



Case Study

Stockpile and Inventory Optimization

Decrease 5-8% in Ore Feed Variability with 3D Block Models of Stockpiles

Goals

A leading copper producer sought to address significant variability in the materials fed into their processing plant.

Challenges

- High variability in ore grade among materials sourced from different stockpiles and fed to the plant.
- Maintain grade control within stockpiles and plant KPIs objectives.
- The mining team faces difficulties in meeting specific short-term planning goals.

Solution

IntelliSense.io's Stockpile & Inventory Optimization (SIO) application was used to perform near real-time 3D ore control models of stockpiles, enhancing spatial granularity to optimize value extraction.

Results Overview



8% reduction in plant feed variability



\$1.4M/y expected in recovery gains



Better short-term mine planning and stockpile reclaiming strategies

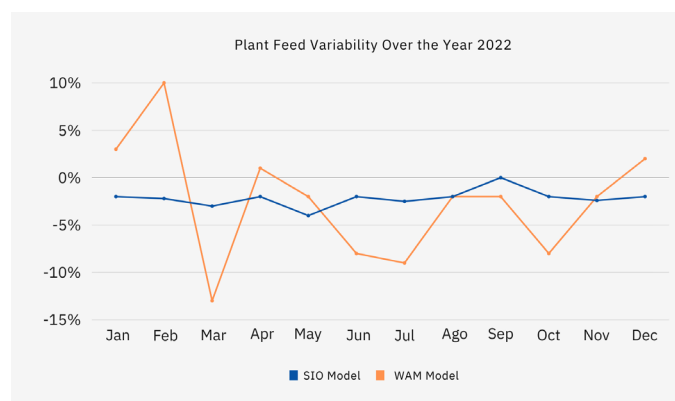
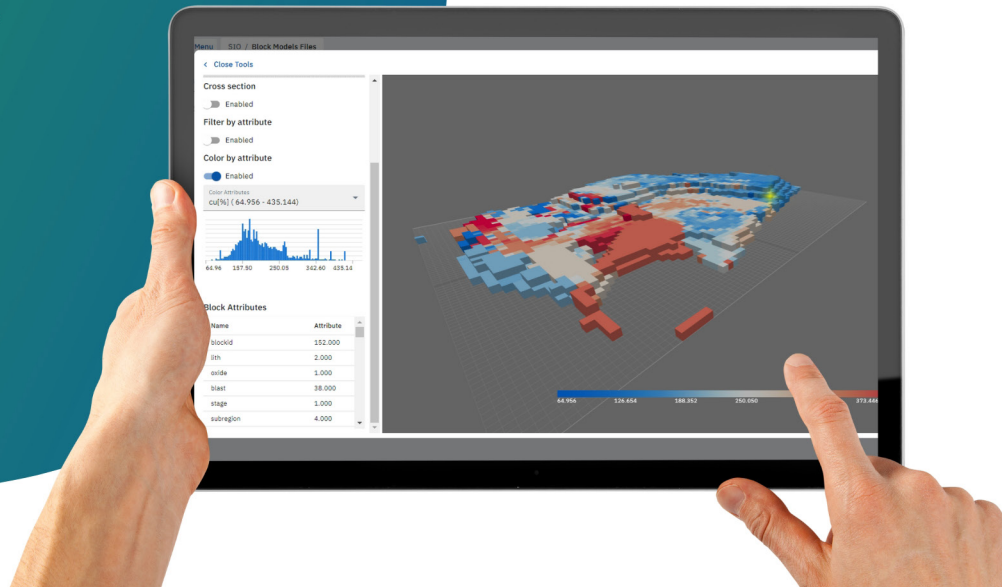


Figure 1 - Variability in plant feed derived from ROM stockpiles reclaiming throughout 2022

Stockpile & Inventory Optimization App

Real-time 3D ore control model of stockpiles, increasing material spatial granularity to maximize value extraction



Results

The material flow and the associated material properties (e.g. volumes (t), key minerals/elements, hardness, residence time etc) were tracked from the mine through the stockpiles, and into processing plant, providing accurate information, predictions, and alerts for application users.

The integration of SIO application into mine site daily activities, successfully helped reduce plant feed variability by an impressive margin of 5 to 8%, a significant achievement that contributed to the stability and predictability of customer operations.

Major benefits includes:

- Decreased Plant Feed Variability by 8%.
- Gains in plant are expected to be around \$1.4M/year.
- Return on investment of 3.3 months.
- Better planning and reclaim strategy.



The models look very accurate in geometry and grade. We see the brains.app as the source of truth since it demonstrated to be accurate and keeps the information of material not reclaimed before the next build up due to error.

Grade Control Manager, Copper Mine

About IntelliSense.io

As a leader in Scientific AI - combining first principle models with machine learning techniques, IntelliSense.io creates digital applications that optimize decision-making in challenging environments such as mining.

Our applications drive process improvements, remove bottlenecks, and enhance asset availability and reliability for individual units or collaboratively for overall mine-to-market efficiency. What sets us apart is our commitment to continuous improvement, ensuring our applications evolve with state-of-the-art practices for sustained value extraction.

Through the integration of operational unit applications, we amplify impacts throughout the mineral processing value chain.