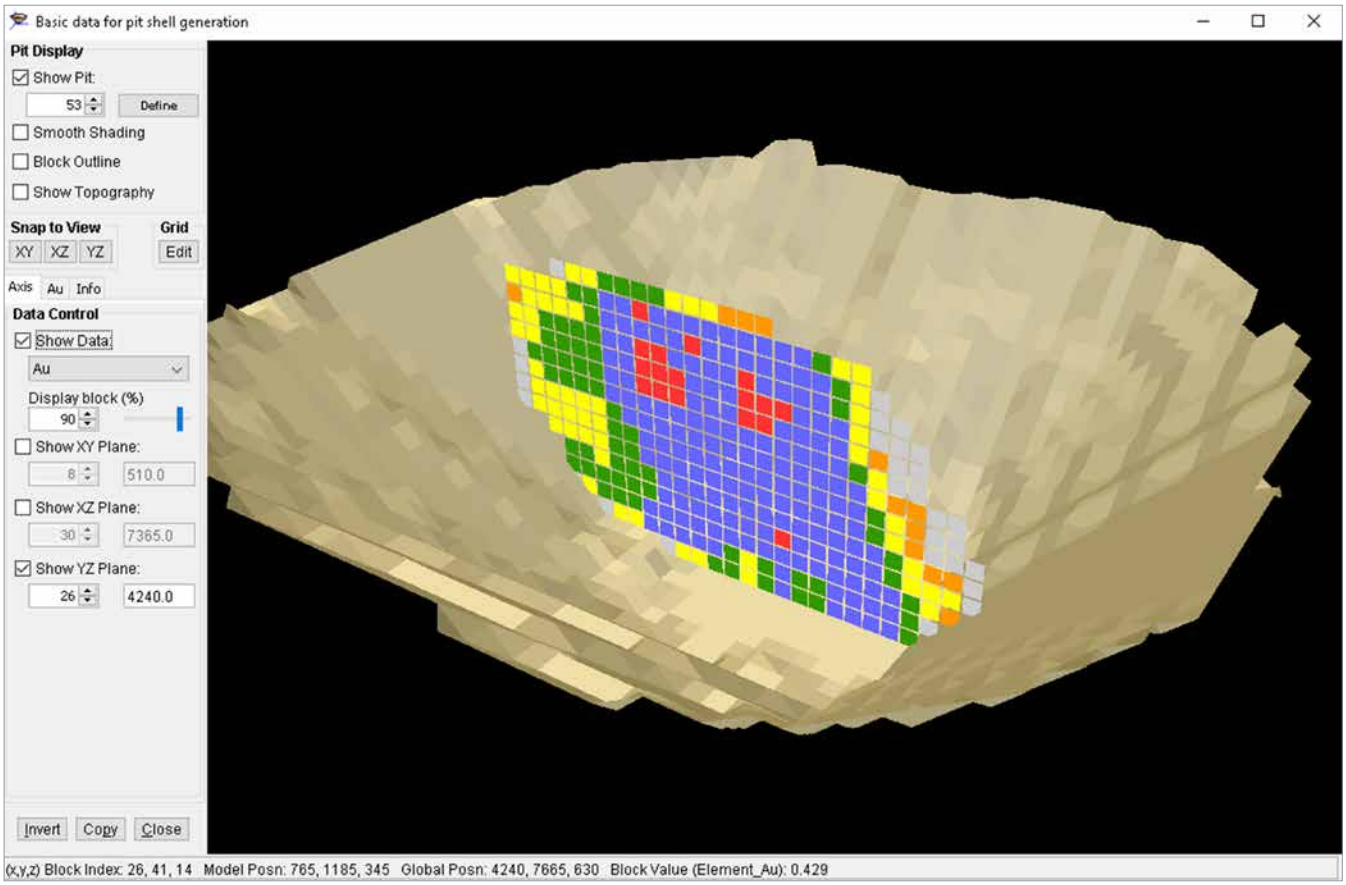
GEOVIA WHITTLE

GEOVIA PIT OPTIMIZER

Start with a Strong Foundation



The Pit Optimizer is the foundation of GEOVIA Whittle™. Designed to produce a seamless workflow, the Pit Optimizer provides tools for importing data, manipulating resource models, modelling pit slopes, performing pit optimization, and analyzing results.

Whittle is completely integrated, so items such as look-and-feel, data manipulation tools, and help files are consistent across all components of Whittle.

DATA IMPORTATION

The Pit Optimizer accepts data in the industry standard Whittle format. Resource model files are imported with or without a Parameters File. On completion of importation, detailed grade and tonnage information are provided to assist in the reconciliation processes. Three-dimensional interactive visualization aids provide an invaluable tool for examining the ore body structure.

MODEL MANIPULATION

The Pit Optimizer can transform block models using extend, truncate, merge, and split capabilities. In addition, global changes can be applied to element data and complex equations can be generated to write positional variables into the model.

PIT SLOPE MODELLING

The Pit Optimizer provides the most comprehensive and flexible slope modelling system available for pit optimization. Pit slopes are defined for the whole model in a variety of flexible ways. Simple rectangular regions can be defined, or alternatively, any shape slope region can be used by assigning slope profiles to individual blocks. Up to fifty slope profiles can be defined with each profile consisting of up to eight bearing/slope pairs. Profiles are then assigned to different parts of the block model, with total flexibility in the definition of slope region shapes.

PIT OPTIMIZATION

Pit optimization is achieved through a Whittle implementation of the well-known Lerchs-Grossmann algorithm. The pit optimization function allows:

- very simple or very complex pit slope modelling, including the application of user-defined "additional arcs" to represent irregular contiguous structures;
- easy user-definition of "expensive" blocks that are used to represent lease boundaries or immovable objects such as processing plants, which cannot be under-mined; and
- flexible price, cost and processing models that can be as simple or as complex as the user requires. Expressions can be defined to allow cost and price variation as a function of the position in the model and/or grade, or even in response to a broad range of special functions and operators.
- user-defined settings, which affect the precise manner in which the optimization proceeds, control pit optimization. Up to 100 optimal pit outlines can be produced in a single run to form the basis for pit and pushback designs and for a range of sensitivity, risk, and 'what if' analyses; and
- alternative use of the Pseudoflow algorithm, which is renowned for the speed in which it generates pit shells, even for large datasets.

ECONOMIC SCENARIOS

The user sets the base case for scheduling and analysis, including costs, prices, throughput limits, recoveries etc. Mine planners can apply the same settings used in the pit optimization or modify them in order to apply special analysis techniques. The vast majority of the settings in the Economic Scenario can be varied over time, adding to the flexibility of the model.

ANALYSIS AND GRAPHS

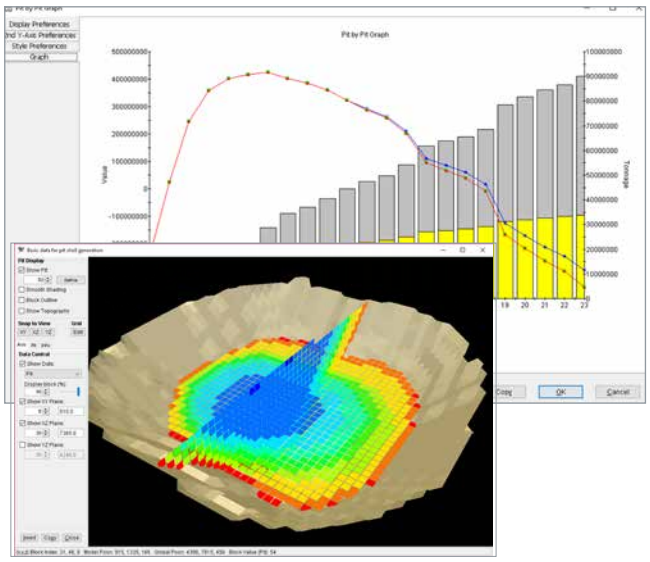
The user specifies one of three different life-of-mine scheduling techniques and views graphs of the results, or export data for further spreadsheet analysis. Each analysis generates a comprehensive summary report, outlining all the assumptions and settings, as well as the details of all the life of mine schedules produced.

DATA EXPORT

A large range of data and reports can be exported or printed. These include audit reports for each model imported, block models, schedules, pit outlines, and data from analyses.

DATA VISUALIZATION

The Pit Optimizer incorporates an interactive 3D viewer for instant visual examination of block models, pit outlines, pushbacks and mining schedules.



Integrated, easy-to-use working environment.

For more information visit 3ds.com/GEOVIA/Whittle or email GEOVIA.Whittle@3ds.com.

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