**Rock Mass Quality Determination in Blasting at Jalal-Abad Iron Mine**

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ABSTRACT

Blasting is believed to be one of the most important operations in mining extraction. One of the main parameters which has to be considered in blasting is rock mass quality. Dynamic strengths of rocks, their spacing and orientation of joints planes and cracks as well as lithology and thickness of bedding are thought to be the most influential factors in blast design. A recognised method to combine these geological characteristics within blast design is Blasting Index (BI) which has subsequently been computed for the Jalal-Abad iron mine in central Iran. Consequently, blasting patterns were designed using the following four principal methods, namely; Ash, Thumb, Anderson and Konya. Following a comparative analysis, Konya was found to provide the best correlation with regards to BI. As a result of this study it can be shown that around 30% and 70% of the specific charge and drilling metres respectively can be reduced. This can be shown to translate into reducing the drilling and blasting costs by approximately $50 million over the life of the mining operation.

***Keywords****: Blasting; rock mass quality; Specific charge, Jalal-Abad iron mine*