ASX Release
29 August 2023

Cummins Range Project – Metallurgical and Geotechnical Testing Update

Results of bulk flotation provide further support to the proposed production of premium grade phosphate concentrate in Stage 2. Additionally, results of initial drill core geotechnical testing provide guidance for mining and crushing methods and will support Stage 1 DFS.

METALLURGICAL HIGHLIGHTS

- Bulk flotation testwork showed consistent performance for the production of a phosphate mineral concentrate from Cummins Range.
- Outstanding results achieved, with **greater than 34% P_2O_5** phosphate mineral concentrate produced with **excellent recovery of 91%.**
- Flotation results further support simple, conventional phosphate flotation circuit for phosphate mineral recovery.
- Flotation results also showed good **rare earth recovery of 70%** which is in line with expectations and further supports the Scoping Study assumptions[1].

GEOTECHNICAL HIGHLIGHTS

- The most competent samples collected from regolithic material to be mined in Stages 1 & 2 of the Project are in the range of 70 MPa in the unconfined compressive strength (UCS) tests.
- Results sit well within the range of surface miner applications and this mining method is now becoming the preferred approach, rather than drill and blast.
- Surface miners have the potential to reduce the permitting requirements for the Project and replace primary crushing, reducing cost and simplifying operations.

RareX Limited (ASX: REE – **RareX** or **the Company**) is pleased to report positive outcomes from recent bulk flotation testwork conducted on phos-dyke regolith samples and geotechnical assessments conducted on diamond core samples for its 100%-owned Cummins Range Rare Earths and Phosphate Project (**the Project, Cummins Range**), located in the Kimberley region of Western Australia.

RareX CEO, James Durrant, said: *"This flotation testwork further supports the opportunity at Stage-2 to produce a high value-in-use phosphate-rare earth beneficiated product at Cummins Range as part of our rare earths business. The upgrade and grade recovery results are very encouraging and support good product quality and resource utilisation. The geotechnical results not only support optimised mine designs but also open up the opportunity for surface miners, rather than drill and blast, potentially simplifying the project further, particularly at start up."*

[1] ASX announcement 22 Aug 2023: Enhanced Scoping Study for Cummins Range

For more information, please contact:
Investors: **James Durrant**, CEO — **P** +61 (0) 8 6383 6593
Media: **Nicholas Read**, Read Corporate — **P** +61 (0) 8 9388 1474
Engage and Contribute: **Investor Hub** — **W** ree.investorhub.com/welcome

Phosphate Bulk Flotation Test

Following the positive 2022 sighter testwork results[2], a bulk flotation program was carried out to assess if similar, or better, flotation performance can be achieved at larger scale with the same simple flotation circuit. The bulk flotation using larger float cells is a good intermittent step to simulate pilot testing and to assess if similar flotation kinetics can be achieved.

The test was performed on the same regolith composite that were tested in the sighter program and was undertaken at Auralia Metallurgy in Perth. A summary of the flotation testwork results with comparison to the sighter float results are shown in Table 1.

Table 1: Flotation Results Summary

Product	Bulk Float				Sighter Float[1]			
	P_2O_5		TREO		P_2O_5		TREO	
	Grade %	Recovery %	Grade %	Recovery %	Grade %	Recovery %	Grade %	Recovery %
Rougher Concentrate	22.6	96.3	0.51	81.7	23.8	94.3	0.55	79.1
Cleaner Concentrate FINAL	**34.4**	**91.1**	**0.72**	**70.7**	**34.1**	**85.7**	**0.70**	**63.9**
Head Grade	12.9	100	0.33	100	12.9	100	0.33	100

As shown, excellent results were achieved from the bulk flotation test producing a phosphate concentrate of 34.4% aligning to the sigher float performance. The bulk float P_2O_5 recovery of 91.1% was also encouraging and was better that the sighter program.

The flotation tests were not focused on concentrating rare earths and the TREO head grade is relatively low for this composite, however, the recovery trend of the rare earth showed high similarities, albeit slight lower recoveries, to the phosphate (as shown in Figure 1) for this composite. This is in line with expectations and further supports the Scoping Study[3] assumptions for the product recoveries and the production of a combined concentrate of apatite and monazite.

[2] ASX announcement 04 October 2022: Met Testwork Delivers Premium Phosphate Concentrate
[3] ASX announcement 22 Aug 2023: Enhanced Scoping Study for Cummins Range

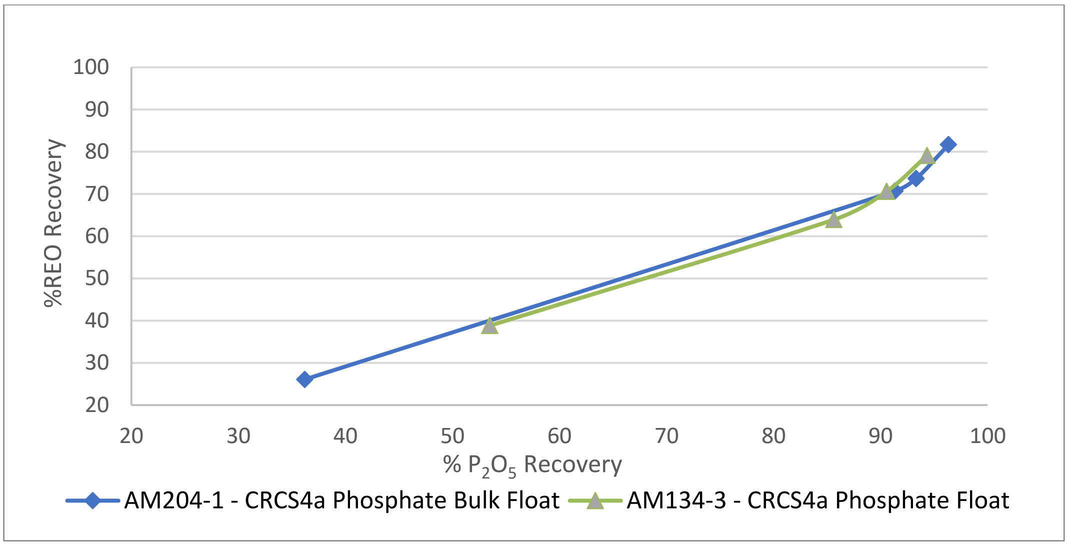

Figure 1: TREO recovery vs. P_2O_5 recovery

The bulk float results have further demonstrated the potential of producing a premium phosphate-rare earth mineral concentrate from the Cummins Range deposit using a simple, proven beneficiation technique. Following these positive flotation results, the next phase of the phosphate mineral beneficiation testwork will focus on demonstrate similar, if not better, flotation performance of the Rare Dyke material, grind size optimisation, further gangue suppression, flotation conditions and circuit configuration optimisation to ensure the technical and economic feasibility of the beneficiation flowsheet.

Geotechnical Assessment

Geotechnical tests on diamond core from within the orebody along a near surface high-grade zone were performed to provide some high case strength parameters of the rocks to be mined.

Note that for near surface material in the weathered zone of the deposit, core at Cummins Range is quite friable and as such most core is not suitable for strength testing at the lab; therefore, core sections that are sufficiently coherent for lab testing are representing a rock strength high-case for processing feed. Sections of phoscorite and ultramafic sample that were sufficiently coherent were tested at E-Precision Laboratory, Perth.

A summary of the UCS tests is shown in Table 2, and as indicated, results returned UCS values in the range of 70 MPa for the phoscorite samples, which are the likely higher grade ore feed for the Project. The ultramafic sample failed at 22 MPa, albeit a microfracture appears to be the release mechanism in this case not the rock mass. This warrants further testing as part of a broader geotechnical campaign, required for detailed designs and approvals which seeks to assess slope mechanics as well as ore parameters.

Table 2: UCS Results Summary

Sample ID	Description	Max UCS, MPa
CDX0048_1_UCSE	Phoscorite	72
CDX0048_2_UCSE	Phoscorite	60
CDX0048_3_UCSE	Phoscorite	70
CDX0049_1_UCSE	Ultramafic	22

Table 3: UCS Test Photos

Sample ID	Pre-Test Photo	Post-Test Photo
CDX0048_1_UCSE		
CDX0048_2_UCSE		
CDX0048_3_UCSE		
CDX0049_1_UCSE	N/A	

The comparatively low rock strength within the pit shell presents an opportunity towards reduced operating costs as explosives under a drill and blast operating scenario, as discussed in the recently Scoping Study release could apply. In addition, for UCS ranges below 150 MPa, the use of surface miners can be considered. RareX has reached out to potential providers of surface miners and surface mining services to establish the viability of this operational pathway. Surface miners could provide further upside to mining and processing costs through pre-screening and crushing of ore in-situ and reduce environmental impacts common with regards to blasting operations[4].

[4] Vermeer Surface Miners: A better solution to drill and blast - Australian Mining

RareX Limited
ASX:REE
ABN: 65 105 578 756

RareX HQ
Level 1, 338 Barker Road
Subiaco WA 6008
Australia

P +61 (0) 8 6383 6593
E info@rarex.com.au
ree.investorhub.com/welcome
rarex.com.au

RareX Limited (ASX:REE)
@rarex_asx

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

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 referred to in this announcement was reported by the Company in accordance with Listing Rule 5.8 on 1 May 2023. 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.

About RareX Limited – ASX: REE

RareX Limited (ASX: REE), a Perth based project development and exploration Company, was founded on the fundamental belief of the electronics revolution and the electric vehicle mega-trend. Our focus is rare earths and associated battery and electronic metals.

Cummins Range, in the East Kimberley region of Western Australia, is our flagship project which aims to produce a sustainable, ethical, transparent and secure low carbon rare earth and phosphate supply chain solution for its products which satisfy the two global mega-trends of population growth and electrification.

RareX maintains exploration upside programs in the immediate vicinity of the Cummins Range Project and also more broadly to identify targets and progress projects complementary to the founding beliefs and expertise of the core team.

Rare earths and in particular, NdPr, are core enablers of decarbonisation and electrification of our society. NdPr supports high strength magnets which enables low carbon technologies, especially in the electric mobility sector, robotics solutions and renewable energy, particularly the wind energy sector.

Phosphates are one of the three macro nutrients required in fertilisers. Fertilisers are in ever more demand due to population growth, depleting soils and reduced arable land requiring ever more intensive farming.

RareX maintains material investments in Kincora Copper (ASX:KCC), Cosmos Exploration (ASX:C1X) and Canada Rare Earth Corporation (LL.V).

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

Appendix 1 – Drill Collar

Hole ID	East MGA	North MGA	RLUTM	End Depth (m)	Azimuth	Dip	Type
CDX0015	307374	7866770	392	205	48	58	Diamond

Appendix 2 – JORC Table 1

JORC Code 2012 – Table 1, Section1
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 core was sampled for the phosphate metallurgical 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.	• For diamond drill cores, half/quarter cores were 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 was: ○ Diamond drilling in 2021- 2022 using HQ and PQ sized rods.

Criteria	JORC Code explanation	Commentary
Drill sample recovery	• Method of recording and assessing core and chip sample recoveries and results assessed.	• Samples used for the metallurgical testwork were collected by riffle split. 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 sighter metallurgical testwork.
	• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	• RC chips were riffle split from the bulk bags. Samples were dry when riffle split.
	• For all sample types, the nature, quality and appropriateness of the sample preparation technique.	• Samples used for the metallurgical testwork included RC and 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	• All sample preparation and sampling equipment was cleaned with adequate procedures before taking of each sample to ensure there is no cross-

Criteria	JORC Code explanation	Commentary
	representivity of samples.	contamination between samples.
	• 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.	• Drill assays, mineralogical and geological information were reviewed for selection testwork samples. Additional assays on the 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.

Criteria	JORC Code explanation	Commentary
	• 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 other locations used in Mineral Resource estimation.	• Drill hole collar locations for the metallurgical testwork have been surveyed using a differential GPS with accuracy to 0.1 m.
	• Specification of the grid system used.	• MGA2020 Zone 52
	• Quality and adequacy of topographic control.	• Topographic control of the metallurgical testwork has been established from surveyed drill collars and are within 0.1 m. The Cummins Range deposit is located on flat terrain.
Data spacing and distribution	• Data spacing for reporting of Exploration Results.	• The regolith samples were collected from one drill hole from the Phos Dyke and were from a range of depth and weathering profiles with P_2O_5 grades.
	• 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, half/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.	• Not applicable as orientation not considered to have introduced a sampling bias.
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

Criteria	JORC Code explanation	Commentary
		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.

JORC Code 2012 – Table 1, 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.
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 background levels of 1000-2000 ppm TREO and high-grade zones up to 20% TREO. Disseminated apatite is through all rock types and

Criteria	JORC Code explanation	Commentary
		is also contained in phoscorite. Above the carbonatite dykes is a well-developed regolith profile that extends to 100 m below the surface where a combination of residual, or eluvial and chemical weathering have redistributed and upgraded rare earths and phosphate. • QEMSCAN and MicroXRF results have showed that all the phosphate is contained in Apatite and Monazite. The Apatite contains low UTh, no cadmium and chlorine, and elevated levels of Fl that are well below acceptable limits. • QEMSCAN and MicoXRF have showed the REO in the Regolith are deporting mostly to monazite, with lesser amounts deporting to bastnaesite, crandallite, and REE intergrowths. • QEMSCAN and MicoXRF indicate the REO in the fresh rock are deporting to monazite, bastnaesite, parisite and REE intergrowths.
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: ○ easting and northing of the drill hole collar ○ elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar ○ dip and azimuth of the hole ○ down hole length and interception depth ○ hole length.	• All drill hole details used in this metallurgical testwork have been previously announced on the ASX.
	• 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.	• Not applicable as all information was previously reported and is also contained in this release.
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.	• No maximum or minimum cut-off grades are used in this announcement.

Criteria	JORC Code explanation	Commentary
	• 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.	• Not applicable as no aggregate intercepts.
	• The assumptions used for any reporting of metal equivalent values should be clearly stated.	• No metal equivalent values are used in this report.
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.	• Not applicable as drill results not reported in this announcement.
	• 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').	• Not applicable as drill results not 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.	• Not applicable as drill results not reported in this announcement.
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.	• Balanced reporting is included in this report.
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.	• This report includes meaningful metallurgical results where a bulk flotation test was performed on a Phos Dyke regolith composite and showed: ○ 34.4% P_2O_5 grade and 91.1% recovery to final float concentrate

Criteria	JORC Code explanation	Commentary
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.	• Baseline Environmental studies have commenced with the instalment of 14 water monitoring bores in 2022. • Metallurgical work is ongoing.