



CASE STUDY: Collahuasi Mine

MAKING MINING SAFER

EXPERIENCING THE SAFETY AND PRODUCTIVITY BENEFITS OF
REAL TIME SLOPE MONITORING

“By using an SSR to monitor slope stability, we have considerably reduced the risk associated with working in unstable areas.”

Jorge E. Pérez Castañeda, Slope Control Engineer, Geotechnical Superintendence.

Compañía Minera Doña Inés de Collahuasi SCM's copper mine is situated in northern Chile, about 180km southeast of the port of Iquique, at an altitude of 4,000m.

The Collahuasi Mine deposit has an annual production capacity of 400,000 tonnes of copper in concentrate and 60,000 tonnes of copper cathode.

There are three main orebodies: Ujina, Rosario and Huiniquipa. The mine has one of the world's largest known copper reserves at 5.19 billion tonnes.

“Safety is the highest priority to Collahuasi Mine management and the ability to rapidly scan large portions of mine walls for potential failures and see the results in near real time has been of great benefit to mine employees and safe production,” Mr Castañeda said.



SSR ENABLES PRODUCTIVITY GAINS IN AREAS OF POTENTIAL
INSTABILITY

Prior to purchasing their first SSR-X Slope Stability Radar system in 2006, Collahuasi's slope monitoring program consisted of extensometers, roughly 200 prisms, a laser system, and visual monitoring.

Geotechnical Engineers were not entirely satisfied with the prisms and extensometers because they could not be regularly and safely placed on the pit walls.

GroundProbe's Slope Stability Radar made a significant impact because its provision of precise information for risk management enabled the mine to work near areas of potential instability when Geotechnical Engineers knew that the conditions were favourable. They also knew very quickly if they deteriorated. Instead of abandoning entire portions of a pit, they were able to realise productivity gains in a safe manner.

Collahuasi Geotechnical Engineers have also used the SSR's alarming mechanism to warn of night time failures that might not have been detected through visual monitoring.

As a result of their success with the first SSR-X, Collahuasi purchased a second GroundProbe SSR-X system in 2009.