Deswik.Spatial

Design & Solids Modeling

Open Pit Metals

Comprehensive geospatial capabilities powered by CAD

Deswik®

Experience the Deswik advantage

We empower mining teams to work smarter and faster. Our integrated approach to mine planning incorporates design and scheduling features across our core platform to help our clients increase efficiency and optimize outcomes.

Deswik.Spatial

Design & Solids Modeling

Deswik.Planning

Gantt Chart Scheduling

Deswik.OPS

Operations Planning & Control

Deswik.GeoTools

Operational Geology

Deswik.MDM

Data Management & Governance

Deswik.BOLT

Surface Mining & Value Chain Optimizer

The industry's most comprehensive CAD solution

Industry-leading geospatial solution for precision and visualization

Deswik.Spatial is the all-in-one geospatial solution that empowers you to make informed and confident decisions to succeed in the rapidly changing mining industry. With its seamless data integration, world-class 3D modeling and geospatial analysis capabilities, Deswik.Spatial is the preferred CAD package to create detailed mine plans, improve site collaboration and productivity, and enable environmental stewardship.

From mapping, survey, and design through to environmental management, Deswik.Spatial unifies the tools mining professionals need across all sectors in one solution to achieve better results and maximize efficiency.

An intuitive and collaborative team experience

Flexible and intuitive, Deswik.Spatial simplifies, automates, and optimizes mine planning processes for multiple roles within your team.

With advanced tools available as standard functionality, mining professionals can work together seamlessly, gather insights and share data to make changes efficiently.

Who uses Deswik.Spatial?

- Long-Term Planning Engineers
- Short-Term Scheduling Engineers
- Strategic Planners
- Geologists
- Surveyors
- Mining Engineers
- Drill and Blast Engineers
- Geotechnical Engineers
- Environmental Engineers

Complete your design and spatial tasks in one CAD package

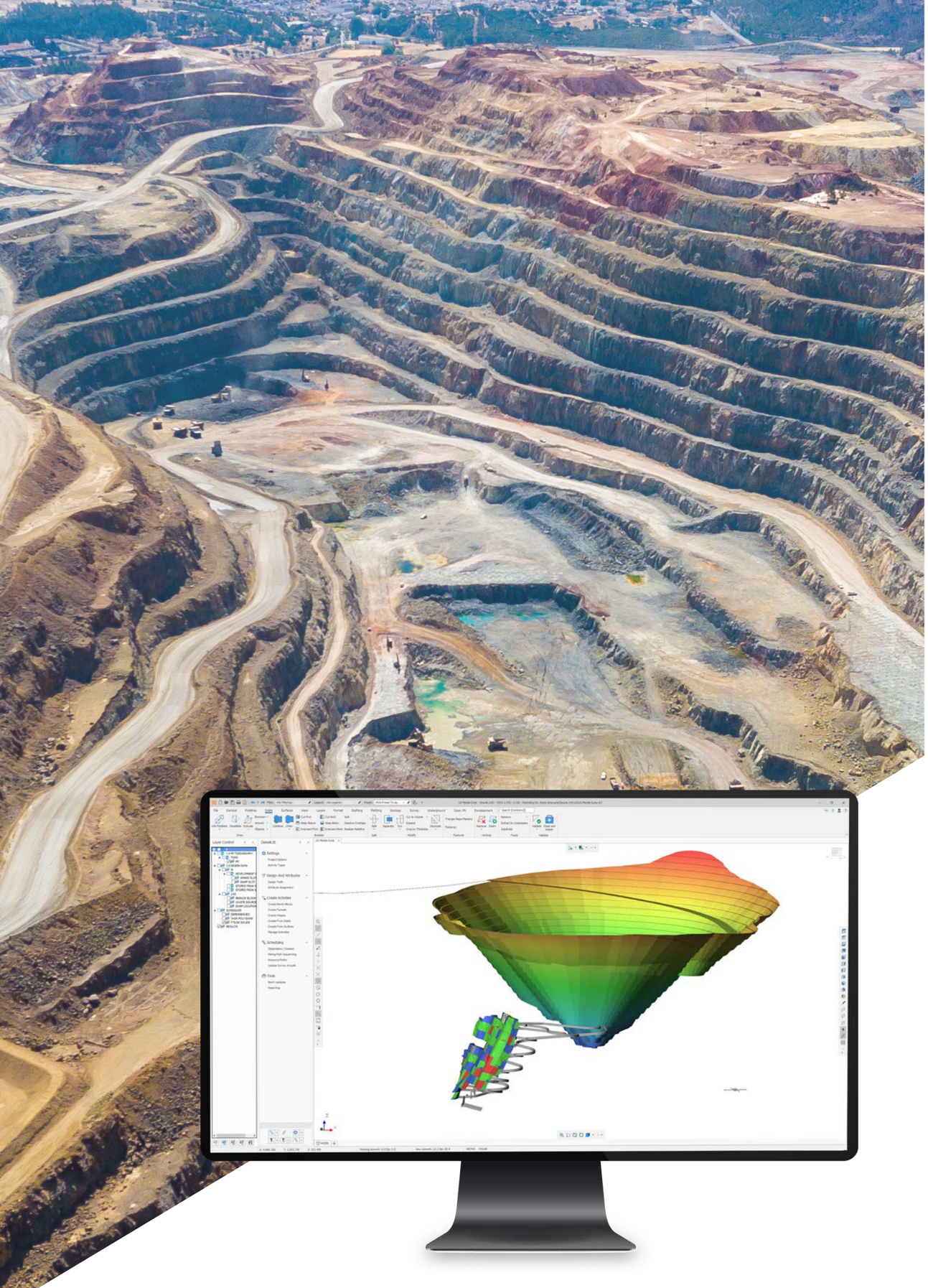
Standard functionality in Deswik.Spatial:

- Design & Solids Modeling
- Automated Design Capabilities
- Fast and Efficient Point Cloud Handling
- Environmental Design
- Dig Optimization

Expand Deswik.Spatial's functionality with other modules:

- Strategic Pit Design
- Geological Mapping
- Open Pit Drill & Blast
- Drillhole Optimization
- Landform and Haulage
- Ore Control

Discover Deswik.Spatial



Design & Solids Modeling

A powerful design platform with superior data handling

Fully-featured CAD engine

Handle large mining datasets with excellent graphics performance. Generate solids, slice and run Boolean commands. Automatic repair for invalid solids imported from other mining systems.

Open and customizable

Manipulate information using a powerful formula builder, instead of scripting. Integrate with most other mining and CAD packages.

Auditable and consistent processes

Add structure to the planning process and remove confusion for unfamiliar users with customizable, graphical workflows tied into the entire Deswik.CAD toolset.

Integrated data management

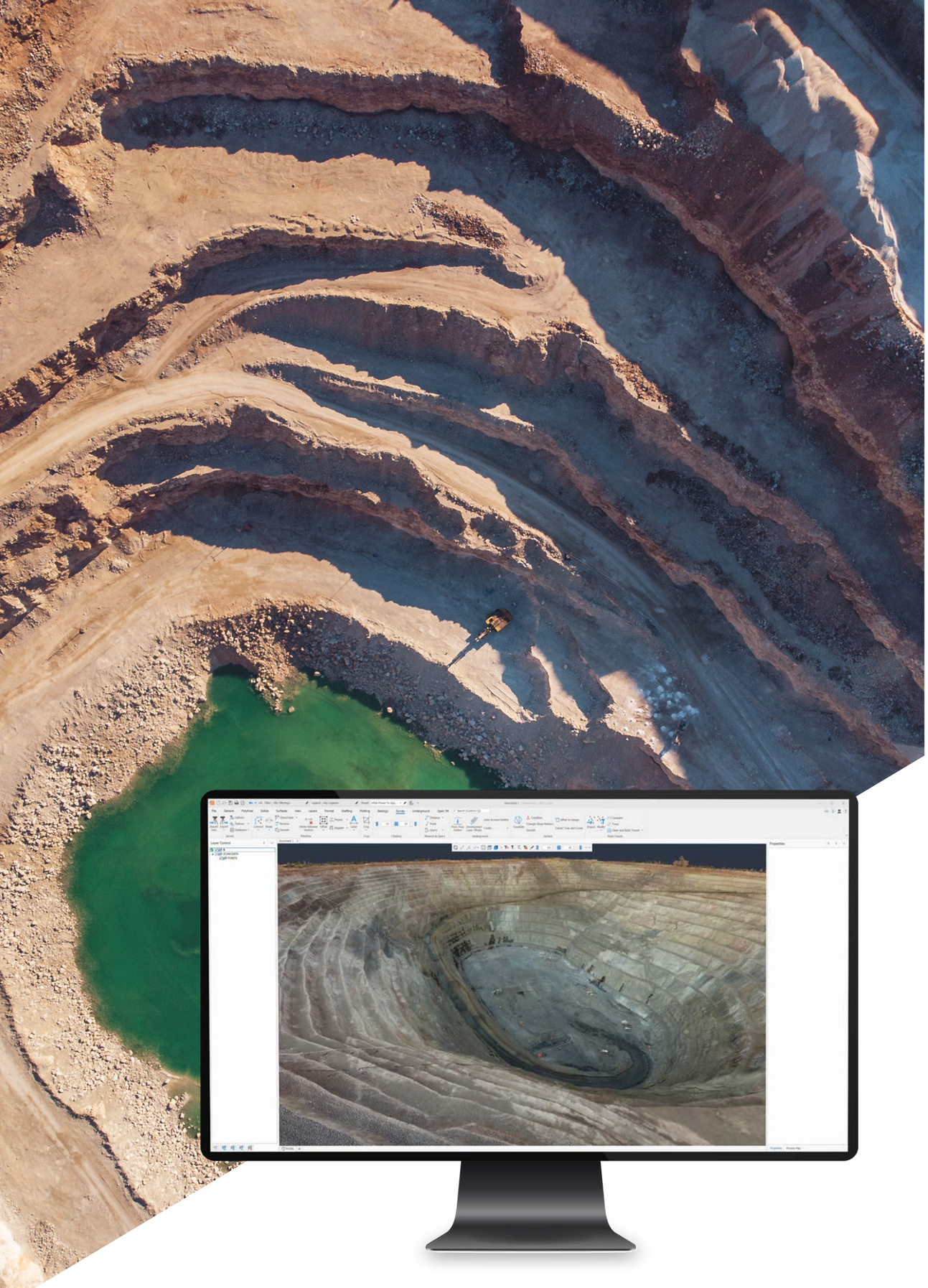
Advanced spreadsheet-style formulas for data calculations including 3D spatial lookup formulas and interrogation of solids for volume, area, and intersections. Interactive and rules-based filtering from attribute values.

Powerful reporting

Flexible data queries generated on demand including volumes, areas, attributes, properties, and data histograms. Familiar plotting functionality mirroring most other CAD systems.

Comprehensive mining design tools

Rules-based mine design engine for designs, allowing for scenario and alternative analysis. Solids and surface generation using a multitude of methods.



Survey

Fast and efficient point cloud handling

Direct integration with survey hardware

Import and export data directly with Leica, Trimble, and RIEGL native formats. Import and export point clouds in *.las/laz formats.

Compliance to plan tools

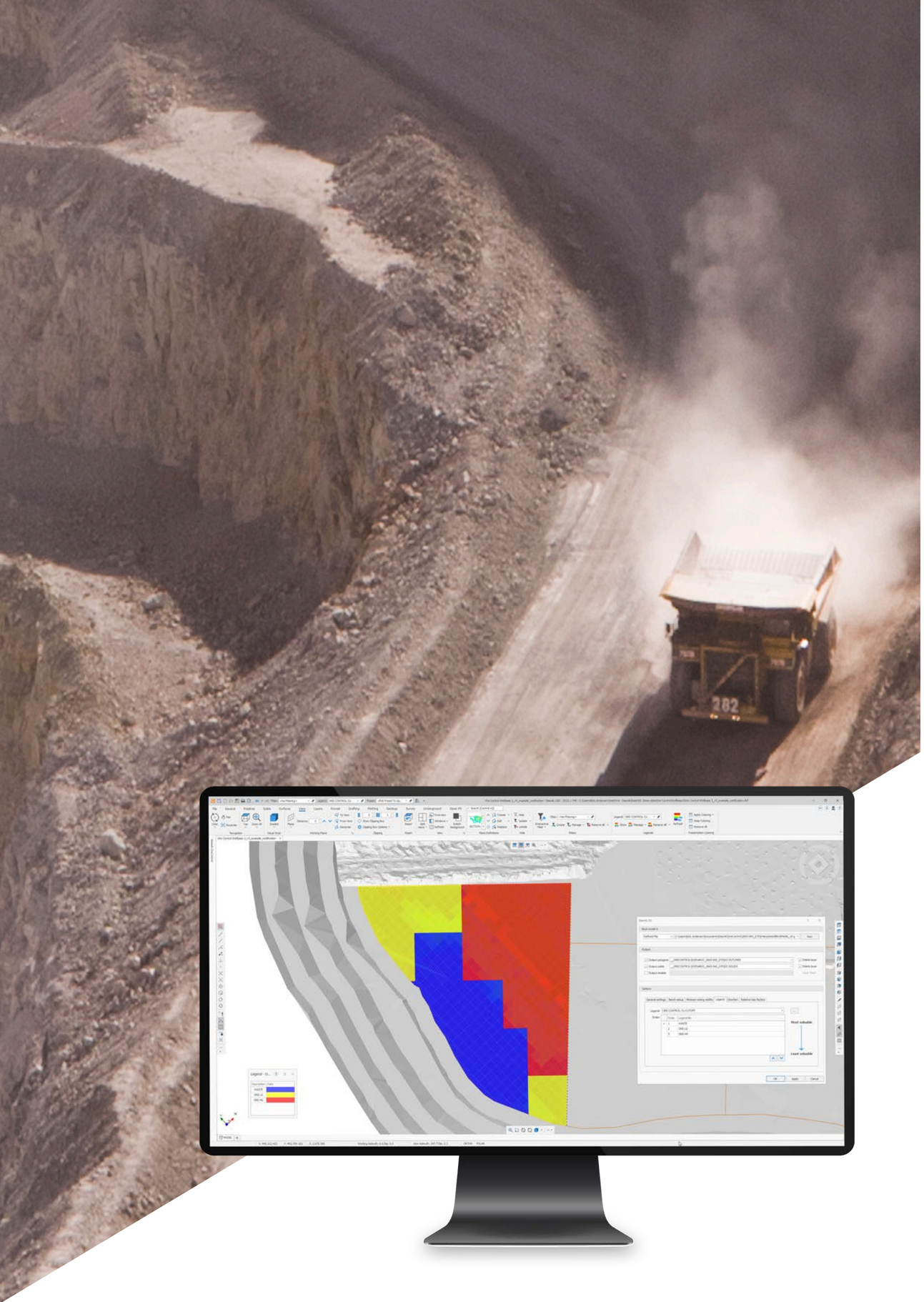
Check surveyed data against design to analyze compliance to design.

Point cloud handling

Generate a solid from scans including multiple drives and cross-sections. Automatically generate a survey outline on the floor of the drive from the scan data.

Road audit tool

Assess haulage and road compliance against design parameters.



Dig Optimization

Dig line optimization for open pit grade control

Constrained optimization

Design dig lines that minimize the dollar loss associated with the dig line misclassification of ore types for a given minimum mining width.

Minimum mining width

Quickly evaluate various minimum mining widths and cutoff grades. This allows the selection of a dig line set that best satisfies current short-term mine plan targets while taking into account mineral continuity as mining progresses through the deposit.

Deposit customization

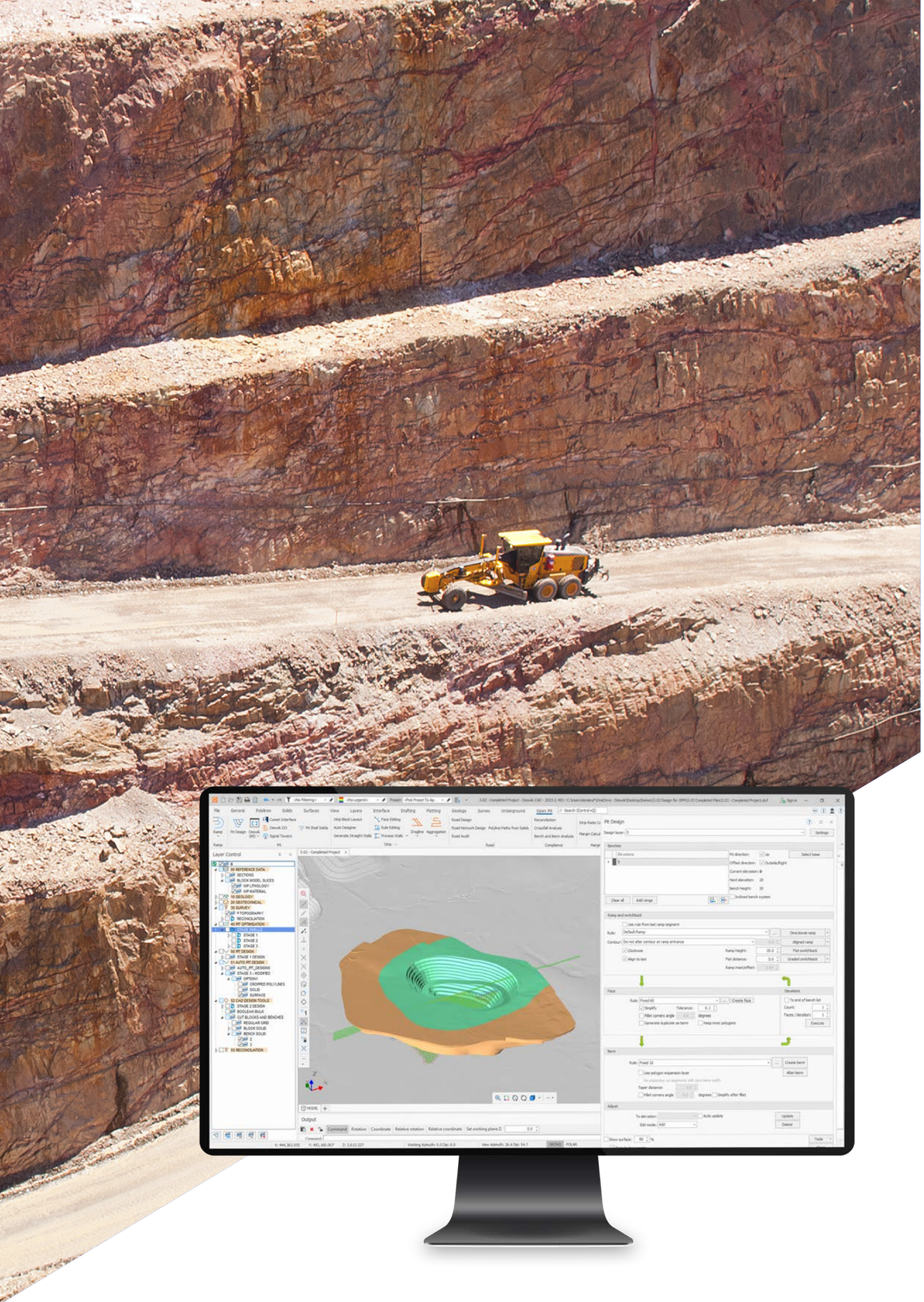
Customize and work with any deposit without the need for writing scripts. The system has been used on sites which use cutoff grades, net smelter return, grades, contaminants, and many other metrics for deciding which blocks to mine.

Digging direction

Easily determine digging directions in a few minutes. Automatically calculate the digging direction based on the blasts location relative to the ramp.

Immediate summaries

Provide immediate reports for each dig line design to evaluate various design options. Graphical feedback is also provided with the automatically designed dig line polygons that are overlaid on top of the block model. Generate reports to easily compare options.



Automated Design Capabilities

Easily generate design scenarios and analyze compliance to design

Pit shell optimizer

Using reserve solids, grids or block models, vary the revenue to calculate the pit shell delivering the maximum undiscounted cash flow.

Automated road design tool

Determine cut and fill requirements from road centerlines with solids creation and surface updating. Design to gradient and bench and berm limitations with cut and fill balancing for dropcuts.

Reconciliation

Generate as-mined, as-designed, and difference solids from initial, design, and final surfaces. Detailed reporting of compliance to plan from a 3D perspective.

Margin calculator

Wizard-based calculator of Net Present Value and incremental, cumulative, and maximum cumulative margins from reserve solids. Import, export and run multiple scenarios against defined costs and revenues as required.

Landform Engineering

Model your final landform reshape requirements

Reshape tools

Rapidly assess the reshape requirements and the associated material movement for final post-mining landforms. Used on either an as-built or predicted as-dumped surface to create a cut and fill-balanced final landform surface.

The Create Dump Surface tool will create a dump design surface, including prescribed dump lift crests and toes from the final landform surface.

Scenario analysis

Determine an optimized result and achieve maximum value for a project by running high-level scenarios in a short period to enable real-time, high-level decision making. Use scenarios to quickly replicate commands with minor variations to test sensitivity to input settings, balance sub-areas within a larger site, and reduce processing time.

Dozer push modeling tool

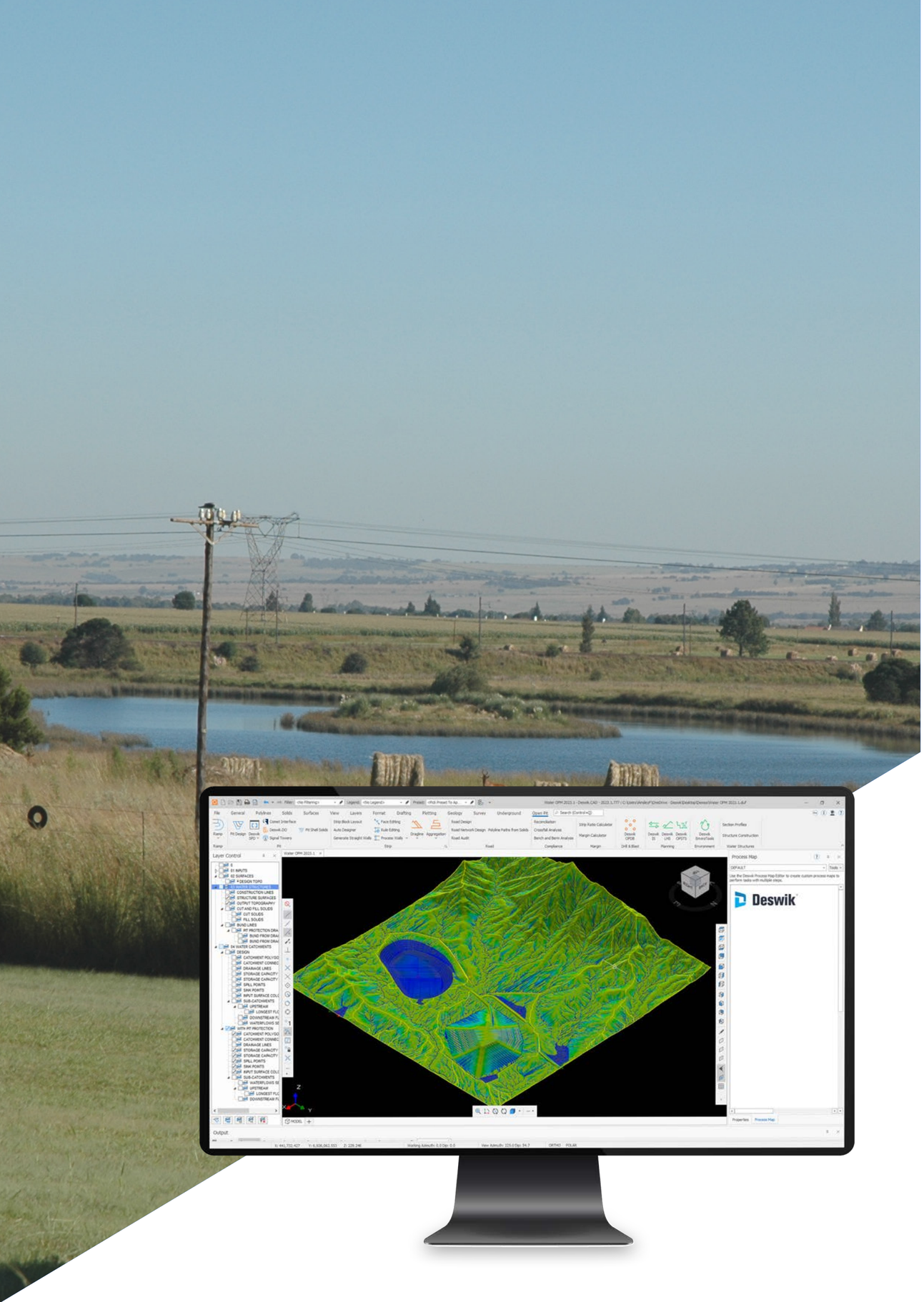
Allocates the material to move between the cut and fill blocks to a dozer or other equipment while minimizing the total push distance of the dozer material. Generates attributed polyline vectors between cut and fill blocks that can then be used as the basis for dozer push costing calculations.

Advanced workflows

Reduce the effort required to set up the inputs for the reshape tool and run the dozer push modeling over the resultant cut and fill solids. Use Process Maps to enable consistency, ease of training, and integrated costing to inform decision-making.

Closure costing modeling

The results generated from the landform engineering reshape and dozer push modeling tools can be used to build a site closure costing model. In conjunction with Deswik.LHS and Deswik.Planning, an integrated closure plan can be scheduled and animated for both reporting to regulators and stakeholder engagement.



Water Catchment Analysis

Rapid assessment water catchment analysis

Water catchment analysis

Rapid assessment water catchment analysis to understand where water is flowing or accumulating, and how the topography can be interactively altered to achieve the desired result through process maps. This process can highlight potential water management issues before they occur.

Sediment basin sizing

Estimate the volume of basins, dams, or ponds required for containment of runoff from extreme rainfall events and ongoing accumulation of mobilized sediment (erosion) as the landform evolves.

Sediment basin volumes are modeled by summing the volume required to store runoff from an extreme rainfall event and the volume of sediment predicted over time by a landform evolution model (net of removal through desilting events).

Water structure toolkit

Interactively add high-level design structures to topographies to check their location and downstream effects. These structures (drains and bunds) are built using default, modified, or custom-generated profile sections which are then applied to an input centerline. Design surfaces and cut and fill solids can be automatically generated and merged into an input topography.

Water flow query

Identify the upstream sources and downstream flows from points and regions of interest or sensitivity in the catchment area. Use with the Sediment Basin Sizing tool to model rain events.

Storage volume analysis

Automatically slice selected water storage solids vertically at specified increments, and then calculate the surface area, water volume, and cumulative volume at each elevation. Optionally export results to a spreadsheet and automatically graph the curves for analysis.

Produce results quickly and easily with Deswik's services

Consulting

Our consultants have significant operational and project-based experience across all mining sectors. We have a proven track record of delivering measurable improvements in mine planning processes, operations and asset value.

Armed with the latest software technology, we ensure that project outputs are delivered for both large and small mine operators, project teams, and investors.

- Mine planning, design and scheduling
- Software implementation
- Scoping, pre-feasibility, and feasibility
- Equipment selection and optimization
- Technical due diligence, peer reviews and audits
- Mine rehabilitation, water catchment analysis, and closure
- Ongoing engineering and training support

Training & Resources

Deswik offers a range of training courses to empower your team with the knowledge and skills to use our products efficiently. We tailor training to suit your learning requirements, whether in-person at one of our global offices, at your site, or via virtual classroom.

Our training catalog includes introductory, self-paced, and online learning for our core products, or facilitator-led training across all mining sectors on using Deswik software for specific applications.

Support

As trained engineers and mining professionals, our global support team provide high-quality support services to ensure you have the best experience using our software. Our five support centers are available for customers to access all over the world through phone, email, or online through the Deswik Client Portal.

About Deswik

Leveraging decades of professional software development experience and a proven history of building technical mining applications, Deswik provides industry-leading tools to ensure that mine plans are robust, transparent and achievable.

Our software is developed to take advantage of the latest high performance technologies and cutting-edge computing algorithms, all accessed through a flexible, intuitive interface.

By avoiding the legacy issues faced by other older packages, coupled with our outstanding customer support, we provide complete solutions to meet the demands of modern mining. Deswik is committed to delivering comprehensive tools and quality support for all mining sectors.