1 June 2022

UPDATED MAKUUTU EXPLORATION TARGET, PLANNING PHASE 5 DRILL PROGRAM

- **Exploration Target range estimated from previously RAB drilled areas, indicating potential for Makuutu to double in resource tonnage long term**
- **Phase 5 exploration program to target areas for further resource growth and to confirm extent of mineralisation across targets already identified**
- **Programs to evaluate areas with known REE mineralisation and untested geophysical anomaly target areas**
- **Program commenced with drilling anticipated by Q4 CY2022**

The Board of Ionic Rare Earths Limited ("IonicRE" or "The Company") (ASX: IXR) is pleased to advise the updated Exploration Target and the associated planning of the Phase 5 exploration program at its 51% owned Makuutu Rare Earths Project ("Makuutu").

Following the recent update to the Makuutu Mineral Resource Estimate (MRE)[1] to 532 million tonnes at 640ppm Total Rare Earth Oxide (TREO), above a cut-off grade of 200 parts per million (ppm) TREO minus CeO_2 (TREO-CeO_2), a review has been conducted to establish further exploration potential at Makuutu and plan the work programs to be conducted over the next 12 months.

The revised Exploration Target, which is additional to the 3 May 2022 MRE, range for additional potential mineralisation at Makuutu has been 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.

Ionic Rare Earths Managing Director Mr. Tim Harrison commented:

"The long-term exploration potential is immense. This updated exploration target, which factors in the successful Phase 3 RAB drilling assay results from July 2021, confirms the massive potential of EL00147, having identified immediate extensions to the resource estimate beyond previous

[1] ASX Announcement 3 May 2022: "Substantial Increase To Makuutu Resource To Over 500 Million Tonnes"

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radiometric targeting. Additionally, the new tenement at EL00257 would provide additional upside beyond this target."

Exploration Program – Phase 5

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[2,3].

The success of that program has allowed a revision of the Exploration Target. The revised Exploration Target is 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 1 and locations shown on Figure 1.

Table 1: Makuutu Exploration Target

		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**

Exploration Target ranges estimated from:
Maximum Tonnes: Area of target area x RAB intercepts above MRE cut-off grade x MRE clay insitu dry bulk density (1.7)
Minimum Tonnes: Targets A1 to A6: 50% of the Maximum Tonnes: Targets B1 to B6: 30% of the Maximum Tonnes
Maximum TREO ppm: Average of RAB drilling intercepts above MRE cutoff grade rounded up to nearest 100 ppm
Minimum TREO ppm: Average of RAB drilling minus 100ppm rounded to nearest 100ppm.
Cut-off grade: Consistent with 2022 MRE cutoff 200ppm TREO-CeO_2 includes REE extraction assumptions.

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.

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

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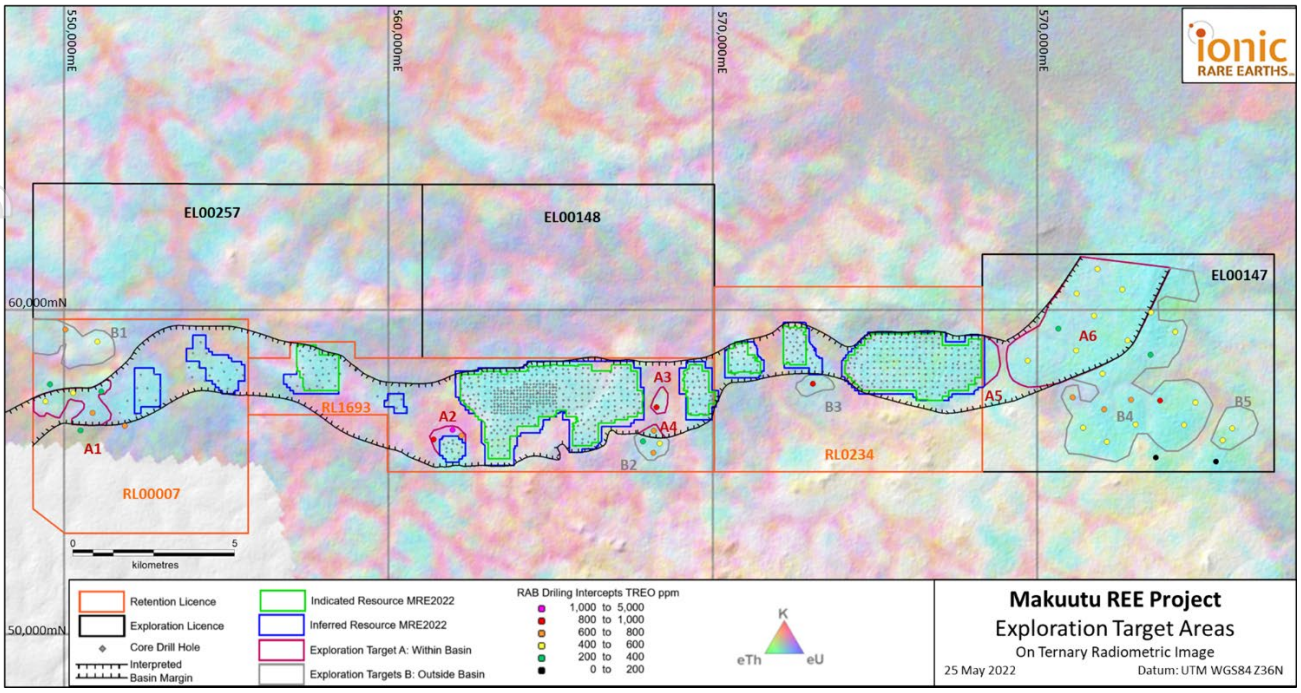

Figure 1: Makuutu Exploration Targets on Ternary Radiometric Image and Phase 3 RAB Intercepts

The aim of the exploration program in the target areas is to establish a minimum of Inferred level resources in accordance with the guidelines of the JORC code. The summary steps of the 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.
ii. Field mapping and sampling of outcropping rocks to assist in identifying potential REE source rocks.
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 indicative metallurgy test work.
iv. Core drilling targeting areas based on the outcomes of the RAB drilling. Detail sampling to determine REE distributions and further metallurgical test work.
v. Targets A1 – A4 located within the Project Retention Licences RL00007, RL1693 and RL00234 will be core drilled for resource addition.
vi. Resource modelling

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.

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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 MRE in 2023.

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.
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.
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 extraction.
iv. Second phase of RAB drilling to reduce hole spacing and refine target areas.
v. Core drilling targeting areas based on the outcomes of the RAB drilling. Detailed sampling to determine REE distributions and further metallurgical test work.
vi. Resource modelling

The EIA lodgment is in progress for both licences with an estimated time for approval from NEMA of 2 to 3 months. Field mapping and sampling is scheduled to commence before 30th of June 2022.

Authorised for release by the Board.

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Makuutu Mineral Resource Estimate

Table 2: Makuutu Resource above 200ppm TREO-CeO_2 Cut-off Grade

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO-CeO2 (ppm)	LREO (ppm)	HREO (ppm)	CREO (ppm)	Sc2O3 (ppm)
Indicated Resource	404	670	450	500	170	230	30
Inferred Resource	127	540	360	400	140	180	30
Total Resource	**532**	**640**	**430**	**480**	**160**	**220**	**30**

Rounding has been applied to 1Mt and 10ppm which may influence averaging calculation.
All REO are tabulated in MRE announcement dated 3 May 2022 with formulas defining composition of Light Rare Earth Oxides (LREO), Heavy Rare Earth Oxides (HREO), Critical Rare Earth Oxides (CREO) and Total Rare Earth Oxides (TREO).

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About Makuutu Rare Earths Project

The Makuutu Rare Earths Project is an ionic adsorption clay (IAC) hosted rare earth element (REE) deposit located 120 km east of Kampala in Uganda and is well serviced by existing high quality infrastructure including roads, rail, power infrastructure and cell communications. The installed infrastructure is illustrated in Figure 2.

The deposit stretches 37 km in length and has demonstrated potential for a long life, low-cost capital source of magnet and heavy REEs. These IAC deposits are prevalent in southern China which have been the source of the world's lowest cost magnet and heavy REE production, however these deposits are gradually being exhausted and Makuutu represents one of only a handful of such deposits outside of southern China.

The Makuutu deposit is shallow, with less than 3 m of cover over a 9 m average thickness clay and saprolite zone which results in low-cost bulk mining methods with low strip ratio. A maximum thickness of 28.5 m has been identified at Makuutu. Processing is via simple acidified salt desorption heap leaching, breaking the chemical ionic bond which washes the rare earths (in a chemical form) from the ore into a pregnant leach solution (PLS). The PLS is concentrated up using membrane technology, from which the rare earths are precipitated as a mixed rare earth carbonate product; a product which attracts both a higher payability and achieves a high basket price due to the dominant high value magnet and heavy rare earths which make up over 70% of the product basket.

The Project has the potential of generating a high margin product with an operation life exceeding 27 years. The Project is also prospective for a low-cost Scandium co-product.

Existing Infrastructure

One of the Makuutu Rare Earths Project's competitive advantages is its proximity to existing infrastructure. The Makuutu site is approximately 10km from Highway 109 which is a sealed bitumen road connecting to Kampala, to Kenya and on to the Port of Mombasa. All weather access roads connecting the site to the adjacent sealed bitumen highway are already existing. A rail line lies within 10 kilometres north of the Makuutu site near the town of Iganga. There are four hydroelectric power plants located within 65 km of the project area, with total installed generating capacity of approximately 810 MW, providing an abundant supply of cheap power to the Project.

Water will be sourced at the project by harvesting water from the Makuutu site, given the Project location in a positive rainfall environment, and a net positive process water balance will require membrane processes to be used to process site discharge water for reagent recovery. Excess water management will be a key focus of the Project the ensure environmental standards are met and reagent consumption is minimised.

A workforce of semi-skilled and artisanal workers is available in nearby towns and population centres. The closest major population centre is Iganga, which has a population of 50,000. The town of Mayuge is approximately 10 km from the Project site and the intent is to source local operations staff from the immediate districts and train staff accordingly. The operation is to be staffed by a residential workforce. No fly in – fly out is envisaged, and the number of expatriate staff is intended to be low, and to be phased out over time.

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Industrial facilities are available in the city of Jinja, approximately 40 km from the Project area. Additional industrial facilities are available on the outskirts of Kampala.

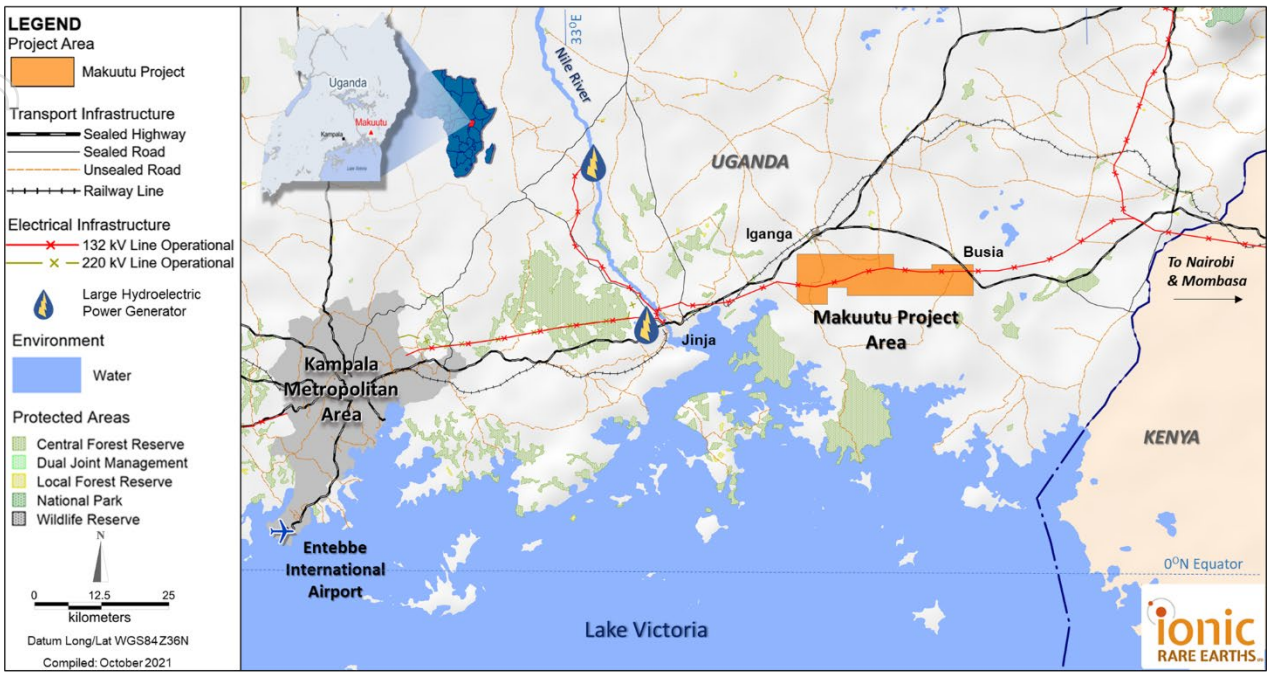

Figure 2: Makuutu Rare Earths Project Location with major existing infrastructure

Competent Persons Statement

The information in this Report that relates to the Exploration Target Ranges is based on information compiled by Mr. Geoff Chapman, who is a Fellow (111889) of the Australian Institute of Mining and Metallurgy (AusIMM). Mr. Chapman is a Director of geological consultancy GJ Exploration Pty Ltd that is engaged by Ionic Rare Earths Limited. Mr. Chapman has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activity being 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' (JORC Code). Mr. Chapman consents to the inclusion in this report of the matters based on the information in the form and context in which it appears. Mr Chapman consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

The information in this report that relates to Mineral Resources for the Makuutu Rare Earths deposit was first released to the ASX on 3 May 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 Scoping Study results and production targets was first released to the ASX on 29 April 2021 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.

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Forward Looking Statements

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