
Australian Securities Exchange Announcement

5 December 2019

Highlights

- ❖ Breakthrough in the refining process has now precipitated Al as an intermediate product from which 99.98% High Purity Alumina (HPA) has been produced.
- ❖ Testwork in the coming weeks will examine the potential of the new HPA process to also extract Alumina from the waste fraction generated at the concentrate stage of the process.
- ❖ The grade of Al in the ROM material is 12.7% Al_2O_3 , the magnetic concentrates typically grade ~7% Al_2O_3 , and the non-magnetic waste fraction (70% of the mined volumes) grades 15-16% Al_2O_3 .
- ❖ The waste fraction is expected to be largely devoid of the Iron, Titanium and Vanadium that are acid consuming in the leaching process.
- ❖ Removing ~50% of the iron early in the refining flow sheet design is expected to facilitate the solvent extraction of vanadium (V) and titanium (Ti).
- ❖ The changes in the PFS process design to focus on HPA, with V, Ti and Fe co-products, is expected to deliver a positive impact on the economics of the Speewah project.

King River Resources Limited (ASX: KRR) is pleased to provide this Prefeasibility Study ("PFS") update on the company's 100% owned Speewah Specialty Metals ("SSM") Project in the East Kimberley of Western Australia. KRR has been examining a new process route to produce high purity alumina ("HPA"), vanadium pentoxide (V_2O_5), titanium dioxide pigment (TiO_2) and iron oxide (Fe_2O_3) products in a re-scaled operation for the Prefeasibility Study ("PFS") (refer KRR ASX release 26 November 2019).

This announcement details the new HPA related developments and redesign of the process flow sheet may have a positive impact on the economics of the SSM project PFS.

Study developments

- KRR made a breakthrough by extracting aluminium (Al) directly from the V, Ti, Fe, Al and Mg rich sulphuric acid leach solution as the first precipitation product (KRR ASX release 26 November 2019). This process development resulted from investigations into removing iron from the leach solution to facilitate the solvent extraction of vanadium (V) and titanium (Ti). KRR is now able to remove 95% of the Al as an intermediate compound and in a second step ~50% of the Fe and ~58% of the magnesium (Mg) in a simple process that has the potential to be relatively low cost using readily available reagents and operates at leach temperature and atmospheric pressure.
- Purification of the intermediate Al rich product has produced a 99.98% Al_2O_3 (3N8) HPA on calcination and washing (calculated on an oxide basis, where impurities are converted to oxides then subtracted from 100%). Optimisation testwork to improve HPA purity and efficiency is underway.
- KRR had previously been progressing flowsheet development where Al was to be the last metal extracted from the leach solution by solvent extraction or chemical precipitation methods. Testwork could not commence on Al extraction and HPA production until the V, Ti and Fe had been removed.

- Testwork in the coming weeks will also trial the potential of the new HPA process to extract Alumina from the waste fraction (~70% of mined volumes) that is generated at the concentrate stage of the process. The grade of Al in the ROM material is 12.7% Al_2O_3 , the magnetic concentrates (30% of mined volumes) typically grade ~7% Al_2O_3 , and the non-magnetic waste fraction (70% of the mined volumes) grades 15-16% Al_2O_3 . The waste fraction is expected to be largely devoid of the Iron, Titanium and Vanadium that are acid consuming in the leaching process. This further process modification may provide the added advantage for a smaller scale start-up SMM project and its future scalability of V, Ti and Fe production in proportion to prices and demand.
- The drilling of the Junction vanadium deposit on the granted Mining Lease M80/267 provides further optionality for the development and timing of the SSM project.

Directors Comments

The Board fully appreciates the frustration and disappointment expressed by shareholders with the delays in completing our PFS in 2019.

The change of project focus towards extracting HPA and the redesign of process route may deliver valuable improvements to project economics, and prove worthy of these delays.

KRR is making positive steps in its PFS process to identify the best process route and scale for the SSM project.

Statement by Competent Person

The information in this report that relates to Exploration Results, Mineral Resources, Metallurgy and Previous Studies is based on information compiled by Ken Rogers (BSc Hons) and fairly represents this information. Mr. Rogers is the Chief Geologist and an employee of King River Resources Ltd, and a Member of both the Australian Institute of Geoscientists (AIG) and The Institute of Materials Minerals and Mining (IMMM), and a Chartered Engineer of the IMMM. Mr. Rogers has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr. Rogers consents to the inclusion in this report of the matters based on information in the form and context in which it appears.



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