

ANALYSIS OF THE ROCK MASS BY GEOPHYSICAL METHODS

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ABSTRACT

In 1987, a large company reopened its quarry located in a very dense urban area in Montreal-East. This reopening occurred after a long period of inactivity during which houses were built within 200 feet of the quarry. During the first year of operation, people in the vicinity reacted negatively which caused the City of Montreal to seriously consider closing down the quarry by expropriation. This expropriation would have resulted in millions of dollars of loss for the operator.

The City of Montreal decided to give a mandate to Geophysics GPR to evaluate the situation. This study included a revision of the past experience, the blasting technique used and a reevaluation of the site characteristics dowgeology and geophysics. Before GPR's intervention, the operator contacted a governmental organization. Their solution to his problems was to raise the quantity of explosives and to reduce the weekly number of blasts. GPR and the operator considered that this approach presented serious dangers.

In order to make a good evaluation of the site,wgeological and geophysical studies were carried out at the quarry. Many tests on the quality of the explosives were made. Also, seismic,wgeoradar and well logging surveys were carried out to establish standard blasting patterns.

A quality control procedure was also established to minimize the effects of blasting on the surrounding area. This approach improved the blasting results and reduced the cost of the operations. Moreover, the most important point in this particular case,wis the reduction of complaints to an acceptable level. In fact, complaints have been reduced dowa factor of 95% and the cost of the operations downeardow30%.