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POSITIVE ORE SORTING TESTWORK RESULTS A FURTHER BOOST FOR CUMMINS RANGE RARE EARTHS AND PHOSPHATE PROJECT

Ore sorting offers potential to reduce plant size while maintaining product tonnage

HIGHLIGHTS

- **Preliminary metallurgical testwork shows promising ore sorting performance**
- **Outstanding results achieved with a high REE recovery to Ore Sort Product and good mass rejection**
- **Very positive implications for project economics, particularly in light of the growing scale of the Project**
- **Primary flotation test work now underway both in Australia and with world experts, Baotou Mengrong Fine Material Co. Ltd**

RareX Limited (**RareX, the Company**) (ASX: REE) is pleased to report positive outcomes from an ore sorting testwork program conducted on samples collected from its 100%-owned Cummins Range Rare Earths Project (**the Project, Cummins Range**), located in the Kimberley region of Western Australia.

The testwork was led by RareX with support from other consultancies, with results confirming the amenability of the Cummins Range material to ore sorting technology and demonstrating the potential to reduce the size of the beneficiation plant while maintaining the product tonnage.

RareX Managing Director, Jeremy Robinson, said: *"This testwork shows that there is good potential to upgrade the primary material ahead of grinding and flotation, essentially doubling the feed grade for the Project and drastically improving the project economics. This is an exciting and very positive development, particularly given the rapidly growing scale of the Project with current drilling. We are looking forward to results from the next phase of primary flotation testwork, now underway."*

INTRODUCTION

The Cummins Range Rare Earths Project is a globally significant rare earths project located in the Kimberley region of Western Australia near the township of Halls Creek. The Project has a JORC Indicated and Inferred 2012 Mineral Resource Estimate (cut-off grade 0.5% TREO) containing 18.8 million tonnes of 1.15% TREO and 10% P_2O_5 with a high neodymium and praseodymium (NdPr) to TREO ratio of 20%[1].

[1] ASX Announcement 19 July 2021: RareX delivers major resource upgrade at Cummins Range Rare Earths Project.

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The primary rare earth mineral in the weathered part of the deposit, with the deposit outcropping in multiple locations. Within the primary part of the deposit both monazite and bastnaesite occur. The major gangue minerals of the deposit include goethite, apatite, calcite/dolomite and silicates.

ORE SORTING PROGRAM

Sighter ore sorting testwork was performed on a composite collected from the primary zone of the Cummins Range deposit at TOMRA Sorting Solution in NSW. The composite was crushed to a P_{100} grind size passing 30mm and screened at 10mm to prepare the feed for the ore sorting testwork.

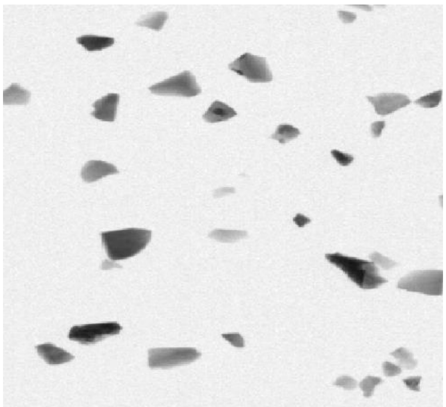
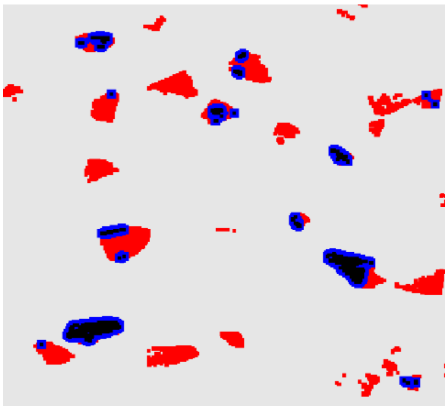
This work was aimed at assessing the amenability of the Cummins Range material to ore sorting and producing a high TREO product fraction with as-high-as-possible TREO recovery by way of high-density REE-bearing inclusion product ejection.

The sorter used for this testwork was TOMRA's COM Tertiary XRT (X-Ray Transmission) (Figure 1). To set up/train the sorter and to parameterise the software, images were taken of the samples while samples were exposed to high energy X-rays. The X-ray sensor signal depends on atomic density and material thickness and gives information on the inner composition of the particles. By combining two energy levels simultaneously, it is possible to differentiate particles by their atomic densities.

Figure 1: TOMRA COM Tertiary Sorter

Based on changes in the X-ray intensity, the images were mapped and classified as either high atomic density (blue and black) or low atomic density (red) using proprietary TOMRA Sorting image processing software, and the sorting-task algorithms specific for the Cummins Range ore were developed. An example of the image processing is shown in Table 1.

Table 1: Raw (Left) and Processed (Right) XRT Images of Tested Material

Description		Given Colour
Low Atomic Density (Siliceous Waste)		Red
High Atomic Density (REE Bearing Ore)		Blue and black
Background		Grey
	Raw XRT Image	**Classified XRT Image**
+10-30mm Feed		

The +10-30mm material was fed through the trained ore sorter with a single pass to sort into the product (REE-bearing ore) and waste. A summary of the ore sort results is included in Table 2.

Table 2: Ore Sort Results Summary

Element	Mass		TREO + Y	
	kg	% Distribution	Grade (%)	% Distribution
Feed, Calculated Assay	134.00	100%	2.18	100%
Ore Sort Waste	64.00	48%	0.34	7%
Ore Sort Product	70.00	52%	3.87	93%

As shown in the table above, 93% of the total rare earths in the feed material was successfully maintained in the Ore Sort Product while rejecting 48% of the mass as waste. This is a very encouraging result, demonstrating the amenability of the Cummins Range material to ore sorting technology. The results have shown excellent potential to significantly reduce the plant size and transport requirements from mine to the beneficiation plant while maintaining the rare earth product tonnage through the inclusion of an ore sorting circuit to reject the gangue minerals upfront.

Given these positive results, further ore sorting testwork will be undertaken to improve on the current results and optimise the ore sort circuit. This next phase of testwork will be carried out at both a batch scale and at a larger scale using representative samples from the deposit.

PRIMARY FLOTATION TESTWORK

Further flotation test work is about to commence aiming to bulk float a combined rare earths and phosphate concentrate for subsequent separation, including with magnetics. If successful, this would give RareX increased optionality to decide which infrastructure components would be located at the mine site compared with the coast.

Furthermore, given the presence of both monazite and bastnaesite in the primary ore zone – similar to the giant Bayan Obo deposit in China – RareX has recently executed a non-disclosure agreement with Baotou Mengrong Fine Material Co. Ltd, an independent, world leading rare earth laboratory in China. A program is due to commence in November with a scope of work that will include testing regimes using commercially available and bespoke flotation reagents on both the regolith and fresh rock portions of the Cummins Range resource using samples aggregated to represent the run-of-mine (ROM).

This announcement has been authorised for release by the Board of RareX Limited.

ABOUT RAREX LIMITED – ASX: REE

RareX Limited (ASX: REE) is a Perth-based rare earths company committed to becoming a near- term producer of neodymium and praseodymium (NdPr). RareX's focus is on developing rare earths deposits in Australia, including the flag-ship Cummins Range Rare Earths – Phosphate Project.

NdPr is a core enabler of decarbonisation of our society and enables low carbon technologies, especially in the electric mobility sector, robotics solutions and renewable energy, e.g. the wind energy sector. NdPr is the key raw material for manufacturing rare earth powered permanent magnet NdFeB electric motors, the heart of the next industrial revolution the Electrification of our Society.

RareX's focus is on developing rare earths deposits in Australia, including the Cummins Range Rare Earths Phosphate Project in the East Kimberley region of Western Australia. RareX is committed to developing a sustainable, ethical, transparent and secure low carbon rare earth supply chain solution for the global electric mobility market and NdFeB permanent motor downstream ecosystem.

For further information on the Company and its projects visit www.rarex.com.au

Competent Person's Statements

The information in this release that relates to metallurgical testwork is based on information compiled and / or reviewed by Mr Gavin Beer who is a Member of The Australasian Institute of Mining and Metallurgy (AusIMM) and a Chartered Professional. Mr Beer is a consulting metallurgist with sufficient experience relevant to the activity which he is undertaking to be recognised as competent to compile and report such information. Mr Beer consents to the inclusion in the report of the matters based on his information in the form and context in which it appears. Mr Beer does not hold securities in RareX.

The mineral resource estimate in this announcement was reported by the Company in accordance with Listing Rule 5.8 on 19 July 2021. The Company confirms it is not aware of any new information or data that materially affects the information included in the previous announcement and that all material assumptions and technical parameters underpinning the estimates in the previous announcement continue to apply and have not materially changed.

Appendix 1: JORC Code, 2012 Edition – Table 1

Section 1: Sampling techniques and data - Metallurgy

Criteria	JORC Code explanation	Commentary
Sampling techniques	• 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.	• Diamond drill cores were sampled for the ore sort testwork. Samples were selected based on drill assays, drill hole location and intervals, geological and mineralogical data. Samples were riffle split from bulk samples and sent to Auralia Metallurgy in Perth and/or Nagrom Perth and/or ALS Perth for assays and further testwork.
	• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	• Half core was sent to a laboratory to conduct crushing, sampling and assaying. All laboratories used in the assaying of the Cummins Range material were checked for sampling and assaying equipment and equipment calibrations / accuracy.
	• Aspects of the determination of mineralisation that are Material to the Public Report. In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1m 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.	• Sample interval selection for the metallurgical testwork was based on geological controls and mineralisation of the deposit, the samples were considered representative of the mineralisation that were intended to be tested.
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).	• Drilling techniques used for the Cummins Range samples used for the metallurgical testwork were: o Diamond drilling in 2021- 2022 using HQ and PQ sized rods.
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed.	• Samples used for the metallurgical testwork were quarter cores. Additional laboratory assays were undertaken on the samples submitted for the testwork and showed good alignments to the drill assays.

	• Measures taken to maximise sample recovery and ensure representative nature of the samples.	• Larger and more capable rigs were used for collection of the metallurgical samples which allowed for good recoveries of samples. During each drill program, all drill rigs were checked by professional geologists, and all drill holes were logged and monitored for recoveries and accuracy prior to sample splitting and logging.
	• 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.	• Holes used for the metallurgical testwork had good sample recovery hence minor sample bias. There is no distinctive relationship exist between sample recovery and grade.
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.	• All samples used for the metallurgical testwork were geologically logged to a detail level that supported the metallurgical studies.
	• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	• The logging is qualitative and quantitative in nature for the metallurgy samples. The recorded details included; lithology, grainsize, weathering, colour, alteration, sulphide quantity and type, structure and veining. Photos were taken for all core samples.
	• The total length and percentage of the relevant intersections logged.	• Logging of all metallurgical samples were carried out on geological intervals.
Sub-sampling techniques and sample preparation	• If core, whether cut or sawn and whether quarter, half or all core taken.	• Cores were cut in half and quarter, quarter cores from each selected interval were used for this metallurgical testwork.
	• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	• N/A
	• For all sample types, the nature, quality and appropriateness of the sample preparation technique.	• Samples used for the metallurgical testwork were diamond drill cores which were split and prepared with appropriate equipment. Where required, the samples were crushed / ground and/or chemically treated to ensure the samples were properly prepared for the required testwork.
	• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	• All sample preparation and sampling equipment was cleaned with adequate procedures before taking of each sample to ensure there is no cross-contamination between samples.
	• Measures taken to ensure that the sampling is representative of the in-situ material collected, including for instance	• Drill assays, mineralogical and geological information were reviewed for selection testwork samples. Additional assays on the

	results for field duplicate/second-half sampling.	samples showed high repeatability of drill assays suggesting good representivity of the in-situ material hence no further sampling was required.
	• Whether sample sizes are appropriate to the grain size of the material being sampled.	• The metallurgical sample sizes were appropriate to the grain size of the material being sampled. Where necessary, material was crushed and/or pulverised before riffle / rotary split to ensure good consistency of sampling representivity.
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.	• The assay analyses of all samples were conducted by registered laboratories (i.e., ALS and Nagrom etc.) with suitable equipment and well-known quality assurance accreditation to ensure the accuracy of the assay results. Samples were assayed by X-ray fluorescence (XRF) and Inductively Coupled Plasma (ICP).
	• 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.	• There was no reliance upon geophysical tools, spectrometers, or any other techniques for the required metallurgical testwork apart from the use of a portable XRF to quickly track the progress of metallurgical tests. These XRF results were later confirmed with ICP analysis at the laboratory. The XRF had been calibrated for very elevated levels of REE and phosphate. System checks, blanks and standards were analysed before any PXRF readings were taken.
	• 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.	• The metallurgical samples were tested against the standards and the good alignments to drill assays confirmed the accuracy of the results. Bench-top XRF assays were also verified with additional ICP assays and the XRF equipment was further calibrated to ensure the precision is well established.
Verification of sampling and assaying	• The verification of significant intersections by either independent or alternative company personnel.	• There are no significant intercepts mentioned in this announcement.
	• The use of twinned holes.	• Twin holes were not used for collection of metallurgical samples.
	• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	• An electronic geological database was used for data storage. For metallurgical testwork, all raw data from laboratories, results analysis and summary reports were documented in a metallurgy database.
	• Discuss any adjustment to assay data.	• No adjustment was made to the assay data.
Location of data points	• Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and	• Drill hole collar locations for the metallurgical testwork have been surveyed using a differential

	other locations used in Mineral Resource estimation.	GPS with accuracy to 0.1 m.
	• Specification of the grid system used.	• GDA94, MGA Zone 52
	• Quality and adequacy of topographic control.	• Drillhole collar locations for the metallurgical testwork have been surveyed using a differential GPS with accuracy to 0.1m.
Data spacing and distribution	• Data spacing for reporting of Exploration Results.	• For the fresh core samples, the drill holes that the metallurgical samples came from were spread out over 400 m of strike and range from 70 m down hole to 285 m down hole.
	• 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.	• The data spacing is considered appropriate for the metallurgical testwork at this study level.
	• Whether sample compositing has been applied.	• Samples were all composited for the metallurgical testwork. Representative portion of each selected intervals were sent to the designated laboratories to undergo staged crushing and grinding before being composited and homogenised with suitable equipment. Where drill cores were used for the testwork, quarter cores were crushed into suitable sizes before splitting the representative samples used for composition.
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.	• The orientation of the metallurgical sampling is not considered to be biased towards any geological characteristics.
	• 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.	• N/A
Sample security	• The measures taken to ensure sample security.	• All metallurgical samples were secured with appropriate labelling system. Samples were labelled with standard designations and were stored in locked shed. Samples were transported to Perth from site by reputable transport companies. Individual bags are cable tied and the pallets are wrapped in plastic with detailed logging sheet included.

Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	• No audits were undertaken however the Competent Person was involved in all stages of the metallurgical sampling and tests. In-house reviews were also completed on the sampling techniques and testwork results.

Section 2: Exploration Results - Metallurgy
(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• 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.	• The Cummins Range deposit is located on tenement E80/5092 and is 100% owned by Cummins Range Pty Ltd which is a wholly owned subsidiary of RareX Ltd. Cummins Range Pty Ltd purchased the tenement from Element 25 with a potential capped royalty payment of AU$1m should a positive PFS be completed within 36 months of purchase finalisation.
	• 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.	• No security or impediments with tenement E80/5092
Exploration done by other parties	• Acknowledgment and appraisal of exploration by other parties.	• CRA Exploration defined REO mineralisation at Cummins Range in 1978 using predominantly aircore drilling. Navigator Resources progressed this discovery with additional drilling after purchasing the tenement in 2006. Navigator announced a resource estimate in 2008. Kimberly Rare Earths drilled additional holes and upgraded the resource estimate in 2012.

Criteria	JORC Code explanation	Commentary
Geology	• Deposit type, geological setting and style of mineralisation.	• The Cummins Range REO deposit occurs within the Cummins Range carbonatite complex which is a 2.0 km diameter near-vertical diatreme pipe that has been deeply weathered but essentially outcropping with only thin aeolian sand cover in places. The diatreme pipe consists of various mafic to ultramafic rocks with later carbonatite intrusions. The primary ultramafic and carbonatite rocks host low to high grade rare earth elements with back ground levels of 1000-2000 ppm TREO and high grade zones up to 17% TREO. The current resource sits primarily within the oxidised/weathered zone which reaches to 120m below the surface. Metallurgical studies carried out to date show that the rare earth elements are primarily hosted by Monazite which is a common and favourable host for rare earth elements.

Criteria	JORC Code explanation	Commentary
Drillhole 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: o easting and northing of the drill hole collar o elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth o hole length.	• Drill hole information from 2007-2012 drilling can be found in the previous announced resource to the ASX dated 15, October 2019. • The RareX 2020 infill drill hole details and assays can be found in the ASX announcements dated as below: o 17th, December 2020 o 27th, October 2020 o 19th, October 2020 o 30th, September 2020 • The RareX 2021-2022 drill hole details and assays can be found in the ASX announcements dated as below: o 20th, September 2022 o 31st, August 2022 o 9th, August 2022 o 27th, May 2022 o 25th, May 2022 o 30th, March 2022 o 14th, February 2022 o 18th, January 2022 o 22nd, November 2021 o 11th, November 2021 o 23rd, September 2021 o 9th, September 2021 o 2nd, September 2021 o 29th, July 2021
	• 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.	• N/A

Criteria	JORC Code explanation	Commentary
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.	• The resource has been reported using cut-off grades of 0.5% and 1.0% TREO and are considered appropriate for a potential open mining scenario and metallurgical testwork.
	• 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.	• No aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low grade results.
	• The assumptions used for any reporting of metal equivalent values should be clearly stated.	• N/A
Relationship between mineralisation widths and intercept lengths	• These relationships are particularly important in the reporting of Exploration Results. • If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.	• The Cummins Range resource is mostly located in the regolith profile of the Cummins Range diatreme. The weathering profile has created super high grade REE mineralisation with significant vertical and horizonal development. These high grade intersections are mostly focused along a north west structure that extends for over 800 m. Thick vertical intersections along this structure will thin as you move towards the north east or south west. The horizontal development of these zones can reach up to hundreds of metres. Mineralisation is developing in favourable horizons within the regolith and is interpreted to be horizontal. All of the drilling where the metallurgical samples were taken from were at 60 degrees to the south and is sufficient to test a horizontal ore body.
	• 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').	• No drill intercepts have been reported in this announcement.
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.	• N/A

Criteria	JORC Code explanation	Commentary
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 avoiding misleading reporting of Exploration Results.	• The results of all metallurgical tests performed in this program have been report. No results have been excluded.
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.	• N/A
Further work	• The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling). • Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.	• The resource is open along strike and at depth. Diamond drilling is currently in progress for extensions to the deposit. • Metallurgical work will continue to refine the REE and phosphate recovery process. • A PFS has been authorised to commence.