

Case study

Pumpsim™ – Enabling efficient design



The new approach represented millions of dollars in savings in refurbishment, drilling and power costs.

For further information contact: www.howden.com

Rosebery Mine is a polymetallic underground mine (lead, copper, zinc and gold), on the remote west coast of Tasmania, Australia, which has been operating since 1936.

The challenge

The ground conditions in the level 44K pump station had become unstable, threatening the operation of the main pump station. Failure of the main pump station would cause flooding in working area which would lead to lengthy downtime. To continue operating, the pump station had to be completely refurbished, including ground support, costing millions of dollars.

The solution

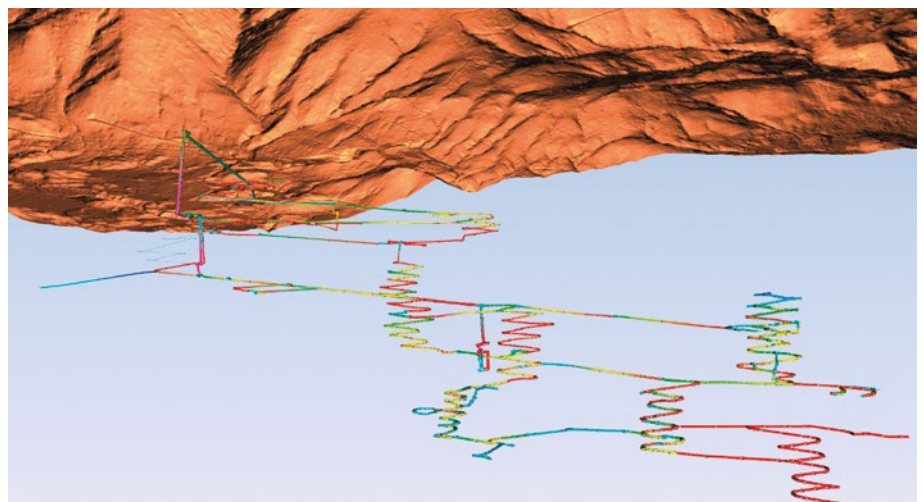
The site ventilation engineer, a Ventsim™ user, had heard about Pumpsim™ and approached management to build a Pumpsim™ model to analyse alternative solutions. The entire mine water reticulation system was modelled and simulated, including water supply, drainage and dewatering pumping throughout the mine. Upon completion of the Pumpsim™ model, it became obvious that the current pump station was not ideally located because it unnecessarily recirculated 100% of the operational water through 60m of additional head.

The result

A better solution became clear: moving the pump station to level 46K. This option not only removed the need to refurbish the pump station but also removed 60m of recirculation.

This enabled the existing 5x75kW pumps to be replaced with a single 90kW pump saving many thousands in annual maintenance and power cost. Additionally bore holes planned from 44K–46K were also no longer required thereby avoiding costly drilling and the 44K pumps could be relocated to other sites in the mine when required.

Combined, the new approach represented millions of dollars in savings in refurbishment, drilling, power, and pump purchase. An estimated \$5 million in CAPEX and an additional \$200,000 per year as OPEX.



Revolving Around You™