LARGE HOLE PRESPLITTING WITH MODIFIED AIR GAP BLAST DESIGNS IN WEAK ROCK

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ABSTRACT

The Bureau of M nes s conduct ng research on blast ng methods that reduce h ghwall overbreak and the assoc ated rockfall hazards. Th s paper presents the results of a ser es of tests to mprove prespl tt ng at a western surface coal m ne. Reduct ons n overbreak were ach eved by decoupl ng and/or repos t on ng the ma n explos ve charge n the 10-5/8 nch prespl t blastholes that formed the h ghwall. Blast des gns are presented by the authors for 1) repos t on ng the explos ve charge from a weak rock layer to a stronger rock layer, 2) decoupl ng w th cardboard tubes n the toe reg on, and 3) suspend ng bagged powder at ntervals along the length of the blasthole. About the same total quant ty of explos ves was used n all three test des gns. It was read ly apparent from per od c v sual exam nat on and photograph c surveys of the h ghwalls that the amount of rockfall was reduced, and w th a longer delay before rockfalls began, n all test areas.