19 March 2021

PHASE 3 EXPLORATION PROGRAM TO COMMENCE AT MAKUUTU

- **Rotary Air Blast drilling program to commence across all 5 tenements at the Makuutu Rare Earths Project**
- **Drill program to evaluate highly prospective Exploration Licence 00147 for potential additional resource extension**
- **Drilling to test the extension of ionic adsorption clay (IAC) hosted rare earth element (REE) mineralisation within the basin margin between radiometric anomalies and beyond margin boundary**

The Board of Ionic Rare Earths Limited ("IonicRE" or "The Company") (ASX: IXR) is pleased to advise of the commencement of the next phase of drilling at its 51% owned Makuutu Rare Earths Project ("Makuutu" or "the Project"). The drill program will provide initial reconnaissance drilling with a view to providing indicative potential of resource extension.

This phase of drilling at Makuutu has been planned as a follow on to the Company's threefold increase of the Mineral Resource Estimate at Makuutu, recently announced to the ASX (3 March 2021), which has been 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 (CeO_2). (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.

Commenting on this next phase of drilling, IonicRE's Managing Director, Mr Tim Harrison said:

"The Company is excited to resume drilling at our flagship Makuutu Rare Earths Project. Key to this is Exploration Licence 00147. We identified the new eastern target radiometric anomaly in August last year, and having been granted EL00147 and EL00148 in December, where we expect a similar outcome to the 2020 Phase 2 drill program which confirmed the radiometric anomaly targeting as being a very good proxy for REE ionic adsorption clay mineralisation."

"Furthermore, the HREO dominant nature of the clay mineralisation in EL1766 immediately adjacent to the EL00147 could result in a very substantial addition at Makuutu."

"Additionally, the Company has been patiently waiting for an opportunity to assess the areas adjoining the individual radiometric anomalies within the basin margins to test for further continuity

of ionic adsorption clay mineralisation. We expect over the course of the next 2 to 3 months we will start to get a more accurate idea on the total potential deposit magnitude at Makuutu which will be critical as we fast track Makuutu to production."

Exploration Drill Program

IonicRE will commence a 1200 metre (67 hole) reconnaissance Rotary Air Blast (RAB) drill program aimed to test new targets plus test REE mineralisation in areas outside the previous focus of the Project. Some targets are potential alternate host types that have not been previously tested.

The drill program, which is illustrated in Figure 1 shows the proposed program over all 5 tenements at Makuutu with several targets being 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 are the focus of the RAB drilling on licences RL00007, RL1693 and EL1766.

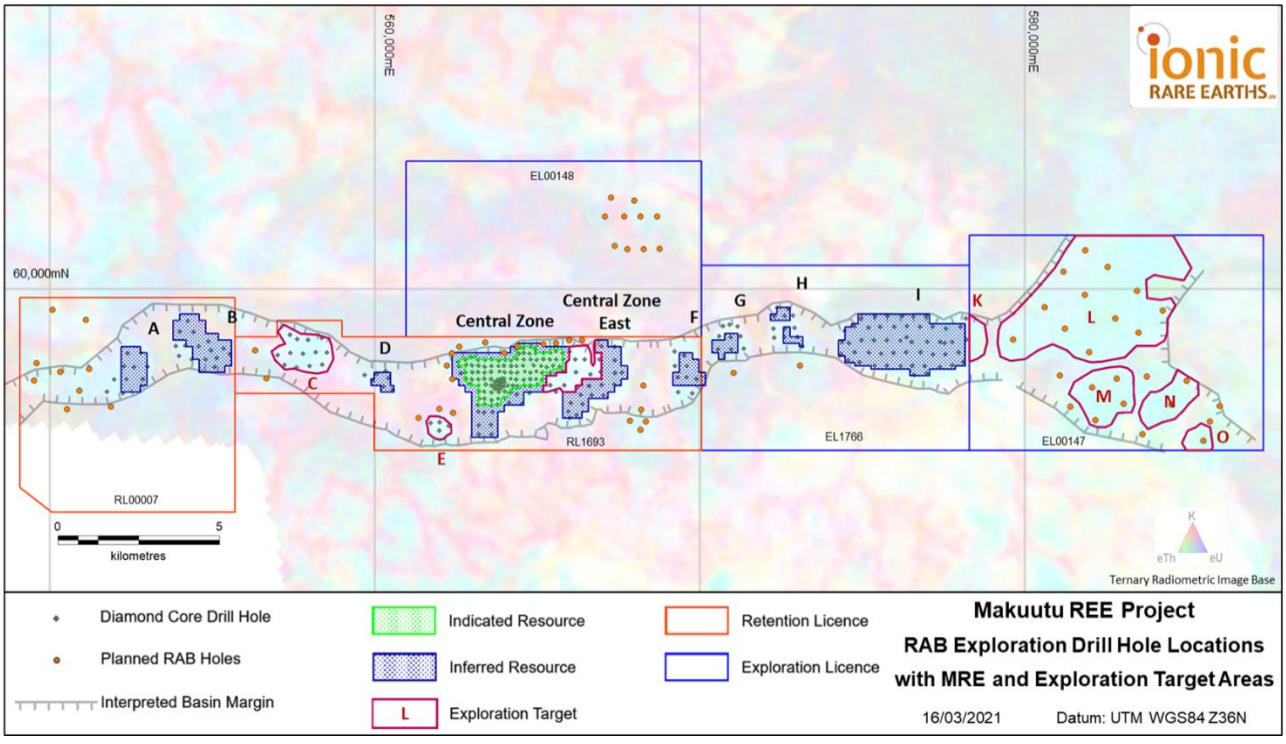

Figure 1: Mineral Resource Estimate (MRE) areas by classification with location of planned RAB holes

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

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tonnes at 550ppm TREO[1] (as displayed in Table 2) which also showed zones of elevated HREO particularly on the northern margin.

Table 1: Makuutu Resource above 200ppm TREO-CeO_2 Cut-off Grade

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO-CeO_2 (ppm)	LREO (ppm)	HREO (ppm)	CREO (ppm)	Sc_2O_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.

On 5 January 2021, the Company announced exploration target ranges for EL00147, illustrated within Figure 1 as Exploration Targets K to O, of:

60 – 270 million tonnes grading 550 – 900 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.

[1] ASX announcement 3 March 2021 "Mineral Resource Estimate Increased Threefold At Makuutu"

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An initial RAB program of 25 holes is planned for EL00147 to traverse the main radiometric (eU/eTh) targets. The aim of this drilling is to test for REE occurrence and tenor, the regolith profile and underlying fresh rock type.

No fixed spacing has been used to plan these holes, rather they are designed to mainly test the areas showing pale blue radiometric response (eU/eTh) rather than the pale green (Th/U) response which has shown to be more sand effected in other drilled areas. Six holes are positioned outside the defined target areas and associated with elevated Th response to test the relationship to radiometric response in the area. Holes have not been designed close to the major town of Bugiri in the northeast sector of EL00147 to minimise community impact at this stage.

Ten (10) RAB holes are also planned to test an area on licence EL00148 that has potential to be used for infrastructure development or as a source of construction material for the Project. These holes will add information important for advancing the Project design and BFS studies.

Addendums

Appendix 1: Makuutu Rare Earths Project June 2020 Mineral Resource Estimate Tabulations

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.

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 30 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.

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

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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 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 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 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.

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Appendix 1: Makuutu Rare Earths Project March 2021 Mineral Resource Estimate Tabulations

Table 3: Makuutu Rare Earth Resource Tabulation at 200ppm TREO- CeO_2 Cut-off Grade

Resource Classification	Tonnes (millions)	La_2O_3 (ppm)	CeO_2 (ppm)	Pr_6O_{11} (ppm)	Nd_2O_3 (ppm)	Sm_2O_3 (ppm)	Eu_2O_3 (ppm)	Gd_2O_3 (ppm)	Tb_4O_7 (ppm)	Dy_2O_3 (ppm)	Ho_2O_3 (ppm)	Er_2O_3 (ppm)	Tm_2O_3 (ppm)	Yb_2O_3 (ppm)	Lu_2O_3 (ppm)	Y_2O_3 (ppm)
Indicated	66	160	250	40	140	30	5	20	3	20	4	10	2	10	1	130
Inferred	248	120	200	30	100	20	3	20	2	10	3	10	1	10	1	90
Total	**315**	**130**	**210**	**30**	**110**	**20**	**4**	**20**	**3**	**10**	**3**	**10**	**1**	**10**	**1**	**100**

Notes: Tonnes are dry tonnes rounded to the nearest 1Mt.

All material REO grades are rounded to the nearest 10 ppm except Eu_2O_3, Tb_4O_7, Ho_2O_3, Tm_2O_3, Lu_2O_3 which are immaterial to overall resource grade.

Table 4: Makuutu Rare Earth Project Resource Tabulation of REO Reporting Groups at 200ppm TREO- CeO_2 Cut-off Grade

Resource Classification	Tonnes (millions)	TREO (ppm)	TREO- CeO_2 (ppm)	CREO (ppm)	HREO (ppm)	LREO (ppm)	NdPr (ppm)	Sc_2O_3 (ppm)	U_3O_8 (ppm)	ThO_2 (ppm)
Indicated	66	820	570	300	230	590	180	30	20	30
Inferred	248	610	410	210	160	450	130	30	10	30
Total	**315**	**650**	**440**	**230**	**170**	**480**	**140**	**30**	**10**	**30**

Notes: All ppm rounded from original estimate to the nearest 10 ppm which may lead to differences in averages from Table 3

Y_2O_3 is included in the TREO, HREO and CREO calculation.

TREO (Total Rare Earth Oxide) = $La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3 + Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3 + Y_2O_3 + Lu_2O_3$.

CREO[2] (Critical Rare Earth Oxide) = $Nd_2O_3 + Eu_2O_3 + Tb_4O_7 + Dy_2O_3 + Y_2O_3$

HREO (Heavy Rare Earth Oxide) = $Sm_2O_3 + Eu_2O_3 + Gd_2O_3 + Tb_4O_7 + Dy_2O_3 + Ho_2O_3 + Er_2O_3 + Tm_2O_3 + Yb_2O_3$, $+ Y_2O_3 + Lu_2O_3$

LREO (Light Rare Earth Oxide) = $La_2O_3 + CeO_2 + Pr_6O_{11} + Nd_2O_3$

NdPr = $Nd_2O_3 + Pr_6O_{11}$

U_3O_8 and ThO_2 and Th are deleterious elements being reported in accordance with JORC (2012) Guidelines.

[2] U.S. Department of Energy, Critical Materials Strategy, December 2011