18 May 2023

PHASE 5 DRILL PROGRAM COMMENCED AT MAKUUTU

- **IonicRE commences Phase 5 drill program at Makuutu across RL00007, EL00147 and EL00257;**
- **Infill drilling at RL00007 to support next Mining Licence Application (MLA);**
- **Reconnaissance drilling at Makuutu exploration targets on EL00147 to evaluate areas with known REE mineralisation, and EL00257, which contains several untested geophysical anomaly target areas; and**
- **Second drill rig expected to be mobilised within 4 weeks.**

The Board of Ionic Rare Earths Limited ("IonicRE" or "The Company") (ASX: IXR) is pleased to advise on the commencement of the Phase 5 drill program at its 60% owned Makuutu Rare Earths Project ("Makuutu" or "the Project"). The drill program will aim at upgrading the Inferred Resources on Retention Licence (RL) 00007 to an Indicated Resource category and undertake reconnaissance drilling at large exploration targets identified at both Exploration Licences (EL) 00147 and 00257 (refer Figure 1).

Makuutu currently ranks amongst the world's largest and most advanced ionic adsorption clay (IAC) deposits, and as such, a globally strategic resource for near term, low capital development and long-term security of magnet and heavy rare earth oxide (HREO) supply.

Makuutu is made up of six tenements, with the Makuutu central tenement, RL 1693, the only tenement used to support the recently announced positive Makuutu Stage 1 Definitive Feasibility Study (DFS), which showed that Makuutu would have an initial 35-year mine life with EBITDA of A$2.29 billion and an IRR of 32.7% (ASX: 20 March 2023).

With the addition of the other tenements at Makuutu, the larger consolidated Project has substantial scope for future growth, and increasing geopolitical importance, to underpin the establishment of western sources for new magnet and heavy rare earths supply chains.

Ionic Rare Earths Managing Director Mr. Tim Harrison commented:

"I am excited to have resumed drilling at Makuutu. Further to the substantial base we have defined as part of the Stage 1 DFS at Makuutu with the MLA over RL 1693 pending, we have ambitious plans for further growth along the 37 km long mineralised corridor on our tenements."

"With a 2nd rig due to arrive on site in coming weeks, we will complete a substantial amount of core and RAB drilling during this Phase 5 program to provide further growth opportunities and to support

the next MLA on the Makuutu western zone. This drilling will also refine our potential growth targets to the east at the massive EL00147 target, and the new north-western target at EL00257."

Phase 5 Drill Program

The Phase 5 drill program will include approximately 4,380m of core drilling used for resource upgrade on RL00007 plus 2,230m of RAB drilling used for evaluation of exploration targets on EL00147 and EL00257.

In addition, the Company has a stated exploration target outside of the estimated resources of (ASX: 1 June 2022):

216 – 535 million tonnes grading 400 – 600 ppm TREO*

*This Exploration Target is conceptual in nature but is based on reasonable grounds and assumptions. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

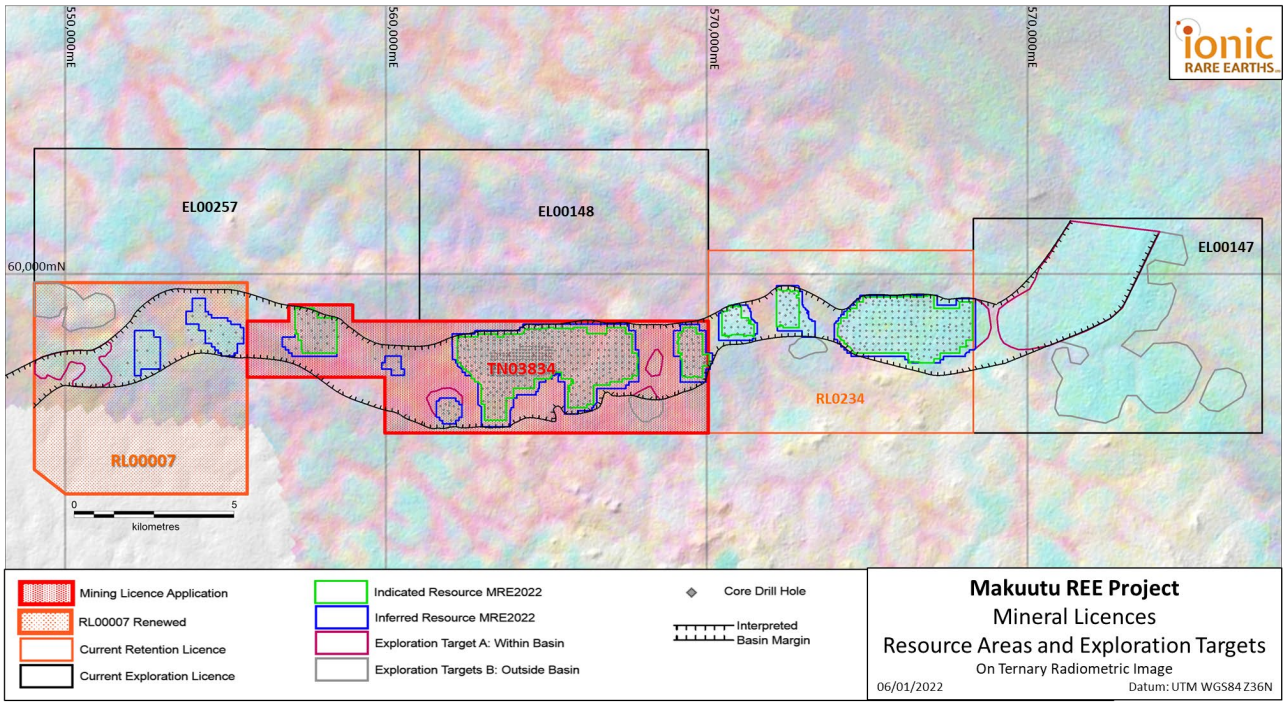

Figure 1: Makuutu Project resource map showing resources and the Makuutu western tenement, RL00007 (highlighted orange), the Stage 1 Mining Licence Application TN03834 (red border) and exploration target areas.

Infill Drill Program

IonicRE will prioritise infill drilling to areas located on RL00007 to increase resource classification from Inferred Resources to Indicated Resources, supporting the Stage 2 DFS and the next MLA expected to be completed on RL00007 in November 2024.

Currently, the Company's greater Makuutu Mineral Resource Estimate (refer Table 1 and ASX: 3 May 2022) is estimated at 532 Million tonnes at 640 ppm Total Rare Earth Oxide (TREO) with a cut-off grade of 200 parts per million (ppm) TREO minus Cerium Oxide (CeO_2). Only a small component

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of this presently exists within RL00007, reflected by areas A and B illustrated on Figure 2 and broken down within Table 2, with an Inferred Resource on RL00007 is 39 million tonnes at 470 ppm TREO.

Table 1: Makuutu Rare Earth Project Resource Tabulation of REO Reporting Groups at 200ppm TREO-CeO_2 Cut-off Grade (ASX: 3 May 2022).

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)	LREO (ppm)	HREO (ppm)	CREO (ppm)	Sc_2O_3 (ppm)
Indicated	404	670	450	500	170	230	30
Inferred	127	540	360	400	140	180	30
Total	532	640	430	480	160	220	30

Notes; Tonnes are dry tonnes rounded to the nearest 1.0Mt.
All ppm rounded from original estimate to the nearest 10 ppm which may lead to differences in averages. TREO = Total Rare Earth Oxide

To support the pending MLA on RL00007, resources will be upgraded to a minimum Indicated classification, and as such infill drilling will focus on areas A and B (refer Figure 2), which also possess very favourable metallurgical extraction based upon test work to date. Some extensional drilling on areas A and B has been planned with the potential to increase the overall resource on RL00007.

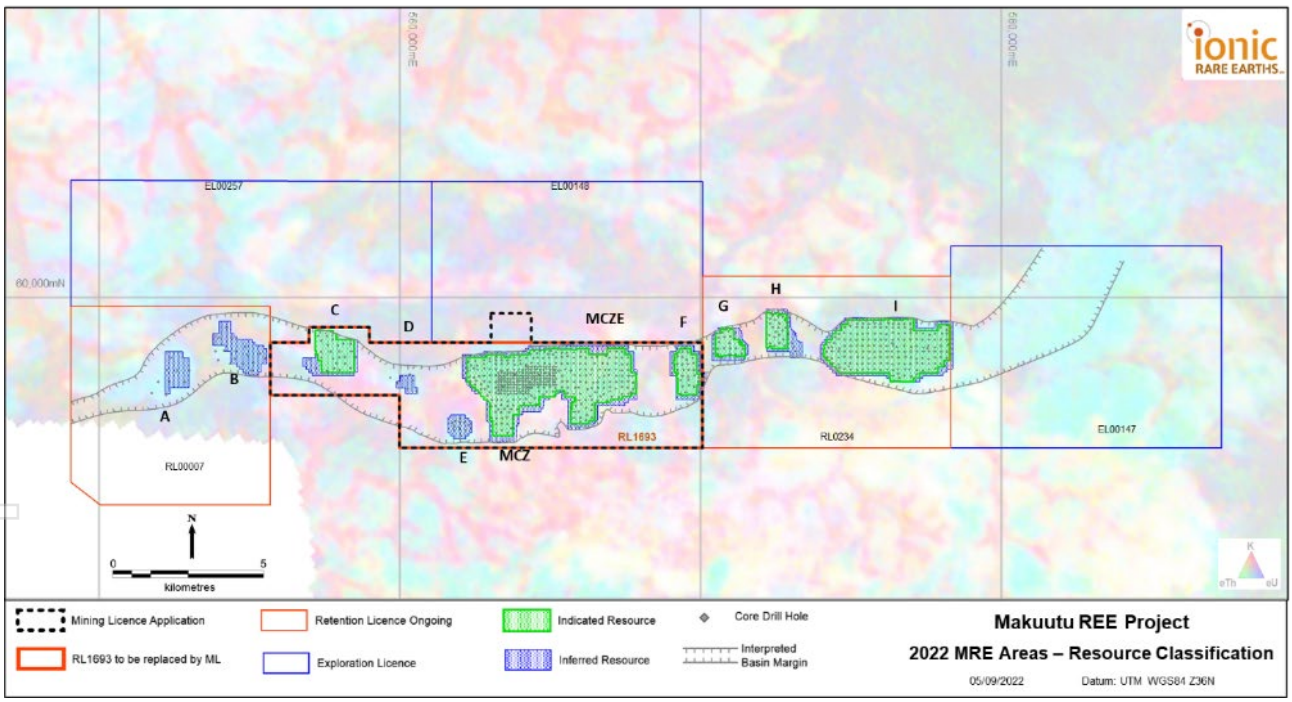

Figure 2: Makuutu Project resource map showing RL00007 Mineral Resource Estimate areas where Phase 5 infill drilling will occur, along with other tenement resource areas estimated to date, and additional exploration tenements across the 37 km mineralisation trend.

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Table 2: Mineral Resources by Area (ASX: 3 May 2022), RL00007 Resource Areas shaded blue.

Classification	Indicated Resource			Inferred Resource			Total Resource		
Area	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)
A				13	580	390	13	580	390
B				26	410	290	26	410	290
C	31	580	400	3	490	350	35	570	400
D				6	560	400	6	560	400
E				18	430	280	18	430	280
Central Zone	151	780	540	12	670	460	163	770	530
Central Zone East	59	750	490	12	650	430	72	730	480
F	18	630	420	7	590	400	25	620	410
G	9	750	500	5	710	450	14	730	480
H	6	800	550	7	680	480	13	740	510
I	129	540	350	19	530	350	148	540	350
Total Resource	**404**	**670**	**450**	**127**	**540**	**360**	**532**	**640**	**430**

Rounding has been applied to 1Mt and 10ppm which may influence averaging calculations.

Exploration Target Drilling

The zones targeted in the proposed RAB drilling program represent the highest identified Total Rare Earth Oxide (TREO) grade Inferred and Exploration Target mineralisation at Makuutu.

As detailed earlier the existing Makuutu Exploration Target (ASX: 1 June 2022), which is additional to the current Makuutu MRE, indicated a range for additional potential mineralisation at Makuutu estimated at;

216 – 535 million tonnes grading 400 – 600 ppm TREO*

*This Exploration Target is conceptual in nature but is based on reasonable grounds and assumptions. There has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.

The exploration program comprises several stages summarised as follows.

1. Previous RAB drilling tested areas – Exploration Target

The 2021 Phase 3 Rotary Air Blast (RAB) reconnaissance drilling campaign over multiple targets in the Makuutu area identified clay hosted REE mineralisation within, and outside, the sedimentary basin that contains the Makuutu resource[1,2].

[1] ASX Announcement 14 July 2021: "Phase 3 Drilling Results Confirm Major Extension Potential At Makuutu"
[2] ASX Announcement 20 July 2021: "Phase 3 Drilling Results Indicate Potential Extension to Northwest at Makuutu"

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The success of that program allowed a revision of the Exploration Target. The revised Exploration Target was separated into target areas within the sedimentary basin, and those outside the basin with clay hosted REE mineralisation derived from a mixture of rock types including granite, granodiorite and some mafic rocks.

The Exploration Target ranges are listed in Table 3 and locations shown on Figure 3.

Table 3: Makuutu Exploration Target (ASX : 1 June 2022)

		Tonnes Range (millions)		TREO ppm Range	
Zone	**Target ID**	**Minimum**	**Maximum**	**Minimum**	**Maximum**
Inside Basin	**A1**	14	28	400	600
	A2	2	5	600	800
	A3	2	5	600	800
	A4	2	4	500	700
	A5	4	8	400	600
	A6	90	180	400	600
Outside Basin	**B1**	15	45	500	700
	B2	4	12	400	600
	B3	2	6,	600	800
	B4	73	220	400	600
	B5	8	28	400	600
Total		**216**	**535**	**400**	**600**

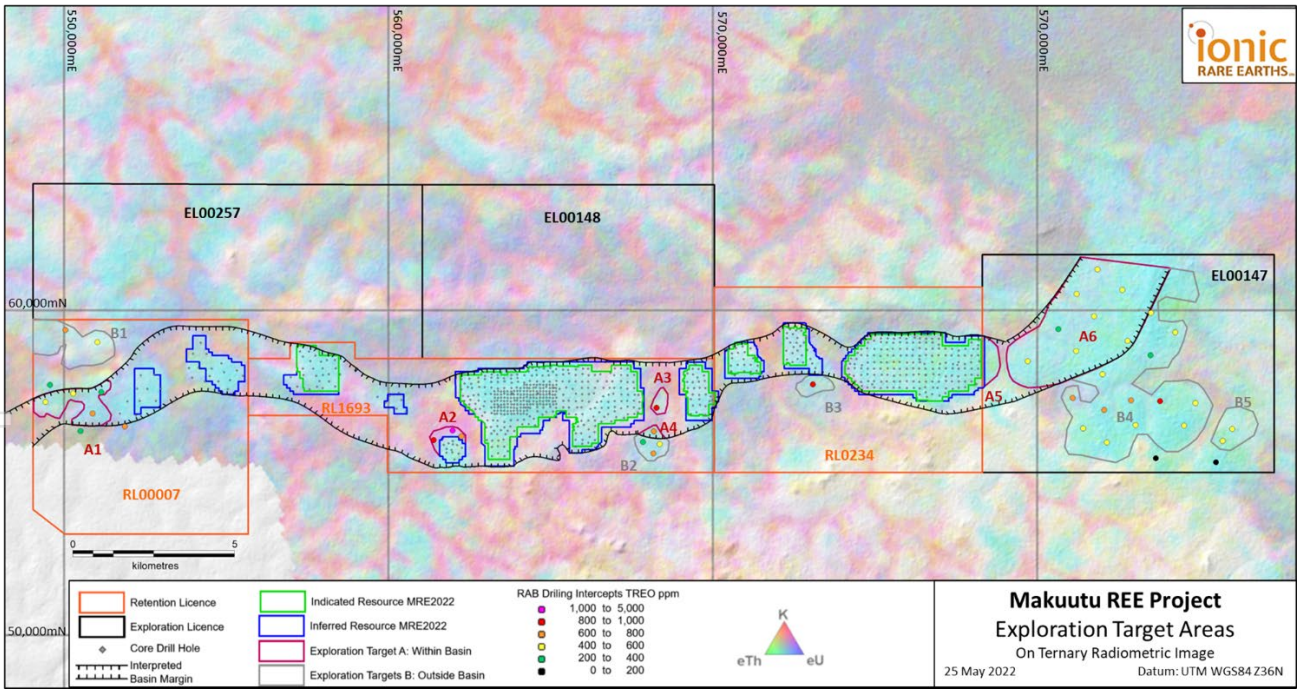

Figure 3: Makuutu Exploration Targets on Ternary Radiometric Image and Phase 3 RAB Intercepts.

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The aim of the exploration program in the target areas is to establish further input ahead of the next phase to progress to Inferred level resources in accordance with the guidelines of the JORC code. The summary steps of the Phase 5 program are:

i. Compilation, lodgement and approval of the exploration program by the National Environment Management Authority (NEMA) following the Environmental Impact Assessment (EIA) for the licence EL00147 – Completed;
ii. Field mapping and sampling of outcropping rocks to assist in identifying potential REE source rocks – Completed; and
iii. RAB drilling in target areas A5 and A6 reducing the drill hole spacing, currently over 1km, to a maximum of 500m. This aims to provide greater confidence in the mineralisation and provides samples for geochemical analysis and further metallurgy test work.

2. Untested areas outside the main project trend EL00257

Exploration Licence EL00257 has areas of eU/eTh radiometric anomalism related to lateritic hardcap as seen at Makuutu. To date only reconnaissance field inspection has been conducted on this licence to confirm the radiometric response is related to hardcap.

The aim of this program is to initially determine the endowment of REE in the area with the goal of generating additions to an updated Exploration Target.

To advance this area, an exploration program is planned with the following stages:

i. Compilation, lodgement and approval of the exploration program by the National Environment Management Authority (NEMA) following the Environmental Impact Assessment (EIA) for licence EL00257 – Completed;
ii. Surface mapping and sampling establishing boundaries of lateritic hardcap zones and surface outcrop rock types, with particular interest in exposed clay, granitic rocks as potential REE source rocks – Completed; and
iii. Following approval by NEMA of the EIA for drilling a program of broad spaced (approximately 1km) RAB reconnaissance drill holes (Phase 1) will test the lateritic plateaus to establish the extent of clay in the profile and REE endowment. Samples will be analysed geochemically and for indicative REE metallurgical extraction.

Authorised for release by the Board.

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About Ionic Rare Earths Ltd

Ionic Rare Earths Limited (ASX: IXR or IonicRE) is set to become a miner, refiner and recycler of sustainable and traceable magnet and heavy rare earths needed to develop net-zero carbon technologies.

The flagship Makuutu Rare Earths Project in Uganda, 60% owned by IonicRE, is well-supported by existing tier-one infrastructure and is on track to become a long-life, low Capex, scalable and sustainable supplier of high-value magnet and heavy rare earths oxides (REO). In March 2023, IonicRE announced a positive stage 1 Definitive Feasibility Study (DFS) for the first of 6 tenements to progress to a Mining Licence Application (MLA) which is pending in Uganda. The Makuutu Stage 1 DFS defined a 35-year life initial project producing a 71% rich magnet and heavy rare earth carbonate (MREC) product basket and the potential for significant potential and scale up through additional tenements. The Stage 1 MLA is expected to be awarded in Q2 2023.

Ionic Technologies International Limited ("IonicTech"), a 100% owned UK subsidiary acquired in 2022, has developed processes for the separation and recovery of rare earth elements (REE) from mining ore concentrates and recycled permanent magnets. Post-acquisition, IonicTech is now focusing on the commercialisation of the technology to achieve near complete extraction from end of life / spent magnets and waste (swarf) to high value, separated and traceable magnet rare earth products with grades exceeding 99.9% rare earth oxide (REO). This technology provides first mover advantage in the industrial elemental extraction of REEs from recycling, enabling near term magnet REO production capability to support demand for early-stage alternative supply chains.

As part of an integrated strategy to create downstream supply chain value, IonicRE is also evaluating the development of its own magnet and heavy rare earth refinery, or hub, to separate the unique and high value magnet and heavy rare earths dominant Makuutu basket into the full spectrum of REOs plus scandium.

This three-pillar strategy completes the circular economy of sustainable and traceable magnet and heavy rare earth products needed to supply applications critical to electric vehicles, offshore wind turbines, communication and key defence initiatives.

IonicRE is a Participant of the UN Global Compact and adheres to its principles-based approach to responsible business.

Competent Persons Statement

Information in this report that relates to previously reported Exploration Targets and Exploration Results has been crossed-referenced in this report to the date that it was originally reported to ASX. Ionic Rare Earths Limited confirms that it is not aware of any new information or data that materially affects information included in the relevant market announcements.

The information in this report that relates to Mineral Resources for the Makuutu Rare Earths deposit was first released to the ASX on 20 March 2022 and is available to view on www.asx.com.au. Ionic Rare Earths Limited confirms that it is not aware of any new information or data that materially affects information included in the relevant market announcement, and that all material assumptions and technical parameters underpinning the estimates in the announcement continue to apply and have not materially changed.

The information in this report that relates to Ore Reserves for the Makuutu Rare Earths deposit was first released to the ASX on 20 March 2023 and is available to view on www.asx.com.au. Ionic Rare Earths Limited confirms that it is not aware of any new information or data that materially affects information included in the relevant market announcement, and that all material assumptions and technical parameters underpinning the estimates in the announcement continue to apply and have not materially changed.

The information in this report that relates to Production Targets or forecast financial information derived from production the production target for the Makuutu Rare Earths deposit was first released to the ASX on 20 March 2023 and is available to view on www.asx.com.au. Ionic Rare Earths Limited confirms that all material assumptions and technical parameters underpinning the Production Targets or forecast financial estimates in the announcement continue to apply and have not materially changed.

Forward Looking Statements

This announcement has been prepared by Ionic Rare Earths Limited and may include forward-looking statements. Forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions which are outside the control of Ionic Rare Earths Limited. Actual values, results or events may be materially different to those expressed or implied in this document. Given these uncertainties, recipients are cautioned not to place reliance on forward looking statements. Any forward-looking statements in this document speak only at the date of issue of this document. Subject to any continuing obligations under applicable law and the ASX Listing Rules, Ionic Rare Earths Limited does not undertake any obligation to update or revise any information or any of the forward-looking statements in this document or any changes in events, conditions or circumstances on which any such forward looking statement is based.