

Smart Mine Scheduling Improves Project Value by \$192 Million

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Partners in Mine Planning

orelogy is a specialist mine planning consultancy with extensive experience in the planning and management of a resource. orelogy personnel have operational and consulting experience throughout the world, in a range of different commodities.

Established in 2005, orelogy is an agile and innovative consultancy that adopts a partnership approach with clients to develop practical solutions within a strategic framework. This approach ensures the delivery of key client outcomes.

In February 2022 orelogy was acquired by idoba. idoba is an innovation ecosystem that identifies and solves problems by connecting technology offerings, expertise, and (mostly but not exclusively) energy and resources sector technical capability, to co-create a better future. We now provide idoba with crucial mining domain knowledge as part of their vision to co-create a better and more sustainable future, in mining and beyond.

orelogy scheduling software

orelogy are “scheduling experts” and in seeking improved ways to deliver practical solutions to our clients we developed EVORELUTION - a best-of-breed, open-pit mine scheduling solution.

In 2014 Maptek, a world leading mining software provider, acquired EVORELUTION from orelogy and rebranded as 'Maptek Evolution'. This is an Open-pit scheduling software that delivers practical high value schedules. Maptek Evolution is a fully featured scheduling solution, that includes reserve engine capability, block model manipulation, strategic and LOM scheduling, reporting and visualisation tools.

Our number
one goal is to
unlock the
true value of
your mining
project



Project Summary

orelogy has been involved with the Balla Balla Iron Ore, Vanadium and Tantalum Project since 2004 and worked on many aspects and studies including:

- Completing a mining study in 2006 to a “Bankable” standard designed to produce 4,500 tonnes of vanadium metal per year for a 30 year mine life.
- Completing a 3 Mtpa magnetite concentrate mine plan for the Central and Western resources.
- Completing a 6 Mtpa expansion plan for the Central and Western resources.
- Completing a 6 - 10 Mtpa integrated product study which now includes Central, Western and Eastern resources and now produces iron, vanadium and titanium products.

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Mining Engineering

Definitive Feasibility Study

Project

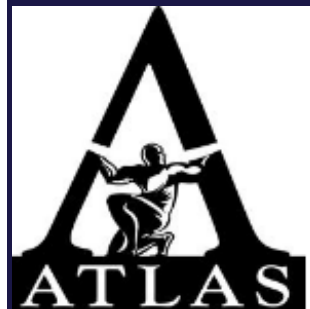
**Balla Balla Iron Ore,
Vanadium, Titanium Project**

Location

**West Pilbara, Western
Australia**

Client

**Aurox Resources Ltd now
Atlas Iron**





The Scope

- Undertake detailed pit optimisation studies.
- Analyse the results and find a set of appropriate shells for both staging and ultimate pit designs which maximise the value and full utilisation of the reserve.
- Provide a detailed mine schedule with the goal of improving the cash-flow.

Challenge

A “well behaved” tabular ore body split into 2 distinct areas, i.e. a vanadium rich mineralisation occurring at the footwall, together with an iron/titanium rich main zone. A strike length of approximately 8 km, together with over 60,000 blocks, within the block model, where each block has over 62 pieces of information and in addition to this:

- 2 different process routes.
- 10 different stages (both dependent and independent).
- 3 grade variables.
- Many different and sometimes conflicting objectives, for example material movement versus grade, or value.

Together these constraints and datasets lead to millions of different combinations.

Business Benefits

Assess Multiple Schedules: Using Evorelution now ‘Maptek Evolution’ were able to efficiently generate and then assess over 50 different scheduling scenarios, which given the time frame, would not be possible using existing scheduling systems.

Increased Project Value: The results clearly demonstrated that value can be brought forward such that the overall discounted cash-flow has increased by over AUD\$190 million whilst meeting all other objectives.

This was achieved by deferring waste and/or bringing forward high value material, all whilst ensuring the results are both transparent and practical.

orelogy quote

“Schedule or stage optimisation (stage design) is an iterative process and with ‘Maptek EVOLUTION’ we can efficiently produce optimal, robust and practical mine schedules.”

Steve Craig CEO
orelogy

Key Benefits

Owner/Shareholder: Maximising the value and utilisation of the resource. Managing risks and/or identifying opportunities by increasing mine planning visibility.

Mining Engineer: Being able to fully utilise equipment, manage re-handle requirements, provide reconciliation feedback.

Engineers/Metallurgists: Ability to blend and manage contaminants, minimise short term variability.

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