ASX ANNOUNCEMENT
Heavy Rare Earths Limited (ASX:HRE)
27 April 2023

MARCH 2023 QUARTERLY ACTIVITIES REPORT AND APPENDIX 5B

- **441-hole rare earth exploration and resource expansion drilling program at Cowalinya complete with thick sequences of clay-rich saprolite intersected across the project area**
- **Assays from 257 holes deliver numerous high-grade intercepts up to 7222 ppm TREO**
- **Discovery of Western Zone of mineralisation within a 5-kilometre x 3-kilometre area features thickest mineralised intercept to date – 42 metres @ 790 ppm TREO**
- **New applications for rare earth exploration tenements lodged in Western Australia**
- **Well-funded to progress with company objectives and exploration activities**

Heavy Rare Earths Limited (**"HRE"** or **"the Company"**) is pleased to announce its March 2023 quarterly activities report for the third quarter since listing on the Australian Securities Exchange (ASX).

HRE's key exploration project is Cowalinya in the Norseman-Esperance region of Western Australia. This is a clay-hosted rare earth project with a JORC Inferred Resource of 28 Mt @ 625 ppm TREO[1] and a desirable rare earth composition where 25% are the valuable magnet rare earths and 23% the strategic heavy rare earths.

Cowalinya Rare Earth Project, Western Australia

Resource Exploration and Expansion Drilling Program

During the quarter the Company announced assays from 296 of its 441-hole resource exploration and expansion drilling program at Cowalinya *(refer to ASX announcements 3 January 2023, 31 January 2023, 1 March 2023 and 29 March 2023)* completed in the September-December 2022 period.

These assays confirmed the widespread occurrence of shallow, thick and/or high-grade rare earth mineralisation in clay-rich saprolite over a 5 x 3-kilometre area west and south-west of the Cowalinya South deposit (Figure 1). This Western Zone discovery is open to the north and north-west, has an average thickness of 11.3 metres, and includes the following significant drill intercepts (on a grade-thickness basis) reported during the quarter:

- **14 metres @ 1033 ppm TREO** from 22 metres (AC212)
- **10 metres @ 2087 ppm TREO** from 17 metres (AC221)
- **17 metes @ 1069 ppm TREO** from 11 metres (AC223)
- **19 metres @ 3190 ppm TREO** from 16 metres (AC225)
- 42 metres @ 790 ppm TREO from 12 metres (AC226)

[1] Table 5.1 of Appendix 7 (Cowalinya Resource Report) of the Independent Geologist's Report contained in HRE's IPO Prospectus.

- **14 metres @ 1135 ppm TREO** from 10 metres (AC269)
- **26 metres @ 1113 ppm TREO** from 14 metres (AC274)
- **18 metres @ 1344 ppm TREO** from 19 metres (AC275)
- **10 metres @ 1580 ppm TREO** from 29 metres (AC279)
- 29 metres @ 701 ppm TREO from 14 metres (AC287)
- 24 metres @ 747 ppm TREO from 11 metres (AC289)
- **12 metres @ 1207 ppm TREO** from 18 metres (AC302)
- 16 metres @ 814 ppm TREO from 25 metres (AC309)
- 36 metres @ 656 ppm TREO from 18 metres (AC312)
- **12 metres @ 1212 ppm TREO** from 22 metres (AC344)
- 21 metres @ 867 ppm TREO from 24 metres (AC387)
- 20 metres @ 755 ppm TREO from 15 metres (AC411)
- **22 metres @ 1018 ppm TREO** from 16 metres (AC412)
- 16 metres @ 929 ppm TREO from 11 metres (AC415)
- **6 metres @ 2597 ppm TREO** from 9 metres (AC424).

Figure 1: Plan view of Cowalinya air core drilling on E63/1972 showing holes with significant intervals of REE mineralisation and drilled extent of Western Zone.
Background image: Landgate digital elevation model.

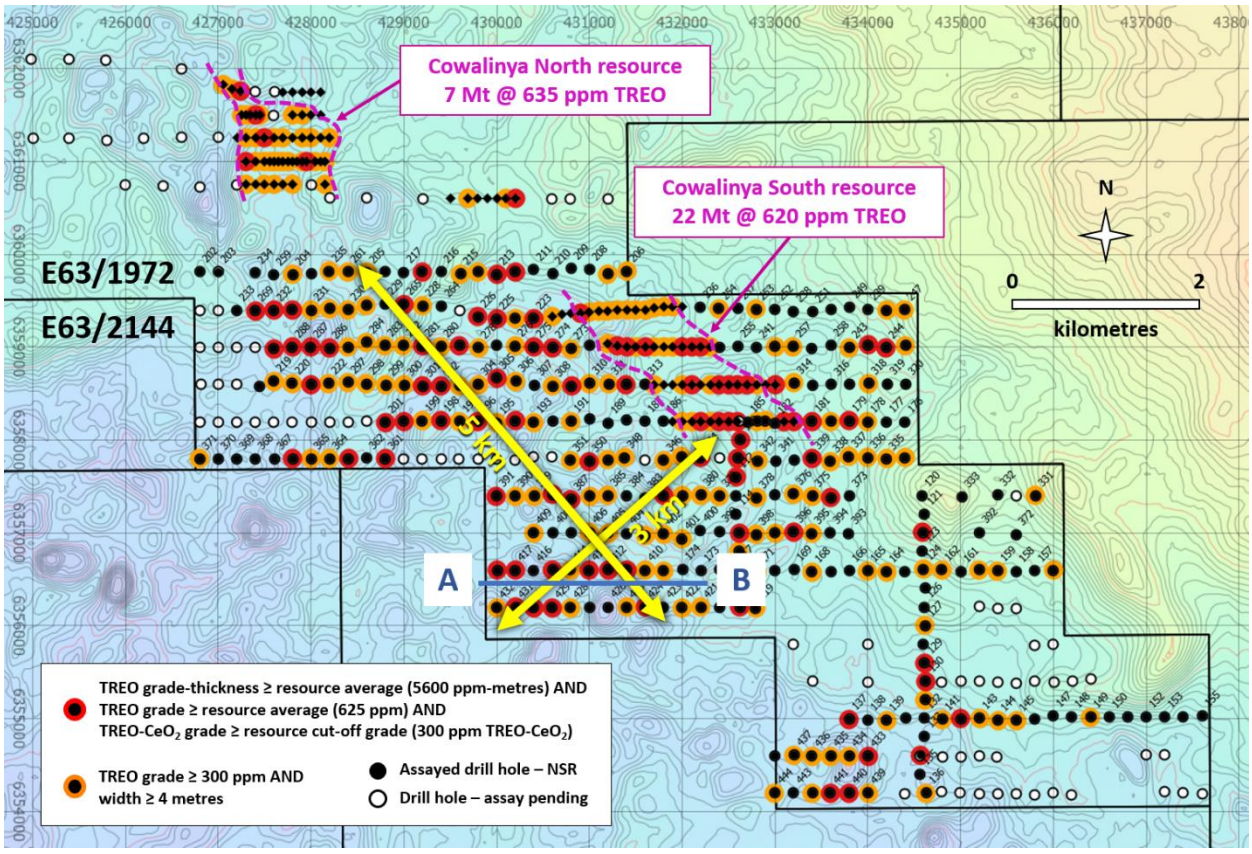
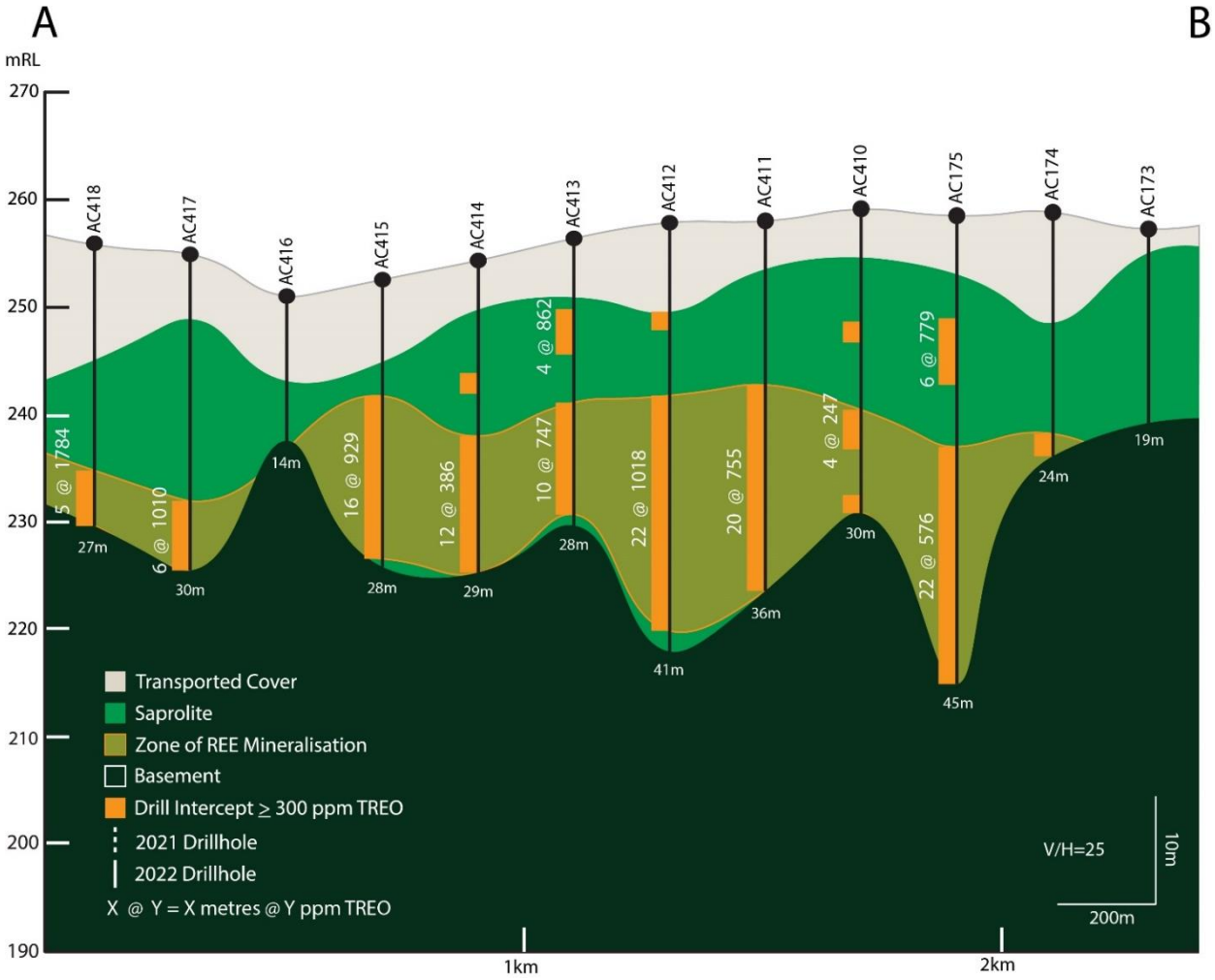


Figure 2: Cross section along Western Zone drill line A-B (6356600N).
Location of A-B shown on Figure 1.



Subsequent to the end of the quarter, the Company announced assays from another 57 air core holes *(refer to ASX announcement 12 April 2023)* which further enhanced the potential for a material increase in rare earth resources for the project. The process to update the project's resource inventory is expected to commence during May 2023 following receipt of assays from a further 36 holes in the south-eastern part of the Company's E63/1972 tenement.

Metallurgical Program

HRE has commissioned Perth-based Strategic Metallurgy ("Strategic") to design and undertake a comprehensive metallurgical program for the Cowalinya project, initially involving particle size analysis as the basis for gangue rejection. This work was completed during the December 2022 quarter on 13 four- and five-metre composite samples of rare earth-bearing saprolite from 10 drill holes across the Cowalinya South (AC4, 16, 28, 36, 41, 47 and 57) and North (AC69, 89 and 104) deposits *(refer to ASX announcement 13 December 2022)*.

Results showed that, on average:

- 78.5% of the rare earths are confined to the -25 µm size fraction, or concentrate
- The concentrate comprises 37.2% of the bulk saprolite feed mass
- The rare earth grade of the concentrate is 116% higher than the bulk saprolite feed grade.

Having successfully targeted the rare earth-rich size fraction, Strategic has commenced the next phase of test work aimed at establishing a suitable leach regime for Cowalinya concentrate. Work during the quarter confirms that a weak solution of hydrochloric acid is the most effective reagent with which Cowalinya rare earths are extracted from concentrate. The Company will report on this work in detail during the June 2023 quarter after Strategic completes its investigation into leach performance at a range of acid concentrations under conditions that are likely to be adopted in a commercial processing operation.

Duke Rare Earth Project, Northern Territory

In late-2021 and early-2022, the Company applied for an 83 block (255 km^2) land package comprising two exploration tenements EL 33101 and EL 33194, located 50 kilometres north-west of Tennant Creek in the Northern Territory. The first of the tenements was granted to HRE by the Northern Territory Government on 2 September 2022. The second was granted on 12 January 2023.

Work by previous explorers in the area of the tenement package has been undertaken for Tennant Creek-style ironstone hosted Cu-Au-Bi and Olympic Dam-type Cu-U-Au deposits. This is the first time the area will be subject to systematic exploration for rare earths. The exploration model being adopted by HRE is a Browns Range-style breccia-hosted hydrothermal mineralized system. Rare earths are expected to be hosted in xenotime, a yttrium phosphate mineral that is enriched in strategically important heavy rare earths terbium (Tb) and dysprosium (Dy).

The Company is planning a reconnaissance trip to the Duke project in the early part of the June 2023 quarter primarily to check access conditions and complete a limited program of prospecting, aided by pXRF and spectrometer readings.

New Exploration Projects, Western Australia

During the quarter the Company lodged applications with the Department of Mines, Industry Regulation and Safety (DMIRS) for exploration licences over two project areas in the Mid West region of Western Australia: **Perenjori**, approximately 300 kilometres NNE of Perth (Figure 3); and **Merino**, about 95 kilometres SW of Mount Magnet (Figure 4). Both project areas were highlighted in an internal study targeting ionic adsorption-type rare earth deposits. Neither area has previously been explored for rare earths and, aside from government water bores, there is no evidence for exploration drilling of any kind.

PROJECT	TENEMENT	AREA	APPLICATION DATE	MINIMUM EXPENDITURE COMMITMENT (YEAR 1)
Perenjori	E 70/6397	70 blocks	24/1/23	$70,000
	E 70/6398	39 blocks	24/1/23	$39,000
Merino	E 59/2795	56 blocks	20/2/23	$56,000
	E 59/2796	33 blocks	20/2/23	$33,000

The underlying tenure at Perenjori comprises a mixture of pastoral leases and freehold, with only pastoral leases present at Merino. Native Title rights for both project areas are held by the Yamatji Nation.

Objections to the grant of the tenements for both projects have been lodged by affected parties as follows:

- E 70/6398: Extension Hill Pty Ltd; MGM Pipelines Pty Ltd; Mount Gibson Mining Limited;
- E 59/2795: FI Joint Venture Pty Ltd; Florance Holdings Pty Ltd; and
- E 59/2796: Florance Holdings Pty Ltd.

HRE is reviewing access agreements advanced by the affected parties and will report progress on the grant of these tenements by DMIRS over the coming months.

Figure 3: Tenement applications for the Perenjori project.
Background image: 1:250,000 scale Perenjori Topographic Map.

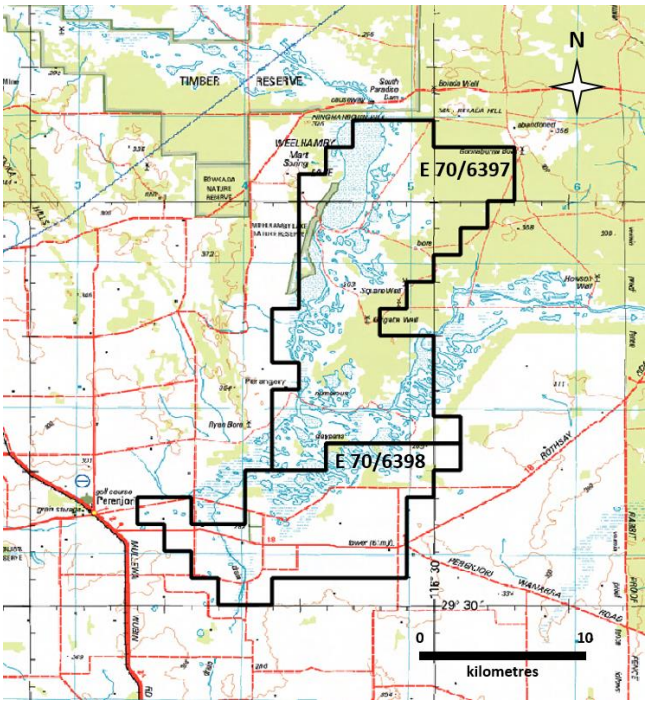
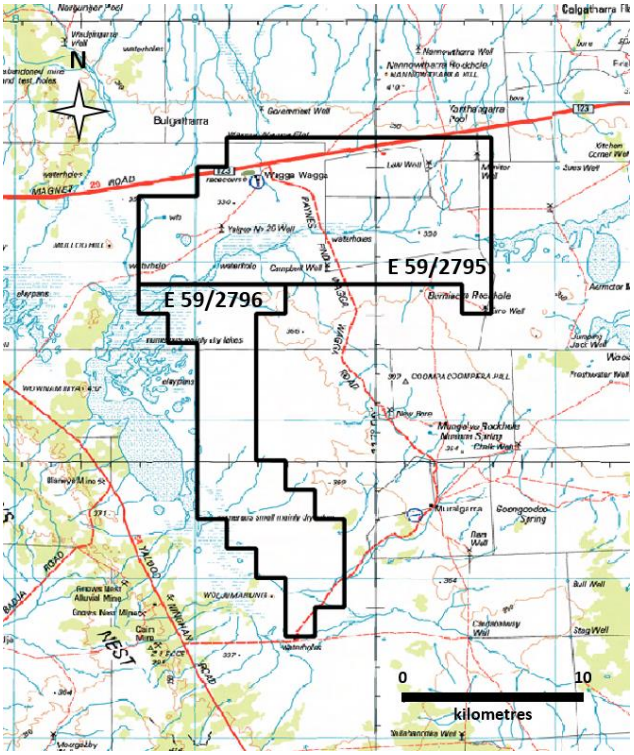


Figure 4: Tenement applications for the Merino project.
Background image: 1:250,000 scale Yalgoo and Kirkalocka Topographic Maps.



Additional Information

The table below compares the Company's actual expenditure against the 2-year Use of Funds table contained in the Company's IPO Prospectus dated 5 July 2022:

Use of funds as contained in the Prospectus	**2-Year Use of Funds as contained in the Prospectus**	**Actual amount spent to date**
Drilling – exploration & resource upgrade	$2,340,000	$1,571,000
Assaying	$440,000	$145,000
Metallurgical process development	$325,000	$16,000
Project Studies	$400,000	-
Duke project exploration (NT)	$100,000	-
Payment for Cowalinya vendors – exercise of option	$300,000	$300,000
Costs of the Offers	$640,000	$649,000
Administration & working capital	$1,455,000	$871,000
Total	**$6,000,000**	**$3,552,000**

Appendix 5B related party payments

Amounts included in section 6.1 of the Appendix 5B relate to Director's fees paid for the March 2023 quarter.

Interests in Mining Tenements

Below is a summary of the mining tenements held by the Company at the end of the quarter:

Mining Tenement	Location	Beneficial Percentage held	Interest acquired/farm-in or disposed/farm-out during the quarter
E 63/1972 – Cowalinya Project	WA, Australia	100%	-
E 63/2144 – Cowalinya Project	WA, Australia	100%	-
E 63/2145 – Cowalinya Project	WA, Australia	100%	-
EL 33101 – Duke Project	NT, Australia	100%	-
EL 33194 – Duke Project	NT, Australia	100%	-
E 70/6397 – Perenjori Project	WA, Australia	100%*	0% (application)
E 70/6398 – Perenjori Project	WA, Australia	100%*	0% (application)
E 59/2795 – Merino Project	WA, Australia	100%*	0% (application)
E 59/2796 – Merino Project	WA, Australia	100%*	0% (application)

* Subject to grant.

-- Ends --

This announcement has been approved by the Board of HRE.

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About Heavy Rare Earths Limited
Heavy Rare Earths Limited (ASX:HRE) is an Australian rare earth exploration and development company. HRE's key exploration project is Cowalinya, near Norseman in Western Australia. This is a clay-hosted rare earth project with a JORC Inferred Resource of 28 Mt @ 625 ppm TREO and a desirable rare earth composition where 25% are the valuable magnet rare earths and 23% the strategic heavy rare earths.

Competent Persons Statement
The Exploration Results contained in this announcement were compiled by Mr. Richard Brescianini. Mr. Brescianini is a member of the Australian Institute of Geoscientists (AIG). He is a director and full-time employee of Heavy Rare Earths Limited. Mr. Brescianini has more than 35 years' experience in mineral exploration and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration to qualify as a Competent Person as defined in the 2012 JORC Code.

The Mineral Resources contained in this announcement have been extracted from the Independent Geologist's Report included in the Company's Initial Public Offering (IPO) Prospectus, a copy of which was lodged with the Australian Securities and Investments Commission (ASIC) on 5 July 2022. The Company confirms that it is not aware of any new information or data that materially affects the Mineral Resources as contained in the Company's IPO Prospectus. All material assumptions and technical parameters underpinning the Mineral Resources in the Company's IPO Prospectus continue to apply and have not materially changed.

Appendix 5B

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

Name of entity

HEAVY RARE EARTHS LIMITED

ABN	Quarter ended ("current quarter")
35 648 991 039	31 March 2023

Consolidated statement of cash flows		Current quarter $A'000	Year to date (9 months) $A'000
1.	**Cash flows from operating activities**		
1.1	Receipts from customers	-	-
1.2	Payments for		
	(a) exploration & evaluation	-	-
	(b) development	-	-
	(c) production	-	-
	(d) staff costs	(40)	(97)
	(e) administration and corporate costs	(166)	(727)
1.3	Dividends received (see note 3)	-	-
1.4	Interest received	8	20
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)	-	-
1.9	**Net cash from / (used in) operating activities**	**(198)**	**(804)**

2.	**Cash flows from investing activities**		
2.1	Payments to acquire or for:		
	(a) entities	-	-
	(b) tenements	(40)	(340)
	(c) property, plant and equipment	-	-
	(d) exploration & evaluation	(695)	(1,743)
	(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)	-	-
2.6	**Net cash from / (used in) investing activities**	**(735)**	**(2,083)**

3.	**Cash flows from financing activities**		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	6,000
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	-	(649)
3.5	Proceeds from borrowings	-	-
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)	-	-
3.10	**Net cash from / (used in) financing activities**	**-**	**5,351**

4.	**Net increase / (decrease) in cash and cash equivalents for the period**		
4.1	Cash and cash equivalents at beginning of period	3,538	141
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(198)	(804)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(735)	(2,083)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	5,351

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	-	-
4.6	**Cash and cash equivalents at end of period**	**2,605**	**2,605**

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	2,605	3,538
5.2	Call deposits	-	-
5.3	Bank overdrafts	-	-
5.4	Other (provide details)	-	-
5.5	**Cash and cash equivalents at end of quarter (should equal item 4.6 above)**	**2,605**	**3,538**

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	60
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** *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.*	**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	**Total financing facilities**	-	-
7.5	**Unused financing facilities available at quarter end**		-
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.		
	N/A		

8.	**Estimated cash available for future operating activities**	**$A'000**
8.1	Net cash from / (used in) operating activities (item 1.9)	(197)
8.2	(Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(745)
8.3	Total relevant outgoings (item 8.1 + item 8.2)	(942)
8.4	Cash and cash equivalents at quarter end (item 4.6)	2,605
8.5	Unused finance facilities available at quarter end (item 7.5)	-
8.6	Total available funding (item 8.4 + item 8.5)	2,605
8.7	**Estimated quarters of funding available (item 8.6 divided by item 8.3)**	2.77
	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.	
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?	
	Answer: 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?	
	Answer: 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?	
	Answer: N/A	
	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.	

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: 27 April 2023

Authorised by: The Board of Directors

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.