



SUCCESSFUL ELECTROCHEMICAL RESULTS ON SKALAND ANODE MATERIAL

- **High first cycle efficiency of 90.6% for Uncoated Skaland Spherical Graphite purified using proprietary, environmentally sustainable process developed with CSIRO**
- **Steady-state capacity of 369 mAh/g for uncoated purified Skaland spherical graphite - close to theoretical maximum (372 mAh/g) for graphite**
- **Skaland Anode material performed comparably to commercially available reference material in key performance benchmarks of efficiency and capacity**
- **Additional testing, including Munglinup samples and coated samples, in progress**

Mineral Commodities Ltd (“MRC” or “the Company”) is pleased to announce the first coin cell electrochemical testing results on Skaland Uncoated Purified Spherical Graphite, which has been purified using a new environmentally sustainable process developed by Australia’s national science agency, CSIRO, under the Australian Federal Government Co-operative Research Centres Project’s, CRC-P Project¹. The purification process developed by CSIRO uses standard industrial reagents and avoids the use of toxic Hydrofluoric Acid (“HF”).

The cells produced using **Skaland uncoated purified spherical graphite achieved an average first cycle efficiency of 90.6%** and 90.7% for the commercial reference material. The first cycle efficiency is an important industry performance indicator. It measures the loss of lithium in forming a protective layer on the graphite anode known as the Solid Electrolyte Interface (“SEI”). It is expected to improve further on coating of the graphite.

The Skaland anodes reached a steady-state discharge capacity of 369 mAh/g, in comparison to 363 mAh/g for the cells containing the commercial reference anode. Both results are very close to the theoretical maximum electrical energy storage capacity of 372 mAh/g for graphite anodes.

	Uncoated Skaland Anode Material	Commercial Reference Material
First Cycle Efficiency (%)	90.6%	90.7%
Steady State Capacity (mAh/g)	369	363

Table 1: Skaland Anode performance against commercial reference material

¹ Refer ASX announcement entitled ‘[Active Anode Materials Plant \(AAMP\) Purification Success](#)’, dated 13 September 2021.

The electrochemical testwork was undertaken by CSIRO Manufacturing, Clayton Victoria. Testing was conducted on a sample of Skaland uncoated spherical graphite purified using the process developed with the CSIRO under the CRC-P Project and a high-quality commercially available natural graphite anode material as a reference. Ten half-cells were produced from each anode material under identical conditions, with high loadings of 10 mg/cm² and densities of at least 1.6 g/cm³ to simulate realistic anode conditions.

Further testwork is in progress, including testing on Munmlinup spherical graphite and on a number of alternative coating options.

Chief Executive Officer, Jacob Deysel, said, "We are very pleased with these results which support Skaland concentrate and the non-HF purification process as an element of our value-creating, vertically integrated European graphite strategy. We are looking forward to further optimisations on Skaland anode performance as well as the results for Munmlinup to support a similar strategy for Australia."

Chief Executive Officer designate of Ascent Graphite, Peter Fox, said "These results demonstrate the favourable electrochemical properties of Skaland material and it appears that the environmentally sustainable purification process produces anode material with similar performance to commercially available anode materials from China.

With these results, we are demonstrating that CSIRO's innovative new purification process can produce material that looks promising in today's market but made using technology that is environmentally responsible and sustainable."

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**Issued by Mineral Commodities Ltd ACN 008 478 653 www.mineralcommodities.com
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About Mineral Commodities Ltd:

Mineral Commodities Ltd (ASX: MRC) is a global mining and development company with a primary focus on the development of high-grade mineral deposits within the mineral sands and battery minerals sectors.

The Company is a leading producer of zircon, rutile, garnet and ilmenite concentrates through its Tormin Mineral Sands Operation, located on the Western Cape of South Africa.

In October 2019, the Company completed the acquisition of Skaland Graphite AS, the owner of one of the world's highest-grade operating flake graphite mine and one of the only producers in Europe.

The planned development of the Munglinup Graphite Project, located in Western Australia, builds on the Skaland acquisition and is a further step toward an integrated, downstream value-adding strategy which aims to capitalise on the fast-growing demand for sustainably manufactured lithium-ion batteries.

About Ascent Graphite

On 5 October 2021, the Company announced the results of a strategic review process², to optimise the Company's corporate and capital structure to fund future growth and accelerate shareholder value, targeting the development of anode production from a dedicated Active Anode Materials Plant ("AAMP") in Norway. MRC announced plans to separate its Norwegian Graphite Assets and its environmentally sustainable purification process into a newly incorporated Norwegian entity branded Ascent Graphite ("Ascent Graphite") with a Norway/European facing, independent Board and operating structure to provide an optimal platform to attract funding and increase value.

Cautionary Statement

This report may contain forward-looking statements. Any forward-looking statements reflect management's current beliefs based on information currently available to management and are based on what management believes to be reasonable assumptions. It should be noted that several factors could cause actual results or expectations to differ materially from the results expressed or implied in the forward-looking statements.

² Refer ASX announcement entitled '[MRC to form a European Sustainable Graphite Business](#)', dated 5 October 2021.