The evolution of the Monty Geological model and the revolution of the onsite modelling and grade control processes.

JB Crow[1], R Dale[2], P Willems[3]

Note: Presenting author's name should be underlined.

1.Project Geologist, Sandfire Resources, West Perth, Western Australia, 6005. Email:james.crow@sandfire.com.au
2. Project Geologist, Sandfire Resources, West Perth, Western Australia, 6005. Email:roseanna.dale@sandfire.com.au
3.Mine Geologist, Sandfire Resources, West Perth, Western Australia, 6005. Email:peter.willems@sandfire.com.au

Keywords: Implicit Modelling, Leapfrog, Workflows

ABSTRACT (USE 'HEADING 1' STYLE)

The Monty Copper Gold deposit is an ultra-high grade mine in Sandfire Resource's Doolgunna region which was completely drilled out and developed within 2 years of commencing mine development. During this period, a total of 986 grade control diamond drillholes were completed, assayed and validated, 15 levels developed, and 3,136 faces mapped.

The aggressive schedule meant a high flow of geological data was produced, validated and incorporated into regular geological model updates. To process this data at a rate which allowed for timely use, more robust data processing methodologies needed to be generated. A new validation system was implemented which required two levels of validation being applied to any diamond drilling update. Step one was the validation of initial physical data including survey pick-ups and logging. This was done prior to new drill data being added to the geological model. Step two was the validation of assay data which was required prior to resource estimation.

The implementation of Seequent's Leapfrog modelling software also allowed for a more seamless and efficient modelling workflow. The use of the Leapfrog vein systems allowed for more rapid generation of geological models which then afforded more time for stringent assessment of the mineralisation system. An example of this was the introduction of cross-shift peer reviews in which opposing rosters of geologists would rigorously evaluate the previous rosters work prior to reporting.

This additional level of validation resulted in more robust geological models and the identification of new unexpected ore trends. This presentation will detail the evolution of the Monty Geological model from a simple tabular indicated resource into a complex highly refined measured resource. Themes will include how the model was produced using workflows developed and optimised to meet key deliverables.