

5 May 2021

PHASE 4 RESOURCE DRILLING PROGRAM TO COMMENCE AT MAKUUTU

- Significant drill program focused on increasing the Indicated Resource base at the Makuutu Rare Earth Project to commence shortly
- The infill drill program will initially incorporate 1 rig with an additional rig planning to be mobilised shortly thereafter
- Increasing the Indicated component of the Resource base will enable additional tonnage from the 315 Million Tonne Resource to be incorporated into updated economic studies – the recently announced initial Scoping Study incorporated only 26% of the total Mineral Resource Estimate tonnage
- The program will also include a Resource extension drilling allocation scheduled to convert RL1693 Exploration Targets
- The Phase 3 reconnaissance RAB drill program has now been completed across all five Makuutu tenements, assays are expected by end of June

The Board of Ionic Rare Earths Limited (“IonicRE” or “The Company”) (ASX: IXR) is pleased to advise on the proposed next phase of drilling at its 51% owned Makuutu Rare Earths Project (“Makuutu” or “the Project”). The drill program will aim at increasing the Inferred Resources on RL 1693 to an Indicated Resource category, plus also converting RL 1693 Exploration Targets to classified resources.

The Company’s Mineral Resource Estimate (ASX: 3 March 2021), was estimated at **315 Million tonnes at 650 ppm Total Rare Earth Oxide (TREO)** with a cut-off grade of 200 parts per million (ppm) TREO minus Cerium Oxide (CeO₂) (see Table 1).

Makuutu ranks amongst the world's largest ionic adsorption clay (IAC) deposits, and as such, a globally strategic resource for low-cost, high-margin and long-term security of critical and heavy rare earth (HREO) supply.

The recently announced Makuutu Rare Earths Scoping Study (ASX: 29 April 2021) was based upon a Production Target which was primarily supported by the Project's Indicated Resource which reflected only circa 27% of the total Mineral Resource Estimate. This infill drill program is primarily to increase the Indicated Resource base to support future studies at Makuutu, including the Bankable Feasibility Study (BFS).

Drilling is planned to commence shortly, with the first rig secured. A 2nd rig is being organised to arrive approximately a fortnight later to expedite the initial allocation of infill drilling.

Infill Drill Program

IonicRE will prioritise infill drilling to areas immediately adjacent to the existing Indicated Resource area, Central Zone East (CEZ) Inferred, CEZ Unclassified Exploration Target, Central Main Zone Inferred, plus areas F, G and H, as illustrated within Figure 1.

The zones represent the highest identified Total Rare Earth Oxide (TREO) grade Inferred and Exploration Target mineralisation at Makuutu.

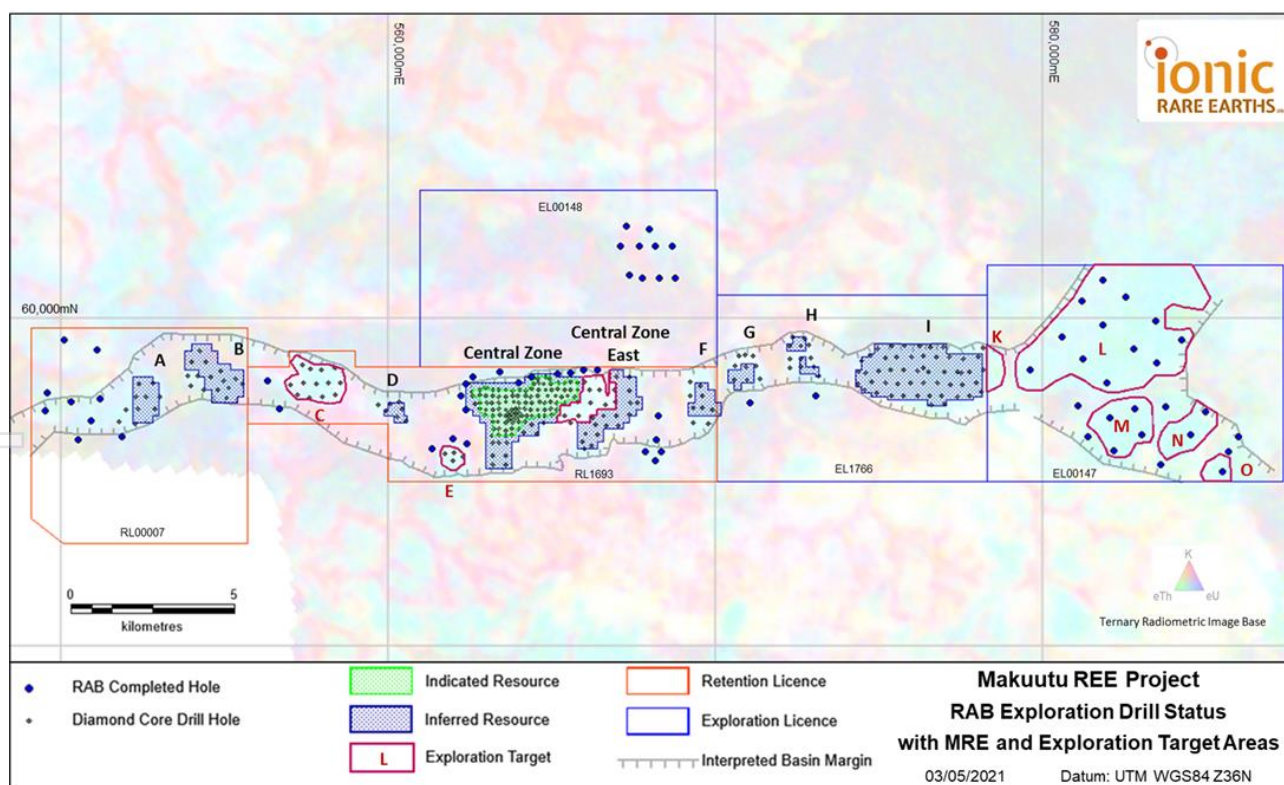


Figure 1: Mineral Resource Estimate (MRE) areas by classification with location of recently completed Phase 3 RAB holes, shown in blue.

Completed Phase 3 Drill Program

As reported in the March Quarterly Report (ASX: 30 April 2021), the 1200 metre Rotary Air Blast (RAB) Phase 3 drill program has been completed. The Phase 3 program, which included reconnaissance exploration drilling only, and is illustrated in Figure 1, shows the completed program over all 5 tenements at Makuutu with several targets evaluated.

The 37-kilometre-long sedimentary basin that hosts the Makuutu REE mineralisation has been interpreted from aeromagnetic and gravity data. Drilling to date has focused exclusively on eU/eTh radiometric anomalies interpreted to be derived from the laterite hardcap within the basin. There has not been any testing of radiometric anomalies outside the sedimentary basin or from zones within the basin that do not show this type of radiometric response. These untested targets were the focus of the RAB drilling on licences RL00007, RL1693 and EL1766.

EL00147, covers an extensive radiometric response similar to, and continuing from, EL1766. Resource Area I within EL1766, immediately west of EL00147, is estimated to contain 96 Million tonnes at 550ppm TREO (ASX: 3 March 2021, as displayed in Table 2) which also showed zones of elevated HREO particularly on the northern margin.

Table 1: Makuutu Resource above 200ppm TREO-CeO₂ Cut-off Grade

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO-CeO ₂ (ppm)	LREO (ppm)	HREO (ppm)	CREO (ppm)	Sc ₂ O ₃ (ppm)
Indicated Resource	66	820	570	590	230	300	30
Inferred Resource	248	610	410	450	160	210	30
Total Resource	315	650	440	480	170	230	30

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

All REO are tabulated in MRE announcement dated 3 March 2021 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).

Table 2: Mineral Resources by Area

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)
Central Zone	66	820	570	51	730	500	118	780	540
A				12	570	390	12	570	390
B				25	410	280	25	410	280
C				-	-	-	-	-	-
D				6	560	400	6	560	400
E				-	-	-	-	-	-
Central Zone East				37	740	520	37	740	520
F				11	570	390	11	570	390
G				6	660	450	6	660	450
H				4	780	560	4	780	560
I				96	550	350	96	550	350
Total Resource	66	820	570	248	610	410	315	650	440

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

Authorised for release by the Board.

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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.

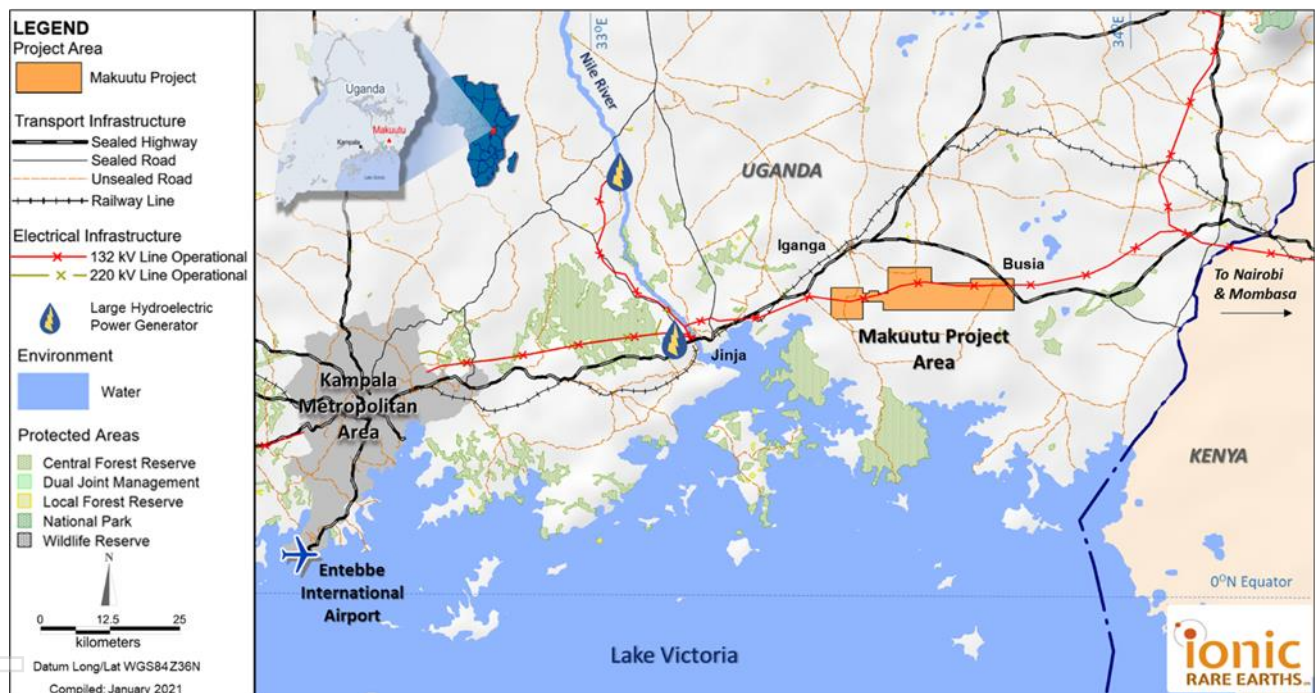


Figure 2: Makuutu Rare Earths Project Location with major existing infrastructure

The deposit stretches 37 km in length and has demonstrated potential for a long life, low-cost capital source of critical and heavy rare earths. These IAC deposits are prevalent in southern China which have been the source of the world's lowest cost critical 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 19.5 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 critical 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 to 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. 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.

Competent Person Statements

Information in this report that relates to previously reported Exploration Targets and Exploration Results has been cross-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 3 March 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.

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

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