



South America: Mine Tailings in Tailings Dams

Efficiently installing a customized solution to understand tailings' characteristics



Case Study Summary

Application

Assembling enclosures, testing sensors, documenting wiring, and testing communications

Location

South America

Products Used

CR6

Background

Tailings dams are crucial components of mining operations, responsible for storing water used in the mining process. Dam safety officials and owners of one of the world's largest copper mines* wanted to better understand tailings characteristics to further the science of mine tailings in tailings dams. The company understood this and took proactive measures to partner with industry experts including Campbell Scientific. The objective was to create an instrumented apparatus filled with different tailings mixtures to assess their properties. The Campbell Scientific CR6 Automated Monitoring Platform was chosen for this project because of its unparalleled versatility and expansion capabilities.

Challenges and Solutions

1. **Customized Solutions:** The mine and its partners developed specialized tailings containers and a lift to fill each container with tailings mixtures without damaging the sensors.
2. **Data-Acquisition Expertise:** The company and partners entrusted Campbell Scientific to develop an automated monitoring platform. Campbell Scientific designed the system, including assembling the enclosures, testing the sensors, documenting the wiring, and testing the communications. To ensure a smooth process, a Campbell Scientific representative was sent to the site for field commissioning to check the installation and make any recommendations.

Results and Impact

1. **Unparalleled Data Insight:** The implemented data-acquisition platform provides the company with valuable data, enabling them to analyze and understand the

properties of different tailings mixtures. The data form a crucial foundation for understanding the characteristics of tailings dams and mitigating potential risks.

2. **Efficient Installation Process:** The partnership with Campbell Scientific benefitted the project by creating and executing efficient installation processes. The prewired sensors from Campbell Scientific and the comprehensive documentation helped to streamline the installation process, saving time and ensuring project milestones were met.
3. **Ongoing Collaboration:** The project's success and the contributions by Campbell Scientific resulted in a continued partnership. The company is planning additional experiments and likely seeking further assistance from Campbell Scientific for data acquisition.

Conclusion

This project was unique because of its size and the logistics of the sensor placement. Field experts accomplished the project's goals in a timely manner to acquire the data needed for a better understanding of different tailings mixtures. The use of industry experts made for a smooth transition and continued partnerships.

**Please note that due to confidentiality concerns, the client, location, and identifying information for this case study cannot be provided.*



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