26th June 2025

Bulk leach program delivers strong rare earth recoveries at Koppamurra

Highlights:

- **Strong recoveries of the key magnet light and heavy Rare Earths at scale:** Bulk leach testing (~3 tonne) delivered magnet rare earth (MRE) recoveries of >60%, reinforcing the scalability of the progressive heap leach approach.
- **Rapid Leach time achieved:** Recoveries were delivered in significantly shorter timeframes compared to traditional heap leaching methods.
- **Opportunities for further recovery optimisation identified:** Opportunities for increased recoveries through reprocessing of lower grade rare earth solution, ('tail' solution), currently under investigation.
- **Ongoing optimisation workstreams:** Reagent usage, water recycling, impurity removal and rare earth precipitation testwork continues to enhance rare earth recoveries, process efficiency and environmental outcomes.
- **Advancing Pre-Feasibility Study:** Testwork results will inform key project design inputs for the Koppamurra Pre-Feasibility Study (PFS), targeted for completion in 2025.
- **Government Co-Funding Grant:** Testwork program is co-funded under the $5 million Australian Government grant from the International Partnerships in Critical Minerals Program.
- **Strategic importance for critical minerals supply:** Koppamurra is advancing as a strategic and secure source of both light and heavy rare earths, contributing to diversified supply chains vital to the world's energy transition.
- Engage with this announcement at the AR3 ***investor hub.***

AR3 Managing Director and CEO, Travis Beinke, said:

"Following encouraging initial recovery results from the lab scale column leach testwork, we have now demonstrated results at the significantly larger scale of ~3 tonne bulk leach. The recovery results of >60% were achieved in significantly shorter periods compared to traditional heap leaching and provide us further confidence in this development approach. This method also reinforces the potential of lower initial capital and operating costs compared to traditional tank leach approaches that other ionic clay projects are pursuing.

We are pleased with the initial bulk leach results and are eager to continue the optimisation testwork to ensure we maximise magnet rare earth recoveries in the most cost efficient way.

Given the growing uncertainty driven by the ongoing tariff war and China's export controls on Dysprosium and Terbium, the strategic importance of ionic clay-hosted rare earths projects like Koppamurra to Australia's national interests has become increasingly evident. We remain committed to advancing the project as customers seek to secure diversified and reliable supply of rare earths."

Australian Rare Earths Limited (**ASX:AR3**, or "**Company**") is pleased to announce progress in the metallurgical testwork for its Koppamurra rare earths project in South Australia. The current phase of metallurgical testwork, a ~3 tonne bulk heap leach campaign, has been completed at Brisbane Met Labs (BML). The program has been designed to:

- De-risk scale up,
- Further optimise the progressive heap leach and rapid rehabilitation development approach, and;
- Inform design aspects for the completion of the PFS, as AR3 seeks to maximise the project's value.

Samples from the Koppamurra Bulk Sample Pit were collected and blended prior to being agglomerated with sulphuric acid and being placed into three 1 tonne testing containers ("cribs"). Irrigation solution, at pH 2.2, was applied through drippers for 33 days with samples collected every 12 hours, to measure the rate of rare earth extraction. The testwork duration was designed to allow for time beyond what is expected for full scale operation, to ensure that the variables (such as dripper spacing) and the operating window was explored.

Operating Conditions:

- **Ore Characteristics** - ~3 tonne of ore from the 2022 Bulk Sample Pit operations grading 1393ppm TREO consisting of ~27% Magnet Rare Earths (~24% NdPr and ~3% DyTb)
- **Acid added in Agglomeration** – A sulphuric acid addition rate of 39 kg/t H2SO4 in the ore agglomeration was applied.
- **Irrigation solution pH** – A low strength magnesium sulphate irrigation solution pH of 2.2 was applied to the ore into the first of the three in-series cribs.
- **Irrigation rate** – 5L/m^2/h

Results

Heap leach testwork conducted at the Australian Nuclear Science and Technology Organisation (ANSTO) since December 2023 has consistently confirmed the suitability of Koppamurra ore for agglomeration and heap leaching, showing uniform physical properties and robust metallurgical recoveries using a progressive heap leach approach (refer to ASX Releases: 2 April 2024 and 8 July 2024).

To demonstrate scalability, AR3 conducted two tests. First, a small-scale column leach trial (test "C11") using a sample from the Koppamurra Bulk Sample Pit, was completed at ANSTO, employing the same equipment and processes, including agglomeration, as previous column tests (ASX Releases: 2 April 2024 and 8 July 2024). Second, a larger-scale test processing approximately 3 tonnes of similar ore as tested in C11, validated the scalability, achieving rare earth recoveries consistent with the C11 column leach results (see Figure 1). These tests confirm a well-understood scale-up from small-scale to bulk processing.

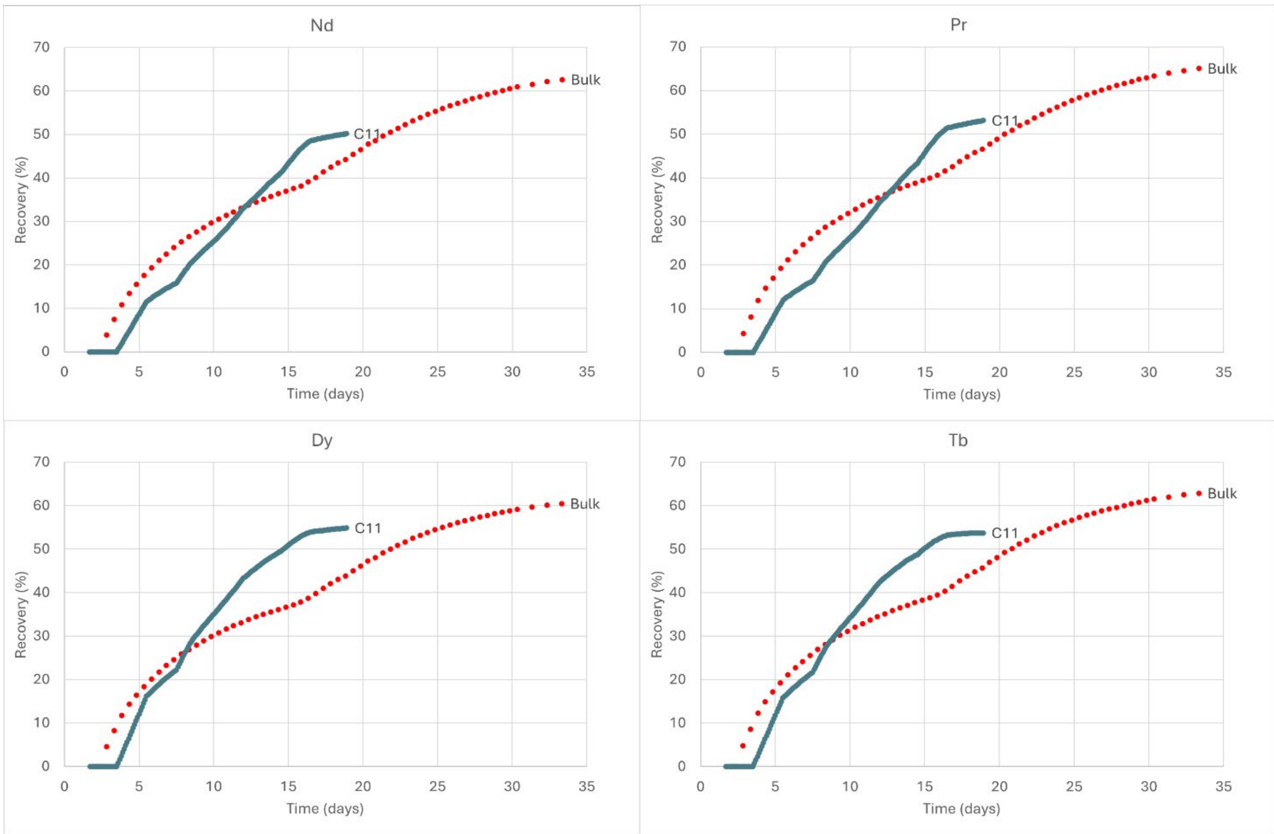

***Figure 1:** Recovery of Individual Magnet Rare Earth metals in small scale column leach compared to the Bulk Leach*

The bulk test, utilising 3,000 kg of Koppamurra ore, followed the same protocols as the small-scale column leach trial (test C11) but extended the duration from 19 to 33 days to further explore recovery potential (see Table 1 for comparison). The bulk test delivered high recoveries for all four targeted magnet rare earth metals, closely aligning with C11 test results up to day 19 and maintaining effective leaching through the trial's completion, as illustrated in Figure 1. Variations in dripper density spacing were introduced, which prolonged the recovery timeline compared to an optimal dripper configuration. This effect is evident in the bulk test recovery curves shown in Figure 1.

Figure 2: *Bulk sample being prepared for Bulk Leach test at BML*

Figure 3: *Bulk Leach with dripper system applying lixiviant for leaching*

The results validate AR3's confidence in using cost-effective, small-scale laboratory tests to optimise the heap leaching process. The bulk test also significantly de-risk scaleup to full production, reinforcing the viability of AR3's innovative, low-cost method. The findings provide a strong foundation for the ongoing Pre-Feasibility Study (PFS), positioning AR3 for success in delivering sustainable rare earth production.

***Table 1:** Comparison of results of small scale test column vs the Bulk Leach*

	Extraction								
	Nd	Pr	Dy	Tb	MRE	Target Feed pH	Acid addition	Irrigation duration	Head Grade TREO[1]
	(%)	(%)	(%)	(%)	(%)		(kg/t)	(days)	ppm
C11	50%	53%	55%	54%	51%	2.2	44	19	1566
Bulk	63%	65%	60%	63%	63%	**2.2**	**43**	**33**	**1393**

1. TREO = La2O3, CeO2, Pr6O11, Nd2O3, Sm2O3, Eu2O3, Gd2O3, Tb4O7, Dy2O3, Ho2O3, Er2O3, Tm2O3, Yb2O3, Lu2O3, Y2O3

***Table 2:** Bulk Leach rare earth elemental recoveries*

	Ce	Dy	Er	Eu	Gd	Ho	La	Lu	Nd	Pr
Head Grade (ppm)	358	34	18	10	42	6.6	174	1.8	229	53
Bulk Leach Recovery (%)	70	60	60	62	64	59	73	56	63	65
	Sc	Sm	Tb	Tm	Y	Yb	LRE[1]	HRE[2]	Magnets[3]	TREO[4]
Head Grade (ppm)	24	44	5.9	2.3	166	14	814	345	322	1393
Bulk Leach Recovery (%)	10	63	63	57	63	55	68	62	63	66

1. LRE = Ce, La, Pr, Nd
2. HRE = Sm, Eu, Gd, Tb, Dy, Ho, Er, Tm, Yb, Lu, Y
3. Magnets = Nd, Pr, Dy, Tb

Optimisation opportunities

The rare earth recoveries in solution identified during the bulk heap leach trial, were completed within only 33 days of heap leaching – a much greater rate of recovery than conventional heap leaching and confirming a pathway for the application of rapid temporary heap leaching and rehabilitation at Koppamurra. The AR3 team are currently analysing the results to determine the ideal heap leaching and irrigation solution recycling durations for maximum rare earth element recovery with minimal reagent use. AR3 are confident that use of appropriate irrigation techniques the leach duration can be shortened, while retaining a high overall REE recovery.

Following the exceptional recovery rates in the Bulk Leach, AR3 is now prioritising the optimisation of operating costs through advancements in water treatment, reagent recycling, and reagent usage in agglomeration.

AR3 is currently utilising the 2,000 litres of rare earth pregnant leach solutions (PLS) generated during the Bulk Leach, to conduct an extensive testwork program to enhance impurity removal and Mixed Rare Earths Carbonate (MREC) precipitation processes. AR3 is collaborating closely with ANSTO, Australia's premier laboratory for ionic clay leaching, on ongoing process flowsheet development, with ANSTO leading the impurity removal and rare earth precipitation testwork.

Additionally, AR3 continues to work closely with Neo Performance Materials Inc. ("Neo"), a global leader in rare earth permanent magnets and products, under a non-binding Memorandum of Understanding that outlines a potential offtake agreement for MREC from AR3's Koppamurra project. Neo's expertise in rare earth oxide separation, metallisation, and magnet production, combined with its rare position as one of the few Western facilities processing third-party MREC, provides critical insights to AR3's MREC supply development.

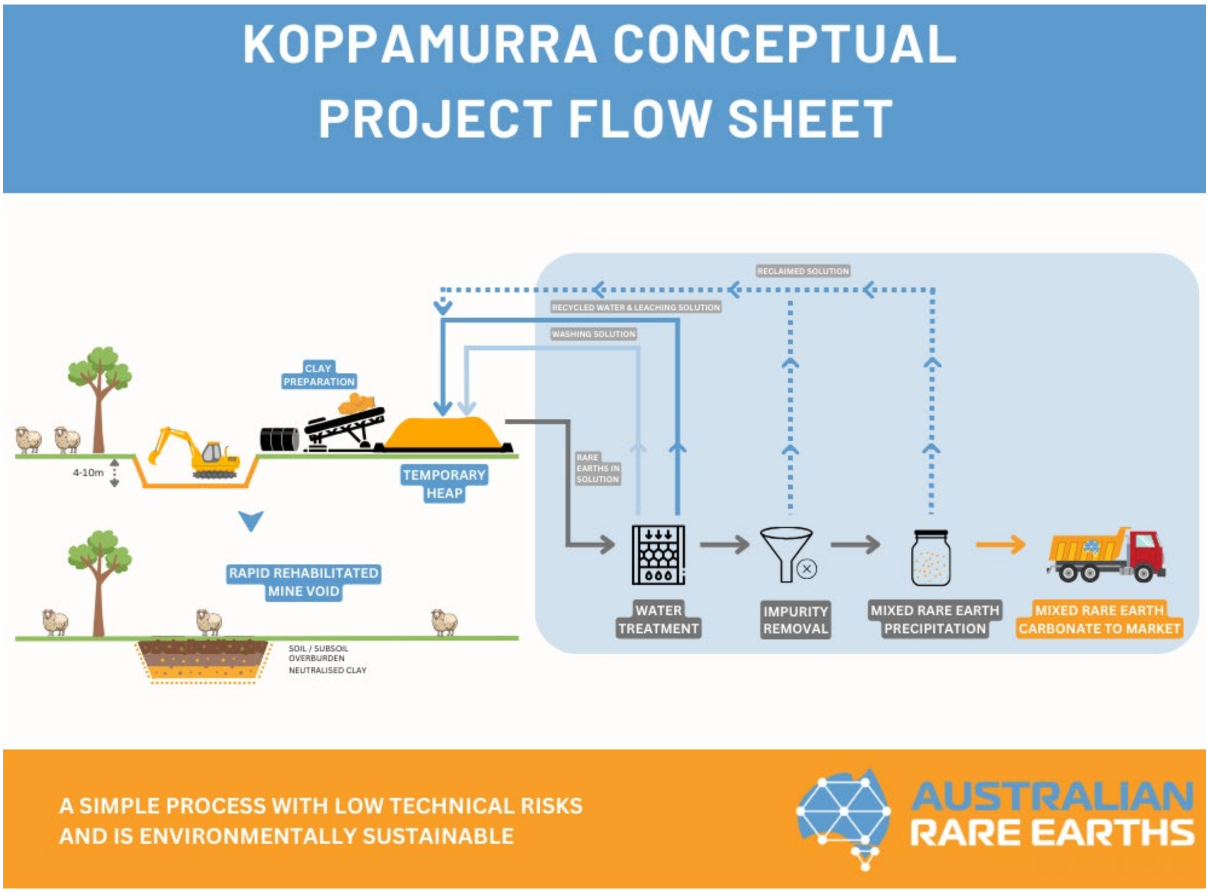

Figure 4: *Koppamurra conceptual progressive heap leach and rapid rehabilitation project flow sheet*

A summary of the planned testwork to be progressed over the next three months is provided below.

Next steps

- **Material Handling and rehabilitation**
  The three tonnes of now leached mineralised clay ("Ripios") will undergo further testing to inform the material handling and rehabilitation aspects of the project. The Ripios will be neutralised and a material handling assessment of the clay post leaching will be conducted.

- **Water Treatment/Recycling**
  Water treatment processes applied to the leach solutions and for the recycle of water and reagents is being assessed. The use of reverse osmosis, nano filtration and/or ultra filtration is being assessed to evaluate the potential to generate a concentrated rare earth solution for further downstream processing, and to produce reagent and water streams to recycle on the heaps. Opportunities for increased recoveries through reprocessing of lower grade rare earth solution, ('tail' solution), are also being assessed.

- **Impurity Removal**
  Following the leaching and water treatment program, impurity removal optimisation will be performed to improve the rejection of deleterious elements such as aluminium, iron,

silica, whilst maximising the recovery of the rare earths. The testwork will also evaluate operating conditions including pH, alkali type, temperature, and residence time.

This work builds on the success of impurity removal testwork previously undertaken by AR3 and ANSTO, the larger scale impurity removal testwork will be undertaken to demonstrate an economic path forward for the production of marketable mixed rare earth concentrates.

- **MREC Precipitation**
  Following the impurity removal program, the rare earth's will be precipitated to produce a saleable quality rare earth product in the form of MREC. The testwork will evaluate the precipitation agent, pH, temperature, residence time, % solids and solid liquid separation performance, and will be conducted in close consultation with Neo.

The announcement has been authorised for release by the Board of Australian Rare Earths Limited.

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Engage and Contribute at the AR3 investor hub: https://investorhub.ar3.com.au/

Competent Person's Statement

The information in this report that relates to metallurgical results is based on information compiled by Australian Rare Earths Limited and reviewed by Jess Page who is the Group Technical Manager of WGA and member of the Institute of Chemical Engineers Australia (CEng MIChemE). Ms Page has sufficient experience that is relevant to the metallurgical testing which was undertaken 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". Ms Page consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to Exploration results is based on information compiled by Australian Rare Earths Limited and reviewed by Mr Rick Pobjoy who is the Chief Technical Officer of the Company and a member of the Australian Institute of Mining and Metallurgy (AusIMM). Mr Pobjoy has sufficient experience that is relevant to the style of mineralisation, the type of deposit under consideration and to the activities undertaken 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 Pobjoy consents to the inclusion in this report of the matters based on this information in the form and context in which it appears.

About Australian Rare Earths Limited

Australian Rare Earths (AR3) is an emerging diversified critical minerals company, strategically positioned to meet the growing global demand for uranium and rare earth elements. The Company's vast ~7,000 km² Overland Uranium Project in South Australia shows strong uranium discovery potential, with initial drilling identifying opportunities for substantial near-surface and deeper deposits.

Simultaneously, AR3's Koppamurra Rare Earths Project in South Australia and Victoria has secured important government support through a A$5 million grant to accelerate development. With support from global advanced industrial materials manufacturer, Neo Performance Materials, AR3 is progressing toward a Pre-Feasibility Study and a demonstration facility, solidifying its role in diversifying global rare earth supply chains for the clean energy transition. With strategic projects and strong government support, AR3 is poised for significant growth in the critical minerals market.

APPENDIX I – JORC TABLE 1 & 2

JORC Table 1 – Section 1

Section 1 Sampling Techniques and Data		
Criteria	**Explanation**	**Comment**
Sampling techniques	*Nature and quality of sampling (e.g., cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g., submarine nodules) may warrant disclosure of detailed information.*	*RC Aircore drilling methods were used obtain samples from the October-December 2021, February-April 2022, September-December 2022 February- June 2023, and October-December 2023 drilling programs.* *The following information covers the sampling process:* • *All air core samples were collected from the rotary splitter mounted at the bottom of the cyclone using a pre-numbered calico bag and plastic UV sample bag. The samples were geologically logged at 1 m intervals using the marked calico sample which averaged ~1.5 kg in mass.* • *A handheld Olympus Vanta XFR Analyser was used to assess the geochemistry of the air core samples in the field. The XRF analysis provided a full suite of mineral elements for characterising the lithological units.* • *XRF readings were downloaded from the XRF Analyser at the end of each day and uploaded to the Australian Rare Earths Azure Data Studio database.* • *Field duplicates were taken at a rate of* • *~1:34 and inserted blindly into the sample batches.* • *At the laboratory, the samples were oven dried at 105 degrees for a minimum of 24 hours and secondary crushed to 3 mm fraction and then pulverised to 90% passing 75 µm. Excess residue was maintained for storage while the rest of the sample placed in 8x4 packets and sent to the central weighing laboratory. The samples were submitted for analysis using XRF-ICP-MS method.* • *A laboratory repeat was taken at ~ 1 in 21 samples;* • *Commercially obtained standards were inserted by the laboratory at a rate of ~ 1 in 9 into the sample sequence.* *Mechanical excavation techniques were applied to the recovery of samples from the area of AR3's Trial Pit. Trial Pit samples were taken from a number of discrete locations within the pit, nominally 1m wide x 1m long x 0.5m deep. Material from these locations were loaded into a dump truck by an excavator and taken to a laydown site for assessment.*

Section 1 Sampling Techniques and Data		
Criteria	**Explanation**	**Comment**
		Up to 5 x dump truck piles of material from each discrete location were dumped on the laydown. *Up to 12 x bulka bags were filled from those (up to) 5 x piles of material and each was provided a unique Bulka Bag # which referenced a Location and sample pile number. Eg C2L1aP3 (C2 - cut bench 2, L1a – location 1a, P3 – pile 3).* *Samples provided for column leach testwork were sourced from Trial Pit Locations;* *C2L1aP3, Bulka Bag #146* *C2L3P2, Bulka Bag #121* *C4L4P5, Bulka Bag #410* *C4L4P2, Bulka Bag #345* Each of the four bulka bag were emptied into separate piles on clean warehouse floor, composited into single pile using skid steer. Performed standard cone and quarter homogenization method on the pile using skid steer. Heavy dusting as ore was dry as added water via mist at ~2L/min over ~25 mins. Final mixed composite transferred 18 x 200L drums via skid steer. Final mass across drums ~3324 kg (note this is actually more than the as-received mass, but some water mass added during dust suppression – still within typical lab/weigh scale accuracy). 1 x drum set aside for redundancy. Remaining 17 x drums screened to 31.5 mm top size.

APPENDIX I – JORC TABLE 1 & 2

Criteria	**Explanation**	**Comment**
Drilling techniques	*Drill type (e.g., core, reverse circulation, open- hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g., core diameter, triple or standard tube, depth of diamond tails, face-sampling bit, or other type, whether core is oriented and if so, by what method, etc).*	• *Drilling was completed using a Mcleod or Wallis air ore drill rig (Landcruiser 6x6 or similar) for the drilling.* • *Aircore drilling is a form of reverse circulation drilling where the sample is collected at the face and returned inside the inner tube. The drill cuttings are removed by injection of compressed air into the hole via the annular area between the inner tube and the drill rod.* • *Aircore drill rods used were 3 m long.* • *NQ diameter (76 mm) drill bits and rods were used.* • *All aircore drill holes were vertical with depths varying between 2 m and 36 m.*
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples.* *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	• *Drill sample recovery for aircore is monitored by recording sample condition descriptions where 'Poor' to 'Very Poor' were used to identify any samples recovered which were potentially not representative of the interval drilled.* • *A comment was included where water injection was required to recover the sample from a particular interval. The use of water injection can potentially bias a sample and very little water injection was required during this drilling program.* • *No significant loses of samples were observed due to the shallow drilling depths (<36 m).* • *The rotary splitter was set to an approximate 20% split, which produced approximately 1.5 kg sample for each meter interval.* • *The 1.5 kg sample was collected in a pre-numbered calico bags and the remaining 80% (5 kg to 8 kg) was collected in plastic UV bags labelled with the hole number and sample interval.* • *At the end of each drill rod, the drill string is cleaned by blowing down with air to remove any clay and silt potentially built up in the sample pipes and cyclone.* • *No relationship exists between sample recovery and grade.*

APPENDIX I – JORC TABLE 1 & 2

Criteria	Explanation	Comment
Logging	*Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* *The total length and percentage of the relevant intersections logged.*	• *All aircore samples collected in calico bags were logged for lithology, colour, cement type, hardness, percentage rock estimate, sorting, and any relevant comments such as moisture, sample condition, or vegetation.* • *Geological logging data for all drill holes was qualitatively logged onto Microsoft Excel spreadsheet using a Panasonic Toughbook with validation rules built into the spreadsheet including specific drop- down menus for each variable. The data was uploaded to the Australian Rare Earths Azure Data Studio database.* • *Every drill hole was logged in full and logging was undertaken with reference to a drilling template with codes prescribed and guidance to ensure consistent and systematic data collection.*
Sub-sampling techniques and sample preparation	*If core, whether cut or sawn and whether quarter, half or all cores taken.* *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* *For all sample types, the nature, quality, and appropriateness of the sample preparation technique.* *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* *Measures taken to ensure that the sampling is representative of the in- situ material collected, including for instance results for field duplicate/second-half sampling.* *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• *1 m aircore sample interval were homogenised within the cyclone and the rotary splitter was set to an approximate 20% split producing around 1.5 kg sample for each metre interval.* • *The 1.5 kg sample was collected in a pre-numbered calico bag and the 80% (5 kg to 8 kg) portion was collected in plastic UV bags labelled with hole identity and interval.* • *Duplicates were generally taken within the clay lithologies above the basement as this is the likely zone of REE enrichment. These duplicate samples were normally collected by using a second calico bag and placing it under the rotary splitter collecting a 20% split but due to the difficulties of placing a second calico bag under the rotary splitter during sample collection, some duplicates were collected by hand from the plastic UV bags which captured the other 80% of the material recovered from any particular interval.* • *The material in the plastic UV bags was mixed up and every attempt to take as representative sample of the material as possible by hand was made and then placed in a pre-numbered calico bag.* • *The 1.5 kg sample collected in the calico bag was logged by the geologist onsite. The logged samples were placed in polyweave bags and sent to Naracoorte base at the end of each day. The polyweave bags were then placed on pallets and dispatched to Bureau Veritas laboratory in Adelaide in Bulka Bags.*

APPENDIX I – JORC TABLE 1 & 2

Criteria	Explanation	Comment
		• *The remaining 80% split from the aircore interval was stored for future reference.* • *Field duplicates of all the samples were completed at a frequency of ~1 in 34 samples. Field standards were inserted into the sample sequence at a frequency of ~1:57. Standard reference Material (SRM) samples were inserted into the sample batches at a frequency rate of 1 per 10 samples by the laboratory and a repeat sample was taken at a rate of 1 per 21 samples.* • *A rig geologist oversaw the sampling and logging process while a second geologist selected samples for analysis based on the logging descriptions and pXRF analysis. Clay rich sample and those adjacent to the limestone basement contact were selected for assay. REEs are known to be contained within the clay component of the sediment package based on analysis of XRF data and previous exploration work.* • *The pre-split samples were passed through a 31.5 mm screen and the oversize gently crushed and recombined with the undersize. Oversize that could not be broken down – tamp material for example was collected and set aside (less than 0.5% of total mass). The material was then taken through to agglomeration.*
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total. For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their*	• *The detailed geological logging of samples provides lithology (clay component) and proximity to the limestone basement which is sufficient for the purpose of determining the mineralised zone.* • *The 1.5 kg aircore samples were assayed by Bureau Veritas laboratory in Wingfield, Adelaide, South Australia, which is considered the Primary laboratory.* • *The samples for this program of work were subsampled and assayed by a combination of XRF and ICP (in-house - BML). Due to concern regarding Ca concentration, multiple head assays undertaken (both fresh new samples and repeats).* • *The samples were initially oven dried at 105 degrees Celsius for 24 hours. Samples were secondary crushed to 3 mm fraction and the weight recorded. The sample was then*

		pulverised to 90% passing 75 µm. Excess residue was maintained for storage while the rest of the sample placed in 8x4 packets and sent to the central weighing laboratory.

Criteria	Explanation	Comment
	derivation, etc. *Nature of quality control procedures adopted (e.g., standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e., lack of bias) and precision have been established.*	• *All weighed samples were then analysed using the Multiple Elements Fusion/Mixed Acid Digest analytical method;* • *ICP Scan (Mixed Acid Digest – Lithium Borate Fusion) Samples are digested using a mixed acid digest and also fused with Lithium Borate to ensure all elements are brought into solution. The digests are then analysed for the following elements (detection Limits shown): Al (100) As (1) Ba (1) Be (0.5) Ca(100) Ce (0.1) Co (1) Cr (10) Dy (0.05) Er (0.05) Eu(0.05) Fe(100) Gd (0.2) Ho (0.02) K (100) La (0.5) Lu (0.02) Mg (100) Mn (2) Na (100) Nd (0.05) Ni (2) Pr (0.2) S (50) Sc (1) Si (100) Sm(0.05) Sr (0.5) Th (0.1) Ti (50) Tm (0.2) U (0.1) V (5) Y (0.1) Yb (0.05) Zr (1)* • *Field duplicates were collected and submitted at a frequency of ~1 per 34 samples.* • *Bureau Veritas completed its own internal QA/QC checks that included a Laboratory repeat every 21st sample and a standard reference sample every 9th sample prior to the results being released.* • *Analysis of QA/QC samples show the laboratory data to be of acceptable accuracy and precision;* • Australian Rare Earths submitted field standards at a frequency of ~1:57 samples. • Australian Rare Earths requested BV insert blank washes at a frequency of 1:40 samples. These blank washes were inserted in the sample sequence behind samples which were thought to be mineralized to ensure that no contamination from higher grade samples was occurring. Frequency of blank samples totaled 1 in 24 samples. *The adopted QA/QC protocols are acceptable for this stage of test work. The sample preparation and assay techniques used are industry standard and provide a total analysis.*

Criteria	Explanation	Comment
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.* *The use of twinned holes.* *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* *Discuss any adjustment to assay data.*	• *All results are checked by the company's Technical Director.* • *Field based geological logging for drill holes was entered directly into an Excel spreadsheet format with validation rules built into the spreadsheet including specific drop-down menus for each variable. This digital data was then uploaded to the Australian Rare Earths Azure Data Studio database.* • *Assay data was received in digital format from the laboratory and was uploaded Australian Rare Earths Azure Data Studio database.* • *Field and laboratory duplicate data pairs of each batch are plotted to identify potential quality control issues.* • *Standard Reference Material sample results are checked from each sample batch to ensure they are within tolerance (<3SD) and that there is no bias.* • *The field and laboratory data was exported and imported into Datamine by IHC Robbins which is appropriate for this stage in the program. Data validation criteria are included to check for overlapping sample intervals, end of hole match between 'Lithology', 'Sample', 'Survey' files and other common errors.* • *Assay data yielding elemental concentrations for rare earths (REE) within the sample are converted to their stoichiometric oxides (REO) in a calculation performed within the database using the conversion factors in the below table.* • *Rare earth oxide is the industry accepted form for reporting rare earths. The following calculations have been used for reporting throughout this report:* • *Note that Y_2O_3 is included in the TREO, HREO and CREO calculation.* ***TREO** = La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3 + Sm_2O_3+ Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Lu_2O_3+ Y_2O_3* ***CREO** = **LREO** = La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3* ***HREO** = Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3+ Lu_2O_3 + Y_2O_3 NdPr = Nd_2O_3 + Pr_6O_{11}* ***TREO-Ce** = TREO - CeO_2* ***NdPr** = Nd + Pr* *Nd_2O_3 + Eu_2O_3 + Tb_4O_7 + Dy_2O_3 + Y_2O_3*

APPENDIX I – JORC TABLE 1 & 2

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<tr><th>Criteria</th><th>Explanation</th><th>Comment</th></tr>
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<tr><td>Eu2O3</td><td>1.1579</td></tr>
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<tr><td>Ho2O3</td><td>1.1455</td></tr>
<tr><td>La2O3</td><td>1.1728</td></tr>
<tr><td>Lu2O3</td><td>1.1371</td></tr>
<tr><td>Nd2O3</td><td>1.1664</td></tr>
<tr><td>Pr6O11</td><td>1.2082</td></tr>
<tr><td>Sc2O3</td><td>1.5338</td></tr>
<tr><td>Sm2O3</td><td>1.1596</td></tr>
<tr><td>Tb4O7</td><td>1.1762</td></tr>
<tr><td>ThO2</td><td>1.1379</td></tr>
<tr><td>Tm2O3</td><td>1.1421</td></tr>
<tr><td>U3O8</td><td>1.1793</td></tr>
<tr><td>Y2O3</td><td>1.2699</td></tr>
<tr><td>Yb2O3</td><td>1.1387</td></tr>
</table>
</td></tr>
<tr><td>Location of data points</td><td>Accuracy and quality of surveys used to locate drill holes (collar and down- hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.
Specification of the grid system used.
Quality and adequacy of topographic control.</td><td>

Down hole surveys for shallow vertical aircore drill holes are not required.
The drill hole collars were located using a GPS unit to identify the positions of the drill holes in the field. The handheld GPS has an accuracy of ±5m in the horizontal.
The datum used is GDA2020/MGA Zone 54.
Topographic data over the southern area of the resource (including all Inferred/Indicated/Measured resource areas) is derived from a fixed wing LiDAR survey flown in May 2022 by Aerometrex using their RIEGL VQ-780ii sensor. The
LiDAR survey data was captured at a minimum 25 points per meter and flown at a height of 591m to ensure ~10cm vertical accuracy.
Topographic DTM surface over the northern area of the resource (Frances Exploration Target area) is derived from DGPS drill collar positions at this stage of exploration and the RL has been corrected using An Australian wide SRTM. The 1 second SRTM Level 2 Derived Smoothed Digital Elevation Model (DEM-S) is derived from the 2000 SRTM. The DEM-S has a ~30m grid which has been adaptively smoothed to improve the representation of the surface shape and is the preferred method for shape and vertical accuracy from STRM products. The smoothing process estimated typical improvements in the order of 2-3 m. This would make the DEM-S accuracy to be of approximately 5 m.
The accuracy of the locations is sufficient for this stage of exploration.

</td></tr>
</table>

APPENDIX I – JORC TABLE 1 & 2

Criteria	Explanation	Comment
Data spacing and distribution	*Data spacing for reporting of Exploration Results.* *Whether the data spacing, and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* *Whether sample compositing has been applied.*	• *The holes were largely drilled at between 100m and 400m spacings along accessible road verges.* • *Drill spacing within paddocks and forested areas was largely completed at 100m to 120m spacings, with a small portion of holes drilled at 60m spacings.* • *The drilling of aircore holes was conducted to determine the regional prospectivity of the wider Koppamurra Project area and for the purposes of generating a mineral resource estimate.* • *No sample compositing has been applied.*
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	• *The Koppamurra mineralisation is interpreted to be hosted in flat lying clays that are horizontal. Undulation of the clay unit is influenced by the weathered limestone basement below.* • *All drill holes are vertical which is appropriate for horizontal bedding and regolith profile.* • *The Koppamurra drilling was oriented perpendicular to the strike of mineralisation defined by previous exploration and current geological interpretation.* • *The strike of the mineralisation is north south, and the high grades follow a northwest-southeast trend.* • *All drill holes were vertical, and the orientation of the mineralisation is relatively horizontal.* • *The orientation of the drilling is considered appropriate for testing the lateral and vertical extent of mineralisation without any bias.*

APPENDIX I – JORC TABLE 1 & 2

Criteria	Explanation	Comment
Sample security	*The measures taken to ensure sample security.*	• *After logging, the samples in calico bags were tied and placed into polyweave bags, labelled with the drill hole and sample numbers contained within the polyweave and transported to the base of operations, Naracoorte, at the end of each day.* • *The samples were then placed on pallets ready for transport and remained in a secure compound until transport had been arranged. Pallets were labelled and then 'shrink-wrapped' by the transport contractor prior to departure from the Naracoorte base to the analytical laboratory.* • *Samples for analysis were logged against pallet identifiers and a chain of custody form created.* • *Transport to the analytical laboratory was undertaken by an agent for the TOLL Logistics Group, and consignment numbers were logged against the chain of custody forms.* • *The laboratory inspected the packages and did not report tampering of the samples and provided a sample reconciliation report for each sample dispatch.*
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	• *Internal reviews were undertaken by AR3's Exploration Manager and Technical Director during the drilling, sampling, and geological logging process and throughout the sample collection and dispatch process to ensure AR3's protocols were followed.* • *A review of the database was also undertaken by Wallbridge Gilbert Aztec (WGA) – Consulting Engineers.* • *A review of the Metallurgical Column Test Work and results was undertaken by Wallbridge Gilbert Aztec (WGA) – Consulting Engineers – Jess Page. WGA is CP for Metallurgical Column Test Work.*

APPENDIX I – JORC TABLE 1 & 2

Appendix I - JORC Table 1 - Section 2, Reporting of Exploration Results

Section 2 Reporting of Exploration Results		
Criteria	**Explanation**	**Comment**
Mineral tenement and land tenure status	*Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	• *Koppamurra Project comprises of a granted South Australian Exploration Licences (EL), EL6509, EL6613, EL6690, EL6691, EL6942, and EL6943 along with Victorian EL007254 and EL007719 covering a combined area of ~6,300 km^2 which is in good standing.* • *EL6509 is within 100m of a Glen Roy Conservation Park and the Naracoorte Caves National Park, the latter of which is excised from the tenement. The License area contains several small Extractive Mineral Leases (EML) held by others, Native Vegetation Heritage Agreement areas, as well as the Deadman's Swamp Wetlands which are wetlands of national importance.* • *A Native Title Claim by the First Nations of the South East #1 has been registered but is yet to be determined. The claim area includes the areas covered by EL's 6509, 6613, 6690, 6691, 6942, and 6943.* • *The exploration work was completed on the tenement EL 6509 which is 100% owned by the company Australian Rare Earths Ltd.* • *The Exploration License EL6509 original date of grant was 15/09/2020 with an expiry date of 14/09/2028.* • *Details regarding royalties are discussed in chapter 3.4 of Australian Rare Earths Prospectus dated 7 May 2021.*

Criteria	Explanation	Comment
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	• *Exploration activities by other exploration companies in the area have not previously targeted or identified REE mineralisation.* • *Historical exploration activities in the vicinity of Koppamurra include investigations for coal, gold and base metals, uranium, and heavy mineral sands.* • *Historical exploration by other parties is detailed in Chapter 7 of Australian Rare Earths Prospectus dated 7 May 2021.*
Geology	*Deposit type, geological setting and style of mineralisation.*	• *The Koppamurra deposit is interpreted to contain analogies to ion adsorption ionic clay REE deposits. REE mineralisation at Koppamurra is hosted by clayey sediments interpreted to have been deposited onto a limestone base (Gambier Limestone) and accumulated in an interdunal, lagoonal or estuarine environment.* • *A dedicated research program investigating the source of the REE at Koppamurra is ongoing, with no definitive source of the REE confirmed to date although preliminary results of this study have ruled out the alkali volcanics in south- eastern Australia which was originally considered.* • *Mineralogical test work previously conducted on clay samples from the project area established that the dominant clay minerals are smectite and kaolin, and that the few REE-rich minerals detected during the SEM investigation are considered consistent with the suggestion that a significant proportion of REE are distributed in the material as adsorbed elements on clay and iron oxide surfaces.* • *There are several known types of regolith hosted REE deposits, including: ion adsorption clay deposits, alluvial and placer deposits. Whilst Koppamurra shares similarities with both ion adsorption clay deposits and volcanic ash fall placer deposits, there are also several differences, highlighting the need for further work before a genetic model for REE mineralisation at Koppamurra can be confirmed.* • *There is insufficient geological work undertaken to determine any geological disruptions, such as faults or dykes, that may cause variability in the mineralisation.*

Criteria	Explanation	Comment
Drill hole Information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:* - *easting and northing of the drill hole collar* - *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* - *dip and azimuth of the hole* - *down hole length and interception depth* - *hole length.* *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*	• *The material information for drill holes relating to this report are contained within Appendices of this release (Appendix II).*
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.* *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• *No metal equivalents have been used.*

Criteria	Explanation	Comment
Relationship between mineralisation widths and intercept lengths	*These relationships are particularly important in the reporting of Exploration Results.* *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	• *All intercepts reported are down hole lengths.* • *The mineralisation is interpreted to be flat lying. Morphology of the mineralised unit is influenced by the morphology of the undulating limestone basement below.* • *Drilling is vertical perpendicular to mineralisation. Any internal variations to REE distribution within the horizontal layering was not defined, therefore the true width is considered not known.*
Diagrams	*Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	• *Diagrams are included in the body of this release.*
Balanced reporting	*Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	• *This release contains all drilling results that are consistent with the JORC guidelines.* • *Where data may have been excluded, it is considered not material.*

Criteria	Explanation	Comment
Other substantive exploration data	*Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	• *AR3 has completed tank leach test work at ANSTO (ASX release: Highly successful metallurgical tests point to significantly lower processing costs, 16 May 2023).* • *AR3 has produced MREC at ANSTO from the tank leach test work (ASX release: First Mixed Rare Earth Carbonate (MREC) produced, 09 March 2023).* • *AR3 has completed column test work at ANSTO investigating the agglomeration, percolation and recoveries from columns to simulate the use of heap leach as a potential component of the process flowsheet (ASX release: Latest Testwork Affirms Low Capex Development for Koppamurra, 08 July 2024).* • *AR3 column leach tests carried out at ANSTO have investigated lixiviant composition in columns C1, C2 and C3 using samples sourced from various locations and bench heights within the Trial Pit. 5,884,443mN / 493,450mE MGA Zone 54 (location identified in diagram in body of previous ASX release: Latest Testwork Affirms Low Capex Development for Koppamurra, 08 July 2024) and variability sample testing in columns C4, C5 and C6 from samples sourced from the drilling cuttings composites (CP03a, CP04a and CP10a) selected as examples of variability across the orebody (ASX release: Latest Testwork Affirms Low Capex Development for Koppamurra, 08 July 2024).* • *All known relevant exploration data and metallurgical test results have been reported in this release.*

Criteria	Explanation	Comment

Further work	*The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	• *Metallurgical test work next steps are:*
		  • *Water treatment testwork, impurity removal and rare earth collection in solution from the pregnant liquor solution from columns; and*
		  • *investigations into the precipitation of impurities and recovered rare earths from solution.*