

**ASX Announcement**

23 January 2023

## **Los Pumas High Purity Manganese For EV Battery Manufacture**

Southern Hemisphere Mining Limited (“Southern Hemisphere” or “the Company”) advises that technical work is advancing on its 100% owned Los Pumas Manganese deposit (“Los Pumas”) in Northern Chile towards a battery grade product to meet the growing demand for electric vehicles (“EV”).

Studies are in progress to evaluate potential for production of **High Purity Manganese Sulphate Monohydrate** (“HPMSM”) at site to supply the North American EV market. Los Pumas hosts a resource of 23.7 million tonnes of Manganese ore, with potential for expansion. The ore is from surface, ideal for open pit low-cost mining and near the port of Arica in Northern Chile for simple product export to the United States West Coast and for the USA EV production facilities.

The Company is working with Mn Energy Limited (“MN Energy”) to conduct preliminary test-work on the Los Pumas ore employing the Mn Energy patent pending leach-purification method for HPMSM manufacture. Samples of ore from Los Pumas deposit have been collected from site and are in transit to Mn Energy for this first phase of test-work.

Mn Energy is a participant in the Future Batteries Industry Cooperative Research Centre (“FBICRC”) Cathode Precursor Pilot Plant Project and has provided samples of its HPMSM for use in ongoing test work and development. FBICRC has successfully utilised a sample of Mn Energy’s HPMSM in the first Australian production of high-quality precursor cathode active material (“P-CAM”). The Mn Energy/FBICRC joint statement as released on their LinkedIn page is attached.

[https://www.linkedin.com/posts/mnenergy\\_joint-statement-from-fbicrc-and-mne-activity-6957176096488394752-aS9P?utm\\_source=share&utm\\_medium=member\\_ios](https://www.linkedin.com/posts/mnenergy_joint-statement-from-fbicrc-and-mne-activity-6957176096488394752-aS9P?utm_source=share&utm_medium=member_ios)

The Company is currently in the process of updating the Los Pumas Manganese resource, as well as technical and metallurgical work on end products suiting the EV battery industry.

Los Pumas Manganese ore is a specific mineralogy (Cryptomelane) which is optimal to produce HPMSM. The market for HPMSM is forecasted to grow tenfold to 2030 based on EV demand, to 3.1mtpa and a deficit of 1.5mt (CPM Group forecast 2021). The majority (90%) of the current supply chain is produced in China and the EV manufacturers report is seeking to balance supply from a range of sources.

The demand for North American high purity manganese is expected to rise to approximately 200,000 tonnes per annum (“tpa”) metal equivalent by 2031, yet there is no current processing capacity and production of battery-grade manganese in North America.

Further results will be reported in due course.

**PROJECTS IN CHILE**

# Los Pumas

**Battery Manganese Project**  
**23.7mt @ 7.81% Mn**  
 Mn for EV Battery Market  
 for production of NCM & HPMSM

[www.shmining.com.au](http://www.shmining.com.au)

# Llahuin

**Copper Gold Moly Project**  
**680,000t**  
 CuEq Resource

[www.shmining.com.au](http://www.shmining.com.au)

Approved by the Board for release.

**CONTACTS:**

For further information on this update or the Company generally, please visit our website at [www.shmining.com.au](http://www.shmining.com.au) or contact the Company:

[cosec@shmining.com.au](mailto:cosec@shmining.com.au)

Telephone: +61 8 6144 0590

**COMPETENT PERSON / QUALIFIED PERSON STATEMENT:**

The information in this report that relates to copper and gold exploration results for the Company's Projects is based on information compiled by Mr Adam Anderson, who is a Member of The Australasian Institute of Mining and Metallurgy and The Australian Institute of Geoscientists. Mr Anderson has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Anderson is a consultant for the Company and consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

For further information, please refer to the Technical Reports and News Releases on the Company's website at [www.shmining.com.au](http://www.shmining.com.au).