

LARGE DIAMETER AND DEEP HOLE PRESPLITTING TECHNIQUES FOR SAFE WALL STABILITY

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ABSTRACT

As mining progresses in the West, the depth of material has increased, making highwall stability a major factor in safety and production. The Jim Bridger Coal Mine has made highwall stability a priority, concentrating on safety as well as increasing and improving production. Overburden depths are increasing dramatically; the geological environment consists of medium to soft material, faulting, water, and current pit alignment not favorable to joint planes. Angle drilling the presplit at 20 degrees became necessary as vertical presplit drilling produced wall failures.

In this paper we will discuss in detail actual presplit loading techniques tested and developed at Jim Bridger Coal Mine. These include 10 5/8" hole diameters on 12-14 ft spacings, foam plugs and a combination of Anfo/Emulsion blends in deck loading. Our methods have achieved the desired presplit results in a depth range of 75 - 220 feet at 20 degrees.