

Benefits starting to surface at Hera

Staff reporter, [23 November 2009](#)

A unique ore processing plant designed for underground deployment may deliver YTC Resources significant power and other cost benefits well before it becomes a fixture in what is expected to be a relatively shallow mine at Hera, near Cobar. For YTC CEO Rimas Kairaitas the decision to use it in a deeper mine, given the right ore, is a bit of a no-brainer.

The company announced last week it had appointed GR Engineering Services as lead manager for its definitive feasibility study on Hera, which it bought from CBH Resources for \$A12 million (the deal included 80% of the nearby Nymagee copper-gold exploration target) earlier this year. YTC is aiming to get Hera into production as early as next year, with targeted annual production of 40,000oz of gold at a cash operating cost of \$A430/oz including base metal credits.

The Main Lens at Hera could support a 5.5-year operation on current resources of 1.14 million tonnes grading 6.7 grams per tonne gold, 0.2% copper, 2.27% lead, 3.72% zinc and 14.9gpt silver.

Kairaitis said GR Engineering Services had a proven track record and reputation in successful feasibility studies and project delivery, in particular gold and base metal processing facilities including site infrastructure. Other consultants engaged include Optiro, which will do mine geotechnical and financial modelling; Coffey, plant and infrastructure civil geotechnical, hydrology, tailings storage design, and site drainage; and Leo Consulting, in charge of metallurgical testwork and flow sheet design.

YTC is examining the use of Ballarat-based Gekko Systems' unique Python compact processing plant, conceived as an underground ore pre-concentration facility (but already operating in South Africa on the surface of a gold mine).

Leo Consulting is expected to complete detailed metallurgical test work and optimisation of Hera process options within 3-4 weeks. GRES will then finalise flow sheets and evaluate infrastructure, plant design and cost estimates for the optimised process options.

Extensive previous sampling and met work was done by previous owners after Hera's discovery by Pasma in 2000.

Kairaitis told *HighGrade* that because such a large proportion of the gold at Hera was coarse, prefeasibility study metallurgy indicated 50-60% of gold could be won by gravity on a relatively coarse grind (250 micron). If an acceptable recovery on sulphides could be achieved using the same grind and using gravity and flash flotation, the Python processing plant could deliver significant operating and capital cost savings.

"A large opex component in any conventional flotation plant is in the energy required for size reduction to 45-75 micron," Kairaitis said. "This represents as electricity requirements. A size reduction to 250 micron requires significantly less energy/electricity."

On the capex side reduced energy requirements again meant reduced electrical infrastructure costs.

"Without the requirement for size reduction to 45-75 micron, there is no requirement for ball/SAG mills which are usually a major capex item," he said.

The latest, 50 tonnes per hour Gekko Python plant is understood to cost \$A10-15 million – potentially a "significant saving on a conventional plant".

"Estimated water consumption in a pre-concentration circuit is well below that of a conventional crush-mill-float [circuit]," Kairaitis said.

"We haven't yet looked closely at the benefits or otherwise of underground-versus-surface implementation. Our first step is to establish whether the process will work on the Hera ore.

"Hera will be a shallow underground, so the benefits of underground pre-concentration may not be as stark as in deeper mines. The other consideration is the suitability of pre-concentrate tails as stope fill. These studies will follow if, as we hope, pre-concentration is shown to be feasible at Hera."

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