

Geological face mapping underground

Barrick Gold Corporation uses Maptek™ Vulcan™ for various geological modelling tasks at the Cortez Hills underground operations in Nevada, USA.

Barrick Gold Corporation uses Maptek™ Vulcan™ at various stages of the Cortez Hills underground operations in north-central Nevada. Cortez District Operations comprises open pit mining of the Pipeline and South Pipeline deposits, and both open pit and underground mining of the Cortez Hills deposit.

Cortez is Barrick's and Nevada's largest gold producer. Mined continuously since 1862, Cortez is the longest operating gold mine in the state of Nevada.

Going digital

It became apparent that as the operation continues to grow, the old paper and pencil methods would not be able to keep up with the day-to-day demands of detailed face mapping.

It is difficult to maintain up to date face mapping using traditional paper based techniques.

'Going digital was the answer,' explained Dave Todaro, Senior Production Geologist at Cortez Hills underground division.

Putting the latest technology in the hands of the mine geologists allows them to work more efficiently. Timely access to all of the underground face data means that essential decisions are well-informed.

Tablet workflow

A customised workflow was generated using existing Vulcan functionality to suit the needs of the underground production environment. Customised Lava scripts speed up the workflow and reduce the amount of user interaction required.



Production geologists using tablet underground

Before heading out to the field the geologist prepares the tablet, ensuring the appropriate data files have been secured for review during the mapping process.

Once in the field the geologist can use the customised Lava scripts and existing Vulcan functionality to digitise the geological features in the correct spatial location.

The tablet system also allows the geologist to review geological observations spatially in real time.

'This is a game-changing advantage,' said Todaro.

Back at the office, geological observations can be shared with the team. The geologist now has more time to review the data and make critical interpretations about the ore system, which have the potential to impact decisions made in the production environment.

Benefits

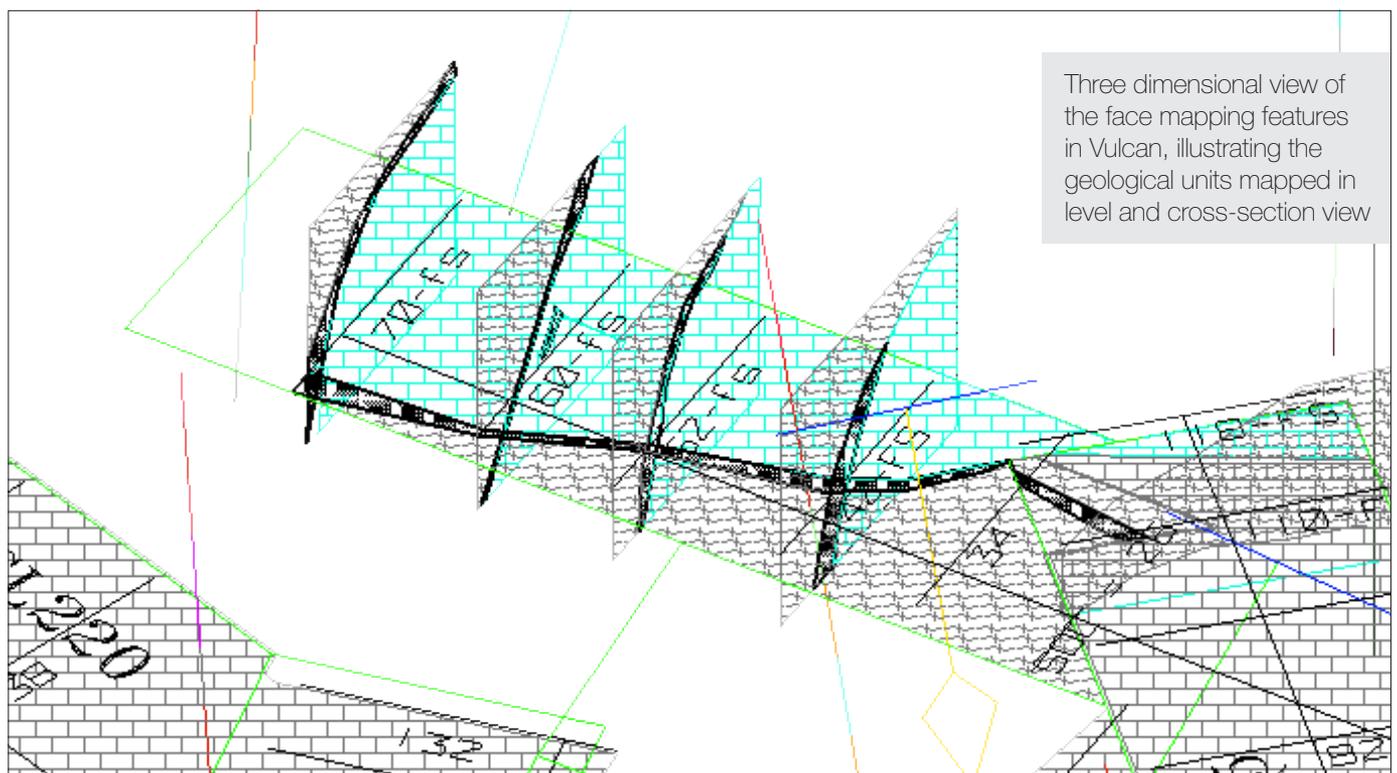
As well as standardising the face mapping process, this customised workflow now provides a way for the team to 'efficiently go digital'.

'It also opens the doors for doing more with the data than previously imagined. Having access to data while

underground means that our geologists are able to visit and clear more headings each day,' said Todaro.

This translates to quicker mining cycles as headings are returned to the mining operations teams faster. It also provides more time for geologists to work on other tasks like bulk sampling and developing sampling methods to meet automated advancements.

*Thanks to
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Barrick Gold Corporation*



Three dimensional view of the face mapping features in Vulcan, illustrating the geological units mapped in level and cross-section view