THE CONTINUING REHABILITATION OF THE KAM KOTIA MINE SITE: AN ACID-GENERATING ABANDONED TAILINGS SITE

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Abstract: Ontario's Ministry of Northern Development, Mines, and Forestry (MNDMF) continues to rehabilitate the Kam Kotia Mine site. This site, located within the municipality of Timmins, in northeastern Ontario, Canada, is considered by many to be one of the worst abandoned mine sites in Canada.

The Kam Kotia mine originally produced base metals in the early 1940's, with production ending in 1972. During that time 6.0 million tonnes of highly sulphide-rich tailings were deposited into three areas, two of which were unimpounded. The mine site is located on approximately 500 hectares of land and has produced acid mine drainage measured at pH 2.3, which has severely impacted two rivers and ground water in the area.

A conceptual rehabilitation plan was developed for the ministry in 2000, with five distinct phases. This included: the construction of a water treatment plant and a new tailings impoundment area; the relocation of the unimpounded tailings to the new impoundment area; the construction of the dry cover for the North Impoundment Tailings area (NIT); the construction of a moist cover over the North Unimpounded tailings area (NUT); and the rehabilitation of the physical mine hazards on the site.

Currently MNDMF has completed the first three phases, and a significant portion of the 4th and 5th phases of the rehabilitation plan. However, an increase in the volume of contaminated water from the site exceeded original estimates, which in turn, impacted the water treatment plant, lead to the implementation of emergency measures, and resulted in a substantial cost increase to the project.

To date, MNDMF has expended CA$54 million on the rehabilitation of the site, and it is now estimated that the total rehabilitation costs will be greater than CA$75 million. This total cost does not include the operation of the on-site water treatment plant, which will need to operate until all south flowing acidic water has been treated or flushed from the site. It is expected the plant will operate for fifty years or more, once all the rehabilitation work is completed.

Key Words: abandoned mine, rehabilitation, reclamation, acid mine drainage, metal leachate, AMD, ARD.