

# KGL Resources Limited - Update on PFS optimisation of the Jervois Copper Project

20.04.2015 | [ABN Newswire](#)

Brisbane, Australia (ABN Newswire) - The pre-feasibility study of [KGL Resources Ltd.](#)'s (ASX:KGL) Jervois Copper Project in the Northern Territory completed in December 2014 found Jervois to be a viable project with strong upside potential from additional drilling and metallurgical work.

[KGL Resources Ltd.](#) (KGL or the Company) decided to undertake an additional work program to improve the economics.

Work to date is summarised below:

- an updated Mineral Resource estimate that is expected to be announced in July 2015
- promising increases in recoveries of copper and silver
- processing improvements to include transitional ores and lead-zinc ore
- possible savings to capital expenditure and operating costs
- expected reductions in mining costs from the 2014 estimates.

## Background

In September 2014, the Company announced the fourth increased Resource estimate in three years of KGL's ownership of Jervois, comprising 25.3 million tonnes @ 1.1% copper and 22.1 g/t silver, containing 280,000 tonnes copper and 18 million ounces silver with an additional exploration target of 50,000 to 150,000 tonnes copper and 2 to 7 million ounces silver\*, together with 120,000 tonnes lead/zinc and 113,000 ounces gold.

\*The potential quantity and grade of the Exploration Potential is conceptual in nature and there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource.

Jervois was shown to be technically and commercially feasible, with annual production in concentrate over an initial seven year mine life of approximately 21,000 tonnes copper and 1 million ounces silver plus gold, lead and zinc. Initial capital expenditure was estimated at A\$189M including A\$22M in contingency, and C1 cash costs estimated at US\$1.51/lb copper (after by-product credits and using an exchange rate of A\$/US\$0.845 and silver price of US\$20/oz.

With continuing good drill results pointing to a larger, more valuable asset, the Company decided to undertake an additional work program, to improve the economic parameters, and targeting \$100M to \$200M of additional free cash flow over the life of the project.

## Current status

The PFS study optimisation work comprises

- Additional resource drilling
- Metallurgical work and flow sheet optimisation
- Geotechnical review
- Review of mining and other operating costs

## Resource Drilling

A resource extension, RC drilling program commenced in February at the Bellbird, Marshall-Reward and Green Parrot Resources. Particular emphasis was placed on targeting poorly drilled portions of these resources that have potential for high-grade mineralisation and are within or immediately adjacent to the proposed open pits or close to planned underground mine development.

This program of 9,400m is now completed and a further 2,000m of drilling has commenced to bring recently discovered near surface copper mineralisation at Sykes, Johannsen and East Reward into the next resource update. Two additional holes beneath the Green Parrot resource are also planned as part of this extended program. It is anticipated that all of the planned drilling will be completed by the end of the week. Assay results are anticipated periodically over the next four weeks. These results will be used to complete an updated Resource estimate that is due for completion in July 2015.

### **Metallurgical test work and flow sheet optimisation**

Outcomes from previous studies suggest that by modifying the process plant it is possible to treat ore extracted from the oxide/sulphide transitional zones, and to allow treatment of ore extracted from the high grade lead-zinc zones which exist within the same deposits at Jervois. To prove this, KGL engaged Minelogix to manage a test work program at ALS Laboratories. The program is designed to gain a better understanding of the wider range of ore types and to define the optimal approach for extracting copper, lead and zinc as well as the associated precious metals in the ore.

Results so far have highlighted:

- Power savings due to lower work indices for copper ores (softer ore)
- Confirmation of flowsheet conditions established for copper sulphide ores in the earlier work
- Improved confidence in metallurgical response with respect to copper sulphide and transitional ores resulting in increased copper and silver recoveries
- Increased throughput in the treatment of transitional ore in the initial stages of operation
- Substantial reduction in sustaining capital requirements.

### **Grinding**

The grinding circuit was redesigned to treat a wider range of ores including sulphide/transitional ores and lead-zinc ores. The grinding circuit was changed to a SAG and Ball (SAB) combination rather than the previous Single Stage SAG combination. The new circuit is superior from an operational perspective. It will improve the ability to control mill capacity and enable the grind size to be changed as required for the range of ores in the deposit.

The overall installed power requirement was reduced to 5MW (SAB) from the previous 6MW single stage SAG circuit due to the ore being softer than previous assumptions.

### **Flotation**

The transitional ore is softer than the sulphide ore and can be treated at increased rates in the initial stages. This ore contains a higher secondary copper component and is able to produce a higher grade concentrate than the sulphide copper ores. Transitional ore can be treated with minor modifications to the sulphide flotation circuit established in the previous study.

The concentrator design for treating both sulphide and transitional copper ore can also be used to treat the copper-lead-zinc ore. For this ore, copper is recovered separately using the existing copper circuit while a small regrind mill, cleaner flotation circuit and concentrate filter are the only additional requirements to recover a lead-silver-zinc concentrate.

The metallurgical outcomes to date are encouraging and demonstrate the ability to improve capital intensity, by reducing plant complexity and thereby reducing sustaining capital over the life of mine. Furthermore, the process plant flowsheet utilises proven industry standard technologies.

Test work is still underway, with 130 flotation tests having been completed to date. Of that, 60 tests were

completed in March and 40 tests are scheduled for April with the program to conclude in early May. Locked cycle confirmatory test work will be completed in late April ahead of schedule.

### **Geotechnical review**

The 1,200m of geotechnical diamond drilling in to the planned pit walls has been completed. Material property test work is being carried out by WASM rock property test laboratory, and managed by geotechnical engineers Peter O'Bryan & Associates. During March, cores from geotechnical investigation boreholes were inspected, reviewed and samples collected for material properties selection. A final report on the geotechnical assessment is due at the end of April.

The aim of this work is to increase the pit slopes for the planned open cut pits. If the pit slopes can be made steeper, then the quantity of waste to be mined will be reduced.

### **Review of Mining Costs**

An engineering consultant will provide current mining costs through a Request for Quotation (RFQ) process that is currently in progress.

Below are key general observations when comparing the recent 2015 RFQ submissions of mining costs to the costs used in the 2014 study:

- General load and haul unit rate cost for surface mining have decreased significantly
- Site establishment, mobilisation and demobilisation have decreased significantly
- The underground unit rate costs appear to have decreased moderately.

KGL is working with logistics providers to leverage their scale and expertise to reduce the project's operating costs. The fall in the price of diesel will also reduce operating costs related to transport and mining.

Mining PFS Revision work is due to commence in July 2015. This will utilise an updated dataset including mining rates, block models and operational costs. This will include PFS level engineering required to attain optimised open pit and underground mine designs including life-of-mine scheduling. The information from the above studies will then be used to prepare a revised financial model for the Jervois project.

### **About KGL Resources Limited:**

[KGL Resources Ltd.](#) (ASX:KGL) is an Australian mineral exploration company focussed on increasing the high grade Resource at the Jervois Copper-Silver-Gold Project in the Northern Territory and developing it into a multi-metal mine.

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