

# ENTERPRISE MINE, MT ISA, CHEMICAL GROUTING



**Client:** Mt Isa Mines  
**Consultant:** Tennent Isokangas Pty Ltd

**Project Manager/ Consultant:** Fluor Daniel  
**Specialist Contractor:** Menard Bachy Pty Ltd

## THE PROJECT

As part of a new paste fill supply operation to the underground workings at Mt Isa's large underground metalliferous ore body, three long paste fill holes, each over a kilometre in depth, were drilled at the Enterprise Mine shaft site. They are the longest such boreholes drilled in Australia for this particular application. Menard Bachy was consulted after one of the pilot holes intersected water at depth flowing into the mine at a rate of 100 litres per second. At the time of drilling it was not known that there was an aquifer in that area of the mine connected to the local river.

## MENARD BACHY'S ROLE

Based on Menard Bachy's previous experience for Pasminco at Roseberry mine in Tasmania, the Company were retained to design and construct a cost effective and innovative solution to reduce water inflow into the mine to a more manageable level. Completion of the paste fill holes and commissioning of the paste fill holes was on the project critical path. From permeability tests Menard Bachy evaluated that there was a large aquifer between 70 and 450 m below surface and most of this zone was of low porosity rock with apparent fissure widths so fine that only micro-fine cement or chemical grout would be effective.

Menard Bachy, in conjunction with Eco Geosystems Inc of the USA, proposed an acrylate chemical grout as a primary means of grouting followed by further permeability testing to locate any ungrouted or extrusion zones. The subsequent stage involved secondary grouting of the untreated zones using a microfine cement grout. Menard Bachy's Geotechnical Engineers worked very closely with the mine personnel, their consultant and project manager to provide a rapid solution to the problem and worked 24 hour shifts to effect a solution to this critical problem.

## MENARD BACHY PROVIDED

- Technical expertise to determine the extent of the problem and propose cost effective solutions
- Supply of specialised grout plant and materials
- Provision of skilled labour and supervision to carry out the grouting works.