Enaex

Public information

ENSURING MINE STABILITY

With Blast Site Watch®

SITUATION

Closure of a section of the mine due to instability

The El Romeral mine, owned by CMP, is situated in Chile and is primarily involved in iron ore extraction using an open pit method. Recently, a significant instability arose due to a rotational failure mechanism associated with a rock formation of poor geotechnical quality. As a result, the ramp access that led to the bottom of the mine had to be closed to prioritize the safety of the operators. To ensure the safety of the operators, it was crucial to analyze the correlation between the movement of this critical fault and the vibrations generated by blasting. This analysis was necessary to reopen the sector while ensuring the operations' continued productivity without risking the operators' safety.

CHALLENGE

Establish the impact of different vibration intensities on zone cracking and sliding to avoid adverse effects.

SOLUTION

Correlate vibrations with geotechnical monitoring of the fault

The Blast Site Watch® system uses various sensors to constantly monitor critical parameters such as airblast, wind, dust, and vibration. Our digital platform, Enaex Bright, has been designed explicitly for optimizing blasting operations and provides real-time data on mining activities' impact on the mine infrastructure and the neighboring communities.

The Devine model can predict blast vibration using historical data and blast parameters.

Blast Site Watch® continuously generates online reports and automatic alerts analyzed by Enaex geotechnical specialists (EMTS).

Client:	CMP
Product:	Blast Site Watch®
Location:	El Romeral Mine, Chile
Application:	Open pit mine
Author:	Christian Aliaga, Technical Manager

KEY FEATURES

- A stabilized fault
- 24/7 Monitoring: Remote and continuous monitoring
- Online information: Information available at Enaex Bright

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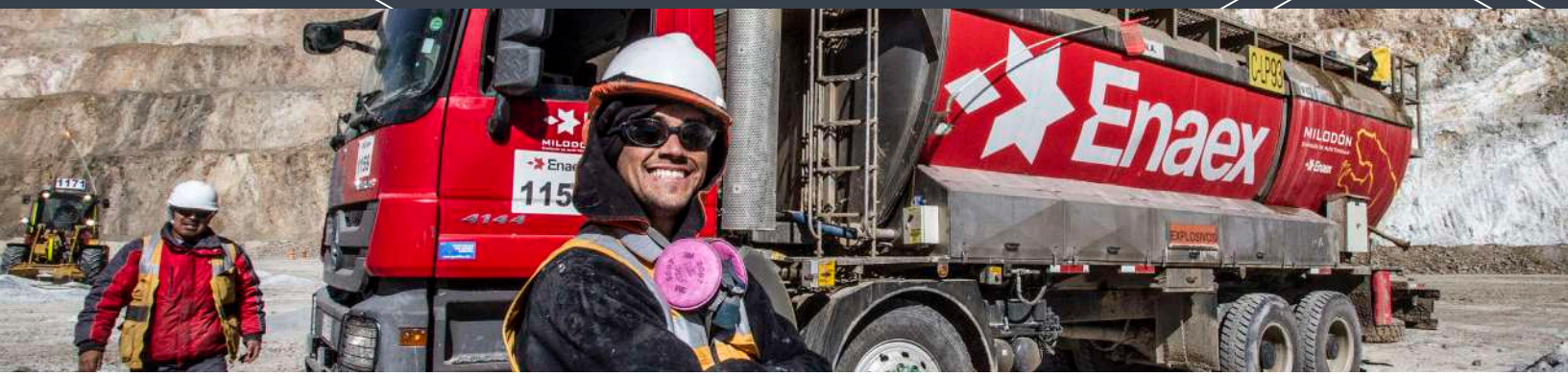

RESULTS

Minimizing vibration levels

▶ Thanks to Blast Site Watch®, we were able to determine the different vibration levels that could affect the fault and establish a damage criterion in the area. In the second step, we adapted our blasting designs, quantity, and type of explosive used to prevent vibration levels from causing progressive fault displacement. As a result, no blasting has produced critical alerts to date. Our control processes have enabled CMP to maintain safe operation in an industry closed since 2003, when the fault first arose.

STRONGER BONDS

▶ We established stronger bonds with CMP to maintain productivity while prioritizing safety.

CUSTOMER TESTIMONIAL

“Blast Site Watch® helped us to corroborate that, in no case, the level of vibrations obtained in each of the blasts was sufficient to activate these poor quality sectors.”

Nuria Salvador Martínez,
Production Geomechanics at the Romeral mine

ABOUT US

At Enaex, our purpose is to humanise mining by having a positive impact on all aspects of the blasting process.

We know that life is the most precious thing on the planet. That’s why we put people first to ensure the well-being of our teams, our broader communities, and the environment.

With a proven track record of providing the global mining industry with flexible, tailor-made blasting solutions, Enaex is the preferred blasting solutions partner.

- ▶ Over 100 years of experience.
- ▶ Blasting services across six continents.
- ▶ More than 400 MPUs.
- ▶ Pioneering the first 100% remote-controlled open pit blast.
- ▶ 880,000 tonnes of ammonium nitrate produced annually.
- ▶ First underground fully remote-controlled blast.
- ▶ Over 7,000 employees.

Do you want to get in touch with one of our experts?
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