

ASX Announcement

10th July 2023

Application for the Lago Lithium Brine Concessions in Chile

Highlights:

- **The Lago Lithium Project includes nine new concessions and covers an area of approximately 27km²**
- **Located near two of the largest lithium operators, SQM and Albemarle, in the renowned lithium-rich Atacama region of Chile**

Southern Hemisphere Mining Limited (“Southern Hemisphere” or “the Company”) (ASX: SUH, FWB: NK4), reports the application for the Lago Lithium Exploration Project (“Lake” in Spanish) located in the renowned lithium-rich Atacama region of Chile. The Salar de Atacama is widely recognised for its exceptional lithium deposits operated by the world’s largest lithium brine producers, SQM and Albemarle.

SQM holds leases in the Salar de Atacama with a total area of approximately 1,400km² and possesses permission to extract brines from an area of approximately 820km². SQM produces highly concentrated lithium chloride at its facility in the Salar de Atacama which are then transported to its PQC lithium carbonate processing facilities near Antofagasta, Chile. The annual production of the lithium carbonate plant at PQC is 180,000 metric tonnes per year (mtpa) and is in the process of increasing the production capacity to 250,000 mtpa by 2026. (source SQM Technical Report Summary – Operation Report for Salar de Atacama April 2022).

The Company’s concessions were applied for following a comprehensive evaluation process, targeting exploration for lithium brines that are potentially suitable for Direct Lithium Extraction technology. (DLE) They are located in an adjacent sedimentary basin to the Salar de Atacama with excellent road access. (Refer Figure 1). The Company is unaware of any competing application(s) on the public register.

Lithium, a vital component in the production of high-performance batteries for electric vehicles and renewable energy storage systems, has emerged as a crucial resource in the transition to a greener and more sustainable future.

Chile, renowned for its world-class lithium and copper resources, and established mining infrastructure, serves as an ideal location for our expansion efforts. The application for these concessions in the Atacama region, known for its high lithium concentrations and low impurities, gives the Company exposure to a highly prospective lithium investment and reinforces our commitment to sustainability and responsible resource management.

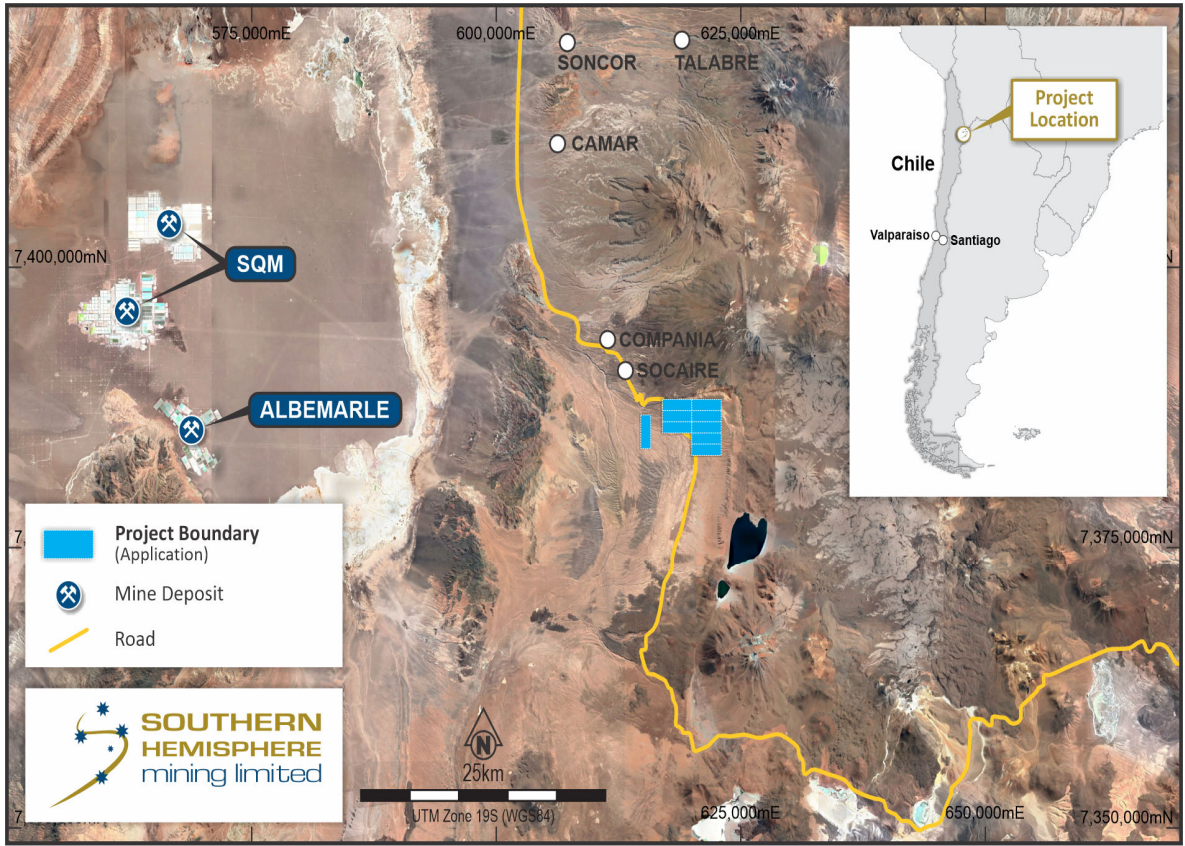


Figure 1: Location of the nine new lithium brine concessions

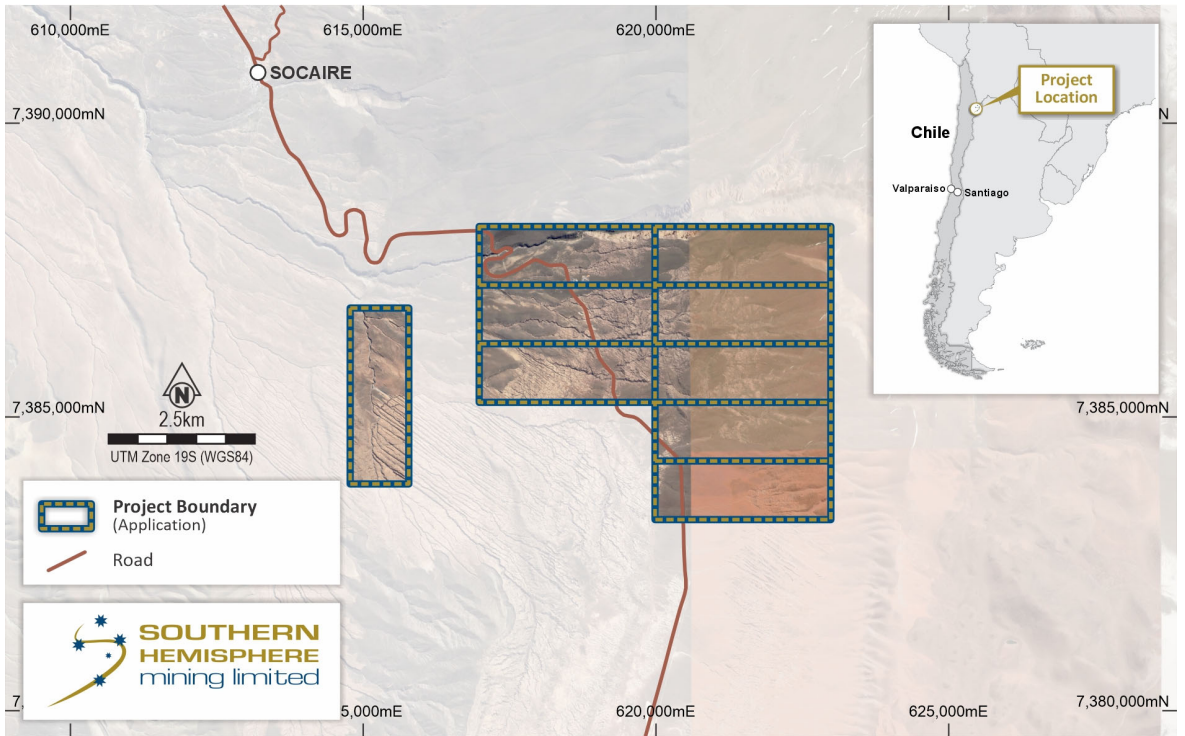


Figure 2: Close up of the nine new lithium brine concessions. Highway 23 provides excellent access to the project area

Southern Hemisphere is targeting prospects that are amenable to DLE. This technology uses innovative methods to extract lithium from brine sources without the need for extensive evaporation ponds or traditional mining processes. DLE technology offers a more efficient and environmentally friendly approach to lithium extraction, particularly from lithium-rich brine deposits found in regions such as salt flats or salars.

The traditional lithium extraction process involves pumping brine from underground reservoirs into evaporation ponds, where the sun and wind help evaporate the water over a period of several months. This method is time-consuming, land-intensive, and can have significant environmental and social impacts, including habitat disruption and water depletion.

DLE technology, on the other hand, aims to minimise these drawbacks by employing more direct and efficient methods of lithium extraction. While there are various DLE technologies in development, they generally involve the following key steps:

Direct Brine Extraction: Instead of relying on evaporation, DLE technologies focus on directly extracting lithium-rich brine from underground reservoirs using specialised wells or boreholes. These extraction methods are designed to target high-concentration lithium zones, reducing the need for extensive pumping and evaporation.

Selective Lithium Separation: Once the brine is brought to the surface, DLE technologies employ specific chemical processes or ion exchange techniques to selectively separate lithium ions from the brine. These processes typically involve passing the brine through various filters or ion-selective membranes that capture and concentrate the lithium ions.

Lithium Recovery: After the selective separation process, the concentrated lithium solution is further processed to remove impurities and other unwanted elements. Various techniques such as precipitation, electrolysis, or solvent extraction may be utilised to isolate and recover pure lithium compounds suitable for downstream applications.

Advantages of DLE technology include:

Faster Lithium Extraction: DLE methods offer significantly faster extraction rates compared to traditional evaporation methods, reducing the overall production time and allowing for more efficient utilisation of resources.

Reduced Environmental Footprint: DLE technologies typically require smaller surface areas and do not rely on extensive evaporation ponds, thereby minimising land use and habitat disruption. They also have the potential to consume less water and energy, reducing the overall environmental impact of lithium extraction.

Scalability: DLE processes can be designed to accommodate a range of production scales, from small pilot plants to large commercial operations, making them adaptable to various project sizes and locations.

High Purity Lithium Output: DLE methods often yield higher purity lithium compounds, which are desirable for the production of lithium-ion batteries used in electric vehicles and energy storage systems.

While DLE technology shows promise in revolutionising the lithium extraction industry, it is important to note that some DLE processes are still in the research and development phase. However, advancements in this field have the potential to significantly improve the sustainability and efficiency of lithium extraction, supporting the growing demand for lithium in clean energy applications.

Recent changes in Chilean government lithium policy has resulted in a pegging rush in this area and others for lithium prospective targets.

Further results on the low-cost exploration work to advance the Lago Lithium Brine project will be reported in due course.

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 or contact the Company:

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BACKGROUND INFORMATION ON SOUTHERN HEMISPHERE MINING LIMITED:

Southern Hemisphere Mining Limited is an experienced minerals explorer in Chile, South America. Chile is the world's leading copper-producing country and one of the most prospective regions of the world for major new copper discoveries. The Company's projects include the Llahuin Porphyry Copper-Gold Project and the Los Pumas Battery Metals Manganese Project, both of which were discovered by the Company.

Llahuin Copper/Gold/Moly Project: Total Measured and Indicated Resources - JORC (2004) Compliant. As announced to the market on 18 August 2013.

Resource (at 0.28% Cu Equiv cut-off)	Tonnes Millions	Cu %	Au g/t	Mo %	Cu Equiv*
<i>Measured</i>	112	0.31	0.12	0.008	0.42
<i>Indicated</i>	37	0.23	0.14	0.007	0.37
Measured plus Indicated	149	0.29	0.12	0.008	0.41
<i>Inferred</i>	20	0.20	0.19	0.005	0.36
Total M+I+I	169	0.28	0.128	0.008	0.40

Note: *Copper Equivalent ("Cu Equiv"): The copper equivalent calculations represent the total metal value for each metal, multiplied by the conversion factor, summed and expressed in equivalent copper percentage. These results are exploration results only and no allowance is made for recovery losses that may occur should mining eventually result. It is the Company's opinion that elements considered have a reasonable potential to be recovered as evidenced in similar multi-commodity natured mines. Copper equivalent conversion factors and long-term price assumptions used are stated below:

Notes on copper recovery from historical testwork

- "Recoveries of copper vary between 75% Cu and 91% Cu with the weighted average of the results being 84% Cu, which is a typically acceptable commercial level";
 - "Recoveries of gold vary between 41% Au and 57% Au, which is in line with expectations given the relatively low gold grades within the deposit"; and
 - "Flotation concentrates produced during testing contained the resource weighted average copper grade of 28% Cu and 4.9g/t Au. They also contained low levels of deleterious materials in the concentrate. Given that these tests were designed to set parameters and were not optimized, the results indicated good flotation process characteristics".
- Copper Equivalent Formula= Cu % + Au (g/t) x 0.72662 + Mo % x 4.412 Price Assumptions- Cu (\$3.40/lb), Au (\$1,700/oz), Mo (\$15/lb)

Los Pumas Manganese Project: Total Measured and Indicated Resources - JORC (2012) Compliant. As announced to the market on 3 May 2023.

Resource (at 2.5% Mn cut-off)	Tonnes	Mn %	Al%	Fe2O3%	K%	P%	SiO2%	SG%
Indicated	23,324,038	6.21	5.71	2.78	2.98	0.05	57.07	2.15
Inferred	6,940,715	6.34	5.85	3.05	2.83	0.05	54.61	2.14
Indicated plus Inferred	30,264,753	6.24	5.74	2.84	2.95	0.05	56.50	2.15

Total JORC Resources for the Los Pumas Manganese Project at a 2.5% Mn cut-off.

Metallurgical studies have demonstrated greater than 38% Mn concentrates are achievable by DMS with low impurities and high silica product.

In relation to the above resources, the Company confirms that it is not aware of any new information or data that materially affects the information in the announcements, and all material assumptions and technical parameters in the announcements underpinning the estimates in the relevant market announcement continue to apply and have not materially changed.

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.