

11 October 2021

## **PHASE 4 DRILL PROGRAM COMPLETED, EXPLORATION LICENCE TN03573 APPROVED FOR GRANTING**

- **Major milestone reached with completion of Phase 4 drill program, ahead of schedule**
- **8,220 metres of drilling (432 holes) completed, targeting an increased Measured and Indicated resource at Makuutu to over 250 million tonnes, with an updated MRE planned for Q1 2022**
- **Exploration Licence TN03573 approved for granting, increasing Makuutu tenement area to approximately 300 square kilometres**
- **Awaiting assay results from drill program for tranches 2 to 4, with samples experiencing increased long delays at the assay lab**

Ionic Rare Earths Limited ("IonicRE" or "the Company") (ASX: IXR) is pleased to advise that the Phase 4 infill drill campaign has been completed ahead of schedule at the Makuutu Rare Earths Project ("Makuutu") in Uganda.

Makuutu has been confirmed as one of the world's largest ionic adsorption clay (IAC) hosted rare earth element (REE) deposits, located 120 km east of Kampala in Uganda. The Phase 4 drill program has targeted a near conversion of previously classified Inferred resources across the Makuutu central and eastern zones and is now targeting a reclassification of Measured and Indicated resources in excess of 250 million tonnes as part of the planned Mineral Resource Estimate (MRE), to be updated in late Q1 2022. A significant increase in the MRE classification will form the next planned milestones for the Project in order to move towards completion of a Feasibility Study, including supporting activities, which will enable the submission of a Mining Licence Application (MLA) in the second half of 2022.

Additionally, the Company has received advice from the Directorate of Geological Survey and Mines (DGSM) in Uganda that the Exploration Licence application TN03573, shown in Figure 1, has been approved for granting. The addition of this exploration licence will increase the overall exploration tenement area at Makuutu to approximately 300 square kilometres, including a 37 kilometers long mineralisation trend confirmed as part of the drilling results released in July 2021 (Refer ASX announcements 14<sup>th</sup> and 20<sup>th</sup> July).

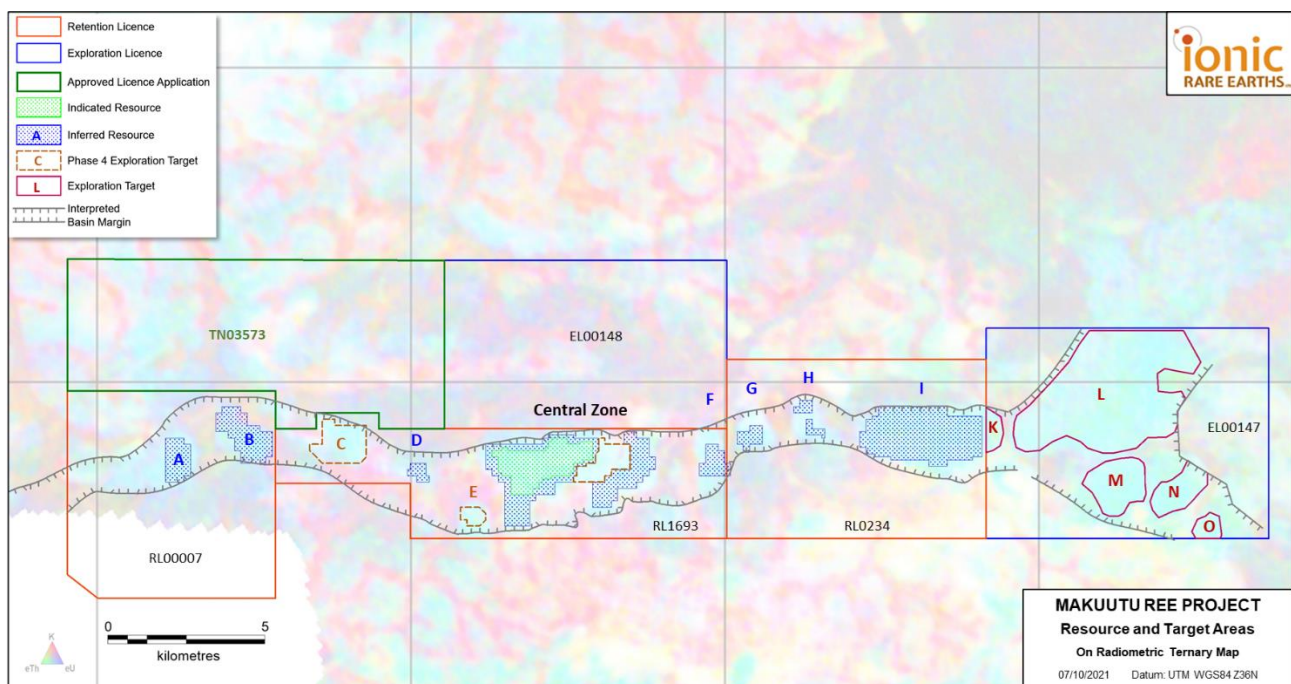
Ionic Rare Earths Managing Director Mr. Tim Harrison commented:

*“The completion of the Phase 4 drill program at Makuutu represents another significant milestone achieved as we rapidly move Makuutu from exploration to a critical and heavy rare earth operation. This drilling program is crucial to increasing the MRE at Makuutu and will underpin a material increase in the measured and indicated resource base that supports the Feasibility Study.”*

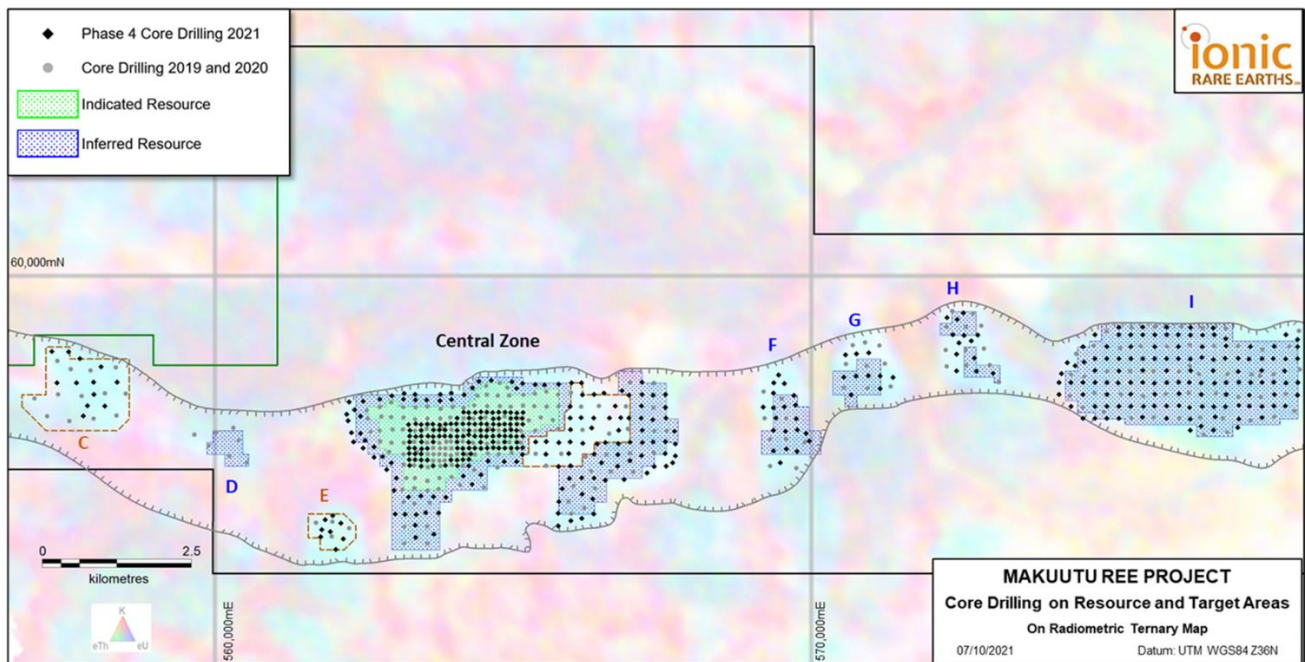
### Makuutu Phase 4 Drill Program

The Phase 4 program had prioritised drilling at the previously classified resources across RL 1693 to enable a reclassification to Indicated and Measured category. The drill program was also aimed at converting RL 1693 Exploration Targets to classified resources. The program was expanded to include infill drilling to increase classification confidence on the newly awarded RL00234 (previously EL 1766). These higher classified resources will then be used to underpin the Makuutu Feasibility Study.

The Phase 4 drill program is illustrated in both Figure 1 and Figure 2, targeting the following areas; Areas C, E, Central Zone, Central Eastern Zone, F, G, H and I. Cumulatively this represents nearly 90% of the existing MRE at Makuutu, as outlined within Table 2.



**Figure 1: Makuutu Rare Earths Project, showing the recently approved for grant exploration licence application TN 03573 (green outline), along with current resource areas and exploration targets across the 37-kilometre-long mineralisation trend.**



**Figure 2: Makuutu resource and exploration target areas with Phase 4 core drilling completed in 2021 (black points) and previous core drilling (grey points).**

The second, third and fourth tranches of core samples have been received in Australia and delivered to the assay lab. Unfortunately, significant delays of 10 to 12 weeks are being experienced in the delivery of assay results.

All remaining drill core samples are expected to be dispatched from Uganda over the next 4 to 5 weeks.

The Company will provide updates to the market as progress continues with core transit and assay results from Phase 4 drill program.

### **New Exploration Licence Application TN03573 Approved for Granting**

In July 2021, the Company applied for an additional Exploration Licence (EL) located to the northwest of the current resource area based upon the encouraging results from the Phase 3 Rotary Air Blast (RAB) drill program. As reported on the 20<sup>th</sup> July 2021, the rare earth element (REE) mineralised intercepts in RMRB063 and RMRB064 on the North-West radiometric target presented an opportunity for further REE mineralisation to exist to the north, and outside of the current licence area. To evaluate the opportunity an application for an EL was submitted over that area with the Ugandan Department of Geological Survey and Mines (DGSM). The application designated TN03573, is shown in **Error! Reference source not found..**

Upon award of the EL, the Company will likely complete initial field-based activity in 2022, prior to potential broad spaced RAB drilling in 2022 to confirm the likely priority for additional exploration programs in the future. The Company already has the highly prospective EL00147, which as part of the Phase 3 drill program returned thick REE mineralised clay zones in numerous holes drilled on

the tenement. Of the 25 holes drilled on EL00147, 23 returned REE grades above the current MRE cut-off providing significant scope for material extension of project life at Makuutu.

Authorised for release by the Board.

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## Makuutu Mineral Resource Estimate (refer ASX 3 March 2021)

**Table 1: Makuutu Resource above 200ppm TREO-CeO<sub>2</sub> Cut-off Grade**

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

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 (shaded areas included in Phase 4 Drill Program)**

| Classification           | Indicated Resource |            |                             | Inferred Resource |            |                             | Total Resource    |            |                             |
|--------------------------|--------------------|------------|-----------------------------|-------------------|------------|-----------------------------|-------------------|------------|-----------------------------|
| Area                     | Tonnes (millions)  | TREO (ppm) | TREO-CeO <sub>2</sub> (ppm) | Tonnes (millions) | TREO (ppm) | TREO-CeO <sub>2</sub> (ppm) | Tonnes (millions) | TREO (ppm) | TREO-CeO <sub>2</sub> (ppm) |
| <b>Central Zone</b>      | 66                 | 820        | 570                         | 51                | 730        | 500                         | 118               | 780        | 540                         |
| <b>A</b>                 |                    |            |                             | 12                | 570        | 390                         | 12                | 570        | 390                         |
| <b>B</b>                 |                    |            |                             | 25                | 410        | 280                         | 25                | 410        | 280                         |
| <b>C</b>                 |                    |            |                             | -                 | -          | -                           | -                 | -          | -                           |
| <b>D</b>                 |                    |            |                             | 6                 | 560        | 400                         | 6                 | 560        | 400                         |
| <b>E</b>                 |                    |            |                             | -                 | -          | -                           | -                 | -          | -                           |
| <b>Central Zone East</b> |                    |            |                             | 37                | 740        | 520                         | 37                | 740        | 520                         |
| <b>F</b>                 |                    |            |                             | 11                | 570        | 390                         | 11                | 570        | 390                         |
| <b>G</b>                 |                    |            |                             | 6                 | 660        | 450                         | 6                 | 660        | 450                         |
| <b>H</b>                 |                    |            |                             | 4                 | 780        | 560                         | 4                 | 780        | 560                         |
| <b>I</b>                 |                    |            |                             | 96                | 550        | 350                         | 96                | 550        | 350                         |
| <b>Total Resource</b>    | <b>66</b>          | <b>820</b> | <b>570</b>                  | <b>248</b>        | <b>610</b> | <b>410</b>                  | <b>315</b>        | <b>650</b> | <b>440</b>                  |

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

## 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 3.

The Company will move to 60% ownership of Makuutu on the completion of the Feasibility Study and has a pre-emptive right over the remaining 40% stake in the Project.

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.

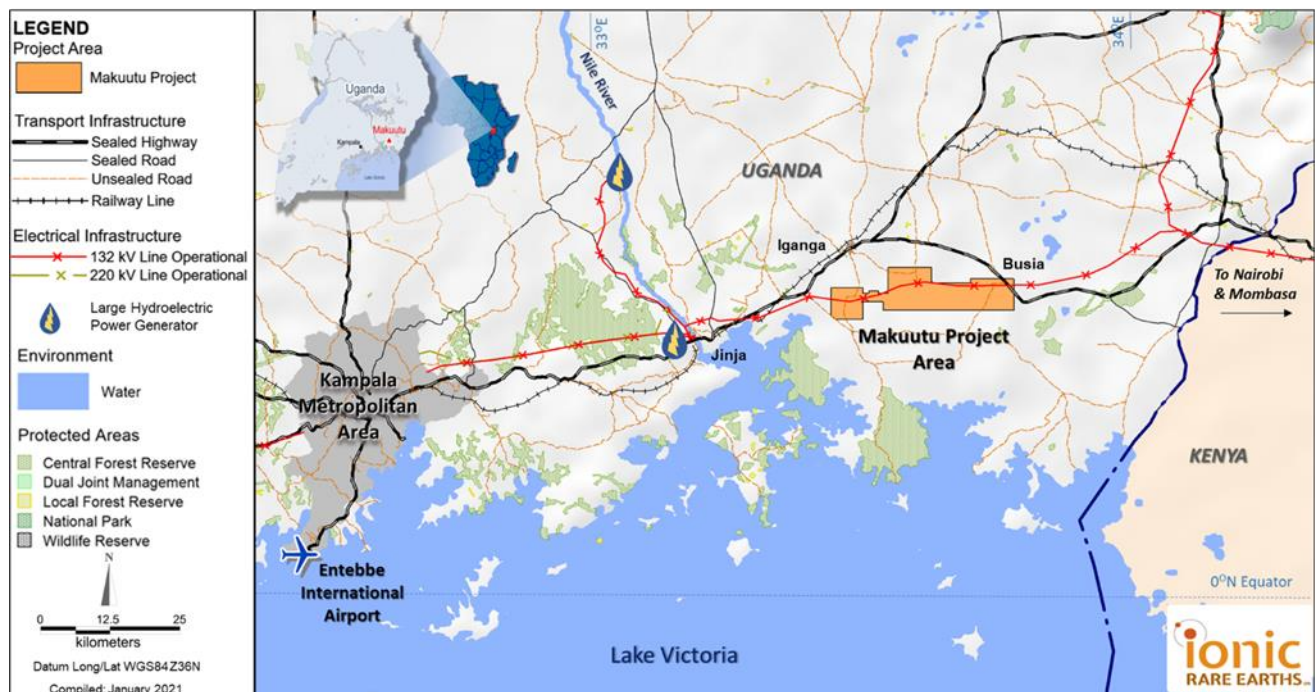


Figure 3: Makuutu Rare Earths Project Location with major existing infrastructure.

## 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](http://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](http://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.*