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**Australian Securities Exchange Announcement****10 April 2018**

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King River Copper Limited (ASX: KRC) provides this update on the progress of the company's Vanadium Concept Study for its 100% owned Speewah Vanadium Project in the East Kimberley of Western Australia. The main objective of the Concept Study is to identify and address the technical hurdles necessary to complete a Scoping Study.

The study is examining the production of high purity vanadium pentoxide (99.5-99.9%  $V_2O_5$ ), titanium dioxide (>99%  $TiO_2$ ) and iron oxide (>68%  $Fe_2O_3$ ) products utilising a novel process using a concentrate derived from the Speewah Central vanadium deposit. The Company is also investigating the means for the production of the vanadium electrolyte (VE) products that are used in vanadium flow batteries (VFB).

KRC aims to be a producer of 12,000 tonnes per annum of high purity vanadium pentoxide, 75,000-90,000 tonnes per annum of titanium dioxide and 300,000-400,000 tonnes per annum of iron oxide (hematite) in 3-4 years.

Items still being addressed in the Concept Study include:

- ❖ Finalising the Process Flow Sheet (PFS):
  - Optimisation of the  $V_2O_5$ ,  $TiO_2$  and  $Fe_2O_3$  process routes and improving recoveries
  - Optimising hydrochloric acid recovery
  - High-level mass and energy balance
  - Capital and operating cost estimates of processing
- ❖ Mining and beneficiation cost estimates
- ❖ Open pit optimisation and mining schedule study.

Once these items have been addressed, KRC will finalise a Scoping Study into the preliminary economics of the Speewah Vanadium Project suitable for release to the market in accordance with the reporting requirements for production targets and forward looking statements. The modifying factors listed in the JORC 2012 Code will be considered to address the Material Assumptions for the Scoping Study (please refer to Appendix 1).

KRC is very pleased with results and the major developments to date including:

- In 2017 CSA Global Pty Ltd (CSA Global) updated the Mineral Resource estimate reporting in accordance with the JORC Code (2012). The Measured, Indicated and Inferred Mineral Resource, reported at a 0.23%  $V_2O_5$  cut-off grade from the Central, Buckman and Red Hill deposits, comprises 4,712 million tonnes at 0.3%  $V_2O_5$ , 2% Ti and 14.7% Fe (refer to KRC ASX announcement 26 May 2017 for the full resource statement details<sup>1</sup>). The high grade zone within the Central Vanadium resource comprises a combined Measured, Indicated and Inferred Mineral Resource of 520 million tonnes at 0.36%  $V_2O_5$ , 2% Ti and 14.8% Fe (reported at a 0.23%  $V_2O_5$  cut-off grade). Only the Measured and Indicated Resources within the high grade zone of the Central deposit (approximately 270 million tonnes at 0.37%  $V_2O_5$ ) will be used in the Concept Study, including samples used in metallurgical testwork and studies.

<sup>1</sup> KRC confirms it is not aware of any new information or data that materially affects the information included in this announcement and confirms that all material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed.

- Beneficiation testwork produced a 2.11% V<sub>2</sub>O<sub>5</sub> magnetite-ilmenite concentrate, at higher mass yield and metal recoveries to that reported in the Scoping Study completed in 2012. The concentrate has been produced at a much coarser grain size (120 micron vs 45 micron) and this new beneficiation process rejected more waste from the concentrate (refer KRC ASX announcement 21 March 2018). An engineering consultant will shortly be engaged to design the beneficiation circuit and provide operating and capital cost estimates for the mining and beneficiation operations at Speewah.
- Hydrochloric acid leaching of the concentrate has demonstrated V, Ti and Fe recoveries >96% at 9M acid strength, 90°C leach temperature and 10% pulp densities (refer KRC ASX announcements 21 August 2017, 9 October 2017, 4 December 2017, 30 January 2018, and 27 February 2018). Further tests are underway to optimise conditions suitable for an operating plant.
- Hydrothermal precipitation testwork has produced a high purity titanium dioxide (99.5% TiO<sub>2</sub>) product (refer KRC ASX announcement 30 January 2018). Further testwork is underway to improve recoveries and increase the grade. Research is also underway to produce titanium metal sponge.
- Chemical precipitation testwork has produced a very high grade vanadium pentoxide (99.48% V<sub>2</sub>O<sub>5</sub>) product (KRC ASX announcement 27 February 2018). Further testwork is underway to improve recoveries and increase the purity to >99.5% V<sub>2</sub>O<sub>5</sub>. KRC will use this material for testwork to manufacture vanadium electrolytes.

The Vanadium product generation testwork is different from other process routes that use salt roast technology or solvent extraction (SX) methods, both of which were trailed by KRC in 2010 - 2012. An SX process route had previously been adopted by KRC in the Scoping Study of 2012.

- Testwork is underway to produce an iron oxide hematite product and improve acid recovery.
- A Conceptual Process Flow Sheet (PFS) for a novel hydrometallurgical process is currently under development by TSW Analytical Pty Ltd, which will include operating and capital expenditure estimates and an economic analysis. This work is incomplete and ongoing as the process route and recoveries are continuing to be improved and refined.
- KRC envisages an open cut mining operation based on the high grade zone of the Central Vanadium deposit which outcrops and has shallow dipping geometry (refer KRC ASX announcement 10 May 2011 for a Preliminary Pit Modelling Study).
- CSA Global have been appointed to complete a conceptual mining study which comprises a preliminary pit optimisation and mining schedule using the Mineral Resource block model for the Central vanadium deposit. Initially a conceptual pit containing approximately 120Mt of high grade zone material will be investigated to help visualise the mining operation for internal management purposes using available information. This is less than 50% of the Measured and Indicated Mineral Resources of the high grade zone in the Central deposit.

During the study, the relevant mining and beneficiation cost estimates, anticipated mining dilution and mining recovery factors, hydrometallurgical recoveries and processing costs, and metal prices, will be applied to the Resource model. The study will develop a series of pit shells for an in-pit resource estimate and generate a production schedule of tonnes and grade and strip ratio for each year of a potential future mining operation.

Each of these new developments will be reported on completion.

**Anthony Barton**  
Chairman  
King River Copper Limited

### **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 Copper 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: Modifying Factors to be applied to the Speewah Vanadium Mineral Resources  
Material Assumptions for the proposed Scoping Study**

<b>Criteria</b>	<b>Commentary</b>
<i>Mineral Resource Estimate for conversion to Ore Reserves</i>	<ul style="list-style-type: none"> <li>CSA Global Pty Ltd updated the Mineral Resource estimate in accordance with the JORC Code (2012) in 2017. KRC confirms it is not aware of any new information or data that materially affects the information included in this announcement and confirms that all material assumptions and technical parameters underpinning the estimate continue to apply and have not materially changed since that time.</li> <li>The total Measured, Indicated and Inferred Mineral Resource in the Central, Buckman and Red Hill deposits is 4,712 million tonnes at 0.3% V<sub>2</sub>O<sub>5</sub>, 2% Ti and 14.7% Fe reported above a 0.23% V<sub>2</sub>O<sub>5</sub> cut off as reported in KRC ASX announcement 26 May 2017.</li> <li>Testwork and studies have not been completed at a Pre-feasibility Study standard to allow for conversion to Ore Reserves.</li> </ul>
<i>Site visits</i>	<ul style="list-style-type: none"> <li>Site visits have been undertaken by the Competent Persons involved in the Mineral Resource Estimate and this Concept Study update.</li> </ul>
<i>Study status</i>	<ul style="list-style-type: none"> <li>The Speewah vanadium project has been the subject of a number of studies and metallurgical testwork between 2006 and 2012 (see KRC ASX announcement 21 April 2017). These were the basis of a Scoping Study for the production of vanadium pentoxide, titanium dioxide and iron oxide (hematite) products from the Central Vanadium deposit completed in 2012 (see KRC ASX announcement 23 April 2012).</li> <li>The Concept Study in this report is incomplete. It is designed to provide the framework for a Scoping Study into the production of high purity vanadium pentoxide, titanium dioxide and iron oxide from the Central Vanadium deposit.</li> <li>The main outstanding inputs are the completion of a Concept Process Study (including the Process Flow Sheet with costings) by TSW Analytical Pty Ltd, mining and beneficiation costs by an engineering consultant to be commissioned, and a conceptual mining study by CSA Global.</li> </ul>
<i>Cut-off parameters</i>	<ul style="list-style-type: none"> <li>The Mineral Resource is reported at 0.23% V<sub>2</sub>O<sub>5</sub> cut-off grade.</li> <li>A cut-off grade for the proposed in-pit resources has yet to be determined.</li> </ul>
<i>Mining factors or assumptions</i>	<ul style="list-style-type: none"> <li>The mining methods, pit slopes, mining dilution and mining recovery factors, and minimum mining widths have yet to be determined in the conceptual mining study.</li> <li>The amounts of Measured, Indicated and Inferred Mineral Resources in the pit optimisation shell have yet to be determined.</li> <li>The infrastructure requirements of a mining operation have yet to be determined.</li> </ul>
<i>Metallurgical factors or assumptions</i>	<ul style="list-style-type: none"> <li>The proposed beneficiation process involves conventional crushing, grinding and magnetic separation methods similar to other vanadium operations that produce a magnetite-ilmenite concentrate and is appropriate to the style of mineralisation.</li> <li>The proposed vanadium, titanium and iron refining processes are novel and the process flow sheet development is incomplete and ongoing.</li> <li>Reverse circulation and diamond core samples from the Central Vanadium deposit are used in metallurgical testwork. Work has included beneficiation tests to produce a magnetite-ilmenite concentrate, including particle size analyses, magnetic separation tests, comminution testwork, and variability studies. In addition, salt roast, pyrometallurgical, acid leach, solvent extraction, thermal hydrolysis and chemical precipitation recovery tests and studies have been undertaken. Beneficiation and hydrometallurgical testwork is ongoing to refine the process route.</li> <li>A broad range of elements, in addition to V, Ti and Fe, are analysed in all metallurgical testwork to detect any deleterious elements. Chromium, copper, lead, zinc, arsenic, cadmium, sulphur and phosphorus are not sufficiently abundant to cause processing problems or economic and environmental issues. Silica, aluminium and calcium levels in the host rock require fine grinding to produce a concentrate suitable for salt roast process recovery but not hydrometallurgical process routes; only trace quantities of these elements have reported into the vanadium and titanium products generated by KRC testwork.</li> <li>A 6 tonne bulk composite sample collected from drillholes within the high grade zone of the Central vanadium deposit was used in 2011-2012 to make a concentrate for acid leaching and solvent extraction testwork.</li> <li>No pilot scale tests have been conducted for the Speewah Vanadium project.</li> </ul>

<i>Environmental</i>	<ul style="list-style-type: none"> <li>• Flora and fauna desktop and field studies have been completed at Speewah in 2009 and 2010 (see KRC ASX announcement 21 April 2012).</li> <li>• No Declared Rare Flora species pursuant to subsection (2) of section 23F of the Wildlife Conservation Act 1950 [WA] and as listed by the Department of Environment and Conservation (2007) and no threatened Flora listed pursuant to section 179 of the Environment Protection Biodiversity Conservation Act 1999 [Commonwealth] have been recorded by Flora surveys within the Speewah Project Area in 2009 and 2010.</li> <li>• Additional work is planned to update these studies as the list of species has changed.</li> <li>• Hydrological, soil and heritage surveys have also been completed and require updating.</li> </ul>
<i>Infrastructure</i>	<ul style="list-style-type: none"> <li>• Speewah is located 110km south of the port of Wyndham in Western Australia. Access is via the sealed Great Northern Highway then 45km of unsealed station tracks to site, being a total of 160km by road from Wyndham.</li> <li>• Power and water supply and hauls roads will need to be established.</li> <li>• The Great Northern Highway has been used for bulk transport of minerals to the Wyndham Port from mine sites south of Speewah.</li> <li>• Wyndham Port takes ships of maximum displacement 34,000 DWT. There is also a barge loading facility that may be available.</li> <li>• Kununurra is the main regional centre, located 160km from the Speewah site.</li> </ul>
<i>Costs</i>	<ul style="list-style-type: none"> <li>• Capital and operating cost assumptions will be made by consultants addressing the mining, beneficiation and refining costs using industry standard information and databases.</li> <li>• The conceptual mining study will use the relevant mining and beneficiation cost estimates, anticipated mining dilution and mining recovery factors, hydrometallurgical recoveries and processing costs, and metal prices, applied to the Mineral Resource model.</li> </ul>
<i>Revenue factors</i>	<ul style="list-style-type: none"> <li>• The current commodity prices for vanadium pentoxide, titanium dioxide and iron oxide (hematite) will be used in the mining, beneficiation and refining studies.</li> </ul>
<i>Market assessment</i>	<ul style="list-style-type: none"> <li>• For vanadium, energy storage, steel and Al-Ti-V master alloys continue to drive vanadium demand and prices. Vanadium pentoxide (V<sub>2</sub>O<sub>5</sub>) prices for flake have doubled since the KRC Scoping Study completed in 2012. This has been influenced by low inventory and high demand. KRC assessment is for an increasing demand in the future for vanadium products in existing and new markets including vanadium flow batteries (VRB) and vanadium electrolyte.</li> <li>• For titanium, the titanium oxide market and price are also increasing, mainly driven by the increasing use in plastics, paints and coatings, cosmetics, and increasing demand for lightweight vehicles</li> </ul>
<i>Economic</i>	<ul style="list-style-type: none"> <li>• KRC is unable to discuss production targets and forecasting financial information.</li> </ul>
<i>Social</i>	<ul style="list-style-type: none"> <li>• There are no Native Title claimant groups over the Speewah vanadium deposit.</li> <li>• KRC commenced discussion with the Woolah Aboriginal Corporation, the owners of Doon Station, in 2011 for the future development of the vanadium project.</li> <li>• Site clearance studies have been undertaken over the Central vanadium deposit and along proposed haul roads. Additional surveys will be required.</li> <li>• Further negotiations and representations are required with all stakeholders.</li> </ul>
<i>Other</i>	<ul style="list-style-type: none"> <li>• KRC will be required to apply for a Mining Lease over the Mineral Resource.</li> <li>• There are several material risks common to all mining projects.</li> </ul>
<i>Classification</i>	<ul style="list-style-type: none"> <li>• No Ore Reserves have been defined or classified.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>• The Mineral Resource was completed by independent mining consultants CSA Global in 2017. CSA Global's update was a conversion of an earlier estimate by Runge Limited completed in 2012. Both estimates reported the same tonnages and grades.</li> <li>• No Ore Reserve audits have been undertaken.</li> </ul>
<i>Discussion of relative accuracy/confidence</i>	<ul style="list-style-type: none"> <li>• The Vanadium Mineral Resource at Speewah has been reported in accordance with the JORC Code (2012) and classified as Measured, Indicated and Inferred. Only the Measured and Indicated Mineral Resources of the Central Vanadium deposit will be used in the Concept Study underway.</li> <li>• Insufficient metallurgical testwork or studies have been completed to the level of a Pre-feasibility Study to allow the definition of Ore Reserves.</li> <li>• The Concept Study underway applies to the Central Mineral Resource and will be more accurately defined when the conceptual mining study identifies a pit shell within the wireframes used for resource estimation.</li> </ul>