A Connected Orebody Knowledge Platform

Challenge

Optimizing Drill & Blast Operations with Geology Data-Driven Decisions

Planning, drilling, loading, and blasting with low-resolution exploration data and a limited, outdated look at your current geology leads to a suboptimal operation. There are plenty of data points during the production cycle to offer a drill and blast team a robust and accurate account of their ever-changing geology, but this data is locked away, siloed and unprocessed. With limited time on the job and a limited breadth of analytic skills, drill and blast teams are operating without a holistic look at their geology even though the data exists.

Solution

KNOW THE ROCK: Automating the Analysis of Production Drilling Data

MinePortal connects to a mine's databases such as, but not limited to, exploration, geo-modeling, blast hole drilling, blast designs, and assays to effectively integrate and analyze all geology data. The power of cloud computing allows MinePortal to ingest and process information in near real-time while applying our proprietary geostatistical and machine learning algorithms. This enhances the drill and blast team's orebody knowledge which accurately reflects the rock today and predicts the rock tomorrow.

Copper – Canada – SAG Mill

"The use of predictive modeling and near real time reporting is a huge driver of better decisions"

– Mine General Manager

Situation

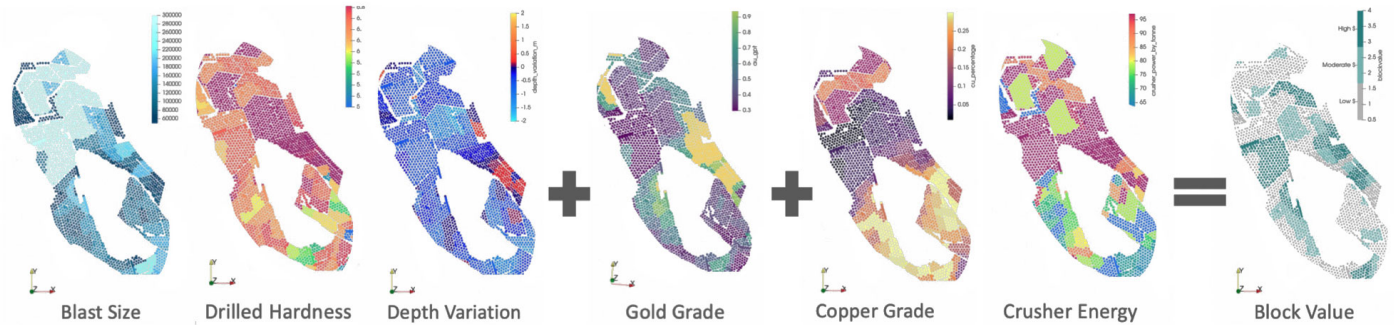
The mill at this mine was suffering from poor throughput and thus recovery. They needed a faster and more robust analysis of geology data to support their mine to mill improvement program efforts.

Strategy

Unlock orebody knowledge from existing geology databases, integrate with MineStar material tracking and Pi mill data feeds, and build a predictive mill energy model with a mine to mill feedback loop.

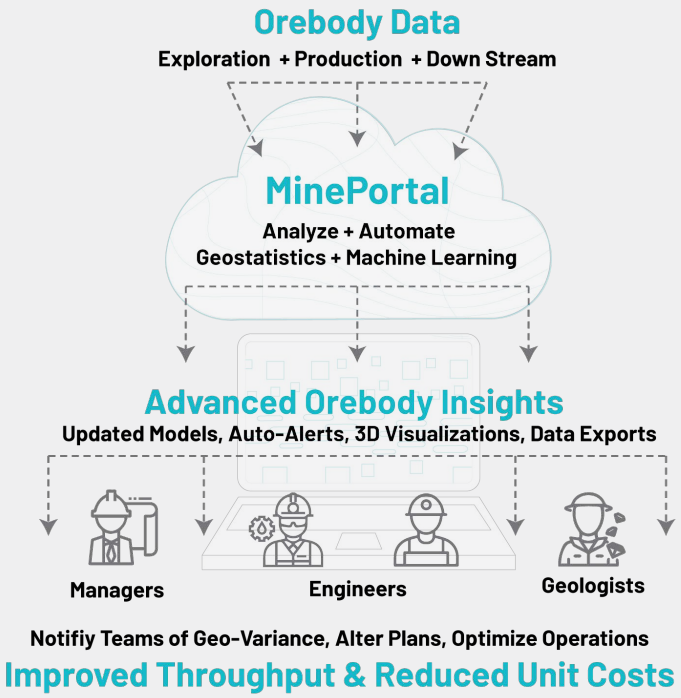
Results

- Optimized blasting
- Increased mill throughput
- Mine to mill improvements
- Reduced cost of explosives



Once blast holes are drilled, rock data is pulled into MinePortal for automated analysis and interpretation. It is thereafter integrated with additional databases from related mine site operations. In the example above, this information was linked to processing facility performance data and tied back to the ore block.

After the muck pile is dug, with ore sent to the mill and waste discarded, there are a series of key data points we aggregate to calculate the value of the remaining resource, by block location within the mine. Aside from the production growth and savings, this information has allowed the mine to revisit its existing development plan and contemplate operational adjustments that will significantly increase the mine's NPV.



Value

Increasing Production While Reducing Unit Costs

The most efficient point of investment to increase the productivity of processing facilities is to develop and continually update high-resolution orebody knowledge. This enhanced understanding of the rock mass will allow clients to predict and improve grinding performance to drive productivity and value, optimizing across a mine site's operations.

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