



**Deswik.EnviroTools**  
Environment, sustainability and  
mine closure

Delivering integrated mine  
closure planning solutions



# Innovative software tools delivering optimized and integrated mine closure planning outcomes



## Maximize project value through integrated mine closure planning and costing

The suite of Deswik.EnviroTools has been developed for mines looking to optimize their rehabilitation and closure outcomes and manage the risks involved in mining with challenging environmental constraints.

The Deswik.LandformEngineering and Deswik.WaterCatchment modules provide an integrated approach to environmental planning; encompassing mining production, progressive and legacy rehabilitation, and mine closure.

Traditionally, the process to create final landform designs from operational dump designs has involved detailed, repetitive section work and has been a largely separate process to production mine planning. Now, with Deswik.EnviroTools you can integrate your mine planning and mine closure to quickly and easily assess:

- Post-rehabilitation landforms
- Equipment volumes and costings
- Multiple scenarios
- Cost-efficient areas to prioritize for progressive rehabilitation
- Updated treatment costing inputs
- Water catchment analysis for site water balance and Acid Mine Drainage (AMD) modeling
- Compliance monitoring of rehab works
- Overall optimization of project value.

# New problems demand new solutions

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.

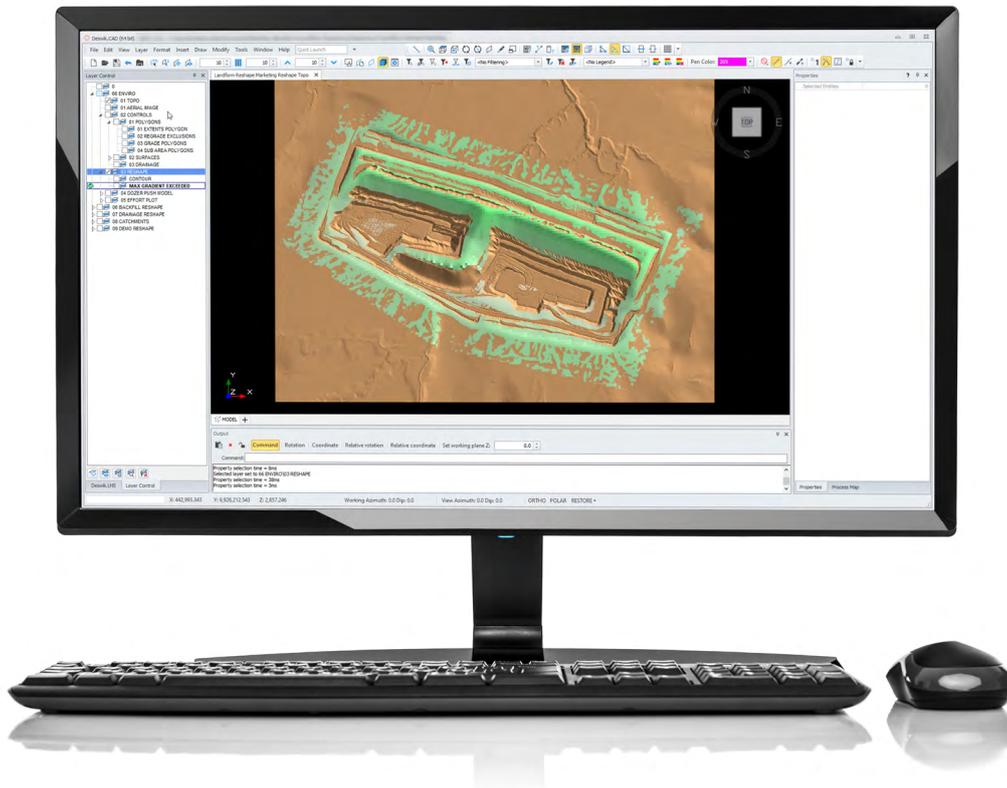
By avoiding the legacy issues faced by other older packages, coupled with our outstanding customer support, we provide complete solutions to meet the demands of modern mining. Deswik is committed to delivering comprehensive tools and quality support for all mining sectors.

## Industry leading landform reshaping

The modules within Deswik.EnviroTools allow users to rapidly:

- » Optimize cut and fill reshape, dozer push and trucking options, which make up a large proportion of closure costs.
  - » Conduct catchment analysis to give pit designers immediate feedback on water catchment impacts of design choices.
  - » Assess water infrastructure requirements by designing interactive water management structures and calculating rainfall runoff and sediment basin volumes.
  - » Calculate closure cost and financial assurance estimates, rehabilitation and closure schedules and costs.
  - » Integrate schedules and costs with the mining production plan to deliver a site master plan that can be used to test scenarios and optimize for value.
- » Communicate to all stakeholders using 3D animations, as well as geospatial, schedule and cost reporting for other planning.
  - » Balance cut and fill reshape to input final landform grades.
  - » Analyze water catchments and incorporate drainage into the final landform surface.
  - » Conduct interactive queries of water flows, illustrating upstream catchments and downstream flows from point of query.
  - » Model dozer push of cut to fill blocks.
  - » Create a dump plan, including bench toes and crests, from an input final landform surface.





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## Deswik.LandformEngineering

### Model your final landform reshape requirements

#### Reshape Tools:

- » Rapidly assess the reshape requirements and the associated material movement costs 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:

- » Used to determine an optimized result, achieving maximum value for a project.
- » The ability to run high-level scenarios in a short period to enable real-time, high-level decision making.
- » Use scenarios to quickly replicate Deswik.EnviroTools 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:

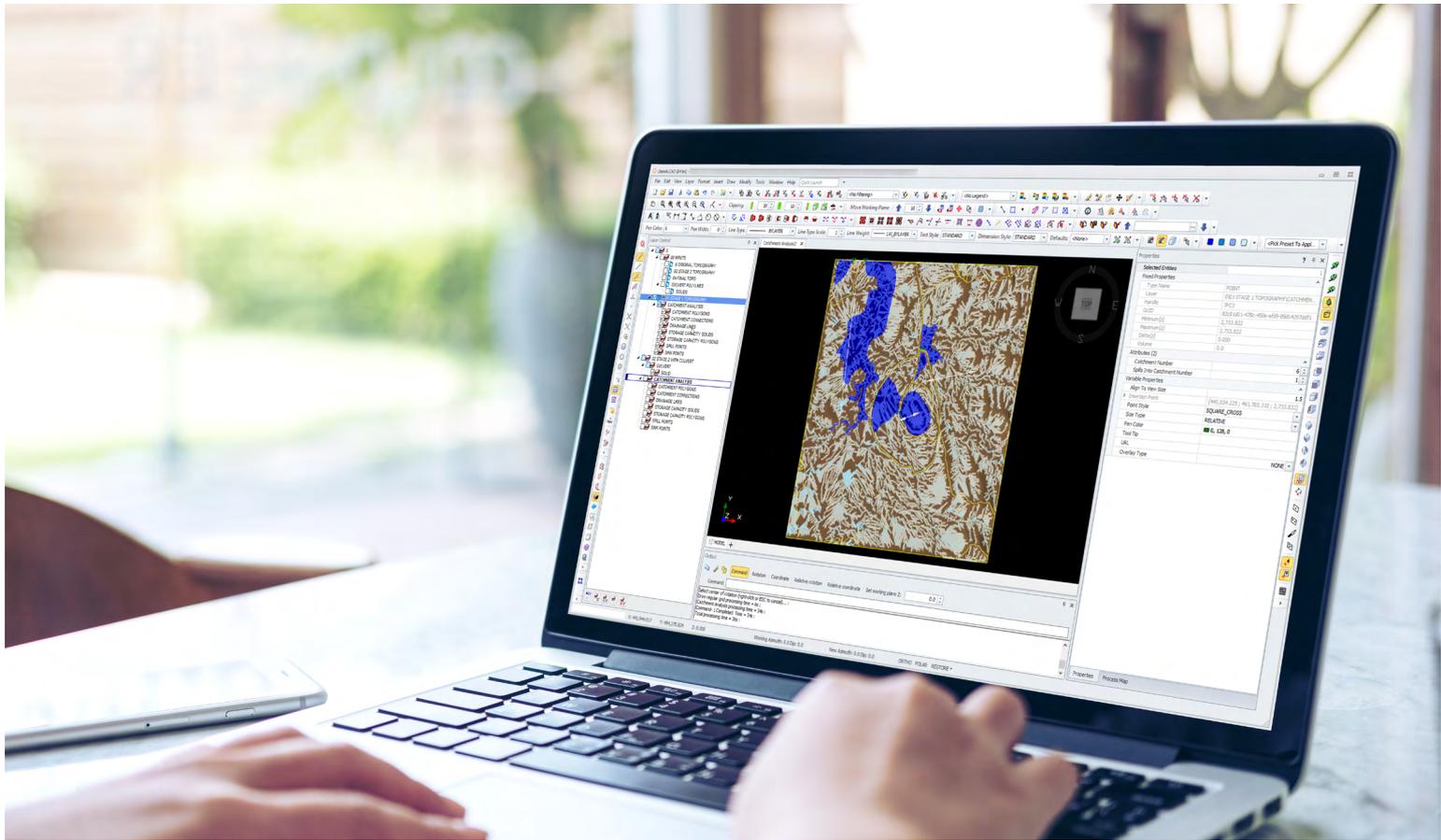
- » Allocates the material to move between the cut and fill blocks to a dozer or other equipment while minimizing the total push distance of the dozer material.
- » Generates attributed polyline vectors between cut and fill blocks that can then be used as the basis for dozer push costing calculations.

#### Advanced Workflows:

- » The software uses advanced workflows to 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.Sched, an integrated closure plan can be scheduled and animated for both reporting to regulators and stakeholder engagement.



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## Deswik.WaterCatchment

### Rapid assessment water catchment analysis

#### Water Catchment Tools:

- » Rapid assessment water catchment analysis to understand where water is flowing and accumulating, and how the topography can be interactively altered to achieve the desired result.
- » Water flows can be interactively queried, and rainfall runoff and sediment loss calculated for site-specific scenarios.
- » Identify the upstream sources and downstream flows from points and regions of interest, or sensitivity in the catchment area.
- » 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.
- » Can be integrated into short to long-term planning processes to highlight potential water management issues before they occur.

#### Water Structure Toolkit:

- » Interactively incorporate water management structures, such as drains and bunds, into a landform surface to assess their impact on water flows.

“Avoid complications by proactively analyzing and managing water flows”

# Our industry leading software solutions include

## **Deswik.CAD**

### Design & Solids Modeling

A powerful design platform with superior data handling – the next generation of planning tools for mining.

## **Deswik.AdvSurvey**

### Advanced Survey

Fast, efficient point cloud handling.

## **Deswik.Agg**

### Coal Seam Aggregation

Simplifying complex aggregation processes to create fit for purpose Run-of-Mine reserves.

## **Deswik.ASD**

### Auto Stope Designer

Automatically create mineable stopes for narrow-vein vertical mining methods.

## **Deswik.DD**

### Dragline & Dozer Section Designer

Automated dragline section design tool with direct integration into Deswik's mine design, scheduling and data management tools.

## **Deswik.DO**

### Dig Optimizer

Design of optimum dig lines for open pit grade control.

## **Deswik.OPDB**

### Open Pit Drill & Blast

Fast, efficient drill and blast design for surface mining methods.

## **Deswik.SO**

### Stope Optimizer

Underground stope shape optimization using the industry leading SSO v3.

## **Deswik.UGDB**

### Underground Drill & Blast

Fast, efficient drill and blast design for underground mining methods.

## **Deswik.Sched**

### Gantt Chart Scheduling

A powerful Gantt chart scheduler specifically designed to handle the challenges of mine planning.

## **Deswik.OPS**

### Operations Planning and Control

Collaborative short-term planning and shift execution tool for monitoring and managing compliance to plan.

## **Deswik.Blend**

### Material Flow Modeling

Optimize your product value with material flow modeling for both coal and metals.

## **Deswik.SOT**

### Schedule Optimization Tool

Realize more value from your resource with an NPV optimized schedule.

## **Deswik.IS**

### Interactive Scheduler

Bridging the planning gap between designing and scheduling.

## **Deswik.LHS**

### Landform & Haulage

Understand material movement like never before with scenario-based modeling and analysis.

## **Deswik.OPSTS**

### Open Pit Short-Term Scheduling

Short-range ore control modeling and design tool.

## **Deswik.MDM**

### Mining Data Management

A spatial database and process workflow management tool.

## **Deswik.Mapping**

### Mapping app

Perform geological mapping on-the-go.

## **Deswik Advanced Modules**

Advanced functionality tailored to the specialized demands of the specific mining sectors.

