



CASE STUDY:

Herculano Mining

MAKING MINING SAFER

RAPID RESPONSE TIME - BRAZILIAN MINE DEMONSTRATES THE IMPORTANCE OF RADAR TO GUARANTEE SAFETY

Herculano Mining has acquired an SSR-XT to assess further risks and ensure a safer tail dump for continued operations.

On September 10, 2014, a tailings dam failure occurred in Retiro do Sapecado open pit mine, resulting in three fatalities, and damage to three mine trucks and two excavators. Preliminary investigations indicate the accident was caused by a geological phenomenon - inversion of relief - caused by underground channels.

This devastating accident shocked the mine's staff and community. The team at Herculano Mining needed a rapid response to secure the safety of their staff, and ensure such a failure would never again go undetected.

With GroundProbe's dedicated team in Brazil, stocked with a lease fleet of slope stability radars, Herculano Mining could rapidly collect the data they needed to restore safety on site.

Following the accident, Herculano Mining immediately responded by acquiring GroundProbe's SSR-XT to further monitor and assess risks during reinforcement work in affected areas, as well as desilting threedam tailings. Herculano Geotechnical Consultant, Antonio Augusto, said the radar is now imperative for site operations:

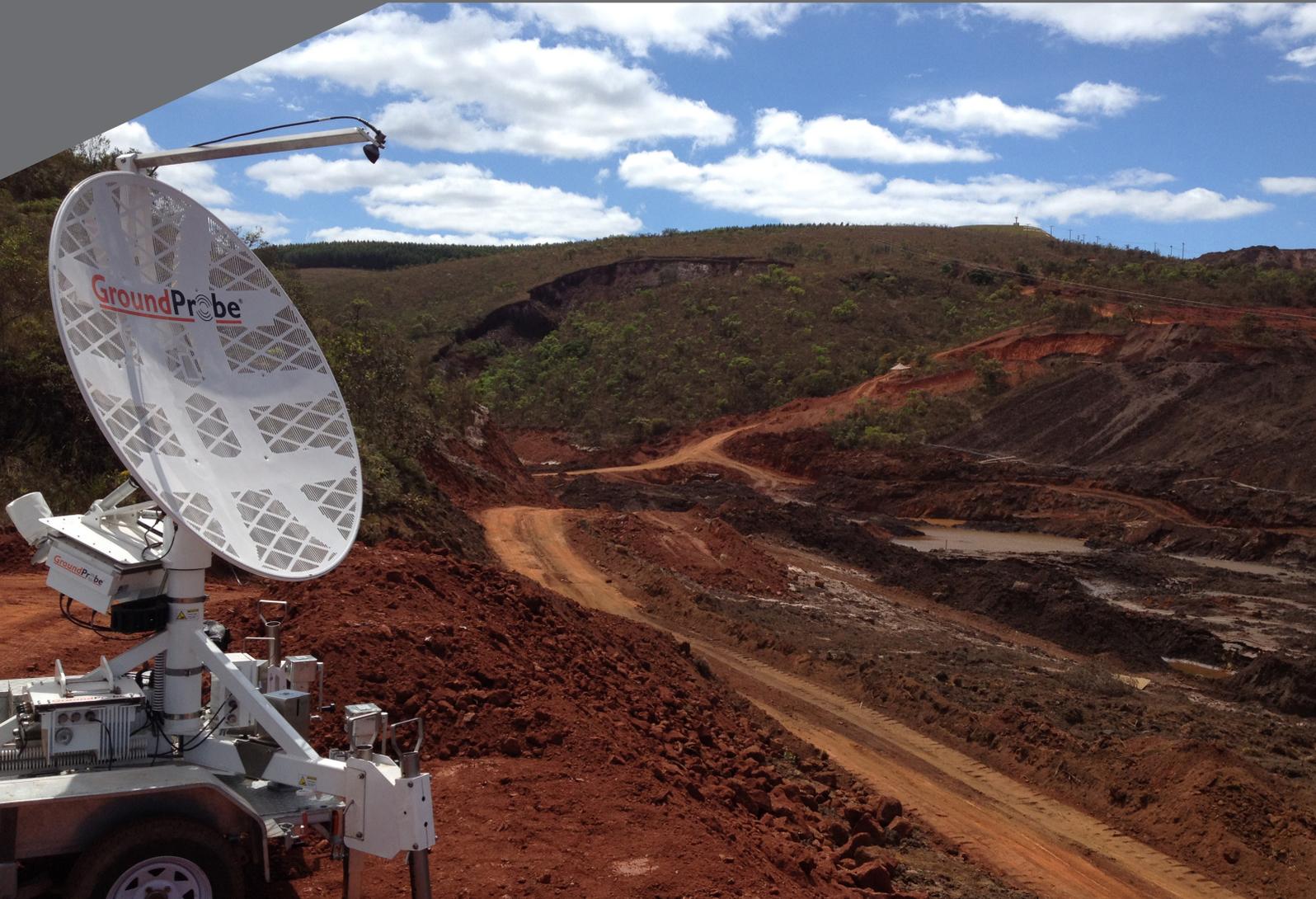
"I think it would be impossible to operate the cleaning of dams without the presence of the radar."

The radar is stationed on a frontal position to the area where the slide occurred, as seen in the photos.

GroundProbe's services did not stop there. A complete in-pit alarming solution was developed between GroundProbe and Herculano Mining, who worked alongside new site procedures, to ensure site evacuation occurs when an alarm is raised.

Moreover, the data collected in Brazil is uploaded and checked each day, by one of GroundProbe's geotechnical engineers in Australia, who produce a daily report that highlights operational risks as they occur.





GroundProbe's Brazil Business Manager, Antonio Rocha, said this is evidence of two companies working together, to provide a safer workplace for future operations.

"I am proud to have played a small role in helping our partners at Herculano Mining, and ensuring our community stays safe."

GroundProbe has developed a complete emergency plan which includes a control room and watchdog connected to office sirens and alarms - automatically messaging the mobile phone of key personnel.

The accident is still under investigation, and with the affected area being monitored, Herculano Mining have procedures in place to ensure complete safety of the mines, local community, and environment.