KING RIVER RESOURCES LIMITED

Alternative Route To HPA Production

Australian Securities Exchange Announcement **19 November 2020**

Highlights

- ❖ The Speewah Prefeasibility Study (PFS) testwork and studies have now identified a more direct route to complete a process design that outlines a lower risk and faster path towards High Purity Alumina (HPA) production.
- ❖ The new KRR leaching and refining route can be used directly on a readily available industrial Aluminium chemical feedstock
- ❖ Laboratory test results have already confirmed the production of a high purity precursor compound suitable for calcining into HPA.
- ❖ This alternative production circuit is a simpler process than our original process flow sheets and not require the development of associated mining, processing and logistical infrastructure up at Speewah.
- ❖ The simpler flowsheet also offers possible advantages and economic benefits in capex and opex savings and fewer process and development risks.
- ❖ Some additional metallurgical testwork and engineering will be required to finalise the PFS, which is now expected in Q1 2021.
- ❖ A recent HPA market report by CRU International supports strong future demand and pricing of HPA.
- ❖ The Speewah mine development testwork and studies will continue, but focus will shift towards a broader range of battery metals and master alloy compounds.

HPA Production

King River Resources Limited (ASX: KRR) is pleased to provide this High Purity Alumina (HPA) Prefeasibility Study (PFS) update. A decision has been made to deliver the PFS using our HPA process using aluminium chemical feedstocks derived from other industrial processes. This HPA operation would be based at an industrial estate rather than at Speewah in the Kimberley of Western Australia. The change in direction has been identified as a consequence of HPA testwork underway as part of the PFS on the Speewah Project. KRR believes this will assist in completing the PFS, fast track the production of HPA, and improve the business case.

Recently, KRR announced the successful production of a high purity precursor compound from the industrial feedstock (KRR ASX release 11 November 2020). Testwork is underway to further reduce the impurity levels in the precursor compound and improve the HPA purity.

The alternative production circuit is a simpler process than the original process flow sheet involving fewer purification steps, and it does not require the development of a mining operation, beneficiation plant, acid plant, leach tanks, filtration, neutralisation or tailings facilities, or associated infrastructure for a remote mining operation (haul road, accommodation camp, airstrip, borefield), and would involve less transport of reagents and products.

Earlier this week Como Engineers delivered the preliminary CAPEX and OPEX costings for the Speewah processing plant and associated infrastructure, which are in line with expectations. This engineering study has highlighted the potential benefits of utilising the simpler process flowsheet based on an industrial chemical feedstock, namely:

- fewer process circuits and less plant and equipment;
- CAPEX savings;
- lower OPEX;
- fewer process and logistical components to implement that may de-risk and fast track through Definitive Feasibility Studies (DFS), permitting, financing, construction and HPA production.

The KRR HPA refining process and the industrial Aluminium chemical feedstock and reagents used in the process are commercial-in-confidence.

Prefeasibility Study

KRR's decision to modify the PFS to deliver HPA from an alternative chemical feedstock will require additional engineering, testwork and permitting studies now underway.

Allowing for the additional engineering and testwork requirement, the modified PFS is now expected to be delivered in Q1 2021.

Speewah HPA-V-Ti Project

The new HPA development plan does not preclude the future integration of the KRR's HPA process with a flowsheet to produce vanadium and titanium products. The strong forecast demand for grid battery storage and lithium ion batteries especially in electric vehicles makes for a compelling business case to produce high purity products used in these green technologies.

This announcement was authorised by the Chairman of the Company.

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Statement by Competent Person

The information in this report 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.

Appendix 1: King River Resources Limited HPA Project JORC 2012 Table 1

Section 1 : Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling Techniques	*Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.* *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* *Aspects of the determination of mineralisation that are Material to the Public Report.* *In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information.*	This ASX Release dated 19 November 2020 provides an update on KRR HPA Project. KRR plans to use samples in its hydrometallurgical testwork to produce high purity alumina (HPA) sourced from alternative Aluminium feedstocks from other industrial chemical processes. Chemical precipitation methods will be used in the separation and precipitation of a high purity Aluminium precursor compound prior to calcination to high purity alumina product. The process, and feedstock and reagents used are commercial-in-confidence..
Drilling techniques	*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).*	Not Applicable. The samples will be generated from a feedstock of industrial chemicals.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Not Applicable.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Not Applicable.
	Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	Not Applicable.
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*	Not Applicable.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Not Applicable.
	The total length and percentage of the relevant intersections logged.	Not Applicable.
	If core, whether cut or sawn and whether quarter, half or all core taken.	Not Applicable.

Sub-sampling techniques and sample preparation	*If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.*	Not Applicable.
	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Not Applicable.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	Not Applicable.
	Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.	Not Applicable.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	Sample sizes are considered appropriate to the grain size of the material being sampled.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	TSW Analytical Testwork Testwork includes chemical precipitation of intermediate aluminium compounds from solutions made from industrial aluminium chemicals, solid liquid separations, purification steps involving recrystallisation methods, and calcination to produce HPA. Assays are conducted on leach solutions and solid residues, mother liquors and residue liquors. TSW Analytical is a well-established analytical service provider that has developed a reputation for producing accurate analyses for complex samples. The company's expertise has assisted with the development of the hydrometallurgical flow-sheets. Samples have been assayed using ICP-AES and ICP-MS. Solid samples were fused in a lithium borate flux, the resultant glass bead was dissolved in hydrochloric acid and suitably diluted for either ICP-MS or ICP-AES analysis. Loss on Ignition (LOI) at 1000 degrees C was performed for completeness of the analytical data and to give a better indication of the total analytical percentage approximation to 100%. Soluble solid samples (such as intermediate aluminium compounds and recrystallised solids) were digested in nitric acid and the digestate was suitably diluted for ICP-AES or ICP-MS analysis. The liquor samples (such as leach solutions, wash liquors, mother liquors) have been analysed using ICP-AES and ICP-MS. The samples were diluted suitably for the appropriate ICP based analysis. Dilutions are used to bring the analyte concentration into the optimum analytical range of the ICP instrument used and to reduce matrix interference complications during quantification. Precipitation efficiency has been determined using the mass of the total analyte in the leach residue divided by the mass of the total analyte in the initial leach solution used. The resulting fraction is multiplied by 100 to give percent precipitation efficiency. Similarly the recovery of soluble solid precipitates has been determined using the mass of analyte in the precipitate divided by the mass of the total analyte in the pregnant liquor from which it was derived. The resultant fraction is multiplied by 100 to give the percent recovery. TSW Analytical uses in-house standards and Certified Reference Materials (CRMs) to ensure data are "Fit-For-Purpose".
	For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their	Not Applicable.

	derivation, etc.	
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	TSW Analytical TSW reports concentrations as micrograms per gram (µg/g) in the solid (unless otherwise stated). Instrumental response is measured against AccuTrace High Purity multi-element standards (Choice Analytical) to achieve quantitation. Data are subjected to in-house QA and QC procedures where an independent analyst recalculates instrumental output and compares the newly generated data set with the original. Lack of equivalence between the two data sets triggers an internal review and if necessary re-analysis of the entire data set. Under these circumstances a third independent analyst will assess all generated data prior to sign off. Initial equivalence between the two data sets, generated by the analyst and reviewer, will clear data for remittance to the customer. All reports are reviewed by an independent analyst prior to submission to the customer and where necessary relevant changes, such as wording that may give rise to possible ambiguity of interpretation, will be modified prior to the final report being sent to the customer.
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Solid sample assays done in triplicate. Different assays methods used by TSW. Verification assays on precursor and HPA products now routinely sent to umpire laboratory
	The use of twinned holes.	Not applicable
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Not applicable
	Discuss any adjustment to assay data.	Not Applicable
Location of data points	*Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*	Not Applicable.
	Specification of the grid system used.	Not Applicable.
	Quality and adequacy of topographic control.	Not Applicable.
Data spacing and distribution	*Data spacing for reporting of Exploration Results.*	Not Applicable.
	Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.	Not Applicable.
	Whether sample compositing has been applied.	Not Applicable.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	Not Applicable.
	If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.	Not Applicable.
Sample security	*The measures taken to ensure sample security.*	Chain of Custody is managed by the Company until testwork samples pass to TSW Analytical Pty Ltd, a duly certified metallurgical laboratory, for subsampling, assaying, and

		hydrometallurgical test work. The Aluminium feedstock sample was delivered to the metallurgical laboratory by the Company or a competent agent. The chain of custody passes upon delivery of the samples to the metallurgical laboratory. Products, Residues and Duplicates of all samples are retained at the Company's Perth laboratory to insure against any sample loss
Audits or Reviews	*The results of ay audits or reviews of sampling techniques and data.*	No external audits have been completed.

Section 2 : Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	Not Applicable.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Not Applicable.
Geology	*Deposit type, geological setting and style of mineralisation.*	Not Applicable.
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length.* ○ *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	Not Applicable.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.*	Not Applicable.
	Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.	Not Applicable.

Criteria	JORC Code explanation	Commentary
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	Not Applicable.
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').*	Not Applicable.
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	Not Applicable.
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	Reports on previous metallurgical results can be found in ASX Releases that are available on our website, including announcements 1 April 2010, 15 July 2010, 9 November 2010, 8 February 2012, 21 April 2017, 21 August 2017, 9 October 2017, 4 December 2017, 30 January 2018, 27 February 2018, 21 March 2018, 25 June 2018, 23 July 2018, 15 October 2018,19 November 2018, 18 January 2019, 1 March 2019, 21 March 2019, 22 March 2019, 9 May 2019, 7 June 2019, 27 September 2019, 26 November 2019, 6 December 2019, 22 January 2020, 24 March 2020, 23 April 2020, 13 May 2020, 17 June 2020, 7 September 2020, 13 October 2020 and 11 November 2020.
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	Not Applicable.
Further work	*The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	Further metallurgical tests are planned to produce HPA by the Company's process.