

PERIMETER CONTROL WITH TRACER BLASTING

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ABSTRACT

Blasting is a very cost effective method of rock fragmentation but its uncontrolled application often results in excessive damage to the perimeter of an excavation. Several perimeter control techniques are available but tracer blasting is commonly used in Canadian underground mines for overbreak control. This involves tracing a column of Ammonium Nitrate-Fuel Oil (ANFO) with a detonating cord. In order to investigate the techno-economic effectiveness of tracer blasting in perimeter control, a field experimentation was conducted which involved blasting in sublevel caving and sublevel sloping operations, experimental drifting, benching and pipe tests.

Initially a comparison with other explosive products was made on the basis of half cast factor and percentage overbreak. It was found that tracer blasting produced much lower damage. Further investigation indicated that tracer blasting is a very cost effective technique of overbreak control during development and sloping operations, with no adverse effects on rock fragmentation. The interaction between ANFO and the detonating cord has also been discussed in this paper.