Shandong Gold leads the way

Sanshandao Gold Mine uses Maptek™ Vulcan™ to streamline modelling and mine planning at the complex underground operation in Shandong Province.

A subsidiary of Shandong Gold Group, Sanshandao Gold Mine is one of the five largest gold mines in China, producing 3.7Mt of ore per year. The underground mine employs cut and fill, drift and fill, and room and pillar mining methods, depending on the orebody thickness and geometry.

Since May 2019, technical services and production teams at the mine have been using Maptek™ Vulcan™ modelling and mine planning software.

About 60 geologists, surveyors and mining engineers use Vulcan to analyse, explain and interpret the complexities of the orebody, and create production models for mine planning.

The previous approach used a 2D method for all geological mapping, review, interpretation and drafting as well as mine planning tasks.

Due to the complexities of the orebody, understanding the geology can be very time-consuming.

Because of the controlled mining methods applied, with relatively smaller stopes, production scheduling work is more difficult, especially with respect to medium term and long term planning.

To simplify the task, mine planners had used assumptions based on past experience, which had sometimes led to compromises.

One of the outcomes of the customer–developer relationship between Shandong Gold and Maptek has been the refinement of CAD tools to facilitate a more automated, integrated design approach.

With tailored software for 3D modelling, Sanshandao mine is now using Vulcan for survey, geology, geostatistics, mine design and scheduling.

The live link between the 3D mine design and the scheduling spreadsheet allows interactive changes to the mine plan to be assessed quickly.

It is important for the operation to be able to compare the budget and actual throughputs on a stope by stope basis.

Survey data of as-built stopes is compared against original designs, providing reports of over/underbreak and dilution to feed into improving the next stope design.

There were some initial challenges transferring the tasks into a new environment. However, once staff became familiar with the workflow, they soon recognised the benefits of the 3D visualisation tools. Mine planning had never been connected to scheduling before so this is a significant improvement.

The whole team is now sharing a common platform for mutual benefit. The easy-to-use software has provided time savings, streamlining and automation of processes, and improved communication across the entire operation.

Pioneering Inc., the Maptek mine planning reseller in China has provided software training and technical support, with a 24-hour, 7-day a week hotline and instant online response to solve any issues.

Geologists and engineers are excited that they can use a single platform in the world's leading mining software to solve their problems. Using Vulcan has streamlined routine modelling and mine planning tasks so that more time can be spent on decision making and management.

Thanks to
Ping Wang
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