



## HERON RESOURCES LIMITED

ASX MEDIA RELEASE

3 September 2004

**\$2.0 Million Placement  
Positive Screen Upgrade Results Achieved  
Oretest to Complete Independent Testing**

### **\$2 Million Placement**

Heron Resources Limited (ASX:HRR) is pleased to announce it has agreed to make a placement of 8 million shares at \$0.25 per share to raise \$2.0 million (before costs). The Company will lodge a transaction specific prospectus with ASIC, with the placement shares being conditional upon shareholder approval. The funds raised will be used for:

- ❖ Drilling of the Kalgoorlie Nickel Project as part of a comprehensive Pre-Feasibility Study;
- ❖ Independent screen upgrade tests to be completed by SGS Lakefield Oretest (**Oretest**); and
- ❖ Additional working capital.

Heron's 100% owned Kalgoorlie Nickel Project has an estimated Mineral Resource of 862 million tonnes grading 0.74% nickel and 0.05% cobalt or approximately 6.4 million tonnes contained nickel metal - making it the world's fourth largest nickel resource.

The capital raising will be managed by Heron's corporate adviser Argonaut Capital Limited.

### **Positive Screen Upgrade Results Achieved**

Heron's Pre-Feasibility Study will be directed to resource definition and metallurgy, specifically the screen upgrade characteristics of the mineralisation, which the July 2004 Scoping Study identified as the project's key to delivering substantial profits.

Heron has recently completed screen upgrade testing under laboratory screening conditions for its Highway Prospect. The results identified that mineralisation averaging 0.95% nickel screen upgraded to a 1.64% nickel Leach Feed Grade, representing a 72% upgrade result. This demonstrated that a Leach Feed Grade in excess of the 1.5% nickel benchmark grade identified in the Scoping Study was achievable.

Previous work by the Company indicated that under operating plant screening conditions, screen upgrade results are significant higher than achievable under laboratory screening conditions.

"These are very encouraging results," Mr Buchhorn said. "The ability to upgrade mineralisation using low cost screening is a key driver of the Kalgoorlie Nickel Project's profitability. Upgrade results of up to 100% have been achieved, which are consistent with those of the proposed Ravensthorpe nickel project and the existing Cawse nickel operation."

"The results suggest the Kalgoorlie Nickel Project is well suited to low cost bulk mining in conjunction with fine screening to achieve the target 1.5% nickel Leach Feed Grade."

## Oretest Engaged

Heron has now engaged leading metallurgical group SGS Lakefield Oretest to complete independent bulk sample screen upgrade testing. Mr Buchhorn said he expected preliminary results to be available by late 2004.

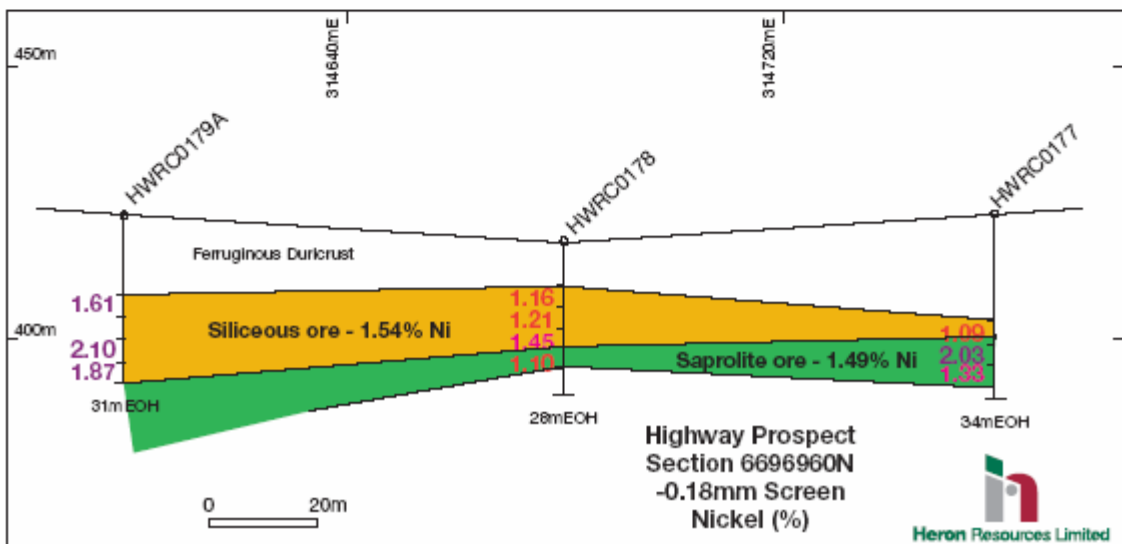
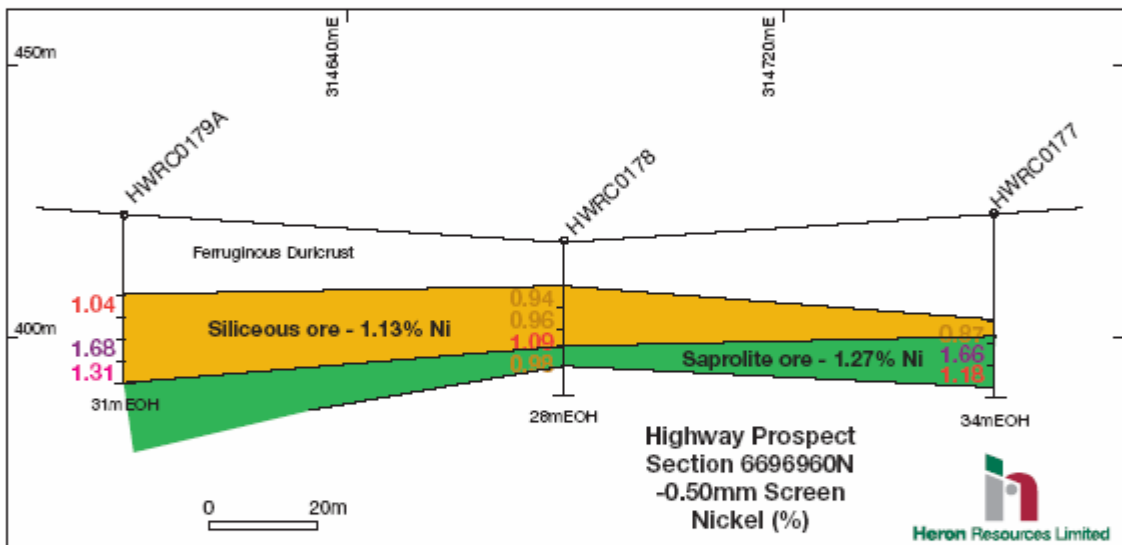
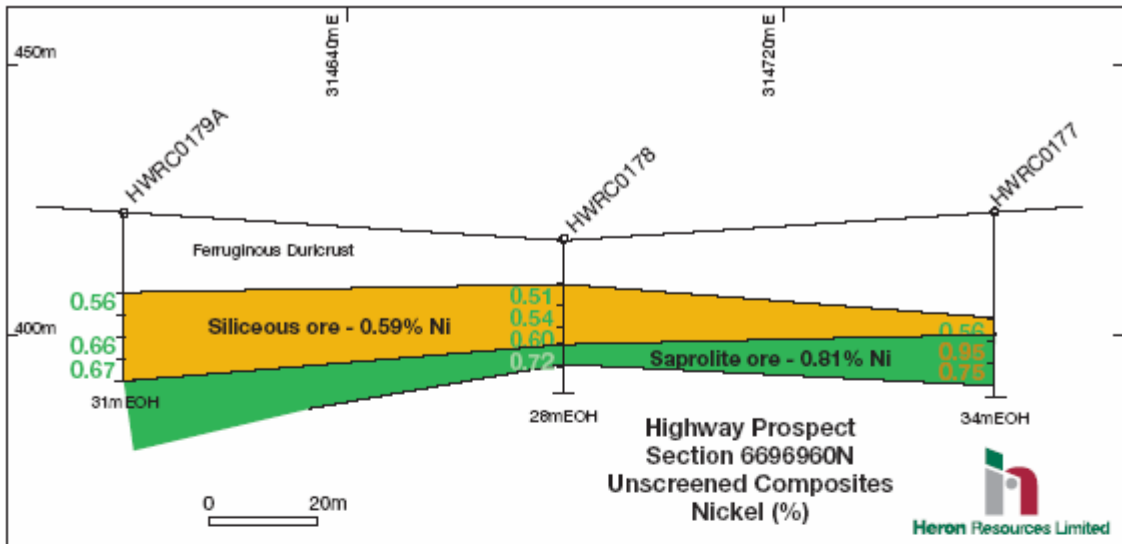
Heron is particularly encouraged by the preliminary screen upgrade results and the continuing capital market support for the Kalgoorlie Nickel Project.

-ENDS-

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## Kalgoorlie Nickel Project

### Screen Upgrade Results Confirm Project's Robust Fundamentals

#### 1. Discussion

As previously announced, Heron Resources Limited (**Heron**) retained consulting engineers Sinclair Knight Merz (**SKM**) to conduct an independent Scoping Study for the Kalgoorlie Nickel Project (**KNP**). The Scoping Study included an assumption that the KNP siliceous mineralisation would be amenable to a 50% nickel upgrade through screening. The basis for the 50% upgrade estimate is Heron's routine minus 0.50mm "Bottle Roll" RC drill assays. *Bottle Roll* screening results have been received from the Highway Prospect, 20km north along strike from Goongarrie.

Highway is a joint venture with Helix Resources Limited, with Heron holding 51% and Helix 49% (diluting on the basis of the approved June 2004 Quarter drilling program). During the RC drilling program, drill samples were routinely assessed at both minus 0.50mm and minus 0.18mm, to assess the effect of finer screening to a size that more closely replicates that of a full scale operating nickel laterite screening circuit.

The Scoping Study conceptual model is a 50% upgrade factor, and assumes mining at a 0.75% Ni cut-off grade for a 1.0% Ni head grade screening to a 1.5% Ni screened Leach Feed Grade (**LFG**). At a 0.75% Ni cut-off grade in siliceous mineralisation, there would need to be "selective mining", to avoid excessive mining dilution when extracting the ore. The objective of the current study is to evaluate cut-off grades less than 0.75% Ni, and ascertain the ability to generate a 1.5% Ni LFG through finer screening.

Having completed conceptual mining studies for the KNP, it was considered preferable to use "selective screening" as opposed to conventional "selective mining" to achieve the 1.5% Ni LFG target.

#### 2. Kalgoorlie Nickel Project, Conventional minus 0.50mm Bottle Roll Screening Results and Interpretation

**Ore Types:** The Upgrade Study has reviewed historical Heron minus 0.50mm screen data for the four main ore types from Highway, Goongarrie Hill and Goongarrie South, representing a 50km strike length of Walter Williams Formation (**WWF**) siliceous nickel laterite mineralisation. Importantly, the results of recent minus 0.18mm screen data from Highway confirm that finer screen sizes have a marked upgrade improvement.

There are four well defined "*stratigraphic*" mineralisation types, from top to bottom in the laterite profile:

- Manganiferous ore is dominantly a goethite-gibbsite mineralogy and has a supergene nickel-cobalt over-print (termed the **Enrichment Zone** or **EZ**) which is a high grade cobalt-nickel layer generally at the top of the profile.
- Ferruginous ore is dominantly a goethite-kaolinite mineralogy and represents siliceous mineralisation which has undergone silica leaching generally within the upper mineralised profile.
- Siliceous ore is dominantly a silica-goethite-kaolinite mineralogy and represents the "run-of-mine" KNP ore style for the Pressure Acid Leach (**PAL**) circuit. Siliceous ore is the dominant product derived from the intense weathering of the WWF olivine-rich precursor rock. Siliceous mineralisation typically occurs within the middle mineralised profile immediately overlying a major weathering break where the magnesia content increases sharply with depth to over 10% (termed the **Magnesia Discontinuity** or **MD**).
- Saprolite is dominantly a silica-magnesite-chlorite-serpentine mineralogy and represents the "run-of-mine" KNP ore style for the atmospheric pressure Saprolite Acid Leach (**SAL**) circuit. Saprolite mineralisation typically occurs within the lower mineralised profile immediately below the Magnesia Discontinuity. Because of its high magnesia content, the saprolite consumes acid, so is used for neutralising the Ni-Co bearing acidic autoclave discharge slurry. Acid dissolution of the saprolite releases additional nickel to the process.

**Conventional Bottle Roll Screening Results** The “*Bottle Roll*” methodology involves agitating the sample through bottle rolling and then screening the resultant slurry at minus 0.50mm to separate the mineralised goethitic fine fraction from the barren coarse siliceous oversize.

The KNP screen data base has 5,549 screen upgrade estimates at minus 0.50mm. The main conclusions are:

- Manganiferous ore is not suited to screening, mainly due to cobalt loss (cobalt occurs within “micro-pisolites” of manganese oxide which are lost in screening). The manganiferous mineralisation has high nickel-cobalt head grades and is best treated through a dedicated Grind Circuit and direct fed to the PAL autoclave with limited coarse screening. Previous manganiferous mineralisation test-work confirms good rheological characteristics, which improve the PAL performance of blended “*run-of-mine*” siliceous mineralisation.
- Ferruginous ore is transitional between manganiferous and siliceous ore, and is likely to be screened in the PAL circuit for an average upgrade of 13% for nickel and 11% for cobalt for a minus 0.50mm screen size.
- Siliceous ore can be screened in the PAL circuit for an average upgrade of 53% for nickel and 63% for cobalt for a minus 0.50mm screen size. This material is the dominant KNP feedstock and is the ore feed around which the KNP plant will be designed.
- Saprolite ore can be screened in the SAL circuit for an average upgrade of 28% for nickel and 42% for cobalt for a minus 0.50mm screen size.

Table 1 Highway Prospect Minus 0.50mm Screen Upgrade Results for All Samples (no cut-off)			
Ore Type	Treatment Method	Ave Ni Upgrade %	Ave Co Upgrade %
Manganiferous	PAL Grind	7.2	-23.1
Ferruginous	PAL Screen	13.0	11.2
<b><i>Siliceous</i></b>	<b><i>PAL Screen</i></b>	<b><i>51.0</i></b>	<b><i>52.3</i></b>
Saprolite	SAL Screen	20.4	43.7

Table 2 Goongarrie Hill Prospect Minus 0.50mm Screen Upgrade Results for All Samples (no cut-off)			
Ore Type	Treatment Method	Ave Ni Upgrade %	Ave Co Upgrade %
Manganiferous	PAL Grind	15.6	5.0
Ferruginous	PAL Screen	17.4	14.8
<b><i>Siliceous</i></b>	<b><i>PAL Screen</i></b>	<b><i>57.6</i></b>	<b><i>61.8</i></b>
Saprolite	SAL Screen	32.5	43.2

Table 3 Goongarrie South Prospect Minus 0.50mm Screen Upgrade Results for All Samples (no cut-off)			
Ore Type	Treatment Method	Ave Ni Upgrade %	Ave Co Upgrade %
Manganiferous	PAL Grind	2.1	-15.0
Ferruginous	PAL Screen	8.0	7.2
<b><i>Siliceous</i></b>	<b><i>PAL Screen</i></b>	<b><i>50.3</i></b>	<b><i>76.3</i></b>
Saprolite	SAL Screen	30.3	37.7

The important observation from Tables 1-3 is that the four main ore types have consistent upgrade factors between the three drilled locations, confirming that the WWF is weathering to a very consistent mineralised profile. This is important in terms of being able to deliver a consistent leach feed to the proposed KNP plant.

The ore types are characterised on the basis of Heron's multi-element geochemistry and geological drill logging. The consistency of screening results confirms that the ore characterisation study is generating discrete and repeatable metallurgical units with diagnostic screening performance.

### 3. Highway Prospect, Comparison of Minus 0.18mm and Minus 0.50mm Bottle Roll Results

The Highway Prospect RC drill *bottle roll* tests aimed at assessing the upgrade comparison of minus 0.50mm and minus 0.18mm at 0.5% Ni and 0.75% Ni cut-off grades for the feedstock material.

#### 0.5% Ni Cut-off Results

Table 4 Highway Prospect 0.5% Ni Lower Cut-off					
Ore Type	Head Grade	Minus 0.50mm		Minus 0.18mm	
		Ni % LFG	Ni Upgrade %	Ni % LFG	Ni Upgrade %
Manganiferous	0.91	0.98	7.2	1.01	9.0
Ferruginous	0.74	0.84	13.0	0.89	20.1
<b><i>Siliceous</i></b>	<b><i>0.65</i></b>	<b><i>0.98</i></b>	<b><i>51.0</i></b>	<b><i>1.17</i></b>	<b><i>82.3</i></b>
Saprolite	0.77	0.93	20.4	1.00	30.4

At a 0.5% Ni in situ cut-off grade, through decreasing the screen size from 0.50mm to 0.18mm, there is a marked improvement in siliceous ore upgrade from 51% to 82%. At minus 0.18mm, the 0.65% Ni head grade siliceous ore screens to a 1.17% LFG. Under full-scale operating plant conditions, it is expected that this LFG will increase significantly.

#### 0.75% Ni Cut-off Results

Table 5 Highway Prospect 0.75% Ni Lower Cut-off					
Ore Type	Head Grade	Minus 0.50mm		Minus 0.18mm	
		Ni % LFG	Ni Upgrade %	Ni % LFG	Ni Upgrade %
Manganiferous	0.99	1.11	12.5	1.15	15.8
Ferruginous	0.92	1.02	10.7	1.09	17.4
<b><i>Siliceous</i></b>	<b><i>0.95</i></b>	<b><i>1.44</i></b>	<b><i>50.6</i></b>	<b><i>1.64</i></b>	<b><i>72.2</i></b>
Saprolite	1.05	1.26	20.9	1.35	29.1

At a 0.75% Ni in situ cut-off grade, there is a strong improvement in siliceous ore upgrade from 51% to 72%, through decreasing the screen size from 0.50mm to 0.18mm. At minus 0.18mm, a 0.95% Ni head grade siliceous ore screens to a 1.64% Ni LFG. Even with the less-than-ideal minus 0.18mm laboratory screening, the LFG exceeds that of the Scoping Study estimate (being 1.5% Ni).

The data in Table 4 and 5 confirms that the in situ cut-off grade for KNP siliceous ore plant feed will be between 0.5 and 0.75% Ni. There is considerable potential through full operating plant-scale screening conditions to either:

- High Grade Option: Further increase the LFG of the 0.75% Ni cut-off mineralisation; or
- High Tonnage Option: Achieve a 1.5% Ni LFG at lower in situ cut-off grades (closer to 0.5% Ni), thus facilitating increased resource tonnes and more efficient bulk mining as the cut-off grade is lowered.

The main objective of the current Pre-Feasibility Study is to derive the optimum mining cut-offs and plant screen sizes that generate the target 1.5% Ni LFG.

#### 4. Comparison of Highway Prospect Leach Feed Grade Estimates

Figure 1 is a plot of Highway Prospect Section 669 6960N showing drill nickel grades as unscreened head grade (top of page), LFG at minus 0.50mm (middle page) and LFG at minus 0.18mm (bottom of page). The nickel grade trend as screen size decreases is remarkable, with average intercepts for siliceous mineralisation progressively increasing from 0.6% Ni, to 1.1% Ni to 1.5% Ni.

The Highway Prospect Section 669 6960N data demonstrates that in this segment of the KNP, the target 1.5% Ni LFG can be generated through fine screening 0.5% Ni cut-off siliceous mineralisation.

Siliceous mineralisation has excellent continuity at low cut-off grades, but requires detailed grade control and “selective mining” at higher cut-off grades. Essentially, the concept is to mine siliceous mineralisation at a very low cut-off grade (close to 0.5% Ni), and use a simple fine size screening circuit (ie “*selective screening*” rather than “*selective mining*”) to reject sub-grade material and so improve the LFG.

#### 5. Documented Performance of WA Screen Upgrade Siliceous Ores

The benefits of laterite ore screening to improve the processed nickel grade are exemplified by the planned Ravensthorpe nickel project in Western Australia. Ravensthorpe has a PAL Leach Feed Grade for upgradeable siliceous laterite ore in the range of 2.5% Ni (Year 1) to 0.9% Ni (Year 20), for an average of approximately 1.4% Ni for the life-of-project.

From public domain information, the average Ravensthorpe upgrades can be calculated as follows:

- PAL, head grade 0.7% Ni screening to 1.4% Ni for a 92% increase.
- SAL, head grade 0.7% Ni screening to 1.1% Ni for a 69% increase.

In the case of the Cawse nickel laterite operation, the published upgrade performance for siliceous ore is a 0.8% Ni head grade screening to a 1.6% Ni LFG for a 100% increase.

Based on the Highway Prospect minus 0.18mm screening results, Heron believes the KNP has the potential to replicate the Ravensthorpe and Cawse nickel screen upgrade performance.

Additionally, the KNP records strong upgrade performance for cobalt, which is not discussed for other WA screen upgrade siliceous ores (which in any event have significantly lower cobalt head grades than the KNP).

## 6. Interpretation and Screen Upgrade Forward Program

Heron is encouraged by the results of the Highway screen upgrade study, which provides the basis and justification to move to conduct bulk sample screening studies for the KNP which replicate full scale operating screening plant conditions.

The current Highway screen upgrade study indicates that the "natural grade cut-off" of the KNP siliceous mineralisation that generates continuous and persistent mining ore blocks is between a 0.5% and 0.7% Ni cut-off grade. In this grade range, the Highway mineralisation is continuous over a 6.5km strike length, with 200-1,000m width and 8-24m thickness.

The next step in the evaluation of screen performance is to complete bulk sample screening trials, to quantify the optimum Cut-off Leach Feed Grade. Accordingly, SGS Lakefield Oretest of Perth (**Oretest**) has been retained to complete pilot-scale Bulk Screen Upgrade studies on 90kg RC drill sample composites. To date, 6 bulk RC samples have been submitted from Heron's Siberia Project, as well as bulk samples collected from existing open cut mines within the Goongarrie Prospect. This Bulk Screen Upgrade program is the initial phase of the KNP Pre-Feasibility Study.

Representative traverses of RC drilling have been designed for all KNP proposed pit areas, to obtain test samples for the Bulk Screen Upgrade test work. A contract for 100,000m of RC drilling has been tendered, the first phase of which is 20,000m for the "representative traverses". Once completed, systematic 80x80m resource definition will commence for all proposed pit areas.

Yours faithfully



Managing Director

*"The information in this report that relates to Mineral Resources or mineralisation is based on information compiled by Norman Mathew Longworth, who is a Member of the Australasian Institute of Mining and Metallurgy.*

*Norman Mathew Longworth has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 1999 Edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Norman Mathew Longworth consents to the inclusion in the report of the matters based on their information in the form and context in which it appears'.*

Norman Mathew Longworth is a fulltime employee of Heron Resources Limited, employed as Exploration Director.