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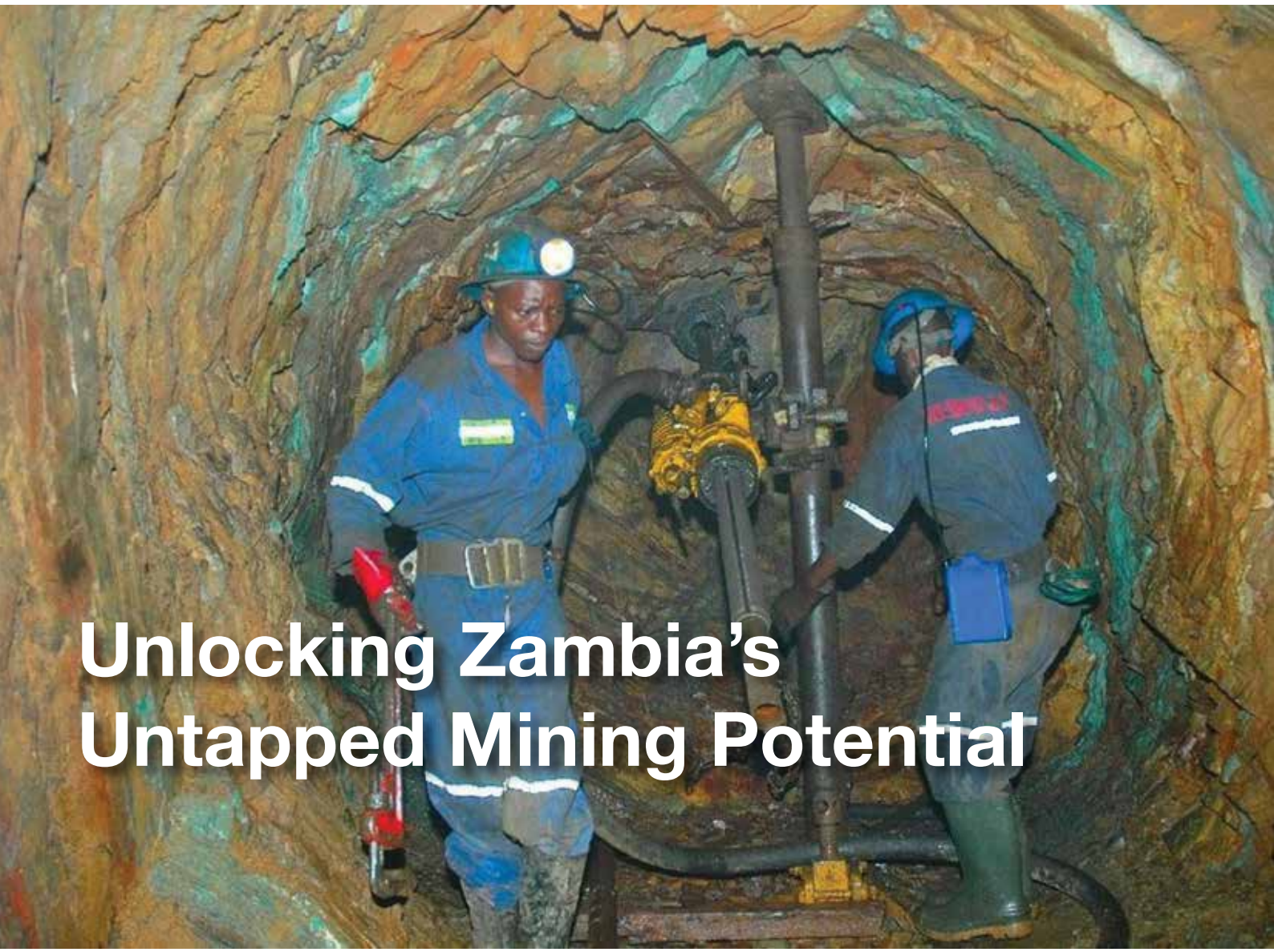

Unlocking Zambia's Untapped Mining Potential

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Data Driven Grind Circuit Optimization

Hydrocyclone performance and particle size classification are crucial elements in the comminution process. The ability to measure particle size within individual cyclones is essential for grind circuit optimization and for controlling product size sent downstream.

Current Challenges

All cyclones within a cluster behave differently, yet until recently, operators were unable to measure the particle size from each individual cyclone. How can they ensure target size classification for optimal recovery? How is particle size variability controlled? In a macro economic environment where the demand for valuable mineral is outstripping the supply, how does a concentrator relax the grinding task, grind coarser, and increase throughput without violating the downstream process barrier? It is impossible to respond to industry challenges using conventional measurement technologies.

Innovative Solutions

For over 20 years, CiDRA Minerals Processing has been creating reliable and innovative technologies designed to address the most difficult challenges in the mining industry.

CiDRA's CYCLONEtrac™ Particle Size Measurement System(PST) with SMARTsensor™ technology is quickly becoming the industry standard for particle size measurement and is the only real time measurement system that directly measures and tracks particle size for individual cyclones every four seconds.

The SMARTsensor is a wave guide that is inserted through the pipe wall on each overflow pipe. As the particles strike the waveguide, high frequency acoustic waves are generated, captured, and produce a frequency spectrum that is processed to determine particle size.

The Paradigm Shift

This unique technology allows minerals processing operations to make a step change from conventional measurement to direct, real-time measurement of individual cyclones with the capability to provide up to five particle size measurements every four seconds.

Operators can now make decisions that reduce particle size variability and achieve their target grind size (micro control strategy). CYCLONEtrac PST also enables a consolidated particle size measurement from all cyclones in the cluster to derive a P80 measurement for the control and optimization of the grind circuit (macro control strategy).

Another benefit of using CYCLONEtrac PST is the ability to prevent roping, a process upset that negatively impacts recovery before it occurs. Additionally, identifying cyclones that are out of class enables condition-based monitoring at the individual hydrocyclone level. Finally, relaxing the grind task and producing coarser particles minimizes maintenance required to shut down and clean flotation circuits. This helps reduce water usage and energy consumption.

What Our Customers Say

One customer attests to the benefits and value that CYCLONEtrac PST technology provides: ***"CYCLONEtrac PST allows us to obtain better control of the P80, by cyclone, and evaluate its positive impact on tonnage without drastically affecting plant recovery. Also, it allows us to optimize the classification circuit, identifying the main constraints (cyclone feed pump flow, pressure, water addition to control % solids, classification efficiency)."***

Another customer stated ***"The good news is that each individual cyclone's performance can been seen. There is a wealth of new information that none of us have ever seen before regarding cyclone cluster operation."***

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CiDRA Mineral Processing, Inc.