



ASX: AR3

28 April 2023

Quarterly Activities Report

For the three months ended 31 March 2023

Highlights

Mixed Rare Earth Carbonate (MREC) successfully produced

- Major milestone for AR3, with the successful pilot-scale production of a Mixed Rare Earth Carbonate (MREC) from an 800kg Koppamurra bulk sample, containing all the rare earths needed to produce rare earth permanent magnets.
- MREC produced using existing equipment and simple processes operating at ambient temperature and pressure at ANSTO Minerals.
- A first for an Australian ionic clay-hosted rare earth resource.

JORC Mineral Resource estimate update

- At the Koppamurra ionic clay-hosted rare earths project, JORC resource at Dovetail increased by 25% to 101 million tonnes at 818ppm TREO (total rare earth oxide) Drilling completed to date, for which assays are still pending, encompasses an area of 15km² (Figure 1) which compares with the area of the JORC Mineral Resources at Dovetail of 30km².
- Accelerated program of follow up drilling planned to further expand resource base, through infill drilling on the recently announced Frances Exploration Target within the Koppamurra project area.

Director and Management Appointments

- AR3 Board now majority independent following the appointment of Mr Angus Barker on 2 March 2023 as an independent non-executive Director.
- Mr Noel Whitcher, joined as CFO and Company Secretary 1 February 2023.

Financials

- Cash position at 31 March 2023 of a healthy \$6.874m.
- Successful capital raise of a further \$11.1 million subsequent to Quarter end, to be settled in two tranches. The second tranche of \$0.4m is subject to shareholder approval to allow for Director participation.

Executive Summary

Australian Rare Earths Limited (ASX: AR3) is pleased to provide an update on progress made during the Quarter ended 31 March 2023 at the Company's flagship Koppamurra rare earth project.

AR3 has made significant progress towards its goal of bringing diversity to the global supply of rare earths. This will in turn enable our Company to capitalise on the rapidly growing demand for rare earths which are sourced from outside China.

The combination of strong demand for new and diversified sources of supply of heavy and light rare earths, the growing resource inventory at our Koppamurra rare earths project and the recent strong metallurgical results underpins the potential for a bright future for AR3.

An integral part of the exploration and development strategy has been the ongoing test work being undertaken at the Australian Nuclear Science and Technology Organisation (ANSTO). This is aimed at developing a process which will enable AR3 to produce a rare earth concentrate that can be sold on the international market.

This work recently resulted in a major milestone for AR3, with the successful pilot-scale production of a Mixed Rare Earth Carbonate (MREC) containing all the rare earths needed to produce rare earth permanent magnets. This is a first for an Australian ionic clay-hosted rare earth resource.

AR3 is now focused on growing the inventory at Koppamurra. Drilling completed late last year and additional drilling currently underway will underpin a further upgrade of the existing resource. It is also expected to reinforce the immense prospectivity of the tenements that extend more than 40km to the north. The ionic clay hosted rare earth mineralisation defined in the Koppamurra Rare Earth province has substantial district-scale potential, giving us every confidence in our ability to grow the Resource and demonstrate the scope for multi-generational supply from Koppamurra.



Photo - Lucindale field days 2023

Operational Review

Koppamurra Drilling and Updated Resource

The updated Mineral Resource incorporates the results from a drilling program completed between September and December 2022 which were announced to the ASX in November 2022 and February 2023. The overall program added 13,400m (1,239 holes) to the existing 26,185m (2,727 holes) drilled for the Mineral Resource estimate announced in July 2022.

Interpretation of geological samples and chemical assay data using relevant industry standard methods resulted in a significant increase in overall resource tonnes, including the delivery of the first JORC Measured Resource classification for the project.

Overall TREO grade was slightly increased with a consistent distribution of magnet rare earths, importantly for the sought-after heavy rare earths. There was a notable increase in grade for the areas pertaining to closer spaced drilling and in support of the maiden Measured Resource.

The updated March 2023 [\(ASX: AR3 3 April, 2023\)](#) Mineral Resource estimate is set out in the table below.

Table 1 – Koppamurra MRE March 2023 - Rounding may cause differences in the last significant figure.

Koppamurra Mineral Resource Estimate – March 2023										
JORC Category	Tonnes Mt	TREO ppm	Magnet Rare Earths							
			Pr ₆ O ₁₁		Nd ₂ O ₃		Tb ₄ O ₇		Dy ₂ O ₃	
			ppm	% TREO	ppm	% TREO	ppm	% TREO	ppm	% TREO
Measured	1	894	40	4.4	148	16.5	3.9	0.4	22	2.5
Indicated	63	839	38	4.5	143	17.0	3.9	0.5	21	2.6
Inferred	38	782	35	4.5	133	17.0	3.6	0.5	20	2.6
Total	101	818	37	4.5	139	17.0	3.8	0.5	21	2.6



Drilling – Dovetail Region

Exploration Target Estimate – Frances and Dovetail

Within the Frances section of the wider Koppamurra Project area, the mineral resource estimate evaluation has revealed a new Exploration Target of between 260Mt @ 760ppm TREO to 1,200Mt @ 530ppm TREO. The potential quantity and grade of the Exploration Target is conceptual in nature, as there has been insufficient exploration undertaken to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

Further, despite having converted portions of the previous Exploration Target in the Dovetail area to Indicated and Inferred Mineral Resources the Dovetail Exploration Target estimate remains, through the completion of additional wide spaced drilling, at up to 200Mt @ 620ppm TREO.

Land access agreements are in place to allow for an accelerated campaign of follow up drilling over sections of the Exploration Target in the coming months. Negotiations for further access agreements are already underway and ongoing. The updated March 2023 ([ASX: AR3 3 April, 2023](#)) Exploration Target estimate is set out in the table below. This Exploration Target has been reported using a cut-off grade range of 225ppm and 425ppm TREO-CeO2.

Table 2 – Koppamurra Exploration Target March 2023

Koppamurra Exploration Target – March 2023											
Exploration Target	Tonnes Mt	TREO ppm	Magnet Rare Earths								
			Pr ₆ O ₁₁		Nd ₂ O ₃		Tb ₄ O ₇		Dy ₂ O ₃		
			ppm	% TREO	ppm	% TREO	ppm	% TREO	ppm	% TREO	
ET – Frances Region	260-1,200	530-760	20 -30	3.8 - 3.9	90-140	17-18	2-4	0.4 – 0.5	14-20	2.6 – 2.6	
ET – Dovetail Region	70-200	620-880	30-40	4.5-4.8	100-160	16-18	3-4	0.5 – 0.5	16-20	2.3–2.6	
Total	330-1,400	540-780	20-40	3.7-5.1	100-140	17-18	3-4	0.5-0.5	14-20	2.6-2.6	



Exploration drilling – Dovetail Region

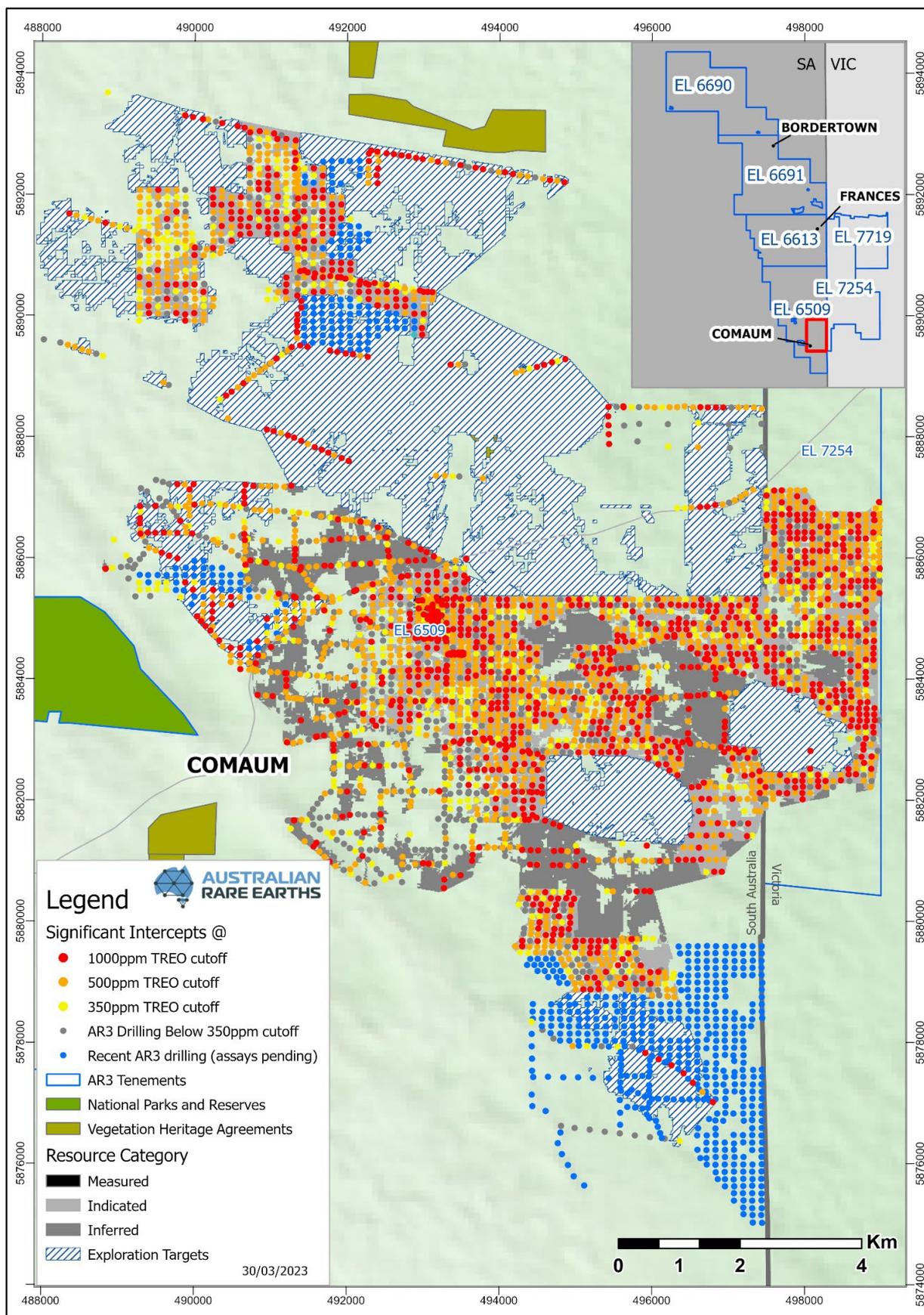


Figure 1: Dovetail Mineral Resource and Exploration Target area. Recent drilling pending assays shown in blue - not included in current resource update

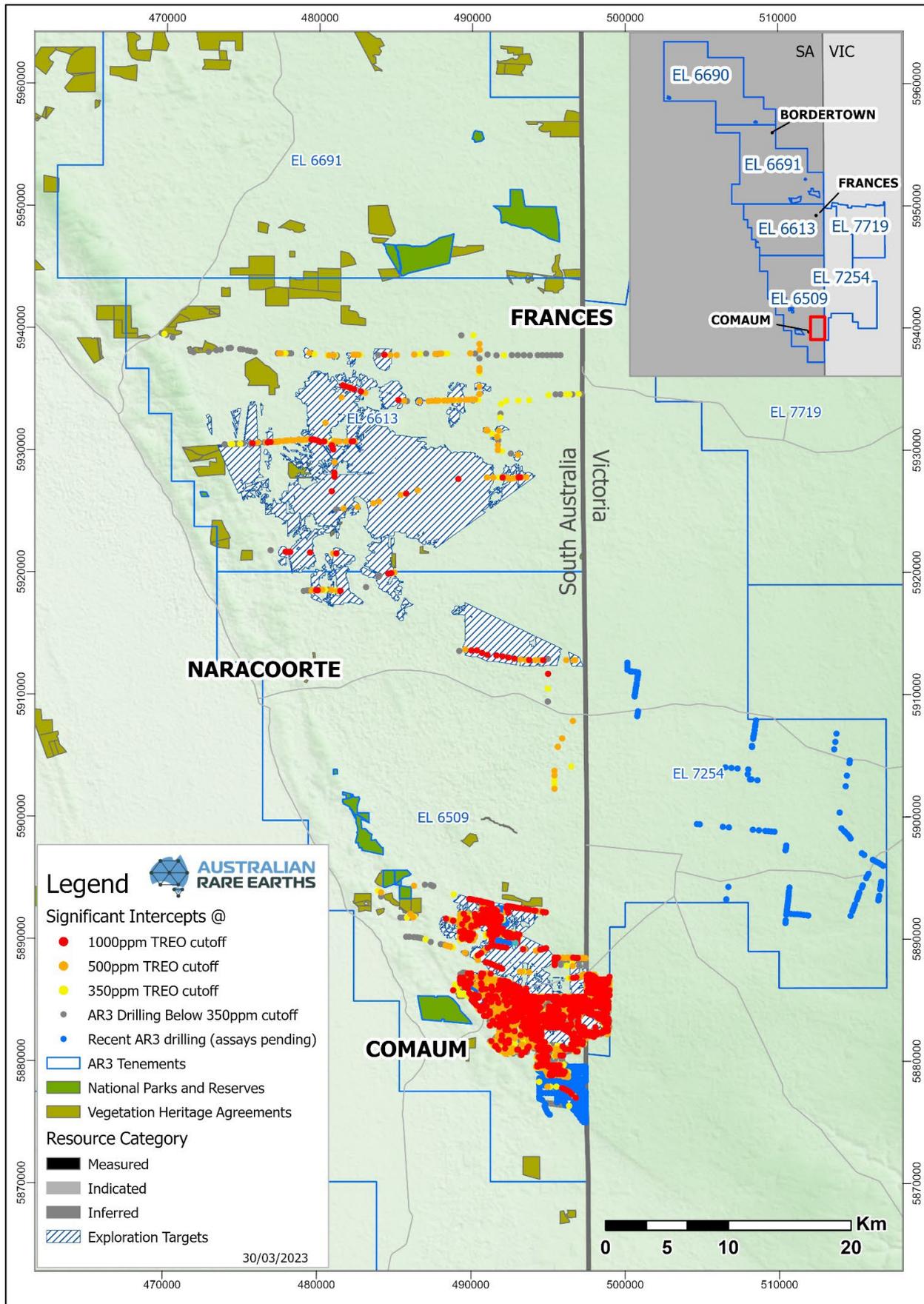


Figure 2: Wider Koppamurra project area - including significant Frances area Exploration Target

Metallurgical Testwork

As a first for an Australian ionic clay hosted rare earth resource, the Company announced the production of a Mixed Rare Earth Carbonate (MREC) during the Quarter. This achievement is being met with great interest by potential downstream customers, especially in light of an increasing awareness that the world currently lacks the sustainable diversity of rare earths supply required to meet the growing demand of a carbon-free global economy.

As the test work progresses it is leading to an increased understanding of the chemistry of rare earths recovery at Koppamurra, including improving rare earth recoveries and the successful management of impurities in a MREC.



Mining Lease Application

Following the Company's recent successful exploration program and resource upgrade which established Koppamurra as a globally significant ionic clay hosted rare earths deposit, the Company continues to progress the preparation of an application to the South Australian State Government for a Mining Lease.

Koppamurra Landholder Reference Group

A third meeting of the Koppamurra Landowner Reference Group was held subsequent to period end and was attended by stakeholders including landowners and local government representatives .

The objectives of the third meeting session were to,

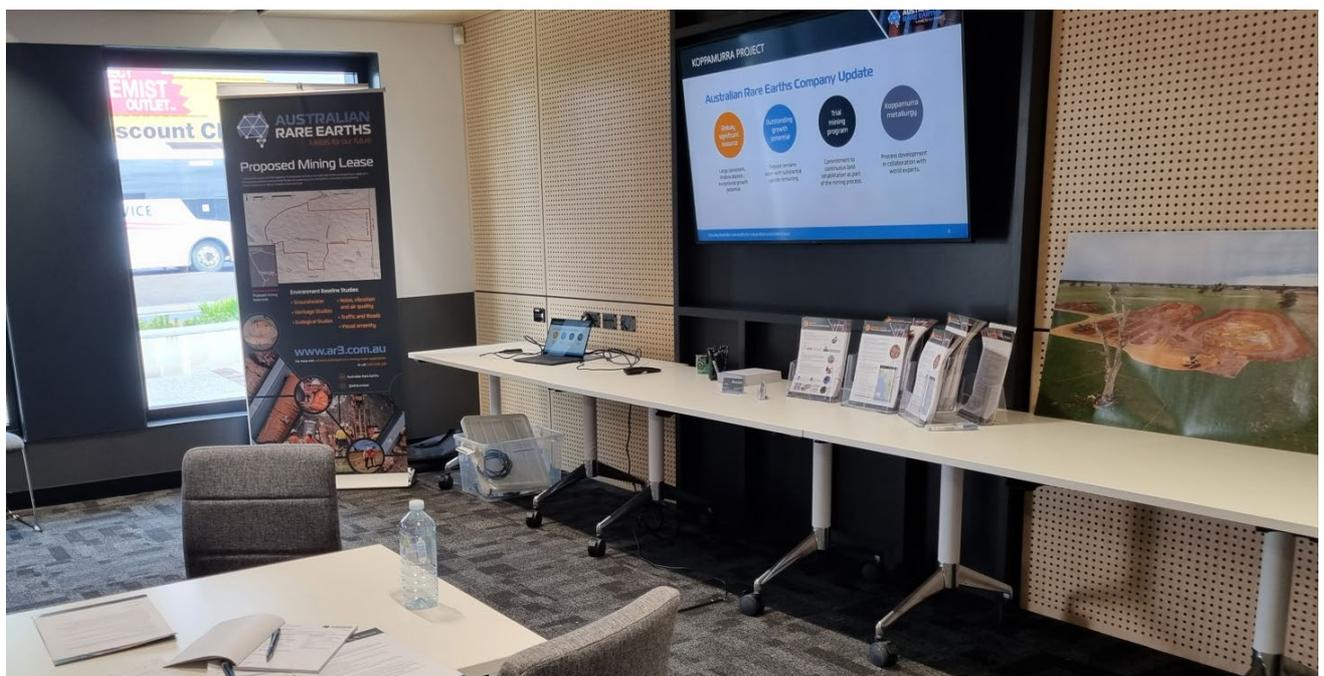
- continue to enhance participants' understanding of the Project by hearing from both Project representatives and external specialists (Dr Melissa Fraser) and to,
- follow up on key areas of interest raised by landowners at the previous meetings and in particular, soils.

Dr Melissa Fraser gave a presentation to the Group on soils and rehabilitation and identified a number of routes to improving the existing nature of the local soils that could be achieved through potential mining activities. For example, layers of overburden that are alkaline and have higher clay content may be suitable for mixing in the sandier surface layers to increase the water and nutrient holding capacity, making them more productive and resilient for agricultural production in the long-term.

The Company remains committed to continuing its open dialogue with key stakeholders as it undertakes a range of environmental, economic and technical studies to support its Mining Lease Application for submission to the South Australian Department for Energy and Mining.

The minutes from the second Koppamurra Landholder Reference Group meeting, held on 12 April 2023 are publicly available via the Company's website. [AR3-koppamurra-landholder-reference-group](#)

Members of the community can submit any matters for discussion for future KLRG quarterly meetings via the AR3 website and are always welcome to contact Jacqui Owen, Manager – Community and Land, who is based in AR3's regional office in Naracoorte, should they have any questions.



AR3s Mining Activity Information – drop in sessions – held March 7th & 8th Naracoorte Library, Alexandra Room

Directors and Management Changes

Appointment of Independent Non-executive Director



Mr Angus Barker joined the Board of Directors as an independent Non-executive Director on the 2 March 2023.

Mr Barker has over 20 years' investment banking experience across mergers & acquisitions and capital markets, working with global investment banking firms in Hong Kong, Australia and the United Kingdom. He served for eight years in senior roles with a number of Australian Government Ministers in the portfolios of Trade & Investment, and Superannuation & Financial Services. Mr Barker is also an Independent Non-Executive Director of ASX-listed WAM Capital Limited.

Angus' extensive corporate finance expertise and government sector experience compliment the strong technical and operational expertise of the Board. Angus' timely appointment will greatly assist the Company.

The AR3 Board is now comprised of a majority of independent Directors.

Appointment of CFO & Company Secretary



Mr Noel Witcher joined the Company as Chief Financial Officer and Company Secretary on the 1 February 2023.

Mr Witcher is an experienced Company Secretary, CFO and Chartered Accountant, with more than 18 years' experience in finance and accounting across government and commercial industries, with the past 10 years in the mining and energy sector.

Noel has served as CFO services to ASX listed exploration companies for over 5 years and has considerable experience in advising on capital market strategies including debt and equity financing options through traditional and structured financing options.

Noel formally replaced Mr Damien Connor from the roles of Company Secretary and CFO of the Company effective 31 March 2023.

Listing Rule 5.23 disclosure

The Company confirms that it is not aware of any new information or data that materially affects the Exploration Results and/or the estimates of Mineral Resources in this release, and in respect of the estimates of Mineral Resources reported, that all material assumptions and technical parameters underpinning the estimates continue to apply and have not changed.

List of Tenements

Tenement	Location	Commodity	Project	Jurisdiction
EL6509	Naracoorte	Rare Earths	Koppamurra	SA
EL6613	Frances	Rare Earths	Koppamurra	SA
EL6690	Keith	Rare Earths	Koppamurra	SA
EL6691	Bordertown	Rare Earths	Koppamurra	SA
EL007254	Apsley	Rare Earths	Koppamurra	Victoria
EL007719	Minimay	Rare Earths	Koppamurra	Victoria
EMP27952	Massie Creek	Rare Earths	Massie Creek	QLD
EMP28169	Stones Creek	Rare Earths	Dalrymple	QLD

1 – All tenements are 100% held by AR3

Finance Update

The Company's cash balance at the end of the Quarter was A\$6,874,000.

After period end, the Company announced it had conducted a placement to institutional and sophisticated investors along with Directors and Management (the latter subject to shareholder approval) to raise a total of \$11.1m before costs. Support was received from a range of high quality, domestic and international investors. Bids were received well in excess of available placement capacity, requiring significant scale back of applications.

The Company welcomes all new shareholders of AR3 and appreciates the continued support of our loyal existing major shareholders.

Capital Structure

Shares on issue: 129,498,220 fully paid ordinary shares.

Options on issue: 30,734,306 unlisted options, comprising:

- 6,000,000 exercisable at \$0.30 and expiring 25 January 2025
- 6,597,200 exercisable at \$0.45 and expiring 29 June 2024
- 2,000,000 exercisable at \$0.60 and expiring 29 July 2025
- 1,600,000 exercisable at \$1.44 and expiring 1 December 2024
- 9,237,106 exercisable at \$0.57 and expiring 13 December 2023
- 1,000,000 exercisable at \$1.02 and expiring 9 May 2025
- 500,000 exercisable at \$0.57 and expiring 4 July 2025
- 1,750,000 exercisable at \$0.50 and expiring on 2 December 2025
- 1,550,000 exercisable at \$0.50 and expiring on 2 December 2026
- 500,000 exercisable at \$0.47 and expiring on 28 February 2026

Appendix 5B Disclosures

AR3's accompanying Appendix 5B (quarterly Cashflow Report) includes an amount in item 6.1 which constitutes executive and non-executive director fees paid as salaries and wages for the Quarter.

During the period, the Company spent approx. \$1,833,000 on exploration activities, including direct costs associated with the Koppamurra exploration and development programs, which included, drilling, geochemical assays, metallurgical test work. This figure also includes allocation of wages directly attributed to specific exploration and development activities.

Use of Funds

AR3 provides the following disclosures required by ASX Listing Rule 5.3.4 regarding a comparison of its actual expenditure as of 31 March 2023 versus listing on 29 June 2021 and the "use of funds" statement in the Prospectus dated 7 May 2021.

March 2023 Quarter			
Funds (A\$)	Prospectus (\$k)	Actual (\$k)	Balance Remaining (\$k)
Pre-offer Cash as at 31 March 2021	732	732	-
Funds Raised Under the Offer	12,000	12,000	-
Total Funds Available	12,732	12,732	-
Offer Expenses	1,047	(1,047)	-
Resource Definition Drilling	4,000	(4,166)	(166)
Regional Exploration	2,000	(1,664)	336
Metallurgical Testwork and Studies	3,000	(2,285)	715
Working Capital	2,685	(4,392)	(1,707)
Total Funds Applied	12,732	(13,554)	(822)
Additional funds raised (net of costs)		7,629	
R&D tax concession receipt		67	
Cash as at 31 March 2023		6,874	

Activities for the June 2023 quarter

- Completion of assays and geological interpretation to support a further updated Mineral Resource Estimate, intended for completion Q3 2023.
- Completion of laboratory testwork by ANSTO aimed at optimising the leach and recovery chemistries to support process flow sheet technology selection.
- Ongoing studies required to support the development of a Mining Lease Application for submission to the Department for Energy and Mining.
- Initiation of further exploration and resource definition drilling to continue to expand the clay hosted rare earth resources at Koppamurra.
- Discussions with potential offtake partners, in addition to Neo.

The Board of AR3 authorised this announcement to be released to the ASX.

For further Information please contact:

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Media Enquiries

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About Australian Rare Earths Limited

Australian Rare Earths (AR3) is committed to the timely exploration and development of its 100% owned, flagship Koppamurra Project, located in South Australia and Victoria. Koppamurra is a highly prospective ionic clay hosted rare earth element (REE) deposit; uniquely rich in all the REE's required in the manufacture of rare earth permanent magnets which are essential components in energy efficient motors. The Company is focused on executing a growth strategy that will ensure AR3 is positioned to become an independent and sustainable source of REE's, playing a pivotal role in the global transition to a green economy.

Appendix 5B

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

Name of entity

Australian Rare Earths Limited

ABN

73 632 645 302

Quarter ended ("current quarter")

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	-	(19)
(b) development	-	-
(c) production	-	-
(d) staff costs - <i>net of allocations to capitalised exploration assets</i>	(93)	(918)
(e) administration and corporate costs	(229)	(992)
1.3 Dividends received (see note 3)	-	-
1.4 Interest received	24	60
1.5 Interest and other costs of finance paid	-	-
1.6 Income taxes paid	-	-
1.7 Government grants and tax incentives – R&D Tax incentive	-	-
1.8 Other (provide details if material)		
- <i>refund received in relation to exploration licence applications paid and expensed in the prior year</i>	-	62
1.9 Net cash from / (used in) operating activities	(298)	(1,807)

2. Cash flows from investing activities		
2.1 Payments to acquire or for:		
(a) entities	-	-
(b) tenements	-	-
(c) property, plant and equipment	(1)	(11)
(d) exploration & evaluation	(1,833)	(4,023)

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
	(e) investments	-	-
	(f) other non-current	-	-
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	(1,834)	(4,034)

3.	Cash flows from financing activities		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)	-	-
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	-	-
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	-	-

4.	Net increase / (decrease) in cash and cash equivalents for the period		
4.1	Cash and cash equivalents at beginning of period	9,006	12,715
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(298)	(1,807)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	(1,834)	(4,034)

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
4.4	Net cash from / (used in) financing activities (item 3.10 above)	-	-
4.5	Effect of movement in exchange rates on cash held	-	-
4.6	Cash and cash equivalents at end of period	6,874	6,874

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	6,774	8,906
5.2	Call deposits	100	100
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)	6,874	9,006

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 <i>* The payments disclosed here relate to fees and salaries paid to all Directors (including Executive Director) during the quarter.</i>	153
6.2	Aggregate amount of payments to related parties and their associates included in item 2	-
<i>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.</i>		

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

7. Financing facilities	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
<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>		
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.		

8. Estimated cash available for future operating activities	\$A'000
8.1 Net cash from / (used in) operating activities (item 1.9)	(298)
8.2 (Payments for exploration & evaluation classified as investing activities) (item 2.1(d))	(1,833)
8.3 Total relevant outgoings (item 8.1 + item 8.2)	(2,131)
8.4 Cash and cash equivalents at quarter end (item 4.6)	6,874
8.5 Unused finance facilities available at quarter end (item 7.5)	-
8.6 Total available funding (item 8.4 + item 8.5)	6,874
8.7 Estimated quarters of funding available (item 8.6 divided by item 8.3)	3.23 quarters
<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?	
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	
<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:28 April 2023.....

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

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.