



2 December 2013

KNP Project Update – Reagent Recovery Testwork Results

Heron Resources Limited (ASX:HRR) is pleased to provide an update on the results of testwork being carried out on its sulphuric acid-based metallurgical testwork on various KNP ore-types by Simulus Laboratories.

Heron Resources Limited

ASX:HRR

Issued Shares 253M

Share Price \$0.14

Market Cap \$35.7M

Cash (Sep 2013) \$38.6M

- **Simulus Laboratories (Simulus) was engaged to undertake sulphuric acid-based metallurgical testwork on various KNP ore-types.**
- **The results for saprolite ore confirmed 94-97% nickel recovery with net acid consumption of 350kg/t after 50% acid recovery, which is an excellent outcome for nickel saprolite.**
- **Heron has agreed to proceed with the production of a Scoping Study for a commercial scale nickel processing plant based on Atmospheric Leach and utilising Simulus' reagent recovery technology.**
- **The Scoping Study is expected to be completed within three months.**
- **Heron and Simulus continue to discuss closer corporate cooperation with respect to the development of the reagent recovery technology.**

Kalgoorlie Nickel Project (Heron 100%)

Heron has a multi-disciplinary strategy to match various extractive technologies to specific ore types within the Kalgoorlie Nickel Project (**KNP**) with the ultimate aim of enhancing and crystallising value from the KNP through innovative technology. There is an increased focus on new nickel laterite extractive technology which, in part, reflects the tightening situation of traditional sources of supply from nickel sulphides. Heron's work with Direct Nickel and the Simulus Group is a part of this strategy.

The Simulus Group (**Simulus**) is a Perth-based metallurgical engineering firm specialising in developing innovative and cost effective solutions to complex metallurgical processes. Simulus is developing technology known as the Carbon Friendly Nickel Production process (**CFNP**), an improved nickel production process that focuses on sulphuric acid recovery, regeneration and recycle measures to improve the operating costs and reduce the carbon emissions associated with nickel production.

The targeted reduction in operating costs is due to the need for less acid/sulphur, less limestone and less water. Infrastructure costs for water supply and tailings storage are also reduced, whilst the overall process plant remains similar to a traditional hydrometallurgical process. CFNP techniques can be applied to (H)PAL, Atmospheric or Heap Leach projects.

Heron believes that the technology Simulus is seeking to apply to the KNP sulphuric acid processing flowsheet has significant potential for the KNP. The aim of the Simulus work is to arrive at a lower capital cost, lower operating cost flowsheet which will substantially improve the project economics of the KNP.

Testwork Results

Three bulk samples of nickel laterite ore were delivered to Simulus Laboratories in Kewdale, Western Australia in July 2013. The samples represent the three main ore types within the KNP:

- Goethite ore from composites of sonic drill core drilled at Siberia North;
- Saprolite ore mined by Heron from Heron's Boulder Block pit at Bulong; and
- Nontronite ore from Heron's ore stockpiles at the Jump Up Dam trial pit (Yerilla Project).

These samples were designed to represent the three end members of the dominant material types recovered from the Heron KNP nickel laterite resource inventory in order to quantify the viability of the Simulus process over the spectrum of KNP metallurgical variability.

Simulus Laboratories have now completed initial amenability testwork on KNP project ore bodies to confirm the suitability of CFNP technology to the treatment of the ore, based on an atmospheric leach flowsheet¹. The program resulted in the following key outcomes:

- Nickel extraction: 94% for Boulder Block and 97% for Jump Up Dam
- Net acid consumption: 350 kg/t
- Leach residence time: 24 hours
- Single stage nickel MHP precipitation efficiency: 96%

By comparison, acid consumption without CFNP was 700 kg/t, due to the relatively high magnesium content of the saprolite component of the resources.

The Siberia limonite ore leach test was conducted at too high a pulp density and resulted in re-precipitation of metals during the leach and a crystalline final residue. The measured nickel extraction was 69%, however leaching at lower pulp density is expected to result in extraction similar to the other ore sources. The limonite ore will be re-tested to better understand the re-precipitation outcome.

Acid recovery processes were operated in a conservative manner due to the crystallisation observed in the Siberia leach sample. Simulus expect that further tests will result in increased acid recovery, as has been demonstrated in previous testwork programs undertaken by Simulus.

This in turn is expected to result in a target net acid consumption of 200-250 kg/t for all KNP ore sources, equivalent to a recycling recovery for the acid of 65-70%.

Heron's Managing Director, Ian Buchhorn, said "the initial testwork undertaken by Simulus is highly encouraging and provides an excellent basis for continuing to progress the application of the technology to the KNP. Understanding the potential cost savings on a commercial scale is the next task, which will provide an indication of just how much of a game changer this flowsheet could be for the KNP economics. Hence we have commissioned Simulus to complete a Scoping Study".

Forward Program

On the basis of the encouraging results to date, Simulus has moved to the next stage of work, the production of a Scoping Study to confirm the capital and operating costs for a commercial scale Nickel Laterite processing operation based on Atmospheric Leaching and incorporating the Simulus CFNP reagent recovery within a fairly standardised Mixed Hydroxide Product (MHP) flowsheet.

The Scoping Study is expected to be completed within the next three months.



Ian Buchhorn
Managing Director

The information in this report that relates to Exploration is based on information compiled by David von Perger who is a Member of the Australasian Institute of Mining and Metallurgy. David von Perger is a full time employee of Heron Resources Limited and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the exploration activity that is being undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". David von Perger has consented to the inclusion in this report of the matters based on his information in the form and context that it appears.

¹ The tests conducted were generic CFNP amenability tests and were not optimised for Heron KNP ores. All tests were a single test only. Simulus expect further tests to provide improved outcomes.

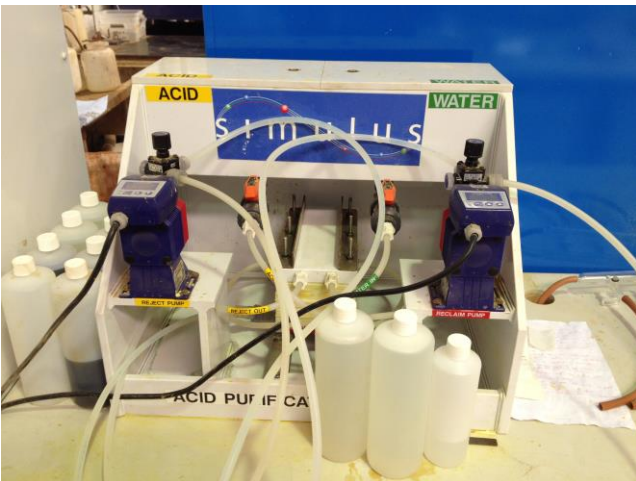
Simulus Piloting Facility, Kewdale, Perth



100 litre reaction vessels which form the Atmospheric Leach stage of the flowsheet.



Autoclave used for intermediate stage hydrolysis of iron sulphate for sulphuric acid regeneration. This stage follows the Atmospheric Leach.



Dialysis unit used to remove sulphuric acid from the Pregnant Liquor Solution as part of reagent regeneration process.



KNP Pregnant Liquor Solution (PLS) following sulphuric acid leaching, purification and acid recovery, from which Mixed Hydroxide Product can be crystallized. The distinctive green coloration in the PLS samples reflects the amount of nickel in solution.