

## PHASE ONE METALLURGICAL TEST WORK ACHIEVES RARE EARTH CONCENTRATES OF ~60% REO

- Results confirm that water-only, low-cost gravity and magnetic beneficiation techniques are suitable for Kangankunde mineralisation
  - Recovery ranges for rougher and cleaner stages of shaking table test-work on coarser (+53 µm) fractions range 60% to 90%
  - An initial evaluation of the Multi-Gravity Separator (MGS) demonstrates that recovery of fine-grained rare earth mineralisation is enhanced over that achieved using a shaking table, with a MGS achieving a 69.7% LREO recovery to a concentrate grading 51.7% LREO in one pass on a -53 µm fines sample
  - Preliminary wet high intensity magnetic separation (WHIMS) testing has demonstrated increases in the REO grade of a final concentrate to near 60% REO
- These results build on the historical metallurgical work undertaken in the 1970s by Lonrho that reported a REO recovery of 60% to a mineral concentrate bearing 60% REO
- Lindian continues to refine the use of gravity and magnetic separation techniques, and expects to further improve the REO recovery and REO concentrate grade, with finer grinding a key variable to be tested to improve recovery and concentrate grade
- Evaluation of gravity and magnetic separation techniques – including WHIMS and MGS separators – are the first stage of the metallurgical test-work program. A baseline result of ~70% recovery achieved to date is an excellent result which Lindian believes it will improve upon in subsequent stages of metallurgical testwork
- These early-stage initial results are extremely encouraging and will be used to guide the ensuing metallurgical optimisation program

Lindian Resources Limited (ASX:LIN) ('Lindian' or the 'Company') is pleased to report results from the initial orientation metallurgical test work undertaken. The scoping test-work reported here is the basis for a more comprehensive testing program that has already commenced, which will further define the metallurgical metrics and process requirements for a Stage 1 Rare Earths concentrator facility at the Company's fully permitted, Kangankunde Rare Earths project in Malawi.

**Chief Executive Officer Alistair Stephens said:** *"These early-stage results are exceptionally pleasing and deliver excellent concentrate grades and recoveries from this initial metallurgical test work. The results benchmark us very well when compared to some of the world's notable rare earths projects. Importantly, this work builds on the historical metallurgical work that was undertaken in the 1970s by Lonrho that reported a REO recovery of 60% to a mineral concentrate bearing 60% REO. Furthermore, new gravity recovery technologies – particularly the Multi Gravity Separator (MGS), which was not developed at the time these historical works were undertaken – present an avenue for improved metallurgical recovery. Also, the use of modern vertical-ring wet high intensity magnetic separators (WHIMS) over the dry Induced Roll High Intensity (IRHI) magnetic separators used in the historical work to further upgrade a gravity concentrate promises greater practicality in the process by eliminating costly dewatering and drying steps from the process.*

*The results of the MGS testing warrant further emphasis. For a single machine – in one pass – to produce an REO concentrate exceeding 50% TREO with a metallurgical recovery approaching our target of 80% is truly remarkable and presents the Company with various options and processing flexibilities for its Phase 1 plant. The Company has secured the use of the only MGS test machine in Perth, where it will undertake extensive further testing, including variability testing.*

*This scoping work has validated a general process scheme for Kangankunde, with several significant avenues for improvement identified. These results are being used to guide the optimisation metallurgical testing program for definition of the process flowsheet and process metrics – which is considered simple in comparison to the overwhelming majority of other REE projects – for the planned Stage 1 Rare Earths concentrate processing plant at Kangankunde. Metallurgy is another critical aspect of the project that is key to bringing Kangankunde into production. Just like our development drilling program, metallurgical test-work is ongoing and we look forward to reporting more results as the program advances."*

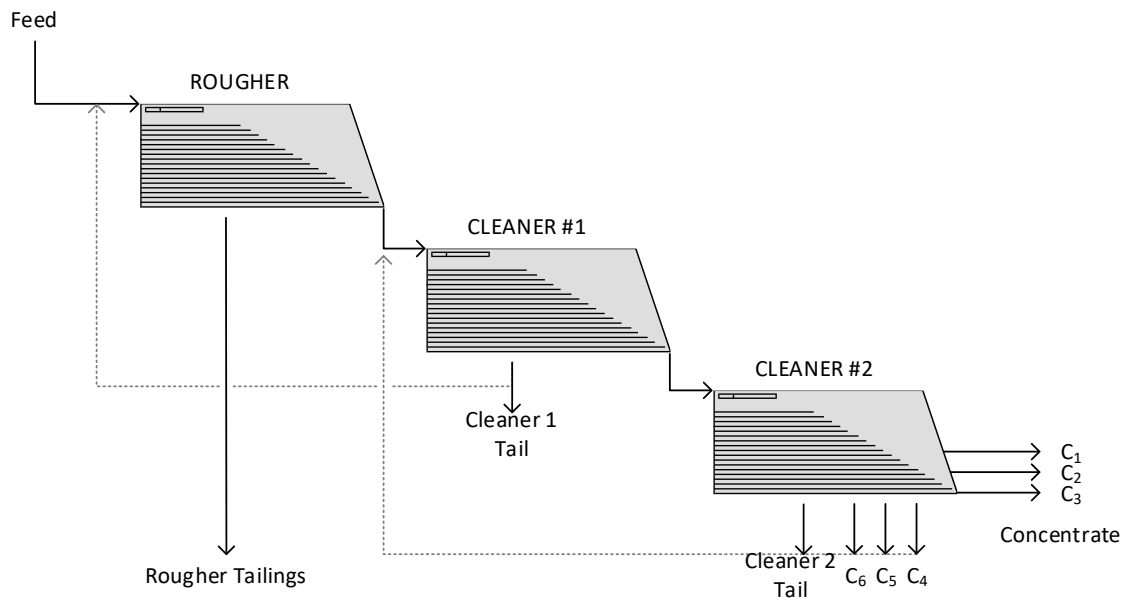
## **Scoping Metallurgical Testing Program**

A scoping metallurgical testing program was undertaken, using key criteria from the historical metallurgical work as a starting basis, to validate the historical work and also identify areas where further improvements may be realised. This scoping work is to form the foundation for an ensuing metallurgical testing and process definition program.

## **Shaking Table Testing**

Shaking table testing was undertaken to determine the viability of beneficiating rare earth mineralisation by gravity separation techniques, and provide a preliminary indication of the grade and recovery achievable. For practicality in regard to the required sample size for testing, shaking table tests were undertaken in-lieu of spiralling tests for rougher separation stage at this early stage of evaluation.

The sample, with head grade of 8.6% TREO, was batch milled and screened into 3 fractions: -250+125 µm, -125+53 µm and -53 µm, and each fraction was subjected to shaking table testing separately. The testing protocol consisted of a rougher stage, followed by multiple cleaner stages. A flowsheet depicting this arrangement is provide in Figure 1, which is followed by a photograph of shaking table testing in Figure 2.



**Figure 1. Shaking Table Testing Protocol.**

**(Dotted lines represent recycle streams typical for a commercial process scheme)**



(a)



(b)

**Figure 2. Shaking Table testing showing a separation of monazite from gangue mineralisation.**

**(a) Overview of laboratory table. (b) Close-up of minerals being separated (lower green band = Rare-earth bearing monazite, intermediate white band = strontianite and barite, brown band = ankerite and other gangue).**

The key highlights from these sequential batch Rougher-Cleaner shaking table tests are as follows:

- Rare Earth mineralisation at Kangankunde is upgradable by gravity beneficiation methods
- The best performance was observed in the -125+53  $\mu\text{m}$  fraction;
  - In the rougher stage, a 20.1% TREO concentrate was produced with a 90.4% TREO recovery
  - In the 1<sup>st</sup> cleaner stage, a 36.1% TREO concentrate was produced with a 73.4% TREO recovery
  - In a 2<sup>nd</sup> cleaner stage, the 1<sup>st</sup> concentrate produced was at a grade of 62.6% TREO which confirms that 60% TREO concentrates are achievable, although as expected from such an initial open-circuit test, the corresponding recovery was low (1.1%).
  - Microscope examination of shaking table products indicated good liberation of rare earth minerals, and it is expected that operating a continuous tabling circuit – with recycle of “Cleaner Tails” products (as depicted in Figure 1) and also optimisation of shaking table operation will lead to greater recovery.
- In regard to the coarser -250+125  $\mu\text{m}$  fraction, the grade and recovery were lesser;
  - In the rougher stage, a 12.6% TREO concentrate was produced with a 73.8% TREO recovery
  - In the 1<sup>st</sup> cleaner stage, a 14.9% TREO concentrate was produced with a 68.3% TREO recovery
  - Further grinding of mineralisation (to further liberate composite particles) and processing of tighter particle size intervals (e.g. split the -250+125  $\mu\text{m}$  fraction into two fractions of -250+175  $\mu\text{m}$  and -175+125  $\mu\text{m}$ ) is expected to provide better performance.
- As expected, the finer -53  $\mu\text{m}$  fraction had poor TREO recovery, due to the intrinsic limitation with processing fines with shaking tables.
  - The rougher stage achieved a 14.95% TREO concentrate but at a low 33.3% TREO recovery.
  - Shaking table performance is known to be poor for fine particles but was undertaken to provide a point of reference for subsequent work.
  - Other “enhanced gravity” technologies (such as the Multi-Gravity Separator that is covered in the following section) are better suited for gravity beneficiation from fine particle streams and these evaluations are ongoing.

Analysis of these gravity rare earth concentrates indicates that the major contaminants are strontianite (a strontium carbonate mineral with an SG of  $\sim 3.76 \text{ t/m}^3$ ) and barite (a barium sulphate mineral with an SG of  $\sim 4.65 \text{ t/m}^3$ ), which is expected given their relatively close specific gravity to the rare earth-bearing monazite mineral (SG of  $\sim 5.1 \text{ t/m}^3$ ). However, monazite has a greater magnetic susceptibility than both strontianite and barite, and therefore a subsequent magnetic separation step will allow further upgrade of rare earth concentrate. This implies that, in the gravity concentration step, rare earth recovery should be emphasised over rare earth concentrate grade.

Further optimisation testing is expected to include continuous grinding, followed by spiralling and shaking table testing supplemented with evaluation of other enhanced gravity technologies such as MGS and Falcon concentrators.

### **Multi Gravity Separator Testing**

An initial evaluation on the amenability of upgrading Kangankunde Rare Earth mineralisation using a laboratory-scale Multi Gravity Separator (MGS) was undertaken at Gravity Mining in the UK, using a sample of fine sized (-53  $\mu\text{m}$ ) mineralisation. The MGS has previously found application in beneficiation of heavy minerals such as tin, tungsten and tantalum, with applications in Chromite, Barites and gold being developed; industry survey indicates there is only seldom application to the recovery of rare earth minerals.

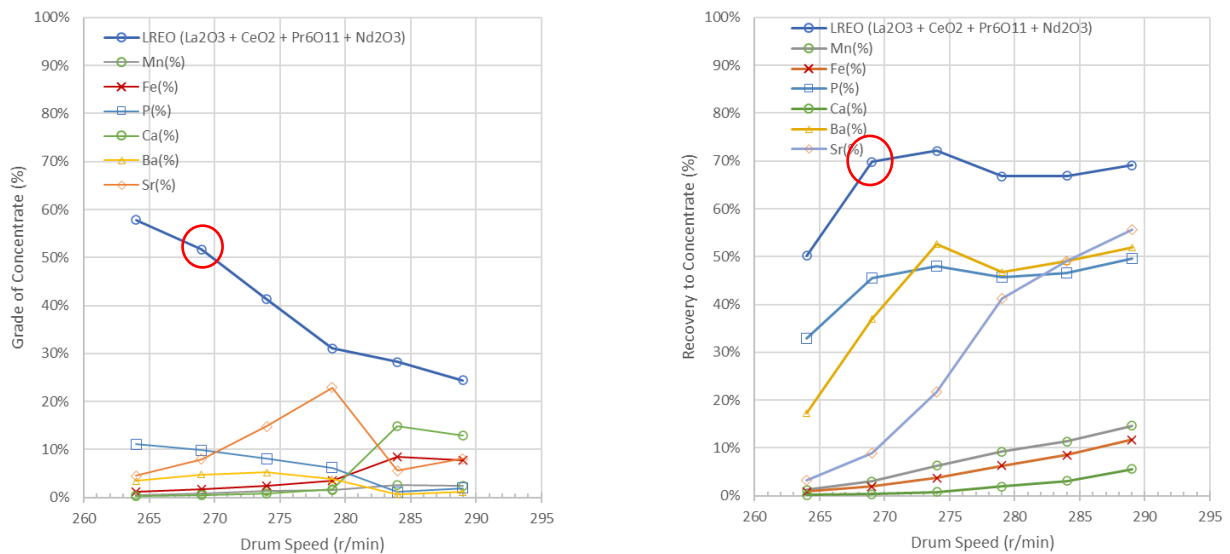
A photograph of the micro-MGS separator used in this work is in Figure 3 and a summary of results in initial evaluation are summarised in Figure 4.

The results show that, generally, a concentrate of 51.7% LREO can be produced with a LREO recovery of 69.7%, which is a fantastic result considering the sample is fine in size. Specifically, the results presented in Figure 5 show that increases in drum speed from 264 to 269 rev/min result in an increase in LREO recovery from 50.2% to 69.8%; concurrently the concentrate grade drops from 57.9% to 51.7% LREO. Subsequent increases in drum speed resulted in a minor variation in LREO recovery (between 66.8 and 72.2%) but the concentrate grade steadily drops to 24.4% LREO owing to greater gangue minerals reporting to the concentrate that increase the mass yield to the concentrate.

Increases beyond 69% LREO recovery and 51.7% LREO grade appear achievable with further testing and optimisation of the MGS (including variables such as wash water, drum angle and drum speed) and optimised preparation and definition of the feed (including the particle size interval and variability testing).



**Figure 3. (a) Testing using the Micro MGS at Gravity Mining in the UK. (b) REO concentrate product from the MGS.**



**Figure 4. Effect of MGS drum speed on LREO recovery.**

(Conditions: feed rate = 10 kg/hr @30% solids, 1L/min wash water, variable drum speed)

(Circled point represents 51.7% LREO concentrate grade with a 69.7% LREO recovery)

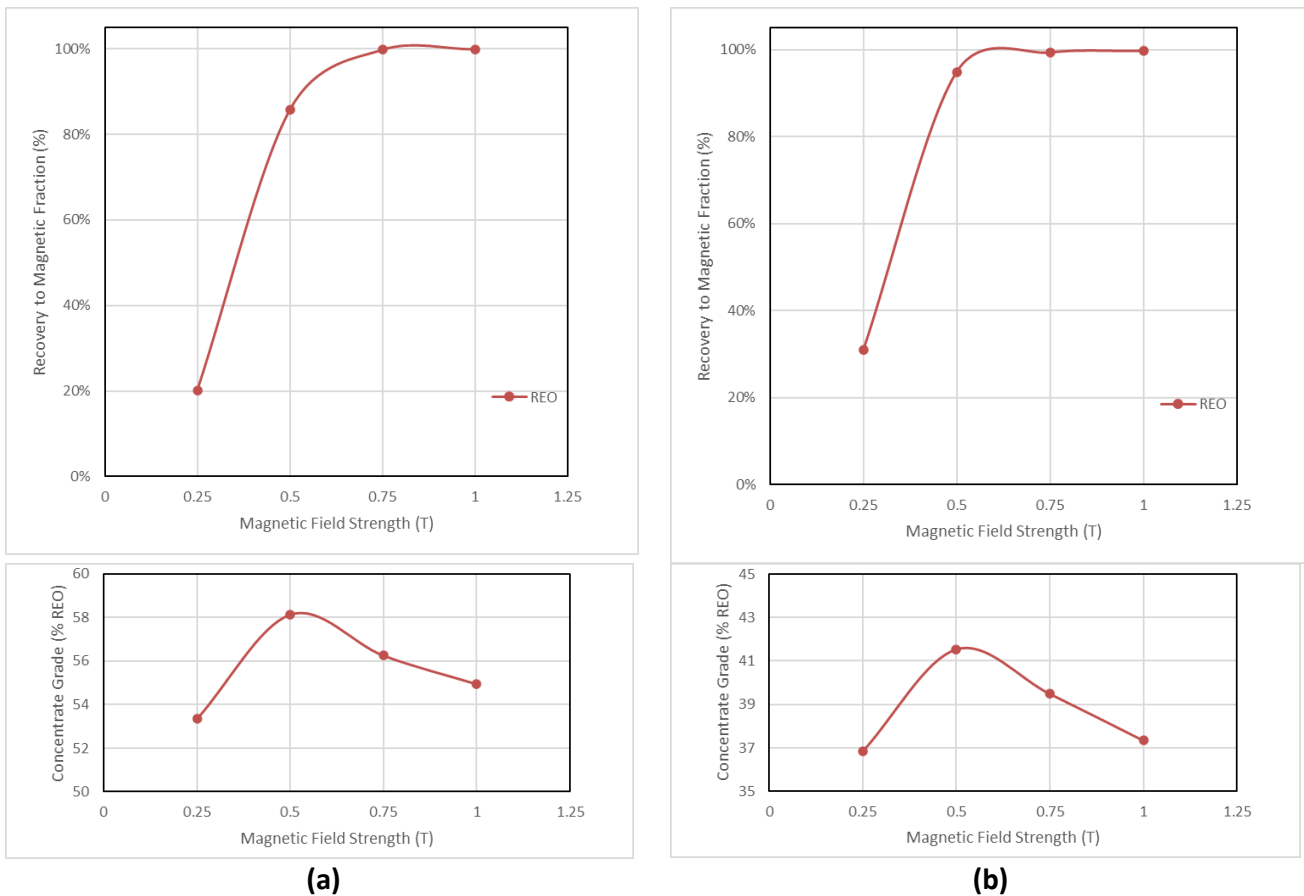
(Feed grade of -53  $\mu\text{m}$  fraction: 6.7% LREO).

### Wet High Intensity Magnetic Separator (WHIMS) Testing

Scoping magnetic separation tests, using a batch WHIMS machine, were undertaken on a sub-sample of (a) shaking table concentrate and (b) MGS concentrate. The tests were to provide an initial indication of processing conditions required to upgrade the REO concentration in gravity concentration intermediate products. A summary of testing results is presented in Figure 5, and a photograph of WHIMS test products is provided in Figure 6.

The results show that:

- A magnetic field strength of 0.75 T results in greater than 99% REO recovery to the magnetic product. This is well within the range of magnetic field strengths producible in commercial WHIMS machines.
- An upgrade of REO grade is achievable:
  - For the -125+53  $\mu\text{m}$  test sample, this has resulted in an increase in REO grade from 47% TREO to over 56% REO with a REO recovery over 99%
  - For the -53  $\mu\text{m}$  test sample, this has resulted in an increase in REO grade from 30% TREO to over 39% TREO
- Increasing the hutch water pulsation intensity promises to allow higher TREO grades by allowing removal of entrained non-magnetic products such as Strontianite and Barite.



**Figure 5. Results from Initial WHIMS Testing. (a) -125+53 μm fraction. (b) -53 μm fraction.**

(Test conditions: Machine: batch GZRINM 145 WHGMS, Magnetic field strength: 0 – 1.0T, Matrix: 2 mm spacing, hutch-water pulsation @ 150 pulse/min and ~10 mm pulse amplitude).

(Feed grade of -125+53 μm fraction: 47% TREO, 2.3% Sr, 15% Ba. Feed grade of -53 μm fraction: 31% TREO, 23% Sr, 4.8% Ba)

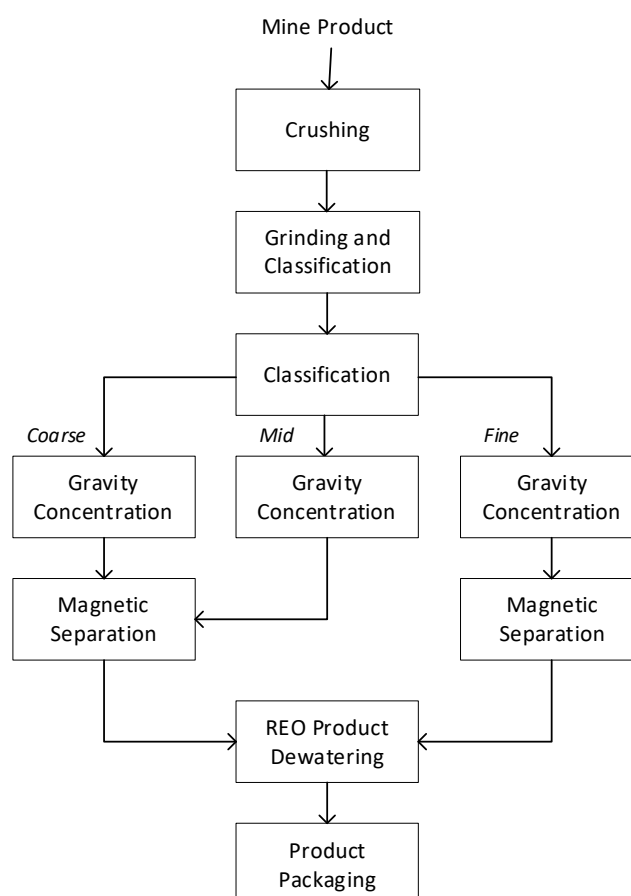


**Figure 6. Photograph of WHIMS Products.**

(Lower left = 0.25 T magnetic product, middle left = 0.5 T magnetic product, top left = 0.75 T magnetic product, bottom right = 1.0 T magnetic product, top right = 1.0 T non-magnetic product)

## General Process Scheme

Based on the results of this scoping work, a general process scheme depicted in Figure 7 is being pursued in further optimisation and development work.



**Figure 7. General Process Scheme Under Development for the Phase 1 Kangankunde Project.**

## Further Work

Further metallurgical testing and optimisation will be undertaken to appropriately define the metallurgical processing scheme and provide metallurgical metrics for the design of a Phase 1 plant. This will involve the following:

- Comminution, bulk milling and classification testing,
- Spiralling and shaking table testing,
- Evaluation of enhanced gravity concentrators, including the Multi-Gravity Separator (MGS) and Falcon concentrator,
- WHIMS testing,
- REO product and tailings product characterisation, and
- Metallurgical variability testing.

In the course of undertaking this work, the metallurgical process scheme will be optimised and a more accurate provision of processing metrics determined. The market will be updated in due course.



- END -

This ASX announcement was authorised for release by the Lindian Board.

**For further information, please contact:**

**Asimwe Kabunga (Chairman)**

**Phone:** +61 8 6557 8838

**Email:** [info@lindianresources.com.au](mailto:info@lindianresources.com.au)

**Alistair Stephens (CEO)**

**Phone:** +61 488 992 544

**Email:** [info@lindianresources.com.au](mailto:info@lindianresources.com.au)

## **Forward Looking Statements**

This announcement may include forward-looking statements, based on Lindian's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Lindian, which could cause actual results to differ materially from such statements. Lindian makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of the announcement.

## **Competent Persons Statement**

The information in this Report that relates metallurgy testwork and results results is based on information compiled by Dr. Marc Steffens, who is a Member of the Australian Institute of Mining and Metallurgy (AusIMM). Dr. Steffens is a consultant metallurgist engaged by Lindian Resources and a principal of Specialised Metallurgical Services Pty Ltd. Dr. Steffens 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 Steffens consents to the inclusion in this public announcement of the matters based on his information in the form and context in which it appears.

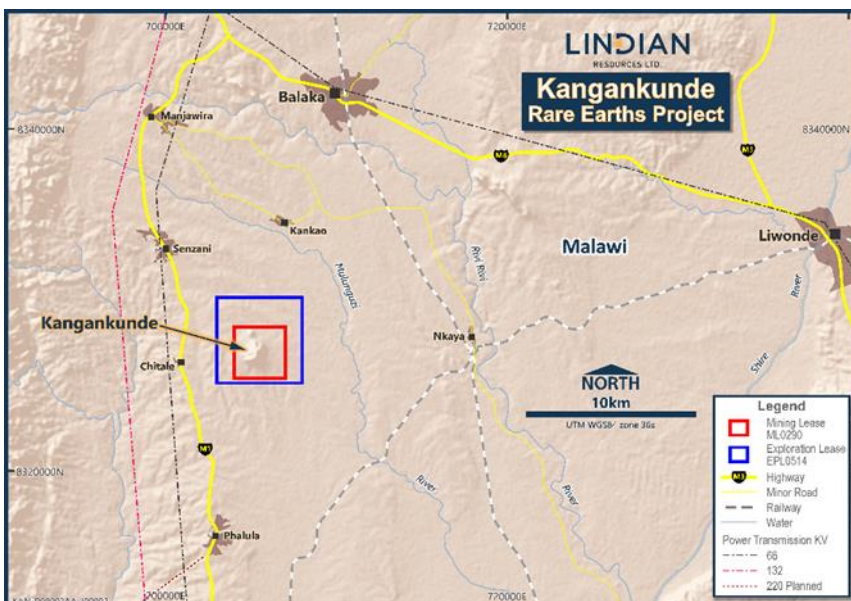
## About Lindian

### RARE EARTHS

**Lindian Resources Limited** will progressively acquire 100% of Malawian registered Rift Valley Resource Developments Limited and its 100% owned title to Exploration Licence EPL0514/18R and Mining Licence MML0290/22 (refer ASX announcement ASX:LIN dated 1 August 2022) issued under the Malawi Mines and Minerals Act 2018. The Exploration and Mining Licences have an Environmental and Social Impact Assessment Licence No.2:10:16 issued under the Malawi Environmental Management Act No. 19 of 2017. The Kangankunde Project, located within MML0290, has been subject to significant historic exploration by Lonrho Plc (Lonrho) in the 1970's and the French geoscience Bureau de Recherches Géologiques et Minières (BRGM) in the 1990's. The project has an underground adit (a horizontal drive with cross cuts extending at least 300 metre underground) and exploration sampling by trenching and drilling has identified significant non-radioactive monazite mineralisation over a footprint of at least 800m by 800m.



**Malawi** is a country in southern and eastern Africa that parallels the great Lake Malawi, the 5th largest freshwater lake in the world that fills part of the massive rift valley of the Africa continent. Malawi is a peaceful country known ubiquitously as “the warm heart of Africa”, with a government and legal system emanated from the English Westminster system (from colonial rule up to 1964). The Malawi economy is currently heavily reliant on agriculture, a small manufacturing sector and foreign aid. Over 80% of Malawians living in rural areas are engaged in traditional subsistence agriculture. The mining industry in Malawi is in its infancy with a new Mining Act introduced in 2019 expected to forge the way for significant expansion and growth. Having seen the impact of mining in neighbouring countries, the Malawi Government has placed mining as the primary growth sector to diversify the Malawi economy and improve living conditions for its people. A growing mining industry is the central plank of the current President’s plans for employment. Significant mineral endowment exists in the form of rare earths, uranium, niobium, tantalum, and graphite in a country substantially underexplored.



**Kangankunde** is located 90 kilometres north of the city of Blantyre, the main economic and commercial centre in Malawi. The town of Balaka, 15 kilometres to the north of Kangankunde, a regional trade centre, has a population of about 36,000 people. The project is located close to the main M1 highway, rail lines to ports and high voltage transmission lines.

## Tenure and licences

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## BAUXITE

**Lindian Resources Limited** has over 1 billion tonnes of **Bauxite** resources (refer company website for access to resources statements and competent persons statements) in Guinea with the Gaoual, Lelouma and Woula projects. Guinean bauxite is known as the premier bauxite location in the world, having high grade and low impurities premium quality bauxite.

**Guinea** is a country in western Africa located on the Atlantic coast. Most of the country has a humid tropical climate. Its topography varies from coastal plains to inland mountains that account for about 60 per cent of the land area. Several of West Africa's major rivers, in particular the Niger, Senegal and Gambia, all originate from these highlands, making Guinea the 'water tower' of West Africa. Its developing mixed economy is based on agriculture, mining, and trade. Over 80% of its population of ~12 million people are engaged in agriculture. Major crops include rice, bananas, cashews, cocoa and coffee. Its Atlantic shoreline supports a large-scale fishing industry and has developed large commercial harbors, such as Conakry and Kamsar. Guinea is endowed with huge deposits of mineral resources. It has extremely large high-quality deposits of bauxite (nearly one-third of the world's total bauxite resources) and iron ore and is a gold and diamond producer. Mining currently contributes 25% of Guinea's GDP. Thanks to these mineral resources, Guinea has the potential of being one of Africa's richest countries. Guinea, under the name French Guinea, was a part of French West Africa achieved independence in 1958. It remained relatively stable politically until the 1990s when Guinea accommodated several hundred thousand war refugees from neighbouring Liberia and Sierra Leone, and since this time conflicts between those countries and Guinea have continued to flare up over the refugee population since. Recently in September 2021, Lt Col Doumouya, the commander of country's special forces, overthrew the President in a military coup; establishing a National Committee of Reconciliation and Development with himself as chairman, ordering the release of political prisoners, and announcing an 18-month transition to democracy. In recent months, despite the current complex political landscape, tensions in the country have settled and life in Guinea has returned to normality.

## JORC Code, 2012 Edition – Table 1 report

### Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <li>Nature and quality of sampling (e.g. 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<p>Approximately 200 kg of grab samples collected from surface exposure of mineralised carbonatite.</p> <p>Samples chosen that contained visible monazite mineralisation.</p> <p>Representivity of samples not known.</p> <p>All analytical subsampling and analysis using industry standard techniques for rare earth elements.</p>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g. 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).</li> </ul>	N/A – Grab samples
Drill sample recovery	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	N/A – Grab samples

Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> <li>• <i>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.</i></li> <li>• <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i></li> <li>• <i>The total length and percentage of the relevant intersections logged.</i></li> </ul>	N/A – Grab samples
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i></li> <li>• <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i></li> <li>• <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i></li> <li>• <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i></li> <li>• <i>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.</i></li> <li>• <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i></li> </ul>	<p>N/A – Grab samples</p> <p>For shaking table test-work, a test composite was prepared in Australia at a commercial metallurgical laboratory by crushing and homogenisation, with a sub-sample for testing prepared by rotary splitting. The sub-sample was milled using a batch rod mill to smaller than 250 µm. The milled fraction was wet screened into the fractions of (a) -250+125 µm, (b) -125+53 µm and (c) -53 µm, with shaking table testing undertaken on each fraction independently.</p> <p>For MGS test-work, a test composite was prepared in South Africa at a commercial metallurgical laboratory by crushing and homogenisation, with a sub-sample for testing prepared by rotary splitting. The sub-sample was milled using a batch rod mill to smaller than 300 µm. The -53 µm fraction was removed from the remainder of the sub-sample by screening and then sent to Gravity Mining (UK) for MGS testing.</p>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i></li> <li>• <i>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.</i></li> <li>• <i>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</i></li> </ul>	<p><b>Assay and Laboratory Procedures – All Samples</b></p> <p>The sample preparation and assay/analytical techniques used are industry standard.</p> <p>Test samples for shaking table and MGS testing were assayed at ALS Metallurgy in Balcatta, WA.</p> <p>In cases where only LREO elements were analysed and reported, these were determined by fusion and XRF analysis. In cases where all REO elements were analysed, these were determined by fusion and XRF/ ICP analysis.</p> <p>Test samples for magnetic separation testing were undertaken at Nagrom laboratory in Kelmscott, WA. The test samples were analysed using fusion/digestion followed by XRF/ ICP analysis.</p>

Criteria	JORC Code explanation	Commentary																																																
<p>Verification of sampling and assaying</p>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<p>No twinning or independent verification of results conducted.</p> <p>All assay data received from the laboratory in element form is unadjusted for data entry.</p> <p>Conversion of elemental analysis (REE) to stoichiometric oxide (REO) was undertaken by spreadsheet using defined conversion factors.(Source:<a href="https://www.jcu.edu.au/advanced-analytical-centre/services-and-resources/resources-and-extras/element-to-stoichiometric-oxide-conversion-factors">https://www.jcu.edu.au/advanced-analytical-centre/services-and-resources/resources-and-extras/element-to-stoichiometric-oxide-conversion-factors</a>)</p> <table border="1" data-bbox="1384 536 1928 1094"> <thead> <tr> <th>Element ppm</th> <th>Conversion Factor</th> <th>Oxide Form</th> </tr> </thead> <tbody> <tr><td>Ce</td><td>1.2284</td><td>CeO<sub>2</sub></td></tr> <tr><td>Dy</td><td>1.1477</td><td>Dy<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Er</td><td>1.1435</td><td>Er<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Eu</td><td>1.1579</td><td>Eu<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Gd</td><td>1.1526</td><td>Gd<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Ho</td><td>1.1455</td><td>Ho<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>La</td><td>1.1728</td><td>La<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Lu</td><td>1.1371</td><td>Lu<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Nd</td><td>1.1664</td><td>Nd<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Pr</td><td>1.2082</td><td>Pr<sub>6</sub>O<sub>11</sub></td></tr> <tr><td>Sm</td><td>1.1596</td><td>Sm<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Tb</td><td>1.1762</td><td>Tb<sub>4</sub>O<sub>7</sub></td></tr> <tr><td>Tm</td><td>1.1421</td><td>Tm<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Y</td><td>1.2699</td><td>Y<sub>2</sub>O<sub>3</sub></td></tr> <tr><td>Yb</td><td>1.1387</td><td>Yb<sub>2</sub>O<sub>3</sub></td></tr> </tbody> </table> <p>Rare earth oxide is the industry accepted form for reporting rare earths. The following calculations are used for compiling REO into their reporting and evaluation groups:</p> <p>Note that Y<sub>2</sub>O<sub>3</sub> is included in the TREO calculation.</p> <p>TREO (Total Rare Earth Oxide) = La<sub>2</sub>O<sub>3</sub> + CeO<sub>2</sub> + Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub> + Sm<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub> + Y<sub>2</sub>O<sub>3</sub> + Lu<sub>2</sub>O<sub>3</sub>.</p> <p>HREO (Heavy Rare Earth Oxide) = Sm<sub>2</sub>O<sub>3</sub> + Eu<sub>2</sub>O<sub>3</sub> + Gd<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub> + Dy<sub>2</sub>O<sub>3</sub> + Ho<sub>2</sub>O<sub>3</sub> + Er<sub>2</sub>O<sub>3</sub> + Tm<sub>2</sub>O<sub>3</sub> + Yb<sub>2</sub>O<sub>3</sub>, + Y<sub>2</sub>O<sub>3</sub> + Lu<sub>2</sub>O<sub>3</sub></p> <p>LREO (Light Rare Earth Oxide) = La<sub>2</sub>O<sub>3</sub> + CeO<sub>2</sub> + Pr<sub>6</sub>O<sub>11</sub> + Nd<sub>2</sub>O<sub>3</sub></p>	Element ppm	Conversion Factor	Oxide Form	Ce	1.2284	CeO <sub>2</sub>	Dy	1.1477	Dy <sub>2</sub> O <sub>3</sub>	Er	1.1435	Er <sub>2</sub> O <sub>3</sub>	Eu	1.1579	Eu <sub>2</sub> O <sub>3</sub>	Gd	1.1526	Gd <sub>2</sub> O <sub>3</sub>	Ho	1.1455	Ho <sub>2</sub> O <sub>3</sub>	La	1.1728	La <sub>2</sub> O <sub>3</sub>	Lu	1.1371	Lu <sub>2</sub> O <sub>3</sub>	Nd	1.1664	Nd <sub>2</sub> O <sub>3</sub>	Pr	1.2082	Pr <sub>6</sub> O <sub>11</sub>	Sm	1.1596	Sm <sub>2</sub> O <sub>3</sub>	Tb	1.1762	Tb <sub>4</sub> O <sub>7</sub>	Tm	1.1421	Tm <sub>2</sub> O <sub>3</sub>	Y	1.2699	Y <sub>2</sub> O <sub>3</sub>	Yb	1.1387	Yb <sub>2</sub> O <sub>3</sub>
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Criteria	JORC Code explanation	Commentary
		$NdPrO\% = Nd_2O_3 + Pr_6O_{11}$ $NdPrO\% \text{ of TREO} = NdPrO\% / TREO \times 100$
Location of data points	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<p>Samples collected from surface around location:  WGS84 UTM Zone 36S 705490mE, 8327070mN, 787mRL.</p>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	N/A – Grab samples
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	N/A – Grab samples
Sample security	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<p>Samples freighted from Malawi to Brisbane for sterilisation then road freight to Perth for sample preparation and testing. Samples were kept secure and in control of freight agents.</p> <p>Sample for MGS testing was freighted from Malawi to Johannesburg for sample preparation, and then freighted to Gravity Mining UK. Samples were kept secure and in control of freight agents.</p>
Audits or reviews	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	N/A – No audits conducted

## Section 2 Reporting of Exploration Results

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

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>• <i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i></li> <li>• <i>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.</i></li> </ul>	<p>The Kangankunde Project comprising granted Exploration Licence EPL0514/18R and Mining Licence MML0290/22 is 100% owned by Rift Valley Resources (RVR) a Malawian registered company. Lindian Resources has a purchase agreement in place to progressively acquire 100 % of RVR.</p>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li>• <i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<p>Previous exploration includes:</p> <p>1952-1958: Eight trenches excavated. No data records known to exist.</p> <p>1959: Geological mapping, ten trenches excavated, seven drill holes drilled below main trenches. Data not sighted.</p> <p>1972-1981: Trench mapping and sampling, adit driven 300 metres north to south with several crosscuts. Diamond drilling from crosscuts. Pilot plant operated producing strontianite and monazite concentrate. Limited data available in hard copy only.</p> <p>1987- 1990: Feasibility study activities including surface core drilling, processing studies, geotechnical and groundwater studies, estimation of “geological reserves” (Not JORC compliant). Limited data available in hard copy reports.</p> <p>Historical data is largely not available or not readily validated and is currently not reported.</p>
<i>Geology</i>	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<p>Intrusive carbonatite containing monazite as the main rare earth bearing mineral.</p> <p>The Kangankunde carbonatite complex is characterized by an elliptic structure centering Kangankunde Hill. The diameters in N-S and E-W directions are 900m and 700m, respectively.</p> <p>In the ellipse, the following rocks are zonally arranged from the centre to the outer part; carbonatites, carbonatized breccias, wall rock / carbonatite breccias and basement rocks.</p> <p>The carbonatites are dolomitic, sideritic and ankeritic and at surface are distributed widely on the northern and western slopes of the Kangankunde Hill. Manganese carbonatite is found at the top and on the eastern slope of the hill.</p> <p>Monazite is found in all carbonatite types in varying quantities. Other associated minerals are strontianite, barite and apatite.</p>



Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul style="list-style-type: none"> <li>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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>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.</li> </ul>	N/A - Grab samples
Data aggregation methods	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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 such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	N/A – no aggregation or metal equivalents reported
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	N/A – Grab samples
Diagrams	<ul style="list-style-type: none"> <li>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.</li> </ul>	N/A – Reporting metallurgical test-work on grab samples
Balanced reporting	<ul style="list-style-type: none"> <li>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.</li> </ul>	Report contains results relevant to the initial (sighter) metallurgical test-work.
Other substantive exploration data	<ul style="list-style-type: none"> <li>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</li> </ul>	<p>This announcement is reporting initial metallurgical test results.</p> <p>Other exploration data relating to ongoing drilling programs is being reported once results are evaluated.</p>

Criteria	JORC Code explanation	Commentary
	<i>treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	Future work programs are intended to evaluate the economic opportunity of the project including metallurgical optimization, metallurgical variability and resource definition.