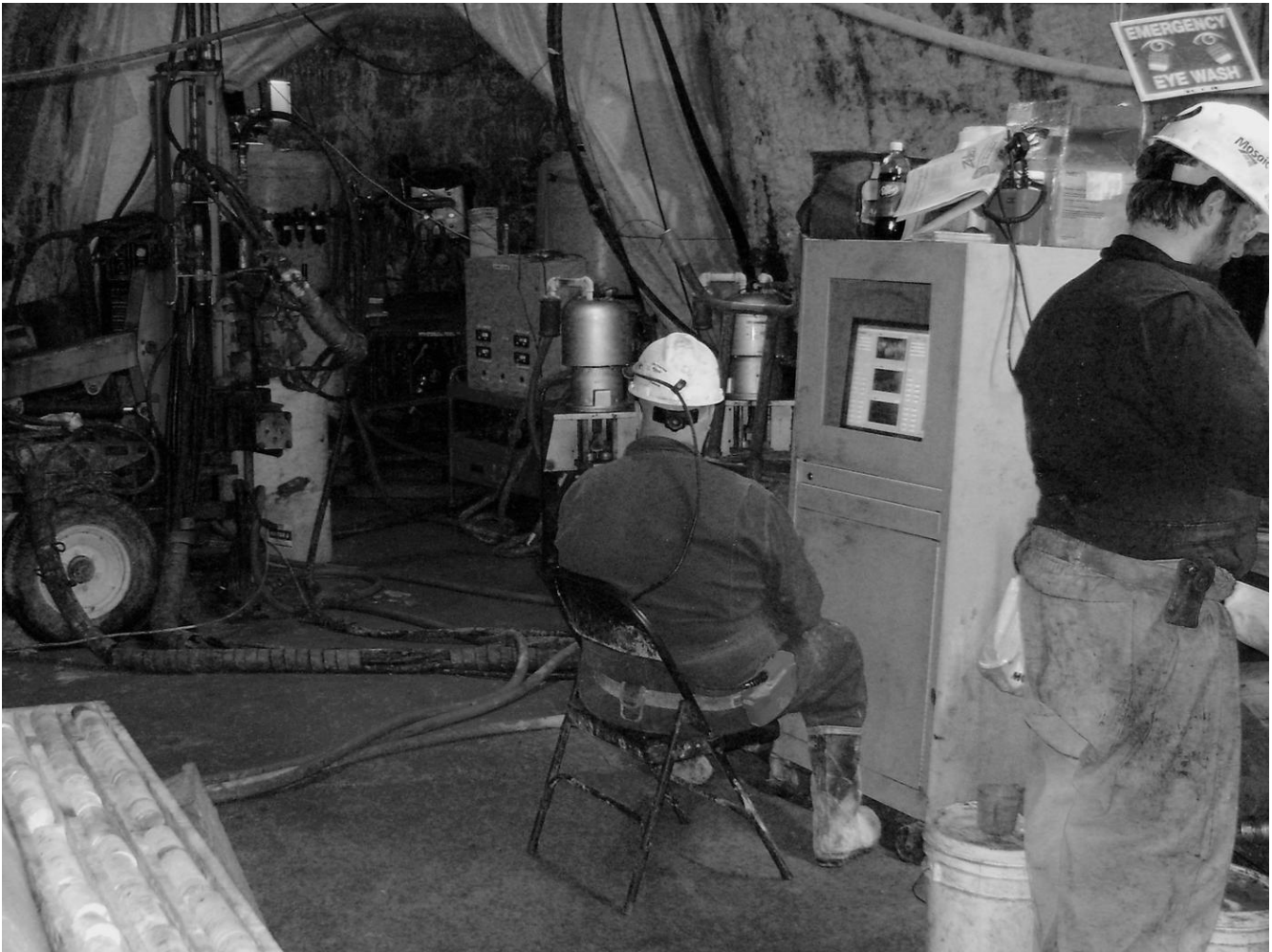


Mosaic Potash Mine K2 Shaft

Esterhazy, Saskatchewan, Canada

This interesting grouting project was performed from a 75 feet diameter circular mine station, at a depth of 2,760 feet below the surface.



The project

The Mosaic Potash Mine is the largest producer and marketer of concentrated phosphate and potash crop nutrients in the world. A grouting program, using chemical grout, had to be implemented inside the shaft to decrease the water flow through limestone formations.

The challenge

The K2 Shaft began experiencing seepage into nearby freshwater aquifers at depth stations between 2,760 feet and 3,010 feet below the surface.

The solution

Keller designed and manufactured the specialized grout mixing placement system and performed the chemical grouting operations associated with the project. ECO Grouting Specialists, Inc., of Grand Valley, Ontario, was responsible for the grout mix design and direction of the grouting program and method in which the grout would be injected into the shaft at the different depths or formations of the below-ground geologic composition. Keller worked in shifts opposite of the drilling operations (performed by others). All work was done from a 75 feet diameter circular mine station, 10 feet x 10 feet, at a depth of 2,760 feet below the surface. The casing was drilled into the various formations at different stations, grouted in place, and pressure tested to 1,500 psi. The holes were cleaned out and tremie grouted with cement grout and pressurized to 1,500 psi using nitrogen. Real-time monitoring of the grouting operation was performed with Keller's UGC® computerized monitoring system. At the end of the project, approximately 100,000 gallons of chemical grout had been placed by Keller.

Project facts

Owner(s)

Mosaic Potash Mine

Keller business unit(s)

Keller

Main contractor(s)

N/A

Solutions

Groundwater control and dewatering

Markets

Infrastructure
Tunnels and shafts
Mining

Techniques

Permeation (chemical) grouting

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