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Bioavailability testwork supports use of Ngualla phosphate within fertiliser applications

- **Critical minerals exploration programme is targeting the multi-commodity potential of the Ngualla carbonatite system**
  - Primary focus remains on progressing the world-class Ngualla Rare Earth Project to a targeted Financial Investment Decision
  - Longer term potential to develop other critical commodities within the broader Ngualla Deposit
- **Northern Zone of the Ngualla deposit remains highly prospective for phosphate**
  - Completed drilling demonstrates widespread and shallow mineralisation of phosphate with numerous intercepts >20% P_2O_5%
- **Bioavailability analysis on phosphate rock from Northern Zone supports potential use as a direct application phosphorous fertiliser**
  - High average bioavailability rating of 10.80%
  - Results support ongoing discussions with strategic parties around the future supply of phosphate from Ngualla
- **Phosphate development supported by increasingly favourable pricing and macroeconomic backdrop**

Peak Rare Earths Limited (ASX: **PEK**) (**"Peak"** or the **"Company"**) is pleased to announce the results from bioavailability analysis undertaken on phosphate composite samples from the Ngualla Deposit. Based on testing undertaken at ALS's laboratory in Perth, phosphate rock from the Northern Zone has 'high' bioavailability, which supports its potential use as a direct application fertiliser. Peak is evaluating opportunities to co-develop other commodities within the Ngualla Deposit, which complement the Ngualla Rare Earth Project ("**Ngualla Project**").

Commenting on the bioavailability results, the CEO of Peak, Bardin Davis, said:

"The bioavailability results are extremely pleasing and highlight the future potential to develop phosphate from the Northern Zone. Phosphate is critical to food security and enhancing agricultural yields in East and Sub-Saharan Africa. Previous drilling has already demonstrated widespread phosphate within the Northern Zone and we look forward to assay results in coming weeks, which should further define this mineralisation. We remain of the view that the Ngualla Deposit can support a world-class, multi-commodity and multi-generational project."

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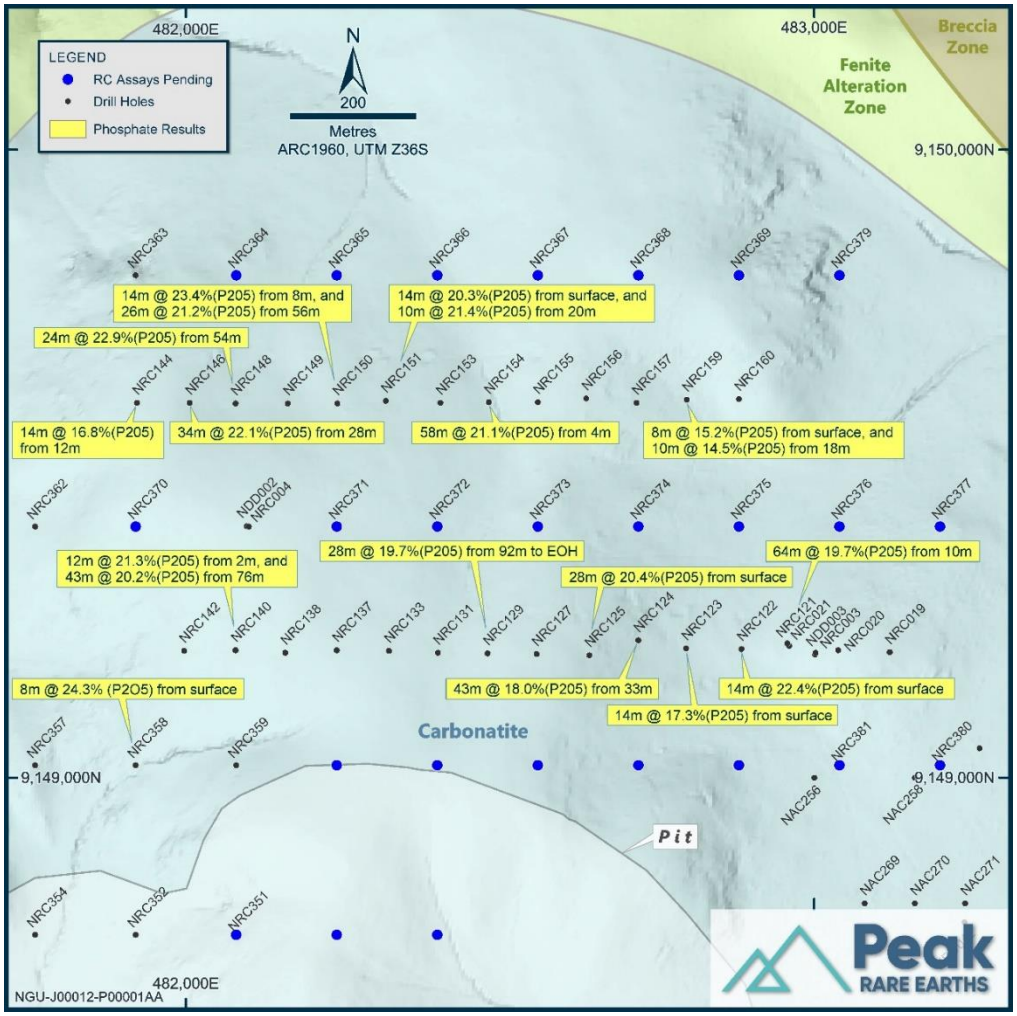
Ngualla's phosphate potential

The Ngualla Deposit remains highly prospective for phosphate, which was previously the focus at Ngualla prior to the discovery of rare earths in 2010. Drilling completed in 2012[1] and in late 2023[2] confirmed widespread and shallow mineralisation of phosphate within the Northern Zone; an area located approximately 2km North of the Bastnaesite Zone (see Figure 1), with numerous intercepts exceeding 20% P_2O_5. Importantly, as Ngualla is an igneous deposit, phosphate mineralisation within the Northern Zone is associated with low levels of deleterious elements such as cadmium, lead and mercury.

Peak is awaiting assay results from a series of key drill holes from the Northern Zone, which will further define the extent of phosphate mineralisation within the Ngualla Deposit.

Figure 1. Previous phosphate intercepts



[1]See announcement 'Final Drill Results Received from the Ngualla Rare Earth Project (15 Feb 2012)

[2] See announcement 'First Assay Results from Exploration Programme' (18 Dec 2023)

The Company confirms that at this time it is not aware of any new information or data that materially affects the information in the announcements

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Bioavailability analysis

Bioavailability analysis is a standard test undertaken on phosphorous rock sources to determine the solubility of phosphate in soils. The analysis is useful in determining whether a particular phosphate rock type is suitable for direct fertiliser applications whereby the phosphate is applied directly to the soil for uptake.

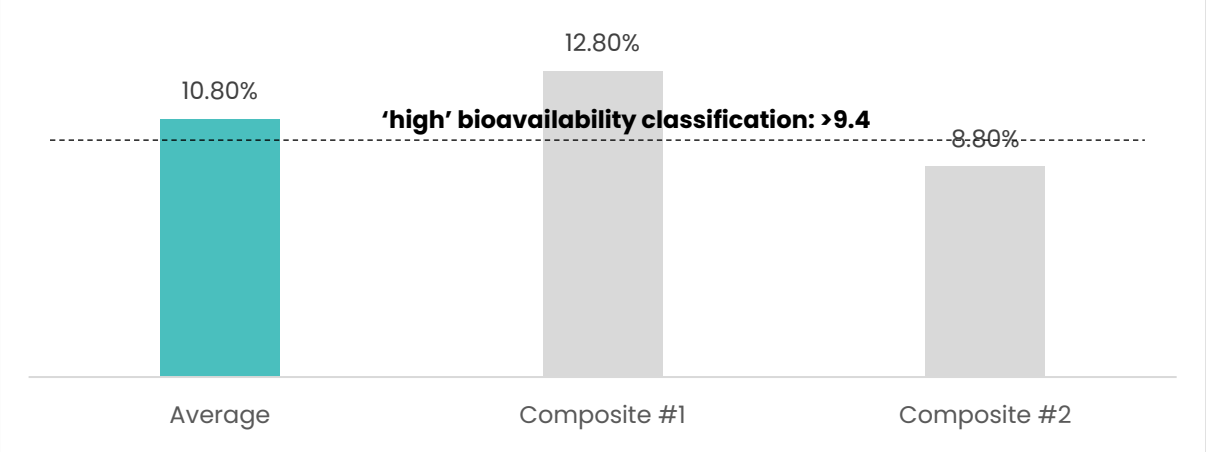
Bioavailability analysis has been completed on two composite phosphate samples from the Northern Zone which have been aggregated from previous RC drill core from the area (see Appendix 1). The analysis has been undertaken at ALS's laboratory in Perth under standard atmospheric conditions using 2% citric acid.

Composite samples from the Northern Zone returned an average bioavailability value for phosphorous of 10.80%, which is above the industry threshold of 9.4% for a 'high' bioavailability classification. The bioavailability results demonstrate the potential for phosphate from the Northern Zone to be used in local fertiliser applications, which is further supported by low levels of deleterious elements including cadmium, mercury and lead.

Table 1. Phosphate composite breakdown

Constituent	Unit	Composite #1	Composite #2
P_2O_5	%	21.8	23.2
Cd	ppm	15	<5
Pb	ppm	450	640

Figure 2. Bioavailability of phosphate[1]



[1]'High' bioavailability – greater than 9.4; "Medium' bioavailability – between 6.7 and 8.4; 'Low' availability – less than 6 ('Solubility Test in Some Phosphate Rocks and their Potential for Direct Application in Soil', Gholizadeh et al, 2009)

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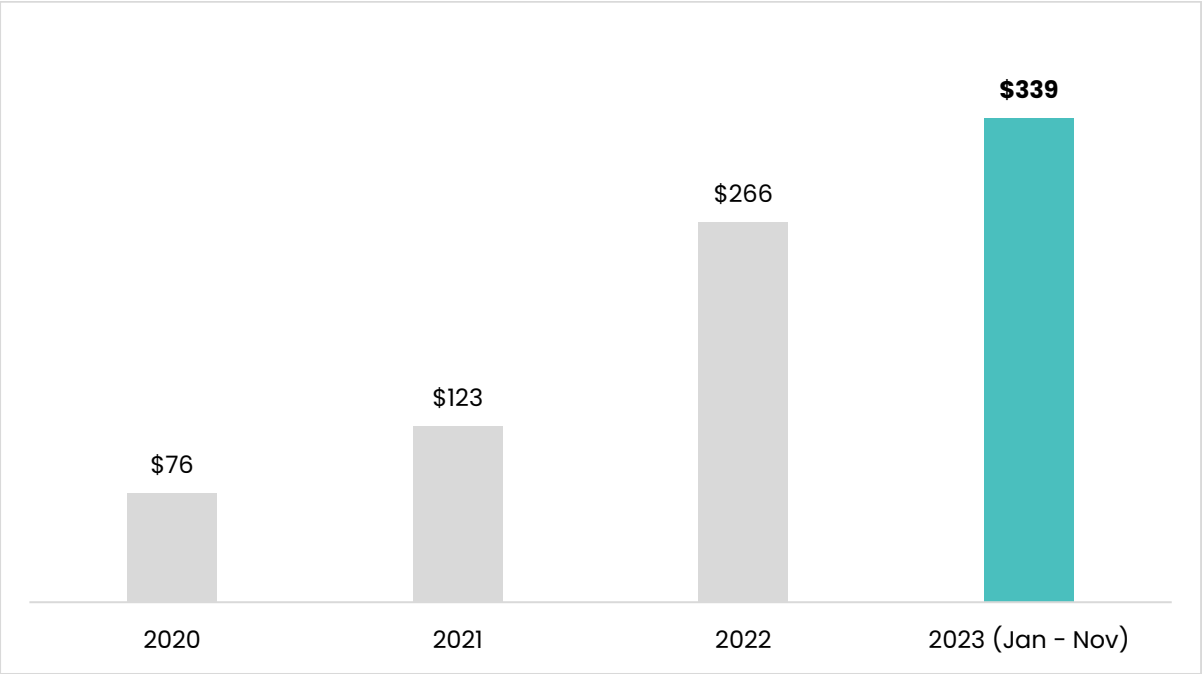
Phosphate market opportunity

Phosphate rock is an increasingly important commodity with critical mineral status in the EU and China as well as strategic materials status in Australia. Phosphate rock is a key source of phosphorous within the agricultural and fertiliser sectors and is an important precursor to Lithium-Ion Phosphate ('**LFP**') batteries, which has recently become the dominant EV battery technology within China[3]. Phosphate rock prices have increased at a CAGR of 65% over the last three years (Figure 3) due to rising global demand to support agricultural yields and food security as well as the rapid emergence of LFP EV technology.

As part of its critical minerals exploration and development programme, Peak is exploring a near-term opportunity to supply phosphate rock into the Tanzanian and broader East African fertiliser market. Despite rapid growth within the regional agricultural sector, current phosphate fertiliser use within the East and Central Africa region remains amongst the lowest globally (see Figure 4). Based on results from the bioavailability analysis, phosphate rock from the Northern Zone could potentially be used as a direct application fertiliser, which would minimise beneficiation requirements and significantly simplify future development pathways.

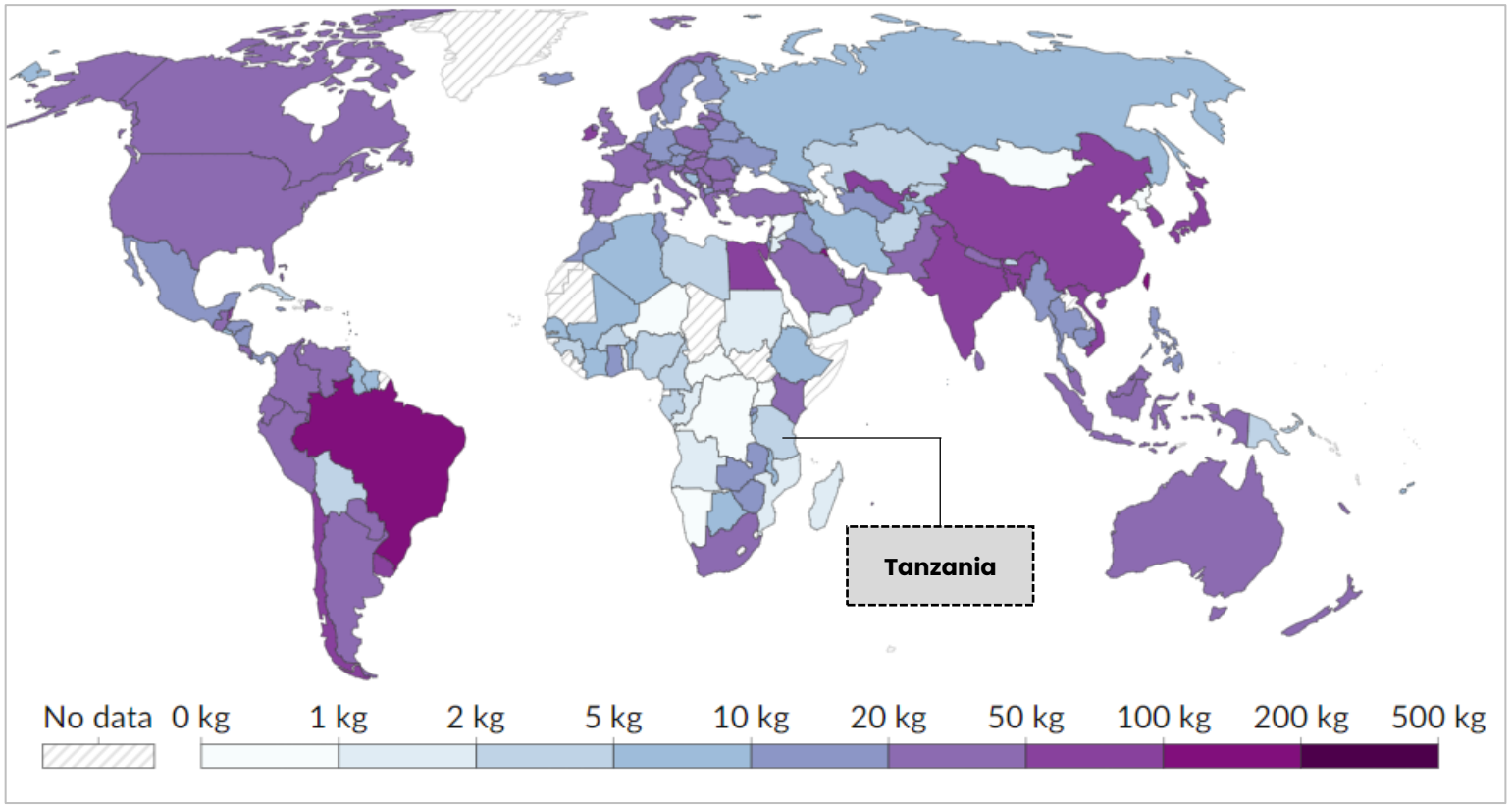
Figure 3. Rock phosphate prices (US$/t)[2]



[2]Source: Index Mundi (https://www.indexmundi.com/commodities/?commodity=rock-phosphate&months=120)

[3] 'LFP batteries extend dominance over NCM batteries in China, July 2023 (Fastmarkets)'

Figure 4. Phosphate fertilizer use per hectare of cropland, 2020[1]



[1]Source data: Food and Agriculture Organisation of the United States (https://ourworldindata.org/grapher/phosphate-application-per-hectare-of-cropland)

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Status and Next Steps

The remaining assay results from the drilling programme completed late last year are expected before the end of the March Quarter. The assay results from the Northern Zone (NRC364 – NRC388) will help further define the extent of phosphate mineralisation as well as potential target areas that could be preferentially developed in the future. It is also intended to evaluate the bioavailability of phosphate rock from different areas and depths within the Northern Zone to better understand if there are parts of the deposit that could be preferentially targeted for future development.

Preliminary discussions are underway with multiple strategic parties around the future development and supply of phosphate from the Ngualla Deposit. These may support a capital-light opportunity to co-develop a phosphate project alongside the Ngualla Rare Earth Project.

Table 2. Drilling and assay status

Sample	Comment
Northern Zone (niobium, phosphate and rare earths)	
RC holes NRC350 – NRC363	Assays completed
RC holes NRC364 – NRC383	Assays pending
RC holes NRC384 – NRC388	Assays pending
Breccia Zone (fluorite and rare earths)	
Trench samples	Assays completed
RC holes NRC389 – NRC410	Assays pending
DD holes NDD048 – NDD049	Assays pending

This announcement is authorised for release by the Company's Executive Chairman and Chief Executive Officer.

Bardin Davis

Chief Executive Officer

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Competent Persons Statement

Information in this Announcement that relates to metallurgical testwork has been 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 this announcement of the matters based on his information in the form and context in which it appears.

Information in this Announcement that relates to exploration results is based upon work undertaken by Maggie Hughes, a Competent Person who is a Member of the Australian Institute of Geoscientists (AIG). Maggie Hughes has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity which she is undertaking 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). Maggie consents to the inclusion in this announcement of the matters based on her information in the form and context in which it appears.

Forward Looking Statements

Certain statements contained in this announcement may constitute forward-looking statements, estimates and projections which by their nature involve substantial risks and uncertainties because they relate to events and depend on circumstances that may or may not occur in the future. When used in this announcement, the words "anticipate", "expect", "estimate", "forecast", "will", "planned", and similar expressions are intended to identify forward-looking statements or information. Such statements include without limitation: statements regarding timing and amounts of capital expenditures and other assumptions; estimates of future reserves, resources, mineral production, optimisation efforts and sales; estimates of mine life; estimates of future internal rates of return, mining costs, cash costs, mine site costs and other expenses; estimates of future capital expenditures and other cash needs, and expectations as to the funding thereof; statements and information as to the projected development of certain ore deposits, including estimates of exploration, development and production and other capital costs, and estimates of the timing of such exploration, development and production or decisions with respect to such exploration, development and production; estimates of reserves and resources, and statements and information regarding anticipated future exploration; the anticipated timing of events with respect to the Company's projects and statements; strategies and the industry in which the Company operates and information regarding the sufficiency of the Company's cash resources. Such statements and information reflect the Company's views, intentions or current expectations and are subject to certain risks, uncertainties and assumptions, and undue reliance should not be placed on such statements and information. Many factors, known and unknown could cause the actual results, outcomes and developments to be materially different, and to differ adversely, from those expressed or implied by such forward looking statements and information and past performance is no guarantee of future performance. Such risks and factors include, but are not limited to: the volatility of prices of rare earth elements and other commodities; uncertainty of mineral reserves, mineral resources, mineral grades and mineral recovery estimates; uncertainty of future production, capital expenditures, and other costs; currency fluctuations; financing of additional capital requirements; cost of exploration and development programs; mining risks; community protests; risks associated with foreign operations; governmental and environmental regulation; the volatility of the Company's stock price; and risks associated with the Company's by-product metal derivative strategies. There can be no assurance that forward looking statements will prove to be correct.

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Appendix 1(a): Section 1 Sampling Techniques and Data (JORC Code 2012 Edition)

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

Criteria	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. Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. 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 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.	The samples were collected from existing reference samples retained from previous drilling programs. 0.5kg splits were taken from the reference samples and combined to make a 20kg sample and six 5kg samples. The samples were selected from the Northern Zone RC drilling. Samples were selected based on drill assays, drill hole location and intervals, geological and mineralogical data. The samples are considered representative of the Northern Zone. Due to the samples sitting in storage for so long, it was necessary shake up the samples to ensure that a representative sub-sample was taken. The sample was first passed through the riffle splitter twice. The sample was re-combined from the three trays before running it through the splitter again. After the second split, 0.5kg was from the largest tray and put in the large sample bag. Each 0.5kg sample bag was clearly labelled with the sample ID.
Drilling techniques	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.).	No drilling was conducted for this round of sampling, the samples are all collected from existing reference samples retained from previous drilling programs. All reference to drilling techniques in this Table 1 refers to the original drilling programs.

		The RC samples were collected using track mounted rigs equipped with 5.5" face sampling button bits and 6 m rods.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed. Measures taken to maximise sample recovery and ensure representative nature of the samples. 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.	A face sampling bit was used to improve recovery and reduce contamination. Each sample was weighed, with the weight compared to the theoretical weight estimated from the hole diameter and expected density. The drill rods were air flushed after each sample to minimise contamination. The RC sample moisture content was qualitatively logged and recorded. A number of studies have been conducted at Ngualla to assess whether there is any relationship between recovery and grade, with no significant correlation identified. Material from the drill return and cyclone overflow have been periodically collected and assayed, and good correlation with the primary sample grades was observed. A number of DDH and RC twinned holes have been drilled at Ngualla. Close lithological and grade correlation was observed between the twinned datasets, with no evidence of significant differences that may indicate issues with one or both of the sampling methods.
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. Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	All RC intervals were geologically logged, with information pertaining to lithology, mineralogy, weathering, and magnetic susceptibility collected and recorded. RC sample weights were recorded. The logging datasets comprised a mix of qualitative (lithology, weathering,

	The total length and percentage of the relevant intersections logged.	mineralogy) and quantitative (magnetic susceptibility, recovery) information. A small amount of material from each 1 m RC sample was collected and stored in chip trays. All chip trays were photographed. A 2kg reference sample was collected to be stored at camp. Logging was performed on the full length of each hole, with the level of detail considered appropriate to support mineral resource estimation studies.
Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken. If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry. For all sample types, the nature, quality and appropriateness of the sample preparation technique. Quality control procedures adopted for all sub- sampling stages to maximise representivity of 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. Whether sample sizes are appropriate to the grain size of the material being sampled.	RC chip samples were collected from each 1 m interval using a standalone 3-tier riffle splitter configured to give a 1/8 split. A scoop was used to collect an equal-sized portion from adjacent samples, which were combined to produce 2 m composites. Replicate samples were collected to confirm that scooping did not introduce significant bias or precision issues. Peak has established a set of quality assurance (QA) protocols, which include the collection and insertion of field duplicates and certified reference samples into the sample stream prior to submission to the laboratory. Coarse crushed blanks are inserted by the laboratory prior to sample preparation. The QA samples are inserted at random, but at a frequency that averages 1:30 for each type. Sample sizes are considered appropriate for this style of mineralisation. Twinned DDH and RC datasets were examined to confirm that the sample

		collection procedures had not resulted in significant bias or precision issues. The QA data does not indicate that there are any significant issues with the weight/particle size combinations used for sample preparation.
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. 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. 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 assay analyses of all samples were conducted by ALS Perth which is a registered laboratory using suitable equipment and well-known quality assurance accreditation to ensure the accuracy of the assay results. Solid samples were assayed by X-ray fluorescence (XRF) and solutions were assayed via Inductively Coupled Plasma (ICP). The metallurgical samples were tested against the standards and the good alignments to drill assays confirmed the accuracy of the results.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel. The use of twinned holes. Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. Discuss any adjustment to assay data.	There are no new significant intercepts in this announcement. All intercepts have been previously reported. No twin holes are being reported. Primary data were handwritten onto pro-forma logging sheets in the field and then entered into Excel spreadsheets at the Ngualla site office. The spreadsheets include in-built validation settings and look-up codes. Scans of original field data sheets are digitally stored and secured. The data entered into the spreadsheets are reviewed and validated by the field

		geologist before being sent to Perth head office to be stored on the server. Results and analysis are saved on the Perth server. There is no adjustment made to 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. Specification of the grid system used. Quality and adequacy of topographic control.	The spatial data for Ngualla are reported using the ARC 1960 UTM, Zone 36S coordinate system. Drill collars were surveyed using a RTK GPS, Base Receiver and Rover Receiver by professional contract surveyors. Down hole surveys were completed during drilling using an electronic single-shot downhole camera, with readings taken at a nominal interval of every 40 m down all DDH holes and RC holes. The elevation for each drill hole collar was adjusted to the elevation of a laterally coincident point on the topographic surface derived from a LiDAR survey flown for Peak by Digital Mapping Australia Pty Ltd in 2012. The LiDAR data have a reported accuracy of 10 cm in elevation and 15 cm north and south.
Data spacing and distribution	Data spacing for reporting of Exploration Results. 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. Whether sample compositing has been applied.	The samples were selected for spatial and lithological representivity. The data spacing is considered appropriate for this stage of the test work.

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. 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.	No orientation-based sampling biases have been identified or are expected for this style of mineralisation.
Sample security	The measures taken to ensure sample security.	The chain of custody of samples is managed by Peak. The samples are kept in sealed bags at an onsite storage facility prior to being trucked to the SGS laboratory Mwanza by Peak personnel. The Mwanza laboratory checks the received samples against the sample despatch forms and issues a reconciliation report. Samples are transported to ALS, Perth by tracked air freight.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No independent audit was taken on the sampling for the metallurgical test work. An SRK Consultant audited Peak's sampling, QAQC, and data entry protocols during a site visit when the drilling program was in progress and considered the drilling and sampling procedures to be consistent with industry best practice.

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Appendix 1(b): Section 2 Reporting of Exploration Results (JORC Code 2012 Edition)

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

Criteria	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 security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.	The mineralisation lies wholly within the Special Mining Licence 693/2023 granted to Mamba Minerals Corporation Limited on 25 April 2023 (Mamba Minerals). Mamba Minerals was incorporated to hold the SML to develop and operate the Ngualla Project. Its shareholders on incorporation and currently are Peak 100% subsidiary, Ngualla Group UK Limited (NGUK), and the Office of the Treasury Registrar for and on behalf of the United Republic of Tanzania Government (the Registrar). NGUK holds 84% of the issued capital of Mamba Minerals, with the Registrar holding 16%. The SML is initially for a term of 30 years over the area set out in the original SML application, which covers ~18.14km^2 and contains the Ngualla Project deposit. The SML area will be expanded in the future to include an existing Prospecting Licence (PL 10897/2016) and the expired Prospecting Licence (PL 9157/2013). The initial term will also be amended to be the shorter of 33 years and the life of the mine, with the ability to extend on application in accordance with the law at the time. There is no habitation or farming on the mineralised area and there are no wilderness, historical sites, national parks or environmental settings known to Peak at this time that would impede development and operation of the Ngualla Project.

Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	No systematic exploration for phosphate had been undertaken at Ngualla prior to Peak Resources acquiring the project in 2009. Limited reconnaissance exploration and surface sampling for phosphate had been undertaken by a joint Tanzanian-Canadian university based non-government organisation in the early 1980s.
Geology	Deposit type, geological setting and style of mineralisation.	The Ngualla Project is centred on the Ngualla Carbonatite, a 4 km x 3.5 km pipe-like intrusive body composed of carbonate mineral-rich, alkaline igneous rocks. The predominant components of the complex are an annular calcite carbonatite (and magnesiocarbonatite) and a central body of ferrocarbonatite. Weathering of the Ngualla carbonatite complex and landscape evolution were critical factors in the formation of the rare earth oxides, phosphate and niobium mineralisation. The mechanism of weathering differs according to carbonatite type and the different processes of mineralisation. Mineralisation has been residually enriched in the oxide zone at surface through weathering and the removal of carbonate minerals to variable depths of up to 140 m vertically.
Drill hole Information	A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: - 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.	No new drilling results are being reported.

	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.	
Data aggregation methods	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. 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. The assumptions used for any reporting of metal equivalent values should be clearly stated.	No new exploration results are being reported.
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. 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').	No new drilling is being reported.
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.	The accompanying document is considered to represent a balanced report. Reporting of grades is done in a consistent manner. All previous significant intersections have been fully reported in previous releases.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable,	The accompanying document is considered to represent a balanced

	representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	report. Reporting of grades is done in a consistent manner. All previous significant intersections have been fully reported in previous releases.
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.	Multi-element assaying is carried out on all samples, including for potentially contaminating elements and radioactive elements such as uranium and thorium. Other exploration data is not considered material to this document at this stage.
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.	Further testwork aimed to evaluate the bioavailability of phosphate from different areas of the Northern Zone.