Deswik®
Delivering mining efficiency

Deswik.LHS

Landform & Haulage

GROUND-BREAKING SOFTWARE DELIVERING OPTIMIZED HAULAGE OUTCOMES

Maximize project value through superior material movement modeling

Building from the Deswik.CAD graphics engine, Deswik.LHS has the power, flexibility and accuracy to deliver the haulage solutions you've always needed. Covering all variables in the material movement equation, Deswik.LHS includes haul road analysis, detailed truck modeling, fixed and mobile conveying and cost modeling. Offering numerous haulage strategies from minimizing dumping height to reducing haulage distance, the easy-to-follow wizard generates multiple scenarios with ease.

Model real world factors including TKPH restrictions, haul road congestion and speed limits; calibrate your GPS tracking data to your modeled cycle times. A comprehensive reporting suite reveals the crucial data behind your material movement schedule including detailed haulage paths, cycle time analysis and stage plans. Environmental reporting includes disturbance and rehabilitation forecasting, wet weather simulation, and final landform analysis.

Deswik.LHS is applicable for mining schedules at any planning resolution across any sector.

A Fresh Perspective

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.

Benefits

Delivering more value through effective mine planning

- Deterministic model for every block of material captures variability and peak requirements for haulage and dump inventory.
- Expose issues hidden by averaging single hauls across large volumes in traditional methods.
- Evaluate the effects of haulage variables efficiently, refine strategies and identify value drivers using scenarios.
- Analyze multiple materials in each scenario; map Run-Of-Mine and waste with rejects and tailings hauled or pumped in-pit.
- Utilize material movement schedules from multiple sources including Deswik products, CSV files and other standard formats.
- Update Deswik.Sched files automatically with key output haulage information for reporting.
- Increase project value by capturing haulage issues previously pushed down the planning value chain by traditional haulage modeling.
- Calibrate theoretical cycle times against GPS logs of truck hauls for accurate models set to site conditions.
- Generate precise in-pit and Out-Of-Pit Dump reserves through Deswik.CAD, trimmed to survey or detailed short term designs.
- Model dynamic haul paths, stop signs and speed limits, rolling resistance, congestion and release dates.
- Report all aspects of a haulage scenario from mining block to haul routes to dump block via animations and tabular reports.
- Customize reporting of individual or macro haul data, stage plan surfaces and contour plots.
- Report mining and dump disturbance, forecast rehabilitation and selective material placement. For example, for acid mine drainage and tailings.
- Run mine closure surface tools, simulate wet weather events, and do catchment reporting.

Deswik.LHS

Industry Leading Haulage Modeling

Uncover your true haulage requirements

- Produce detailed, meaningful dump schedules from large datasets to accurately model complex material movements and compare dumping strategies.
- Integrate with production scheduling to maximize opportunities and manage production risk at both tactical and strategic time horizons.
- Model dragline, cast blast and dozer dumps as well as standard truck haulage or fixed and mobile conveyors.

Superior Scheduling Functionality

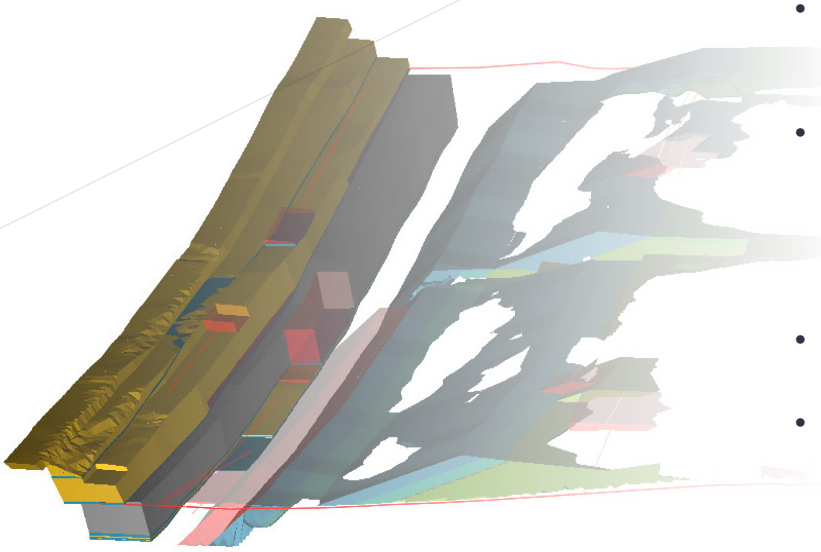
Greater control and flexibility than ever before

- Detailed material mapping links source and dump areas by material against each resource type for more accurate modeling.
- Destination overrides to force material into specific dump locations.
- Limit haul roads with congestion, so a different haul path must be found once congestion limit is reached.
- Vary performance over time to model seasonal weather variations and reflect actual delay events with release dates for haul roads and dump areas.

Expanded Scope and Accuracy

Meaningful detail gives meaningful results

- Unique method of importing site-based truck GPS data and calibrating software to actual cycle times.
- TKPH tolerance and limiting of hauls to ensure that changing tire manufacturer can be quantified.
- Rolling resistance rules to automatically populate haul path rolling resistances.



Managed Scenarios

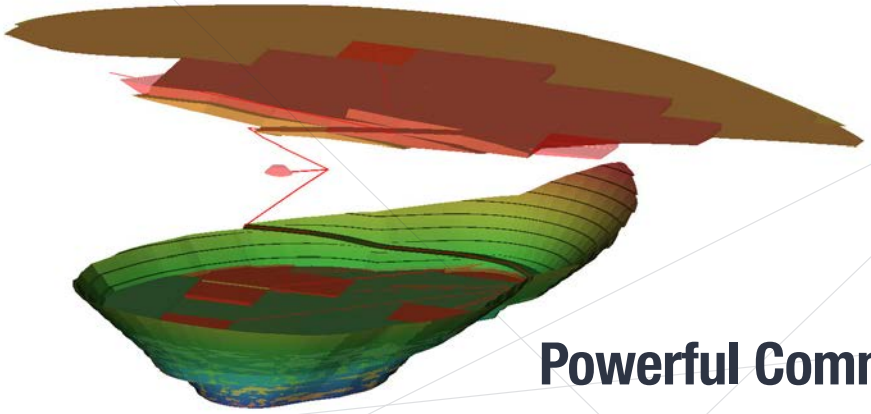
Understand what drives your dumping

- Intuitive scenario manager and comparison tools facilitate rapid scenario generation for sensitivity analysis and effective contingency planning.
- Set dumping strategies that can be varied over time including:
  - Minimize cycle time
  - Minimize RL
  - Minimize fuel usage
  - Minimize cost.
- Manage stockpiling and re-handle through integration with Deswik.Blend.
- Investigate the impact of truck limited haulage when integrated with Deswik.Sched.

Detailed Design and Haul Path Modeling

Find the road best traveled

- Intuitive haul path and slot connection tools.
- Dynamic haul paths that move with a changing landform throughout the schedule.
- Manually audit cycle times directly from a 3D haul path.



Powerful Communication

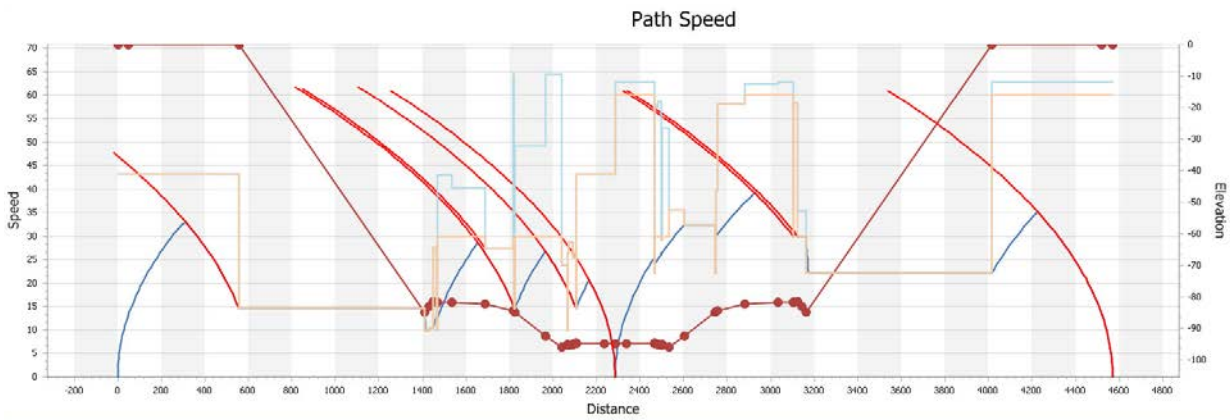
Superior reporting tools for better understanding

- Rapid generation of mining stage plan surfaces and contour plots.
- Comprehensive reporting toolbox to meet industry demands, including:
  - Interactively display haulage results with the 3D solids
  - Disturbance and dumping polygons
  - Export results directly to Deswik.Sched for integrated reporting.
- Animations and period progress plots for communication of the plan.
- Auditing tools ensure that the material has been moved in a practical fashion.

Environmental Planning

Quantify your impact

- Understand the final landform with volume balancing and mine closure planning tools.
- Wet weather event simulation with catchment and run-off reporting.
- Selective material placement for sensitive materials including acid mine drainage and tailings.
- Report fuel and CO^2 emissions.



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

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.Sched - Gantt Chart Scheduling A powerful Gantt chart scheduler specifically designed to handle the challenges of mine planning.

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.Blend - Material Flow Modeling Optimize your product value with material flow modeling for both coal and metals.

Deswik.Agg - Coal Seam Aggregation Simplifying complex aggregation processes to create fit for purpose Run-of-Mine reserves.

Deswik.SO - Stope Optimizer Underground stope shape optimization using the industry leading SSO v2.0.

Deswik.ASD - Auto Stope Designer Automatically create mineable stopes for narrow-vein vertical mining methods.

Deswik.OPDB - Open Pit Drill & Blast Fast, efficient drill and blast design for surface mining methods.

Deswik.UGDB - Underground Drill & Blast Fast, efficient drill and blast design for underground mining methods.

Deswik.SOT - Schedule Optimization Tool Realize more value from your resource with an NPV optimized schedule.

Deswik.MDM - Mining Data Management A spatial database and process workflow management tool.

Deswik.FM - File Manager Proactively manage data versioning with an integrated document management system.

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

Deswik®

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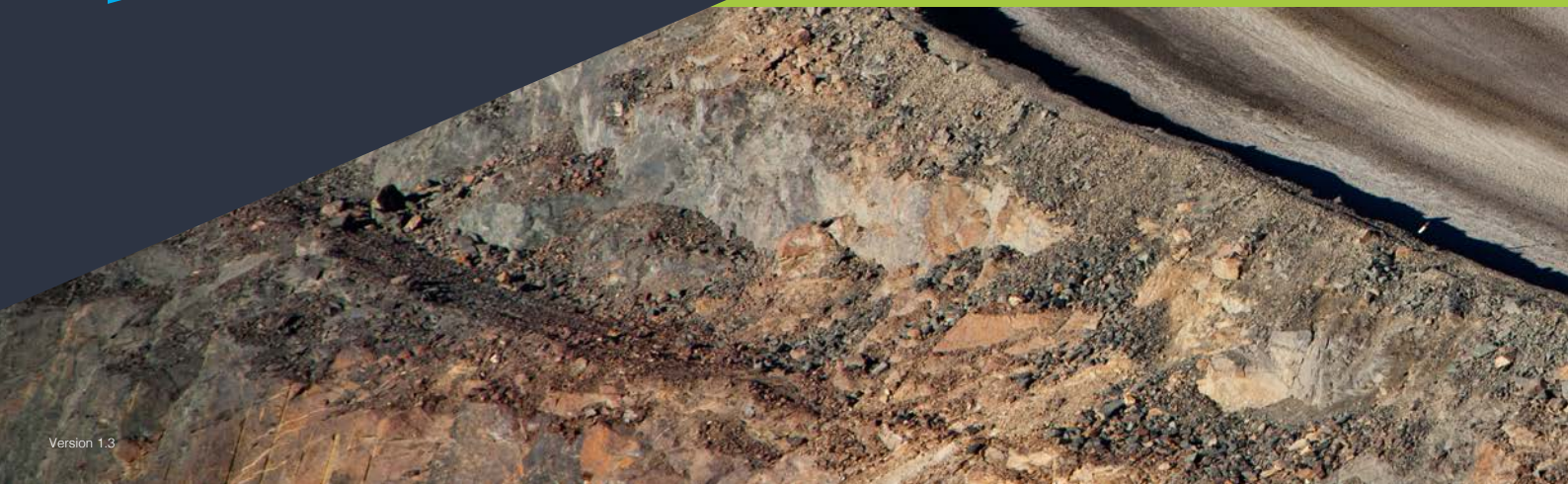

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