

# **THE HISTORY OF PERIMETER BLASTING AT THE HOMESTAKE MINE**

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## **ABSTRACT**

Overbreak into the wall rock of a development drift leads to the inevitable need to rehabilitate a drift. Moreover, overbreak in a production heading can lead to external dilution and lower ore grades. Both of these factors are critical to bottom line costs of underground operations today. The geology of the Homestake orebody makes this an even more complex problem. For over fifteen years the Homestake Mine has attempted to implement perimeter blasting techniques that are both safe and cost effective. Many practical perimeter methods and products have been tested including air decking; low density emulsions; various types of stick powder; various decoupling media including rope, low density ANFO, polystyrene ANFO, salt based ANFO, and various grain detonating cords up to 200 grain.

This paper presents the results of these tests for both development and production headings. It will also show how the program was successfully implemented through improved drilling standards, new drilling equipment, training, miner acceptance, and a commitment by management to make it work. Even with the program in place, testing continues today to further lower blasting costs. The development of this program has helped Homestake maintain itself as a world class underground gold operation for over 120 years.