

Integrated haulage strategy cuts costs

Maptek™ recently added advanced strategic mine scheduling optimization tools to its mine planning capabilities. Maptek Evolution generates medium, long term and strategic schedules for open pit operations.

Now known as Maptek Evolution, Evorelution proved its worth in a scheduling study at the Tropicana gold mine in Western Australia in 2012.

One large block model covered the Tropicana project, which extended more than 5km along strike and to a depth of 400m. Ten waste destinations were involved. Practical medium and long-term mine plans were developed from the resource model.

The mine plans met mill feed requirements while minimizing haulage costs, maximizing recovered metal production and minimizing stockpile rehandle.

The efficient scheduling process reduced the time to generate optimal fleet haulage routes for the 10 waste landforms.

Haulage costs were lowered by developing a practical operating plan which met all of the complex objectives associated with operational readiness.

Plans had to incorporate infrastructure such as tailings dam lifts, ROM pads and haul roads, and allow for growth medium (topsoil) as well as encapsulation of potentially acid generating material.

Other requirements were to build in truck ramp-up strategy, and to allow for variable period length and variable crusher throughput, which is dependent on lithology, to process 5.8 to 6.6 mtpa.

Productivity benefits

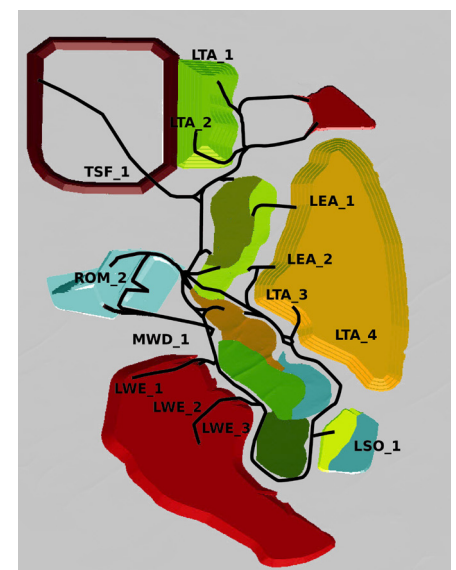
As well as maximizing value by meeting required metal production, haulage costs were reduced by 10%. Additional productivity benefits were realized by deferral of capital outlay on fleet purchases and early identification of where, when and how much land needs to be cleared.

Analysis revealed that THE purchasing of three extra trucks could be delayed for 18 months, saving more than 1,000 haulage hours per month for this period.

Closure planning was included as part of the mine plan. The benefit of this lies in identifying areas where final landform development can commence early in the mine schedule. Management is then able to make decisions based on known clearance costs.

Running production scheduling, route allocation, haulage cycle time analysis and waste landform optimization within the same package meant a 30% reduction in mining software costs.

Technical staff also reported improved efficiency through working across planning horizons, with reduced training costs and enhanced workflows.



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