areas the surface should remain unaffected.

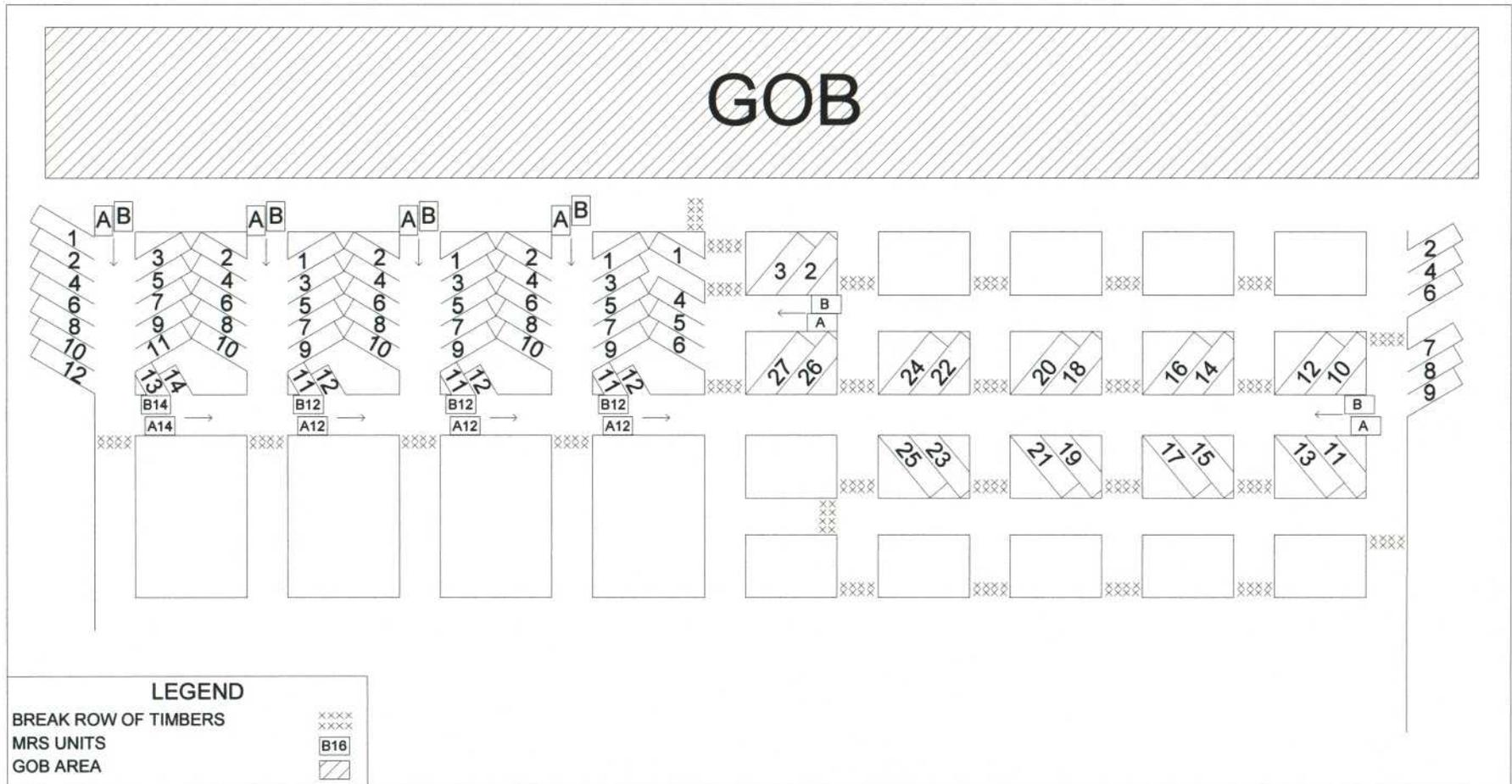
There are no coal seams above the IJ Zone that are considered mineable under the above mentioned criteria. Any future operations will take place in coal seams below the IJ Zone and will not be adversely affected by current mining operations in the IJ Zone.

Additional information related to recoverability of the other coal seams is in Appendix IV-I. This appendix deals with the maximum economic recovery of the coal in Federal Lease U-5287.

The mining method used in most of the mine is room and pillar with partial pillar removal. Full extraction mining (planned subsidence) is ~~not practiced~~ proposed at Emery only in the First South panel, as noted on Plate V-5. As a result, any subsidence outside of the First South panel area would fall into the unplanned category. Figure 1 pg. 28 shows the partial pillar splitting diagram employed underground. This layout is the result of past experience as well as state and federal regulations pertaining to roof control and ventilation. ~~This methodology has been~~ All pillar splitting will be approved by MSHA. A pillar split diagram specific to full extraction is provided in Figure 2 (page 29).

Consol intends to prevent subsidence from affecting Quitchupah Creek, Christiansen Wash and the alluvial valley floor area on the west side of the permit area (Refer to Plate V-5). An intermittently occupied dwelling in Section 30 will also be protected from subsidence. As of the date of this writing, a subsidence waiver has not been obtained on this dwelling. At such time as a waiver is obtained, the Division shall be notified and the buffer around this dwelling will be removed. Other than these features, the presubsidence survey, and our knowledge of the permit area confirms that there aren't any structures overlying present or future underground workings for which mitigation of subsidence effects would be overly difficult.

The three above noted features will be protected by establishing buffer zones which in turn are created by leaving coal pillars of adequate size beneath these areas. The dimensions of the buffer zone will be determined by the overburden depth and the angle of draw. With respect to Quitchupah Creek and Christiansen Wash, the buffer zone will include an additional standoff distance of 100 ft. on either side, as required by UMC 817.57. The pillar dimensions are based on established geotechnical information and a factor of safety for long term pillar stability. The partial pillar splitting design data can be found at CH V Page 28a, 28b, and 28c. A pillar split plan sketch can be found at CH V Page 28 and Figure V-1 on CH V Page 28d. As can be seen from the following design data this partial pillar splitting plan will not result in subsidence, and is considered unplanned subsidence per the MRP.



**Figure 2: Full Extraction with 2 MRS Units for Supplemental Support**  
Mirror Image Applies

A breaker row may consist of either:

- two MRS units, or
- two rows of posts on a maximum spacing of four feet (4'), or
- two cribs