

ASX Announcement

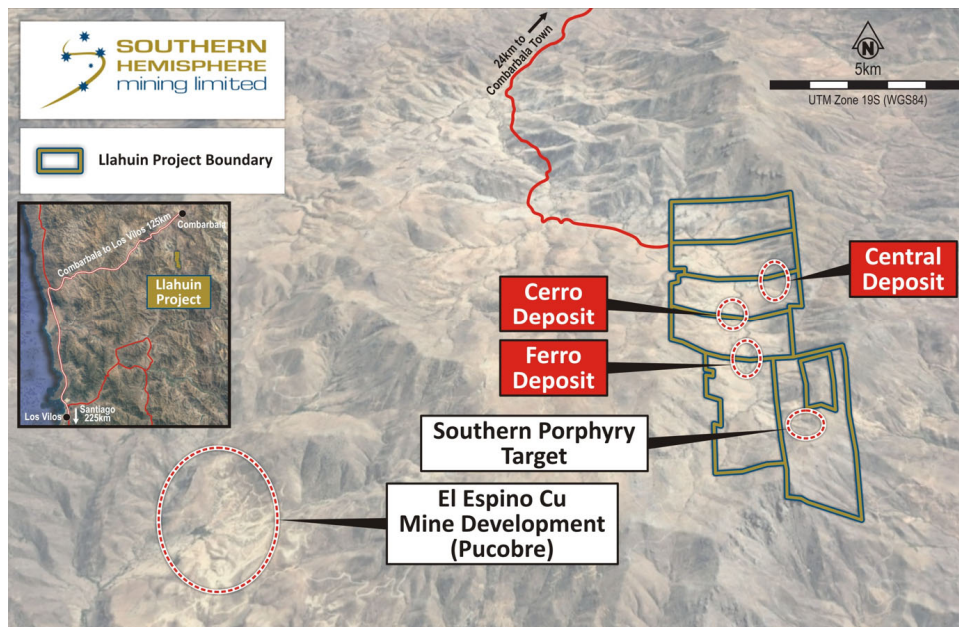
26 April 2023

**QUARTERLY ACTIVITY REPORT  
FOR THE PERIOD ENDED 31 MARCH 2023**

**Highlights:**

- High-grade rock chips up to 17.5% Cu and 1,495g/t Ag expand the mineralised footprint of the Llahuin Copper-Gold Project in Chile
- The Llahuin Southern Porphyry Copper/Gold/Moly target is advancing – located within a large circular magnetic feature – a classic porphyry style magnetic target
- Los Pumas Battery Manganese Project: Studies are in progress to evaluate the potential for production of High Purity Manganese Sulphate Monohydrate ('HPMSM') at site in Northern Chile to supply the North American EV market

Southern Hemisphere Mining Limited ("Southern Hemisphere" or "the Company") (ASX: SUH, FWB: NK4) reports the quarterly activity report for the period ended 31 March 2023 at its Llahuin Copper/Gold/Moly project in central Chile and its Los Pumas Manganese Battery Metal project in Northern Chile.



*Figure 1 Llahuin Copper/Gold/Moly project location map, noting close to the coast, towns, road and ~6km to grid power infrastructure*

## EXPLORATION ACTIVITIES

### Llahuin Copper-Gold-Moly Project 100%

During the quarter under review, the Company continued its exploration work to expand the Llahuin copper (eq) resources from the current 680,000t CuEq resource to the size where mining studies can commence, for a long mine life, substantial operation.

Geological mapping of areas previously un-explored within the project area continued. The best samples included 17.5% and 16.3% copper, 0.94g/t gold and 1,495g/t silver.

Three other standout results included 2.74% copper, 0.58g/t gold and 1,045g/t silver. Further north of Cerro de Oro results received were 16.6% copper, 0.94g/t gold and 1g/t silver, complemented by another strong sample of 16.3% copper, 0.13g/t gold and 4g/t silver.

[\(Refer ASX Announcement dated 3 February 2023, High-Grade Rock Chips – 17.5% Cu & 1,495g/t Ag – Llahium\).](#)

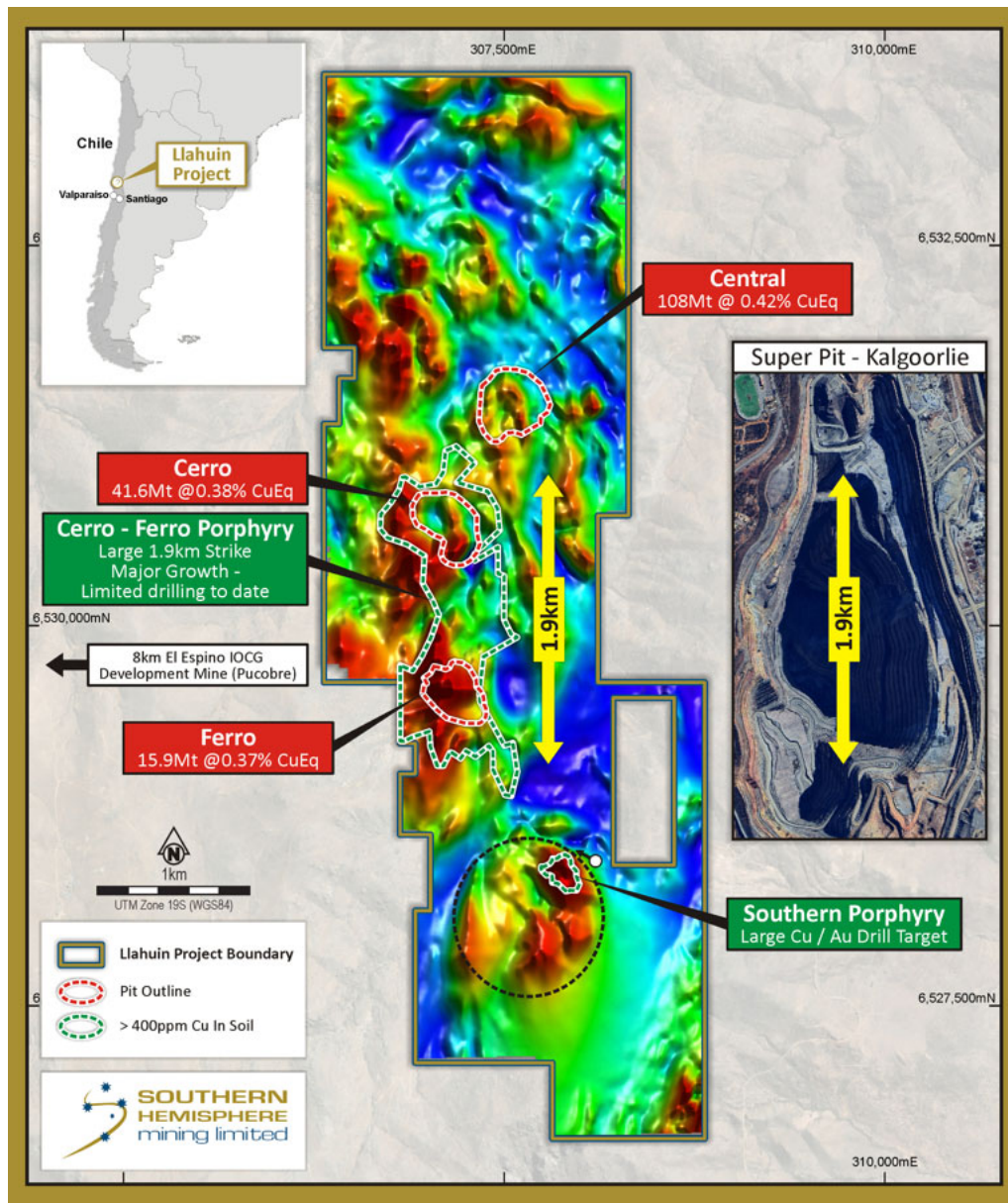
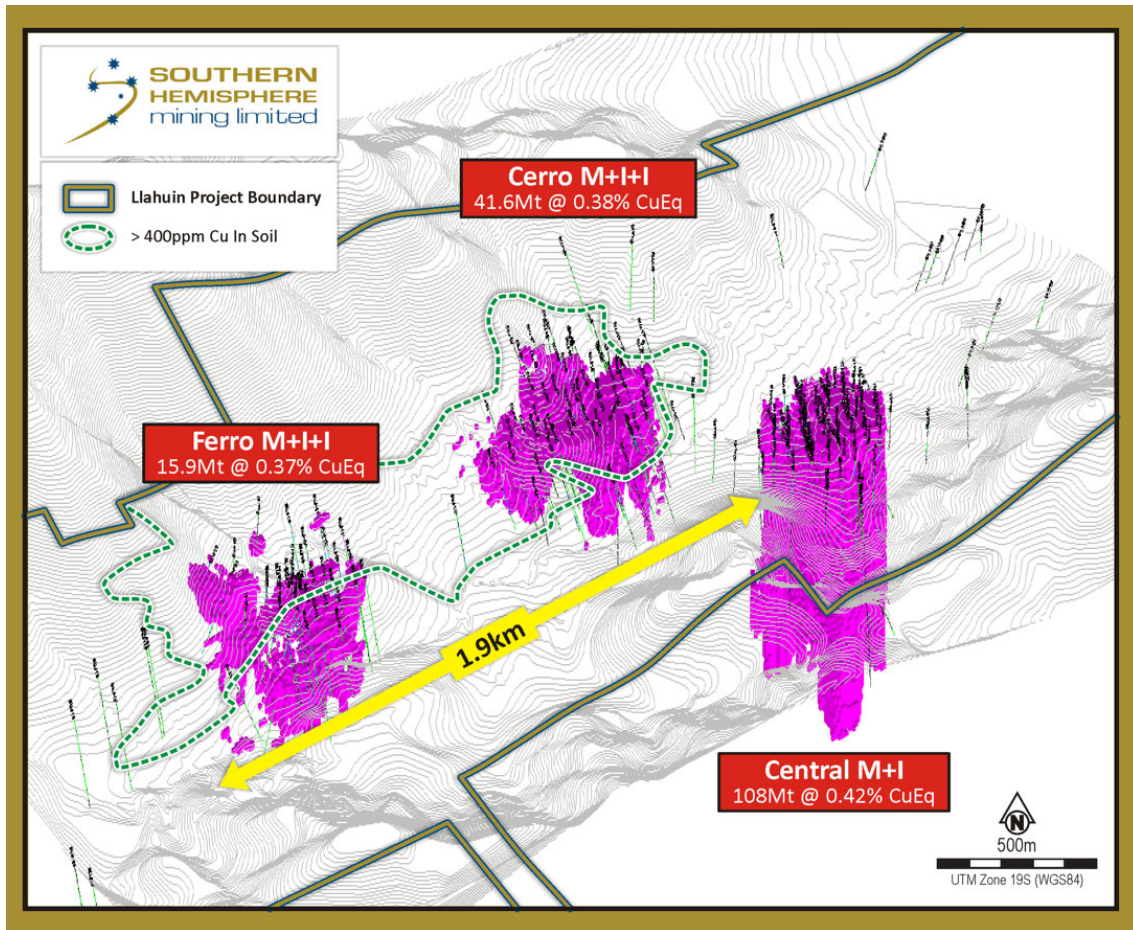


Figure 2 Llahuin Prospects areas with prospect outlines, >400ppm Copper in soil contour (simplified) on magnetics and showing scale comparative to the Kalgoorlie Superpit



**Figure 3. Oreblocks in each of the three deposits, Central drilled deeper and +90% in measured category, no further exploration drilling required to progress to mining studies. Cerro-Ferro only lightly and shallow drilling with connection potential over 1.9km –a large growth target**

The Company completed a second infill soil sampling program which has confirmed and added gold to the new Southern Porphyry target in the South of the Llahuin Project area.

An oblong copper/gold in soil anomaly with a footprint similar to the Central deposit and shows a robust +500ppm copper in soil contour with a peak value of 0.22% (2,232ppm) copper in soil. The core 1,000ppm copper contour extends for approximately 200m in a NNW direction.

The Southern Porphyry gold assays show a robust, coincident +40ppb gold in soil anomaly associated with the copper in soil anomaly with a peak value of 240ppb gold. The anomaly is spatially associated with a large circular magnetic high which is interpreted to be a porphyry signature.

[\(Refer ASX Announcement dated 18 January 2023, Copper Infill Sampling – Llahuin Project\).](#)

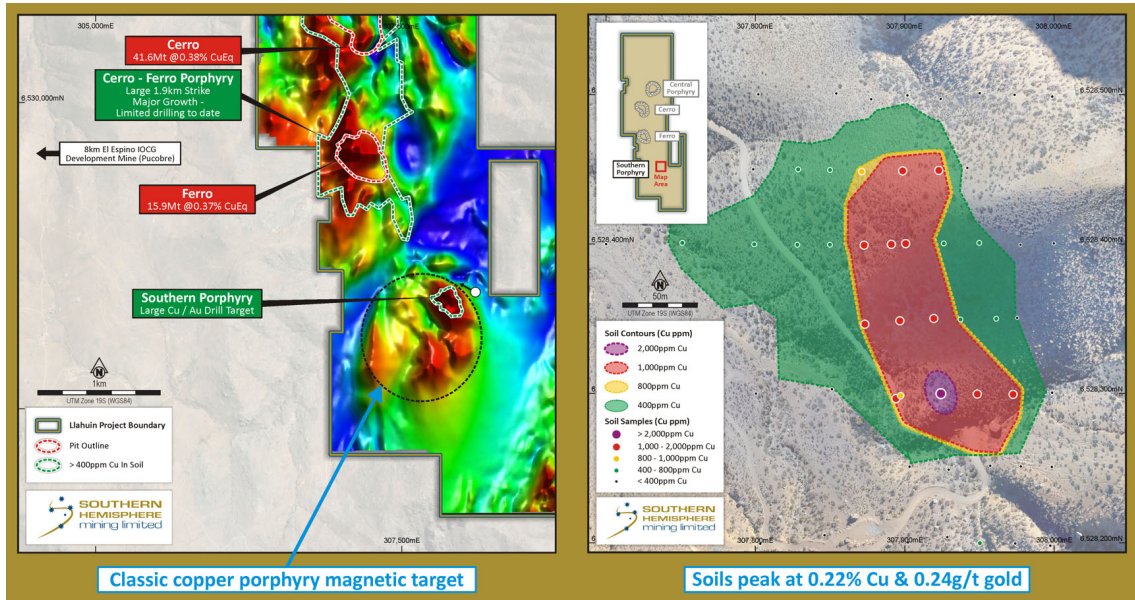


Figure 4. Showing the Southern Porphyry Copper/Gold/Moly growth target ~2km from the Ferro deposit

#### Los Pumas Manganese Project 100%

The Company advanced technical work on the Los Pumas Manganese deposit in Northern Chile towards a battery grade product to meet the growing demand for electric vehicles ('EV').



Figure 5. Los Pumas project area, tenement marker in foreground. Flat lying area, good road access, optimal topography for establishing an operation

Studies are in progress to evaluate the potential for production of High Purity Manganese Sulphate Monohydrate ('HPMSM') at site to supply the North American and other EV markets. Los Pumas hosts a resource of 23.7mt 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 US and for the US EV production facilities.

[\(Refer ASX Announcement dated 23 January 2023, HPMSM – Los Pumas Project\).](#)



***Figure 6. A Chilean Independent Consulting Geologist pointing out one of the previously overlooked high grade Manganese feeder zones outcropping at surface that would be the focus of future diamond drilling***

On 22 March 2023, the Company reported that Mn Energy Ltd, a specialist manganese processing company, had completed the first stage leach amenability test-work on ore provided from the Los Pumas Manganese Project, with excellent results.

The leach amenability test-work determined that the Los Pumas manganese ore was suitable for HPMSM for the battery metals market.

The Los Pumas ore achieved ~99% extraction of manganese under “standard” leach conditions, producing a leach solution containing 80g/L manganese.

[\(Refer ASX Announcement dated 23 March 2023, Amended – Leach Amenability Test-Work Completed – Los Pumas\).](#)



*Figure 7. Showing high grade manganese (dark/black rock) in several thick layers from surface, in optimal low cost mining topography and configuration*

#### **CORPORATE ACTIVITIES**

Chile is a well established tier one mining jurisdiction and holds an A2 Moodys credit rating. Recent acquisitions by major copper producers in the country attest to its attributes, for example, South32<sup>1</sup> purchase of 45% of Sierra Gorda for US\$1.55bn in Nov '21 and Lundin Mining's<sup>2</sup> purchase of 51% of Casserones Copper mine for US\$950m last month.

Payments to related parties during the quarter totalled \$69,956 which included directors fees, superannuation, consulting fees, office lease and equipment rental.

#### **Approved by the Board of Directors**

Keith Bowker

**Company Secretary**

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#### **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.

<sup>1</sup> [www.mining.com/south32-locks-45-stake-in-sierra-gorda-copper-mine/](http://www.mining.com/south32-locks-45-stake-in-sierra-gorda-copper-mine/)

<sup>2</sup> [www.lundinmining.com/news/lundin-mining-to-acquire-a-majority-interest-in-th-123110/](http://www.lundinmining.com/news/lundin-mining-to-acquire-a-majority-interest-in-th-123110/)

## BACKGROUND INFORMATION ON SOUTHERN HEMISPHERE MINING:

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-Moly Project, Colina2 Gold/Copper prospect near Llahuin, and the Los Pumas Manganese Project, all 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
<b>Measured plus Indicated</b>	<b>149</b>	<b>0.29</b>	<b>0.12</b>	<b>0.008</b>	<b>0.41</b>
<i>Inferred</i>	20	0.20	0.19	0.005	0.36
<b>Total M+I</b>	<b>169</b>	<b>0.28</b>	<b>0.128</b>	<b>0.008</b>	<b>0.40</b>

**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 (2004) Compliant. As announced to the market on 25 March 2011.

Resource (at 4% Mn cut-off)	Tonnes Millions	Mn %	SiO <sub>2</sub> %	Fe <sub>2</sub> O <sub>3</sub> %	Al %	K %	P %
<i>Measured</i>	5.27	7.39	57.85	2.78	5.62	2.88	0.05
<i>Indicated</i>	13.06	7.65	55	2.96	5.64	2.92	0.05
<b>Measured plus Indicated</b>	<b>18.34</b>	<b>7.58</b>	<b>55.82</b>	<b>2.91</b>	<b>5.62</b>	<b>2.91</b>	<b>0.05</b>
<i>Inferred</i>	5.39	8.59	51.44	2.72	5.49	2.69	0.06
<b>Total</b>	<b>23.73</b>	<b>7.81</b>					

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

**Tenement List**

Project	Tenement	Interest Acquired during the Qtr	Interest Disposed of during the Qtr	Interest Held at the end of the Qtr
Llahuin	AMAPOLA 1 1 AL 20	-	-	100%
Llahuin	AMAPOLA 2 1 AL 20	-	-	100%
Llahuin	AMAPOLA 3 1 AL 20	-	-	100%
Llahuin	AMAPOLA 4 1 AL 20 - RED 1/18	-	-	100%
Llahuin	AMAPOLA I 1 AL 228	-	-	100%
Llahuin	AMAPOLA II 1 AL 256	-	-	100%
Los Pumas	AWAHOU 1 AL 20	-	-	100%
Los Pumas	EMANUEL 1 AL 20	-	-	100%
Los Pumas	LLUTA I 1 AL 60 RED 1/54	-	-	100%
Los Pumas	LLUTA II 1 AL 300 RED 1/285	-	-	100%
Los Pumas	PUTRE 6, 1 AL 20 RED 1/11	-	-	100%
Los Pumas	PUTRE I 1 AL 20	-	-	100%
Los Pumas	PUTRE II 1 AL 20	-	-	100%
Colina	COLINA 2 1 AL 30	-	-	100%
Colina	COLINA A01	-	-	100%
Colina	COLINA A02	-	-	100%
Colina	COLINA A03	-	-	100%
Colina	COLINA A04	-	-	100%
Colina	COLINA A05	-	-	100%
Colina	COLINA A06	-	-	100%
Colina	COLINA A07	-	-	100%
Colina	COLINA A08	-	-	100%
Colina	COLINA A09	-	-	100%
Colina	COLINA A10	-	-	100%
Colina	COLINA A11	-	-	100%
Colina	COLINA A12	-	-	100%
Colina	COLINA A13	-	-	100%



## Appendix 5B

### Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Name of entity

SOUTHERN HEMISPHERE MINING LIMITED

ABN

17 140 494 784

Quarter ended ("current quarter")

31 MARCH 2023

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (9 months) \$A'000
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	-	-
1.2 Payments for		
(a) exploration & evaluation	(377)	(1,526)
(b) development	-	-
(c) production	-	-
(d) staff costs	(50)	(88)
(e) administration and corporate costs	(89)	(259)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	-	-
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives	-	-
1.8 Other (provide details if material)	-	-
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(516)</b>	<b>(1,873)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) tenements	-	-
(c) property, plant and equipment	-	-
(d) exploration & evaluation	-	-
(e) investments	-	-
(f) other non-current assets	-	-

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (9 months) \$A'000
2.2 Proceeds from the disposal of:		
(a) entities	-	-
(b) tenements	-	-
(c) property, plant and equipment	-	-
(d) investments	-	-
(e) other non-current assets	-	-
2.3 Cash flows from loans to other entities	-	-
2.4 Dividends received (see note 3)	-	-
2.5 Other (provide details if material)	-	-
<b>2.6 Net cash from / (used in) investing activities</b>	<b>-</b>	<b>-</b>

<b>3. Cash flows from financing activities</b>		
3.1 Proceeds from issues of equity securities (excluding convertible debt securities)	150	2,699
3.2 Proceeds from issue of convertible debt securities	-	-
3.3 Proceeds from exercise of options	-	-
3.4 Transaction costs related to issues of equity securities or convertible debt securities	(9)	(35)
3.5 Proceeds from borrowings	-	143
3.6 Repayment of borrowings	-	-
3.7 Transaction costs related to loans and borrowings	-	-
3.8 Dividends paid	-	-
3.9 Other (provide details if material)	-	-
<b>3.10 Net cash from / (used in) financing activities</b>	<b>141</b>	<b>2,807</b>

<b>4. Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1 Cash and cash equivalents at beginning of period	1,475	161
4.2 Net cash from / (used in) operating activities (item 1.9 above)	(516)	(1,873)
4.3 Net cash from / (used in) investing activities (item 2.6 above)	-	-
4.4 Net cash from / (used in) financing activities (item 3.10 above)	141	2,807

## Mining exploration entity or oil and gas exploration entity quarterly cash flow report

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (9 months) \$A'000
4.5	Effect of movement in exchange rates on cash held	1	6
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>1,101</b>	<b>1,101</b>

5. Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts		Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	1,086	1,460
5.2	Call deposits	15	15
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>1,101</b>	<b>1,475</b>

6. Payments to related parties of the entity and their associates		Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	70
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-

*Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments..*

7. Financing facilities <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>		Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
7.1	Loan facilities	-	-
7.2	Credit standby arrangements	-	-
7.3	Other (please specify)	-	-
7.4	<b>Total financing facilities</b>	<b>-</b>	<b>-</b>
7.5	<b>Unused financing facilities available at quarter end</b>		<b>-</b>
7.6	Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

<b>8. Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	(516)
8.2 (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	-
8.3 Total relevant outgoings (item 8.1 + item 8.2)	(516)
8.4 Cash and cash equivalents at quarter end (item 4.6)	1,101
8.5 Unused finance facilities available at quarter end (item 7.5)	-
8.6 Total available funding (item 8.4 + item 8.5)	1,101
8.7 <b>Estimated quarters of funding available (item 8.6 divided by item 8.3)</b>	<b>2.13</b>
<i>Note: if the entity has reported positive relevant outgoings (ie a net cash inflow) in item 8.3, answer item 8.7 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.7.</i>	
8.8 If item 8.7 is less than 2 quarters, please provide answers to the following questions:	
8.8.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
N/A	
8.8.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
N/A	
8.8.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?	
N/A	
<i>Note: where item 8.7 is less than 2 quarters, all of questions 8.8.1, 8.8.2 and 8.8.3 above must be answered.</i>	

### Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Date: 26 April 2023

Authorised by: By the Board  
(Name of body or officer authorising release – see note 4)

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**Mining exploration entity or oil and gas exploration entity quarterly cash flow report**

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**Notes**

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 6: Exploration for and Evaluation of Mineral Resources* and *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.