Reference Details:

Owner Cerro Vanguardia, Province Santa Cruz, Argentina

DSI Unit DSI-Soprofint, Santiago de Chile, Chile
DSI Scope Technical evaluation; supply and installation of 3,700 m of cablebolts

Cablebolt Systems secure Open Pit Mine in Argentina

Cerro Vanguardia, Province Santa Cruz, Argentina

Mining company Cerro Vanguardia performs its operations in extraction of precious minerals, especially gold and silver, via Open Pit in the province Santa Cruz in southern Argentina.

Due to the unstable conditions presented by the Osvaldo Diez mine CB 7 south, west wall, Cerro Vanguardia asked that the Department of Engineering at DSI-Soprofint evaluate the problem and - through its geomechanical engineering services - determine the system of stability control regarding the critical slope and install a system of reinforcement.

In order to design the reinforcement system, the engineers built a conceptual model and determined the principal mechanisms regarding the failure of the wall given the main orientation of its critical slope. To construct the model, they considered the parameters of resistance with respect to the rock mass as well as the in-situ geological conditions.

Using bi-dimensional numeric modeling, the stability both of the bench and the inter-ramp scales was investigated. The team calculated factors of safety and the probability of failure utilizing the Duncan Method, evaluating both the cohesion and friction properties of structures present in the rock mass. As a result of their evaluation, the engineers recommended the application of the grout cablebolt system over an area of 1.000 square meters to control the instability of the critical slope. Accordingly, 3.700 meters of birdcage cablebolts of different lengths and orientations were installed.

The client showed great satisfaction with the quality of service and professionalism demonstrated by DSI-Soprofint's Department of Engineering.

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