1 April 2021

# MAKUUTU PHASE 3 EXPLORATION DRILLING UPDATE

- **Rotary Air Blast drilling program underway with presence of sedimentary basin confirmed and regolith clay intercepts on Exploration Licence 00147**
- **Drill program testing the extension of ionic adsorption clay hosted rare earth element mineralisation within the host basin and alternative untested targets within and outside the basin**

The Board of Ionic Rare Earths Limited ("IonicRE" or "The Company") (ASX: IXR) is pleased to advise progress on the Phase 3 exploration drill program at its 51% owned Makuutu Rare Earths Project ("Makuutu" or "the Project").

The first 5 drill holes of the initial reconnaissance drill program have all intersected clay intervals with 2 holes (RRMRB004 and 005) both intersecting sediments confirming the presence of the sedimentary basin that hosts the Makuutu REE mineralisation in this area. These are the first drill holes to test the highly prospective Exploration Licence 00147 with the current resource boundary located approximately 5 kilometres west of these new drill holes.

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 Phase 3 drill program is a 1200 metre (67 hole) reconnaissance Rotary Air Blast (RAB) drill program aimed to test new targets plus test for rare earth element (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 Phase 3 drill program at Makuutu is a follow on to the Company's threefold increase of the Mineral Resource Estimate (MRE) at Makuutu, announced to the ASX on 3rd 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).

IonicRE Managing Director Tim Harrison commented:

*"The initial drilling activity within the new exploration licence EL00147 has found sediments that appear similar to those that host the Makuutu rare earth mineralisation. The drilling is initially focused on establishing the existence of the sediments and rare earth hosting clay on the eastern side of the*

*massive radiometric anomaly that extends from the Makuutu deposit. The exploration targeting method to date has been very successful and continues to provide a great initial indicator for the regolith profile seen at Makuutu with all holes intersecting clay beneath a surface hardcap layer."*

*Figure 1: RRMRB001 being drilled at Exploration Licence EL00147.*

**Exploration Drill Program**

A total of 4 reconnaissance RAB holes have been completed with 1 hole in progress. Significantly, holes RRMRB004 and RRMRB005 finished in sediments considered to be of similar appearance to those seen at the Makuutu deposit, confirming the interpretation that the sedimentary basin hosting the REE mineralisation at the Makuutu also occurs in this area. All holes have intersected clay and saprolite regolith profiles. The hole locations are shown in Figure 2.

A summary of the rock types observed in each hole is:

Hole RRMRB001, drilled to a depth of 22 metres and ended in dolerite. RRMRB001 encountered a 14 metre clay and saprolite regolith profile beneath 5 metres of surface hardcap.





Ionic Rare Earths Limited, Level 1, 34 Colin Street, West Perth WA 6005 Australia T+61 8 9481 2555 F+61 8 9485 1290

RRMRB002, approximately 1 kilometre north east of RRMRB001 was terminated at 17 metres depth following the collapse of the drill hole in saprolite. The intersected regolith profile to that point was similar to that seen in RRMRB001.

RRMRB003, located approximately 1.5 kilometres to the north of RRMRB001 and at a higher elevation than the first 2 holes, has intersected 5 metres of surface hardcap followed by 23 metres of red-brown and pink-brown clays to a depth of 28 metres. The hole is in progress.

RRMRB004, located approximately 1.5 kilometres to the northwest of RRMRB003 has intersected a regolith profile including 4 metres of surface hardcap followed by 8 metres of clays and saprolite with partially weathered sediment at the end of hole (16 metres).

RRMRB005, located 900 metres northwest of RRMRB004 also intersected 6 metres of clay and saprolite in the regolith profile with partially weathered sediment at end of hole (13 metres).

No assay data is available for the drilling yet.

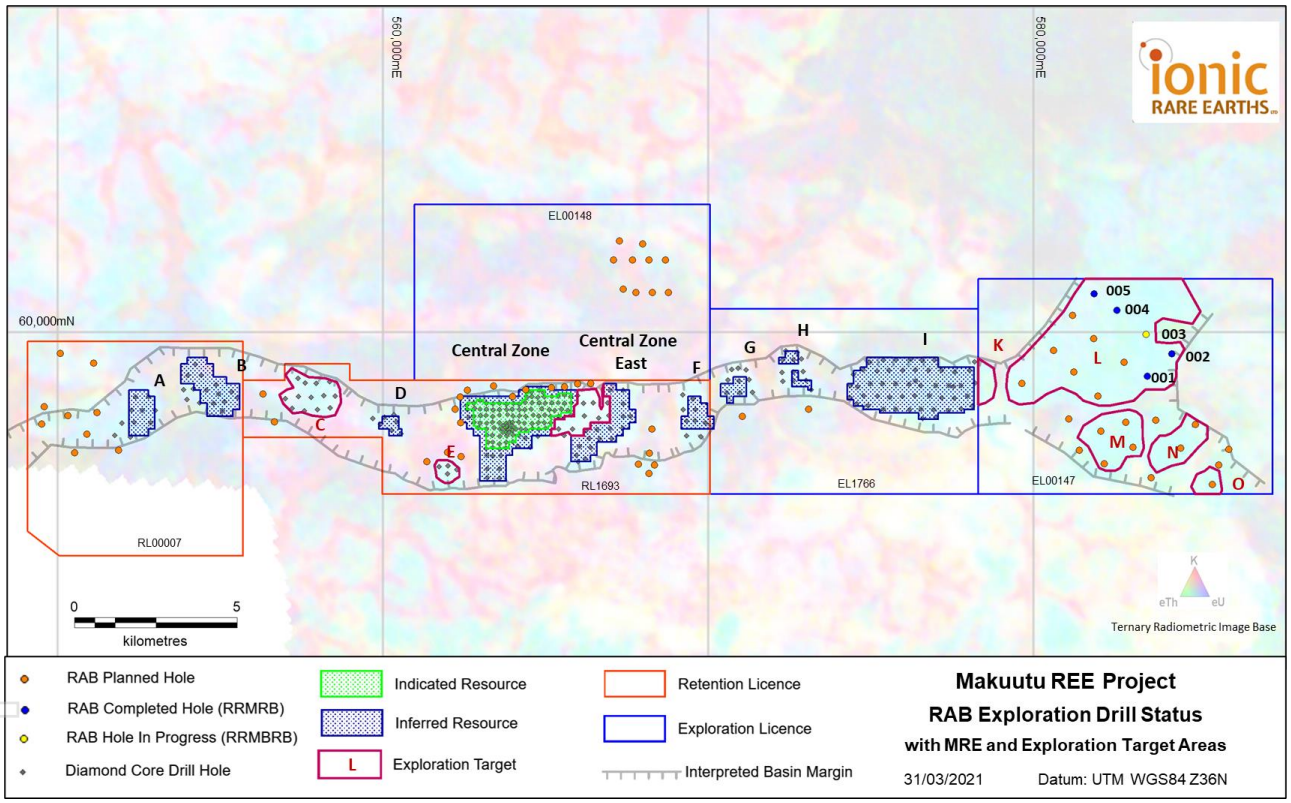


*Figure 2: Mineral Resource Estimate (MRE) areas by classification with location of completed, current and planned RAB holes.*

The drill program, which is illustrated in Figure 2 and shows the location of the first 5 holes drilled, plus 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.

On 5 January 2021, the Company announced exploration target ranges for EL00147, illustrated within Figure 2 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.

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.

The program is expected to be completed in May 2021. Samples will be sent from Uganda to Australia for analysis with samples also made available for metallurgical evaluation post analysis.

**For enquiries, contact**: Tim Harrison
Managing Director
+61 8 9481 2555

*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).

**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 current resource is identified over a 20 km length. The potentially mineralised basin is 37km 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.

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.


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

**Competent Person Statements**

*The information in this Report that relates to Exploration Results for the Makuutu Project is based on information compiled by Mr. Geoff Chapman, who is a Fellow 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 Ltd. 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.*

*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.*





Ionic Rare Earths Limited, Level 1, 34 Colin Street, West Perth WA 6005 Australia T+61 8 9481 2555 F+61 8 9485 1290

## Appendix 1: Drill Hole Details; Datum WGS84 Zone 36 North

| Drill Hole ID | UTM East (m.) | UTM North (m.) | Elevation (m.a.s.l.) | Drill Type | Hole Length EOH (m.) | Azimuth | Inclination |
|---|---|---|---|---|---|---|---|
| RRMRAB001 | 583,516 | 58,608 | 1,180 | RAB | 22 | 0 | -90 |
| RRMRAB002 | 584,279 | 59,316 | 1,169 | RAB | 17 | 0 | -90 |
| RRMRAB003 | 583 531 | 59 912 | 1184 | RAB | In progress | 0 | -90 |
| RRMRAB004 | 582,640 | 60,618 | 1155 | RAB | 16 | 0 | -90 |
| RRMRAB005 | 581,881 | 61,252 | 1131 | RAB | 13 | 0 | -90 |





Ionic Rare Earths Limited, Level 1, 34 Colin Street, West Perth WA 6005 Australia T+61 8 9481 2555 F+61 8 9485 1290

# JORC Code, 2012 Edition – Table 1 report template

## Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Sampling techniques*** | • *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.* | Rotary Air Blast (RAB) Drilling<br>RAB drill cuttings collected by a specifically designed sample collection tray at the collar of the hole for each measured 1 metre of drill advance.<br>All (100%) of collected sample transferred from tray to individually numbered plastic bag. |
| ***Drilling techniques*** | • *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).* | Hole diameter was 10.16cm (4 inch) |
| ***Drill sample recovery*** | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure representative nature of the samples.*<br>• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | Individual 1 metre samples weighed after collection in its plastic sample bag.<br>No grade data is available yet or reported in this announcement. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Logging*** | • *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | RAB chips geologically logged based on 1 metre drill interval.<br>Logging is qualitative with description of colour, weathering status, alteration, major and minor rock types, texture, grain size, regolith zone and comments added where further observation is made.<br>Additional non-geological qualitative logging includes comments for sample recovery, humidity, and hardness for each logged interval. |
| ***Sub-sampling techniques and sample preparation*** | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*<br>• *Whether sample sizes are appropriate to the grain size of the material being sampled.* | Sample collected by a tray at the collar of the hole for each 1 metre of drill advance.<br>All (100%) of collected sample transferred from tray to individually numbered plastic bag.<br>A geological sample increment is selected and transferred to a chip tray for geological logging and storage. |
| ***Quality of assay data and laboratory tests*** | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*<br>• *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.* | No assay data reported |
| ***Verification of sampling and assaying*** | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | No significant intersections reported.<br>No twinning of drill holes was undertaken.<br>Sampling protocols for RAB sampling documented.<br>Data were collected in the field by hand and/or entered directly to Excel spreadsheet. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | |
| ***Location of data points*** | • *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | RAB collar locations were surveyed using handheld GPS. For this type of instrument, the general accuracy in x and y coordinates is ± 5m. The elevation component of coordinates is variable and may be low accuracy using this type of device.<br>Datum WGS84 Zone 36 North was used for location data collection and storage. This is the appropriate datum for the project area. No grid transformations were applied to the data. |
| ***Data spacing and distribution*** | • *Data spacing for reporting of Exploration Results.*<br>• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*<br>• *Whether sample compositing has been applied.* | RAB reconnaissance drill holes have been drilled on a broad spacing, generally ≥1km, based on testing radiometric anomalies over a large area |
| ***Orientation of data in relation to geological structure*** | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br>• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.* | Orientation of potential mineralisation unknown in this area but assumed to be horizontal as seen in the Makuutu deposit |
| ***Sample security*** | • *The measures taken to ensure sample security.* | Samples not dispatched yet. |
| ***Audits or reviews*** | • *The results of any audits or reviews of sampling techniques and data.* | No audits or reviews have been undertaken |

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| ***Mineral tenement*** | • *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint* | The Makuutu Project is located in the Republic of Uganda. The mineral tenements comprise two (2) granted Retention Licences (RL1693 and |

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>and land tenure status</td><td>ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.<br>• The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</td><td>RL00007), three (3) Exploration Licences (EL1766, EL00147 and EL00148).<br><br>All licences are in good standing with no known impediments.<br><br>The Makuutu Rare Earths Project is 100% owned by Rwenzori Rare Metals Limited (RRM), a Ugandan registered company. Ionic Rare Earths (IXR) currently has a 51% shareholding in RRM and may increase its shareholding to 60% by meeting expenditure commitments.<br><br>1. IXR to contribute US$1,700,000 of expenditure by 1 October 2020 to earn up to a 51% staged interest in RRM as follows;
<table>
<tr><th>Spend</th><th>Interest earned</th><th>Cumulative Interest earned</th></tr>
<tr><td>Exercise of Option US$100,000 of cash plus US$150,000 of shares</td><td>20%</td><td>20%</td></tr>
<tr><td>Expenditure contribution of US$650,000</td><td>11%</td><td>31%</td></tr>
<tr><td>Expenditure contribution of a further US$800,000</td><td>15%</td><td>46%</td></tr>
<tr><td>Expenditure contribution of a further US$350,000</td><td>5%</td><td>51%</td></tr>
</table>
2. IXR to fund to completion of a bankable feasibility study to earn an additional 9% interest for a cumulative 60% interest in RRM.<br>3. During the earn-in phase there are milestone payments, payable in cash or IXR shares at the election of the Vendor, as follows:<br>• US$750,000 on the Grant of Retention Licence over RL1693 which is due to expire on 1 November 2020;<br>• US$375,000 on production of 10 kg of mixed rare-earth product from pilot or demonstration plant activities; and<br>• US$375,000 on conversion of existing licences to mining licences.<br>At any time should IXR not continue to invest in the project and project development ceases for at least two months RRM has the right to return the capital sunk by IXR and reclaim all interest earnt by IXR.</td></tr>
<tr><td>Exploration done by other parties</td><td>• Acknowledgment and appraisal of exploration by other parties.</td><td>• Previous regional scale exploration on RL00007, RL0693 and EL1766 includes:<br>1980: Country wide airborne geophysical survey identifying uranium anomalies in the Project area.</td></tr>
</table>

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | 1990s: French BRGM and Ugandan DGSM undertook geochemical and geological survey over South-Eastern Uganda including the Project area. Anomalous Au, Zn, Cu, Sn, Nb and V identified.<br><br>2006-2009: Country wide high resolution airborne magnetic and radiometric survey identified U anomalism in the Project area.<br><br>2009: Finland GTK reprocessed radiometric data and refined the Project anomalies.<br><br>• Previous regional scale exploration on RL00007, RL0693 and EL1766 includes<br>2010: Kweri Ltd undertook field verification of radiometric anomalies including scout sampling of existing community pits. Samples showed an enrichment of REE and Sc.<br><br>2011: Kweri Ltd conducted ground radiometric survey and evaluated historic groundwater borehole logs.<br><br>2012: Kweri Ltd and partner Berkley Reef Ltd conducted prospect wide pit excavation and sampling of 48 pits and a ground gravity traverse. Pit samples showed enrichment of REE weathered profile. Five (5) samples sent to Toronto Aqueous Research Laboratory for REE leach testwork.<br><br>2016 – 2017: Rwenzori Rare Metals conduct excavation of 11 pits, ground gravity survey, RAB drilling (109 drill holes) and one (1) diamond drill hole.<br><br>2019 – 2020: Rwenzori Rare Metals conducted drilling of 279 diamond core drill holes and associated resource estimation programs.<br><br>• The historic exploration has been conducted to a professional standard and is appropriate for the exploration stage of the prospect.<br>• No previous exploration for REE has been conducted on EL00147 or EL00148 |
| ***Geology*** | • *Deposit type, geological setting and style of mineralisation.* | The Makuutu deposit is interpreted to be an ionic adsorption REE clay-type deposits similar to those in South China, Madagascar and Brazil.<br><br>The mineralisation is contained within the lateritic weathering profile of a basin filled with sedimentary rocks including shales, mudstones and |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | sandstones potentially derived from the surrounding granitic rocks. These granitic rocks present the original source of the REE which were then accumulated in the sediments of the basin as the granites have degraded. These sediments then form the protolith that was subjected to prolonged tropical weathering.<br><br>The weathering developed a lateritic regolith with a surface indurated hardcap, followed downward by clay rich zones that grade down through saprolite and saprock to unweathered protolith. The thickness of the regolith is between 10 and 20 metres from surface.<br><br>The REE mineralisation if present is concentrated in the weathered profile where it has dissolved from its primary mineral form, such as monazite and xenotime, then adsorbed on to fine particles of aluminosilicate clays (e.g. kaolinite, illite, smectite). This adsorbed REE is the target for extraction and production of REO.<br><br>There is insufficient geological study to determine any geological disruptions, such as faults or dykes, that may cause variability in the mineralisation. |
| ***Drill hole Information*** | • *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*<br>  ○ *easting and northing of the drill hole collar*<br>  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>  ○ *dip and azimuth of the hole*<br>  ○ *down hole length and interception depth*<br>  ○ *hole length.*<br>• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.* | The material information for all drill holes is contained in Appendix 1 of this report. |
| ***Data aggregation methods*** | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.*<br>• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of* | No data aggregation.<br><br>No metal equivalents values are used. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *such aggregations should be shown in detail.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | |
| ***Relationship between mineralisation widths and intercept lengths*** | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').* | Down hole lengths, true widths are not known. |
| ***Diagrams*** | • *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.* | Refer to diagrams in body of text. |
| ***Balanced reporting*** | • *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | Reporting geology logging observations only as no other data is available. |
| ***Other substantive exploration data*** | • *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | Not applicable to this report. No previous exploration on this area (EL00147) |
| ***Further work*** | • *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | RAB program to continue |