



MINESCAPE

ROMONTA

CUSTOMER SUCCESS STORY

Achieving over 95% accuracy in a complex historical mining district with the MineScape mine planning model.



The Customer

ROMONTA is the world's largest crude montan wax producer. It operates the Amsdorf open pit mine, located in the Central German lignite mining area. From the bitumen-rich soft lignite, approximately 15,000 tonnes of crude montan wax are extracted per year from 500,000 tons of lignite. Over the past 100 years, the deposit has been mined underground and open pit (in the outskirts of the mining area).

The Challenges

When designing a mine site, an accurate geological model is an important foundation for the extraction planning. Knowledge about the mineral deposit, especially about the quantities and qualities, as well as the spatial location of seams, are important factors in optimised mine planning. In the lignite deposits of Amsdorf, new mining areas are rare, because historical open pit and underground mining operations have been in existence throughout the 19th and 20th centuries. Several independent mines were previously combined over time and consolidated to create today's mine site.

As a result, confusing pit geometries across a network of underground mine tunnels and caving areas exist within the mine site. For these mining areas, little or no historical modelling has ever been done, although bitumen-rich lignite exists in quantities that are still economical to extract today. "Geological modelling of old underground mines can be challenging because of their complex structures, especially the underground caves," explains ROMONTA's Maximilian Hertrampf. "Standard mine planning software provided insufficient modelling capabilities."



The Solution

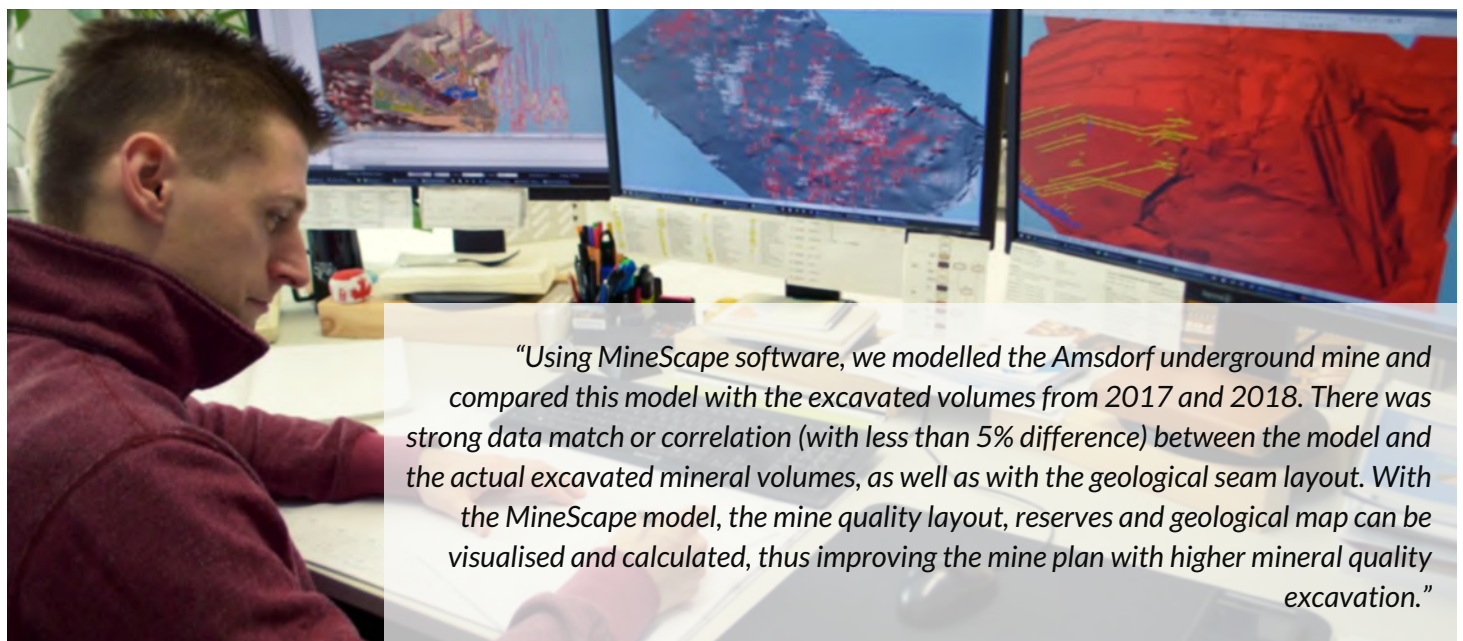
To help address their unique challenges, ROMONTA turned to MineScape. Specifically developed to meet the mining industry's rigorous demands, MineScape has been proven to outperform in the most complex mining operations throughout the world. MineScape is a suite of integrated solutions designed for use in open pit and underground mining operations for both coal and metalliferous deposits. It delivers extensive geological modelling and mine design functionality, making it the global leading mine planning solution.

The Results

Using the MineScape solution, ROMONTA modelled the Amsdorf underground mine, including the complex infrastructure of old mines, to create an optimised mine plan model. The MineScape stratigraphic model incorporated a complex set of data consisting of:

- Old topography and mine maps.
- Complex old underground structures and caving systems.
- Current maps.
- Digital sources including drill hole data and quality analysis.

This data set was normalised into a single correct data source. A geological model was built that accurately represented the stratigraphic coal deposit with all the deformations caused by the old underground mining. A triangulated model of the old underground workings was constructed to visualise the areas affected by the past underground excavations. All this combined information provided an accurate geological and quality model, accurate resource estimates and mine plan.



“Using MineScape software, we modelled the Amsdorf underground mine and compared this model with the excavated volumes from 2017 and 2018. There was strong data match or correlation (with less than 5% difference) between the model and the actual excavated mineral volumes, as well as with the geological seam layout. With the MineScape model, the mine quality layout, reserves and geological map can be visualised and calculated, thus improving the mine plan with higher mineral quality excavation.”


Maximilian Hertrampf, Specialist Mining Engineer, ROMONTA





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