



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

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 equally applicable in open pit and underground environments, incorporating mining schedules at any planning resolution.

INDUSTRY LEADING HAULAGE MODELING

- » Deterministic model for every block of material captures variability and peak requirements for haulage and dump inventory.
- » Exposes issues hidden by averaging single hauls across large volumes in traditional methods.
- » 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.

MANAGED SCENARIOS

- » Scenario manager gives efficient evaluation of haulage variables, to refine strategies and identify value drivers.

- » Multiple materials in each scenario; map ROM and waste with rejects and tailings hauled or pumped in-pit.
- » 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.
- » Manages stockpiling and re-handle through integration with Deswik.Blend.
- » Investigate the impact of truck limited haulage when integrated with Deswik.Sched.

SUPERIOR SCHEDULING FUNCTIONALITY

- » Input material movement schedules from multiple sources – Deswik.Sched, Deswik.Blend flowlog, .CSV and others.
- » Automated updating of Deswik.Sched files with key output haulage information for reporting.
- » 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
 - Dump areas.



EXPANDED SCOPE AND ACCURACY

- » Model dragline, cast blast and dozer dumps as well as standard truck haulage or fixed and mobile conveyors.
- » Calibrate theoretical cycle times against GPS logs of truck hauls for accurate models set to site conditions.
- » Unique method of importing site based truck GPS data and calibrating software to actual cycle.
- » 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.

DETAILED DESIGN AND HAUL PATH MODELING

- » Generate precise in-pit and OOPD reserves through Deswik. CAD; trimmed to survey or detailed short term designs
- » Dynamic haul paths, stop signs and speed limits, rolling resistance, congestion and release dates.
- » 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.

EFFECTIVE REPORTING TOOLS

- » 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.
- » Rapid generation of mining stage plan surfaces and contour plots.
- » 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

- » Mining and dump disturbance reporting. Rehabilitation forecasting and selective material placement (acid mine drainage, tailings, etc.).
- » Understand the final landform with volume balancing and mine closure planning tools.
- » Wet weather event simulation with catchment and run-off reporting.
- » Report fuel and CO2 emissions.