

## MASSIVE MAIDEN MINERAL RESOURCE ESTIMATE >1B TONNES FOR EMA RARE EARTH PROJECT

### Highlights

- JORC 2012 compliant Inferred Mineral Resource Estimate (MRE) of **1.02Bt @ 793ppm TREO**, including a higher-grade portion of **331Mt @ 977ppm TREO**
- Places Ema as one of the largest<sup>1</sup> tonnage fully **ionic clay**, rare earth deposits in the world
- High magnetic REO (Nd, Pr, Dy, Tb) element proportion of **27 – 31%** of basket positioning it as one of Brazil's most enriched MREO deposits
- MRE developed from only **46%** of the available area at Ema, with 107km<sup>2</sup> available for further exploration
- The mineralisation is close to surface, amenable to low-cost open pit mining methods and remains **open at depth** and to the **east** and **west**
- Drilling program is now being designed to convert MRE from Inferred to **Indicated and Measured** categories

MRE when coupled with previously announced<sup>1</sup> world class metallurgical testwork recovery results of the magnetic rare earth oxides (MREO), as listed below, confirm the following:

- 10 metres @ 76% Nd, 74% Pr, 47% Dy and 54% Tb from 10m (EMA-TR-101)
- 6 metres @ 66% Nd, 61% Pr, 56% Dy and 83% Tb from 10m (EML-TR-059)
- 13 metres @ 71% Nd, 62% Pr, 45% Dy and 52% Tb from 5m (TR-071)
- 5 metres @ 66% Nd, 66% Pr, 52% Dy and 55% Tb from 12m (TR-059)
- 10 metres @ 65% Nd, 61% Pr, 43% Dy and 50% Tb from 10m (TR-110)
- Ema is a fully ionic clay rare earth deposit – there is currently **zero** drilling into fresh rock
- Is amenable to a low cost REE metal recovery process – **low** reagent usage, **high** impurity removal in final product
- Recoveries achieved using standard **weak** ammonium sulphate leaching solution, pH 4, at ambient temperatures over low leach times of only 30 minutes duration
- Results demonstrate mineralisation is suited to low-cost processing through conventional processing facilities commonly used in China

### Andrew Reid, Managing Director, commented:

“Today’s announcement is very important for the Company and our shareholders as it now sets us on a path towards development. This result places Ema as one of the largest ionic rare earths deposits in the world. The team has done a tremendous job in getting such a large MRE defined in less than 1 year, which now confirms the immense potential of the Ema project in Brazil.

Not only do we have a massive mineral resource of >1 billion tonnes but also significantly we have >300 million tonnes at grades close to 1,000ppm which will assist in generating positive financial cash flow models.

Opportunities to increase both grade and tonnage remain high due to the extremely conservative global specific gravity (SG) of 1.34 which was applied to the estimated volumes. Additional deeper, less weathered samples from the higher-grade horizon is expected to result in significantly higher sg's.

With only 46% of the total area drilled, the team is confident of increasing not only tonnages but believes the opportunities to also increase the grade are well founded and will be tested through the next round of drilling commencing over the coming months. BCM is now well on its way to establishing the Company as a global rare earths leader."

Brazilian Critical Minerals Limited (**ASX: BCM**) ("**BCM**" or the "**Company**") is pleased to announce a maiden Mineral Resource Estimate (MRE) for the Ema and Ema East projects (collectively Ema), forming part of the Company's wholly owned REE projects, Apuí, Amazon, Brazil (Table 2) at a cut-off of 500ppm the Inferred Mineral Resource Estimate contains 1,017Mt @ 793 ppm TREO.

*Table 1. Ema REE Project 2024 Global Mineral Resource Estimate-@COG 500ppm TREO*

JORC Category	Tonnes Mt	TREO ppm	Pr <sub>6</sub> O <sub>11</sub> ppm	Nd <sub>2</sub> O <sub>3</sub> ppm	Tb <sub>4</sub> O <sub>7</sub> ppm	Dy <sub>2</sub> O <sub>3</sub> ppm	MREO ppm	MREO:TREO %
inferred	1,017	793	45	154	4	13	216	27

*Table 2. Ema REE Project 2024 Mineral Resource Estimate – by cut-off grade*

JORC Category	cut-off ppm TREO	Tonnes Mt	TREO ppm	NdPr ppm	DyTb ppm	MREO ppm	MREO:TREO %
Inferred	0	1,340	694	163	15	178	26
<b>Inferred</b>	<b>500</b>	<b>1,017</b>	<b>793</b>	<b>199</b>	<b>17</b>	<b>216</b>	<b>27</b>
Inferred	600	863	836	218	18	236	28
Inferred	700	685	885	237	20	257	29
Inferred	800	494	936	259	21	280	30
Inferred	900	331	977	278	22	300	31

Notes:

- TREO = total rare earth oxides (CeO<sub>2</sub>, Dy<sub>2</sub>O<sub>3</sub>, Er<sub>2</sub>O<sub>3</sub>, Eu<sub>2</sub>O<sub>3</sub>, Gd<sub>2</sub>O<sub>3</sub>, Ho<sub>2</sub>O<sub>3</sub>, La<sub>2</sub>O<sub>3</sub>, Lu<sub>2</sub>O<sub>3</sub>, Nd<sub>2</sub>O<sub>3</sub>, Pr<sub>6</sub>O<sub>11</sub>, Sm<sub>2</sub>O<sub>3</sub>, Tb<sub>4</sub>O<sub>7</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>
- NdPr=Pr<sub>6</sub>O<sub>11</sub>+Nd<sub>2</sub>O<sub>3</sub>
- DyTb= Dy<sub>2</sub>O<sub>3</sub> + Tb<sub>4</sub>O<sub>7</sub>
- Totals may not balance due to rounding of figures.
- The estimate of Mineral Resources may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant factors.
- Mineral resources were classified as Inferred.
- Mineral Resources were prepared in accordance with Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code, 2012) incorporating drilling data acquired by 2023.
- Blocks estimated by ordinary kriging at support of 100 m × 100 m × 4 m with sub-blocks 25 m × 25 m × 2m.
- The results are presented in-situ and undiluted, are constrained within optimized open pit shell, and are considered to have reasonable prospects of economic viability, using the following parameters:
  - Pit slope angle: 25°.
  - Selling Prices: estimated by element oxide.
  - Costs: Mining: 2.13US\$/t mined; Process: 7.23 US\$/t processed; Royalties: 2% of revenue; Selling costs: 7.03US\$/kg REO.
  - Metallurgical Efficiencies estimated by element.

## Project Summary

The Ema project is located in the State of Amazonas in Brazil (Figure 1). The discovery of rare earths in Ema was announced in May 2023, with its maiden MRE announced just one year after



Figure 1. Location of the Ema project in Brazil

The EMA ionic REE project (Ema and Ema East leases) is unique amongst Brazilian REE projects in that it shares almost identical characteristics with the iREE deposits developed over felsic volcanic rocks in southwest China, the world's largest known ionic clay region.

The project comprises 189 km<sup>2</sup> of felsic volcanic over which 194 auger holes totalling 2,749 metres have been completed to date (Figure 3), covering 82 km<sup>2</sup> (<50% of available area).

Exploration drilling has been conducted with hand-held augers to date, which offers the advantage of low-cost, rapid deployment and mobility. One key constraint of auger drilling is the depth limitation, with the deepest holes, generally containing the highest-grade results, drilled to ~20m, with all holes stopping upon encountering the fresh rhyolite rock.

Additionally, most of the exploration to date has been conducted across hill slopes, on widely spaced (800m) centres, with limited drilling in the valleys and foothills. Future planned drilling in these limited areas could potentially facilitate penetration into higher-grade zones at depth.

The entire enriched zone in Ema East is similar in grade and thickness to that at Ema, contained within the 10 metres of regolith sitting directly above the saprock/fresh rock interface, which show a clear increase in grades.

This enrichment of higher grades at the base of the regolith profile highlights an opportunity to potential target better mineralisation with a drilling method able to constantly penetrate this saprock zone. The current estimated "average grade" of the lower horizon within a 12km<sup>2</sup> high grade zone is 1,048ppm TREO, based on a cut-off of 700ppm TREO combined with NdPr >100ppm (Figure 3).

The first pass leach test results from standard assays at SGS (AMSUL) confirm high recoveries of the four most important rare earth elements, neodymium, praseodymium, dysprosium and terbium with some individual elements producing recoveries of up to 85%.

The recoveries received to date indicate a significant proportion of the REE's are present as ionically adsorbed clays, confirming that Ema, which currently stretches >80km<sup>2</sup> has the potential to become one of the largest ionic clay hosted deposits defined outside of China.

### Ema Mineral Resource Estimate

A set of Inferred Mineral Resources was estimated for the contained rare earth elements in the Ema project constrained by different cut-off grades by the consultancy group GE21 Consultoria Mineral Ltda (GE21) and reported in accordance with the JORC Code (2012) (Table 1) and (Figure 2).

Table 3. Ema REE Project 2024 Mineral Resource Estimate – by cut-off grade

JORC Category	cut-off ppm TREO	Tonnes Mt	TREO ppm	NdPr ppm	DyTb ppm	MREO ppm	MREO:TREO %
Inferred	0	1,340	694	163	15	178	26
<b>Inferred</b>	<b>500</b>	<b>1017</b>	<b>793</b>	<b>199</b>	<b>17</b>	<b>216</b>	<b>27</b>
Inferred	600	863	836	218	18	236	28
Inferred	700	685	885	237	20	257	29
Inferred	800	494	936	259	21	280	30
Inferred	900	331	977	278	22	300	31

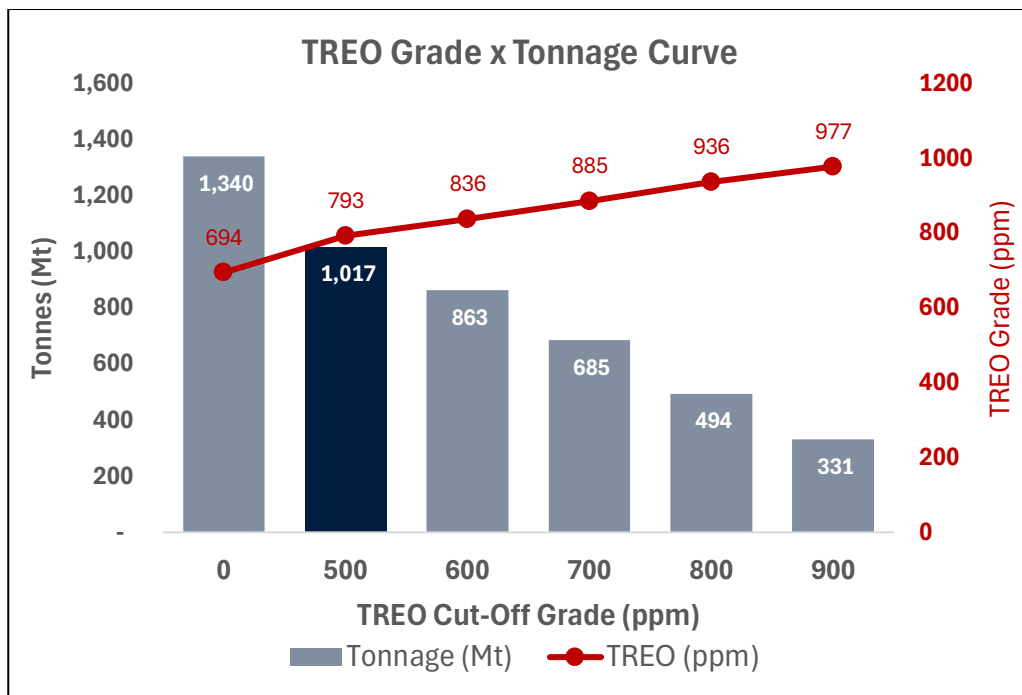
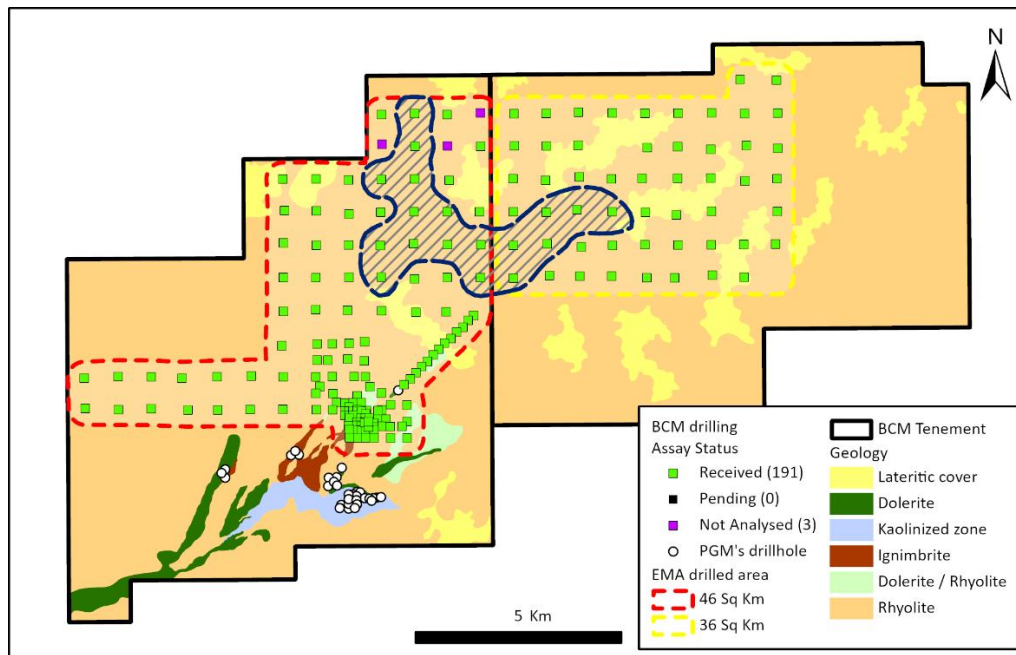


Figure 2. Grade and tonnage curve for the Ema project.



### Weathering Model – Chemical Index of Alteration (CIA)

The mineralised horizons were constrained by a weathering model constructed using the CIA index, which showed high reliability, only made possible by the availability of major oxide assays for each interval (Figure 4).

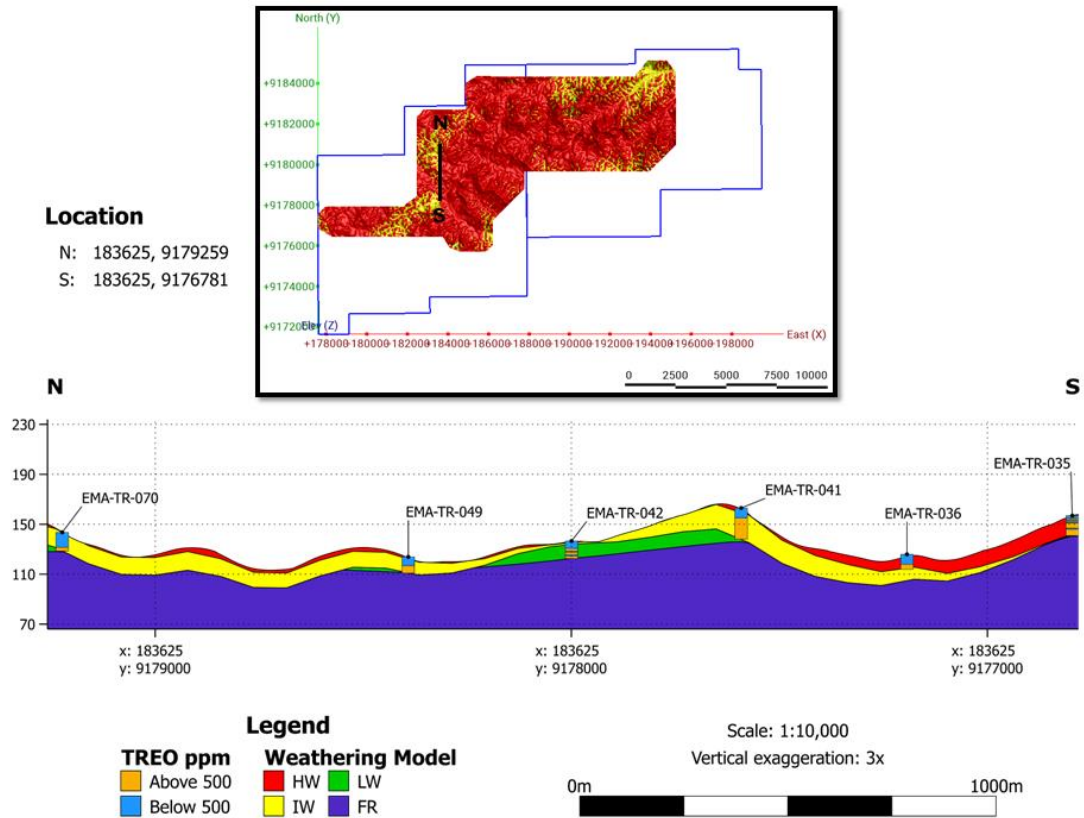


Figure 4. Schematic section of the Ema weathering Model.

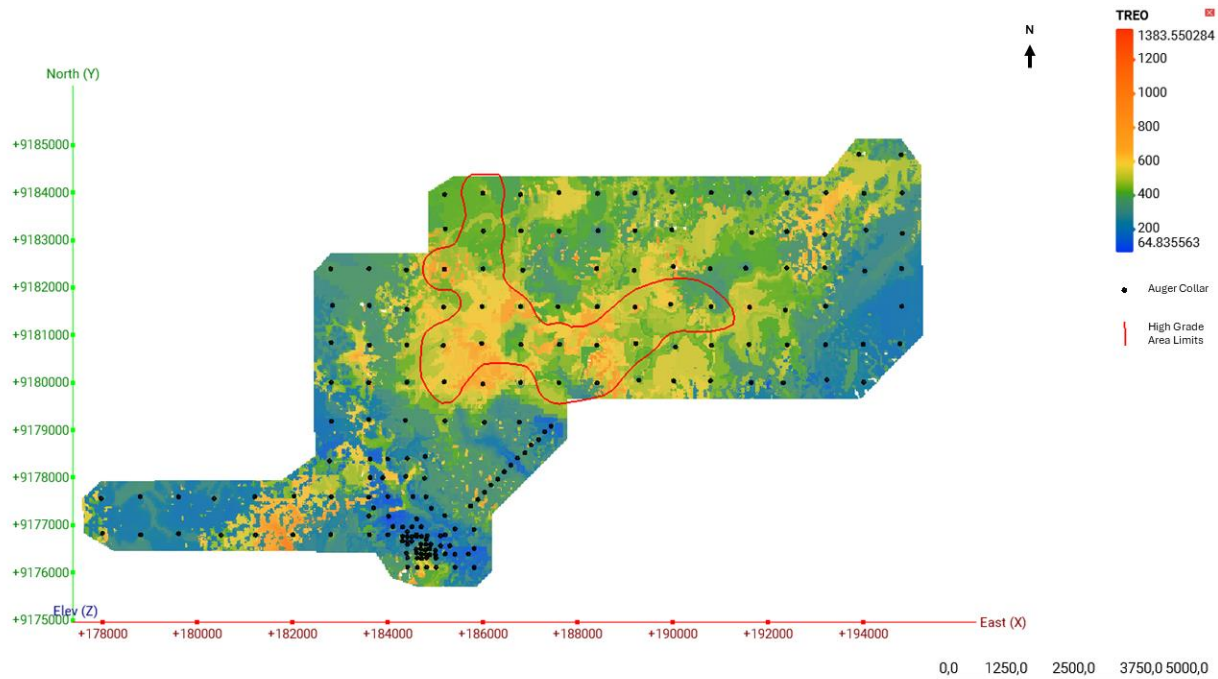


Figure 5. Map for the Resource Area with grade distribution plan (block model) of Ema showing a high-grade zone where infill drilling is planned.



## Geology and mineralisation

The REE mineralisation at EMA is contained within the tropical lateritic weathering profile developed on top of felsic volcanic and volcanoclastic rocks (rhyolites and ignimbrites).

The REE mineralisation is concentrated in the weathered portion of the profile where it has dissolved from primary rare earth minerals such as monazite and xenotime, migrating downwards through the regolith profile where it is adsorbed on to the neo-forming fine particles of aluminosilicate clays (e.g. kaolinite, illite, smectite). This adsorbed REE is the target for extraction and production of REO.

## Drilling techniques

Auger drilling was completed by a hand-held-mechanical auger with a 3" auger bit. The drilling is an open hole technique where there is a chance of contamination from surface and other parts of the auger hole. All holes were drilled vertically and not oriented.

The maximum depth achieved with the powered auger was 31m, and this was only achievable if the hole did not encounter fragments of rocks/boulders etc. sitting within the weathered profile, and/or the water table. Final depths were recorded according to the length of the rods in the hole.

## Sampling and Sub-sampling Techniques

Holes were sampled by BCM's exploration team, with sampling being supervised by a BCM geologist and/or field assistants. Every 1-metre sample was collected in a raffia bag in the field and transported to the exploration shed to be dried in the sun, prior to homogenisation.

Samples were homogenised and subsequently riffle split with about 1 kg sent to SGS for analysis and a similar amount stored.

Additional sample preparation for the auger samples was conducted at SGS Vespasiano (greater Belo Horizonte) comprising oven drying, crushing of entire sample to 75% < 3mm followed by rotary splitting and pulverisation of 250 to 300 grams at 95% minus 150#

The <3mm rejects and the 250-300 grams pulverised sample were returned to BCM for storage.

All samples generated have identification that is registered in internal spreadsheets. This identification is linked to the name of the hole and interval to which the sample belongs.

## Sample Analysis Method

The assay technique used for REE analysis was Lithium Metaborate Fusion ICP-MS (SGS code ICP95A and IMS95A). This is a recognised industry standard analysis technique for REE suite and associated elements. Elements analysed at ppm levels included the following minerals and elements:

Ba	Ce	Co	Cs	Dy	Er	Eu	Ga
Gd	Hf	Ho	La	Lu	Nb	Nd	Pr
Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm
U	V	W	Y	Yb	Zr	Zn	Co
Cu	Ni						

The sample preparation and assay techniques used are industry standard and provide total analysis.

The ICP95A reports the major elements oxides used to calculate the Chemical Index of Alteration (CIA) at % levels included:

Al <sub>2</sub> O <sub>3</sub>	CaO	Cr <sub>2</sub> O <sub>3</sub>	F <sub>2</sub> O <sub>3</sub>
K <sub>2</sub> O	MgO	MnO	Na <sub>2</sub> O
P <sub>2</sub> O <sub>5</sub>	SiO <sub>2</sub>	TiO <sub>2</sub>	

### Estimation Methodology

Geological modelling classified weathering domains based on the Chemical Index of Alteration (CIA; Nesbitt & Young, 1982). GE21 used Leapfrog Geo and Edge software for 3D modelling, with domains based on weathering horizons defined as follows (**Error! Reference source not found.**):

- High Weathering: CIA ≥ 93%
- Intermediate Weathering: CIA ≥ 82%
- Low Weathering: CIA < 82%
- Fresh Rock: EOH of auger drilling

Most drillholes did not cross the complete weathering profile; with some holes stopping in the pedolith or saprolite domains due to the limitations of the auger for deep drilling and for drilling in semi-compact rocks. The top of fresh rock horizon was assumed at the end of each auger drilling. Figure 4 shows a perspective view of the geological model.

### Quality assurance and quality control

One blank sample plus one certified reference material (standard) sample and one field duplicate sample were inserted by BCM into each 25-sample sequence.

Standard laboratory QA/QC procedures were followed, including inclusion of standard, field duplicate and blank samples.

### Data analysis

GE21 developed data analyses, including descriptive statistics for light and heavy REE's by domain, exploratory data analysis, and geostatistical analysis. They identified outliers as breaks in probability plot distribution curves for each element by domain (Table 4).



Table 4. Ema-Ema east Exploratory data analysis for HW, IW and LW domains

Domain	Element	Number of Samples	Mean	Standard Deviation	Coefficient of Variation	Variance	Minimum	Lower Quartile	Median	Upper Quartile	Maximum
HW	La	729	45.31	41.65	0.92	1734.62	0.05	15.5	30.2	63	247.7
	Ce	729	143.99	121.44	0.84	14748.16	9.9	52.6	127.2	201.4	1207.6
	Pr	729	9.17	8.95	0.98	80.06	0.025	2.86	6.16	12.51	57.88
	Nd	729	30.09	30.37	1.01	922.39	0.05	9.6	19.9	41.2	214.4
	Sm	729	5.56	4.92	0.88	24.17	0.05	2.3	3.9	7.5	37.1
	Eu	729	0.79	0.67	0.85	0.45	0.025	0.39	0.58	0.98	6.24
	Gd	729	5.28	2.98	0.56	8.87	0.025	3.51	4.56	6.22	27.45
	Tb	729	0.94	0.40	0.43	0.16	0.025	0.72	0.92	1.1	3.97
	Dy	729	6.61	2.25	0.34	5.05	0.06	5.36	6.61	7.58	23.59
	Ho	729	1.36	0.46	0.34	0.21	0.025	1.1	1.36	1.55	4.69
	Er	729	4.31	1.28	0.30	1.63	0.17	3.65	4.31	4.83	13.41
	Tm	729	0.66	0.19	0.28	0.03	0.025	0.57	0.65	0.74	1.89
	Yb	729	4.61	1.21	0.26	1.47	0.2	4	4.6	5.1	12
	Lu	729	0.68	0.19	0.27	0.03	0.025	0.58	0.68	0.75	1.81
	Y	729	35.99	11.72	0.33	137.43	0.025	29.44	35.82	41.25	117.41
IW	La	1254	81.45	67.49	0.83	4554.79	0.05	29.1	66.3	111.4	495.2
	Ce	1254	180.01	110.69	0.61	12253.05	0.4	117.6	169.3	215.2	1074.5
	Pr	1254	18.13	16.05	0.89	257.52	0.025	5.82	14.26	24.77	120.15
	Nd	1254	61.83	56.22	0.91	3160.98	0.05	18.4	46.8	84.8	407.1
	Sm	1254	10.63	9.35	0.88	87.50	0.05	3.6	8.1	14.2	68
	Eu	1254	1.40	1.23	0.88	1.52	0.025	0.53	1.04	1.84	8.79
	Gd	1254	8.04	5.70	0.71	32.43	0.025	4.21	6.55	9.78	46.95
	Tb	1254	1.20	0.66	0.55	0.44	0.025	0.82	1.06	1.39	6.17
	Dy	1254	7.79	3.48	0.45	12.09	0.025	5.96	7.16	8.7	35.08
	Ho	1254	1.55	0.65	0.42	0.43	0.025	1.21	1.42	1.73	6.76
	Er	1254	4.87	1.89	0.39	3.57	0.025	3.96	4.51	5.31	20.95
	Tm	1254	0.72	0.27	0.37	0.07	0.025	0.59	0.68	0.79	2.84
	Yb	1254	5.08	1.76	0.35	3.09	0.05	4.2	4.8	5.5	20.7
	Lu	1254	0.74	0.26	0.36	0.07	0.025	0.6	0.7	0.81	2.93
	Y	1254	41.20	17.27	0.42	298.33	0.025	32.27	38.23	45.61	191.28
LW	La	232	134.90	84.45	0.63	7132.56	7.1	72.6	119.5	192.3	447.2
	Ce	232	178.43	87.00	0.49	7568.29	37.3	136.9	160.9	197.6	668.4
	Pr	232	31.74	21.37	0.67	456.47	1.47	16.23	26.82	44.8	105.01
	Nd	232	111.75	77.35	0.69	5983.36	5.8	56.1	98.1	162.5	394.1
	Sm	232	19.71	14.02	0.71	196.66	1.2	8.9	17	28.2	75.2
	Eu	232	2.73	1.97	0.72	3.87	0.025	1.33	2.31	3.85	11.09
	Gd	232	14.55	10.08	0.69	101.65	2.08	7.32	12.09	19.76	60.83
	Tb	232	1.95	1.25	0.64	1.55	0.26	1.03	1.66	2.64	7.83
	Dy	232	11.71	6.92	0.59	47.84	3.4	6.47	9.91	14.95	42.65
	Ho	232	2.29	1.31	0.57	1.71	0.7	1.28	1.98	2.84	8.28
	Er	232	6.97	3.78	0.54	14.27	2.74	4	5.93	8.45	23.69
	Tm	232	1.02	0.52	0.51	0.27	0.39	0.63	0.88	1.24	3.25
	Yb	232	7.00	3.32	0.47	11.01	3.1	4.5	6	8.4	21.8
	Lu	232	1.04	0.50	0.48	0.25	0.37	0.67	0.93	1.24	3.12
	Y	232	61.93	36.85	0.60	1357.78	17.92	33.51	52.49	79.08	226.06

### Bulk density

The density applied in the block model was defined from the mean of values obtained from field density tests of oxide material at a 2-metre depth from pits, determined by the Sand Replacement Method. The sg applied to all volumes of categories and units mineralised within the regolith was 1.34g/cc.

An extremely conservative global specific gravity (SG) applied to estimated volumes, based on data obtained from shallow surface pits. Future data to be collected within the deeper, less intensively

weathered higher grade horizon is expected to result in significantly higher sg's which will further increase MRE tonnages.

### Block model and grade estimation

The block model dimensions were based on average drilling spacing, with sub-blocks used for adhesion between modelled solids and the selective mining unit.

The 3D block model was constructed for resource estimation purposes in Leapfrog Edge™ software. The parent block dimensions were 100m x 100m x 4m, sub-blocked to 25m (X) x 25m (Y) x 2m (Z).

Variographic analysis was performed for grouped domains (HW, IW and LW) and elements (TREO), with experimental variograms constructed in different directions. No continuity differences were observed in different directions in the horizontal plane; therefore, horizontal/omnidirectional experimental variograms were chosen (Table 5). Mineral resource was estimated using ordinary kriging (

Table 6. ) and validated the grade estimate through visual analysis and global and local bias analysis using the nearest neighbour as the comparison estimate.

*Table 5. Variogram Parameters for HW, IW and LW domains*

Structure		Normalized Sill	Model	Range (Major)	Range (Semi Major)	Range (Minor)
Nugget		0.08	-	-	-	-
Structure 1		0.92	Spherical	200	200	10
Total sill		1	-	-	-	-

*Table 6. Ordinary Kriging Strategy*

Kriging Pass	Horizontal Range (m)	Vertical Range (m)	Max Samples per DH	Max Samples	Min Samples
P1	100	10	2	12	3
P2	200	20	2	12	3
P3	400	40	2	12	3

### Cut-off grades, including basis for the selected Cut-off Grade

The selection of the TREO cut-off grade (500ppm) used for reporting was based on the experience of the Competent Person. Given the inferred resource and in the absence of any development studies, this cut-off grade was selected based on a peer review of publicly available information from more advanced projects with comparable mineralisation styles (i.e. clay-hosted rare earth mineralisation) and comparable conceptual processing methods.

### Mining and metallurgical methods / material modifying factors

No specific mining or metallurgical methods or parameters were incorporated into the modelling process.

### Mineral Resource classification and reporting

The Mineral Resource for Ema Project have been classified as Inferred.

The Competent Persons are satisfied that the classification is appropriate based on the current level of confidence in the data, drill hole spacing, geological continuity, variography, and bulk density data available for the project.

### Future Proposed Work for H2 2024

- Further infill drilling to identify higher TREO grades, with deeper drilling to incorporate high grade zones in the MRE;
- Closer spaced drilling to improve the MRE classification and quality;
- Further measurement of specific gravity (SG) in the mineralised horizons and additional metallurgical leaching tests in Brazil and Australia.

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

### References

<sup>1</sup>Company Research Reports Barrenjoey - Equity Research Initiation on Meteoric Resources NL 4<sup>th</sup> December 2023

### Enquiries

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### About Brazilian Critical Minerals Ltd

Brazilian Critical Minerals Limited (BCM) is a unique mineral exploration and mineral processing technology company listed on the Australian Securities Exchange.

Its major exploration focus is Brazil, mainly in the southern Amazon, a region BCM believes is vastly underexplored with high potential for the discovery of world class gold-PGM, base metal and Ionic Adsorbed Clay (IAC) Rare Earth Element deposits. BCM's key assets are the Três Estados and Ema gold-PGM projects and the iREE projects at Ema, Ema East and Apui. The company has 718km<sup>2</sup> of exploration tenements within the Colider Group and adjacent sediments, a prospective geological environment for gold, PGM, base metal and iREE deposits.

BCM is also developing an environmentally friendly and sustainable beneficiation process to extract precious metals using a unique bio leach process. This leading-edge process, that extracts precious metals naturally, is being developed initially for the primary purpose of economically extracting Platinum Group metals from the Três Estados mineral deposit. It is expected that such technology will be transferable and relevant to many other PGM projects. BCM believes that this processing technology is

critical in the environmentally timely PGM space and supports a societal need to move towards a carbon neutral economy.

### **Competent Persons Statement**

The information in this announcement relates to previously reported exploration results for the Ema/Ema East Project released by the Company to ASX on 22 May 2023, 17 July 2023, 19 July 2023, 31 July 2023, 13 Sep 2023, 19 Oct 2023, 06 Dec 2023, 06 Feb 2024, 22 Feb 2024, 13 Mar 2024 and 02 Apr 2024. The Company confirms that is not aware of any new information or data that materially affects the information included in the above-mentioned releases.

The information in this announcement that relates to the Ema/Ema East Mineral Resource is based on and fairly represents information compiled by Mr. Antonio de Castro (acts as BCM's Senior Consulting Geologist through the consultancy firm, ADC Geologia Ltda) and Mr. Leonardo Rocha, (employee of GE21 Consultoria Mineral Ltda). Mr. de Castro is a member of the Australasian Institute of Mining and Metallurgy, and Mr. Rocha is a member of Australasian Institute of Geoscientists. Both have sufficient experience of relevance to the styles of mineralisation and types of deposits under consideration, and to activities undertaken to qualify as Competent Persons as defined in the 2012 Edition of the Joint Ore Reserve Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Specially, Mr. de Castro is the Competent Person for the database (including all drilling information), the geological and mineralisation model plus completed the site visits with Mr. Rocha. Mr. Rocha is the Competent Person for the construction of the 3D geology/mineralisation model plus the estimation. Mr. de Castro and Mr. Rocha consent to the inclusion in this report of the matters on their information in the form and context in which they appear.

**Appendix 1 - The following Table and Sections are provided to ensure compliance with JORC Code (2012 Edition).**

**JORC (2012) Table 1 – Section 1: Sampling Techniques and Data**

Item	JORC code explanation	Comments
<b>Sampling Techniques</b>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg cut channels. random chips. or specific specialised industry standard measurement tools appropriate to the minerals under investigation. such as down hole gamma sondes. or handheld XRF instruments. etc). These examples should not be taken as limiting the broad meaning of sampling.</li> <li>Include reference to measures taken to ensure sample representativity 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 (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required. such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<ul style="list-style-type: none"> <li>Holes were sampled using a powered auger drill machine (open hole) conducted by BCM's exploration team.</li> <li>Sampling was supervised by a BCM geologist or field assistants.</li> <li>Every 1-metre sample was collected in a raffia bag in the field and transported to the exploration shed to be dried in the sun. prior to homogenisation.</li> <li>Samples were homogenised and subsequently riffle split with about 1 kg sent to SGS for analysis and a similar amount stored.</li> <li>1 certified blank sample. 1 certified reference material (standard) samples and 1 field duplicate sample were inserted into the sample sequence for each 25 samples.</li> </ul>
<b>Drilling Techniques</b>	<ul style="list-style-type: none"> <li>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-</li> </ul>	<ul style="list-style-type: none"> <li>Auger drilling was completed by a hand held-mechanical auger with a 3" auger bit. The drilling is an open hole. meaning there is a significant chance of contamination from surface and other parts of the auger hole. Holes are vertical and not oriented.</li> </ul>

Item	JORC code explanation	Comments
	sampling bit or other type. whether core is oriented and if so. by what method. etc).	<ul style="list-style-type: none"> <li>The maximum depth achieved with the powered auger was 31m, and this was only achievable if the hole did not encounter fragments of rocks/boulders etc. sitting within the weathered profile, and/or the water table. Final depths were recorded accordingly to the length of the rods in the hole.</li> </ul>
<b>Drill Sample Recovery</b>	<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>	<ul style="list-style-type: none"> <li>No recoveries were recorded.</li> <li>The operator observes the volume of each metre and notes any discrepancy.</li> <li>When recovery is below 75% in two sequential one metre interval, the field crew stops the drill hole.</li> <li>No relationship is believed to exist between recovery and grade.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean. channel. etc) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>All holes were logged by BCM geologists or field technicians. detailing the colour. weathering. alteration. texture and any geological observations. Care is taken to identify transported cover from in-situ saprolite/clay zones and the moisture content. Logging was done to a level that would support a Mineral Resource Estimate.</li> <li>Qualitative logging with systematic photography of the stored box.</li> <li>The entire auger hole is logged.</li> </ul>
<b>Sub-Sampling Techniques and Sampling Procedures</b>	<ul style="list-style-type: none"> <li>If core. whether cut or sawn and whether quarter. half or all core taken.</li> <li>If non-core. whether riffled. tube sampled. rotary split. etc and whether sampled wet or dry.</li> <li>For all sample types. the nature. quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling</li> </ul>	<ul style="list-style-type: none"> <li>Auger sampling procedure is completed in the exploration shed in Apui.</li> <li>The entire one metre sample is bagged on site in a raffia bag which is transported to the exploration shed where it is naturally dried prior to homogenisation then quartered to about 1kg to go to SGS and another 1kg to store on site.</li> <li>Sample preparation for the auger samples was conducted at SGS Vespasiano (greater Belo Horizonte-MG) comprising oven drying. crushing of entire sample to 75% &lt; 3mm followed by rotary</li> </ul>



Item	JORC code explanation	Comments																																																				
	<p>stages to maximise representativity of samples.</p> <ul style="list-style-type: none"><li>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.</li><li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li></ul>	<p>splitting and pulverisation of 250 to 300 grams at 95% minus 150#</p> <ul style="list-style-type: none"><li>The &lt;3mm rejects and the 250-300 grams pulverised sample were returned to BCM for storage.</li></ul>																																																				
Quality of Assay Data and Laboratory Tests	<ul style="list-style-type: none"><li>The nature. quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li><li>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.</li><li>Nature of quality control procedures adopted (eg standards. blanks. duplicates. external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established</li></ul>	<ul style="list-style-type: none"><li>1 blank sample. 1 certified reference material (standard) sample and 1 field duplicate sample were inserted by BCM into each 25-sample sequence.</li><li>Standard laboratory QA/QC procedures were followed. including inclusion of standard. duplicate and blank samples.</li><li>The assay results of the standards fall within acceptable tolerance limits and no material bias is evident.</li><li>The assay technique used for REE was Lithium Metaborate Fusion ICP-MS (SGS code ICP95A and IMS95A). This is a recognised industry standard analysis technique for REE suite and associated elements. Elements analysed at ppm levels:<table><tr><td>Ba</td><td>Ce</td><td>Co</td><td>Cs</td><td>Dy</td><td>Er</td><td>Eu</td><td>Ga</td></tr><tr><td>Gd</td><td>Hf</td><td>Ho</td><td>La</td><td>Lu</td><td>Nb</td><td>Nd</td><td>Pr</td></tr><tr><td>Rb</td><td>Sm</td><td>Sn</td><td>Sr</td><td>Ta</td><td>Tb</td><td>Th</td><td>Tm</td></tr><tr><td>U</td><td>V</td><td>W</td><td>Y</td><td>Yb</td><td>Zr</td><td>Zn</td><td>Co</td></tr><tr><td>Cu</td><td>Ni</td><td></td><td></td><td></td><td></td><td></td><td></td></tr></table><p>The sample preparation and assay techniques used are industry standard and provide total analysis.</p><p>The ICP95A reports the major elements oxides used to calculate the Chemical Index of Alteration (CIA) at % levels:<table><tr><td>Al2O3</td><td>CaO</td><td>Cr2O3</td><td>F2O3</td></tr><tr><td>K2O</td><td>MgO</td><td>MnO</td><td>Na2O</td></tr><tr><td>P2O5</td><td>SiO2</td><td>TiO2</td><td></td></tr></table></p></li><li>The SGS laboratory used for the RRE assays is ISO 9001 and 14001 and 17025 accredited.</li></ul>	Ba	Ce	Co	Cs	Dy	Er	Eu	Ga	Gd	Hf	Ho	La	Lu	Nb	Nd	Pr	Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm	U	V	W	Y	Yb	Zr	Zn	Co	Cu	Ni							Al2O3	CaO	Cr2O3	F2O3	K2O	MgO	MnO	Na2O	P2O5	SiO2	TiO2	
Ba	Ce	Co	Cs	Dy	Er	Eu	Ga																																															
Gd	Hf	Ho	La	Lu	Nb	Nd	Pr																																															
Rb	Sm	Sn	Sr	Ta	Tb	Th	Tm																																															
U	V	W	Y	Yb	Zr	Zn	Co																																															
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Al2O3	CaO	Cr2O3	F2O3																																																			
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P2O5	SiO2	TiO2																																																				

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		<ul style="list-style-type: none"> <li>Analytical standard for REE ITAK-705 was used as CRM material in the batches sent to SGS.</li> <li>The assay results for the standards were consistent with the certified levels of accuracy and precision and no bias is evident.</li> <li>The blanks used contain some REE. with critical elements Ce. Nd. Dy and Y present in small quantities.</li> <li>Duplicate samples were allocated separate sample numbers and submitted with the same analytical batch as the primary sample. Variability between duplicate results is considered acceptable and no sampling bias is evident.</li> <li>Laboratory inserted standards. blanks and duplicates were analysed as per industry standard practice. There is no evidence of bias from these results.</li> </ul>
<b>Verification of Sampling and Assaying</b>	<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>	<ul style="list-style-type: none"> <li>Apart from the routine QA/QC procedures by the Company and the laboratory. there was no other independent or alternative verification of sampling and assaying procedures.</li> <li>Analytical results for REE were supplied digitally. directly from the SGS laboratory in Vespasiano to the BBX's Exploration Manager in Rio de Janeiro.</li> <li>No twinned holes were used.</li> <li>Geological data was logged onto paper and transferred to Excel spreadsheets at end of the day and then transferred into the drill hole database. Microsoft Access is used for database storage and management and incorporates numerous data validation and data integrity checks. All assay data is imported directly into the Microsoft Access database.</li> <li>No adjustments were made to the data.</li> <li>All REE assay data received from the laboratory in element form is unadjusted for data entry.</li> <li>Conversion of elements 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/resources/element-to-stoichiometric-oxide-conversion-factors">https://www.jcu.edu.au/advanced-analytical-centre/resources/element-to-stoichiometric-oxide-conversion-factors</a>).</li> </ul>

Item	JORC code explanation	Comments		
		Element ppm	Conversion Factor	Oxide Form
		Ce	1.2284	CeO2
		Dy	1.1477	Dy2O3
		Er	1.1435	Er2O3
		Eu	1.1579	Eu2O3
		Gd	1.1526	Gd2O3
		Ho	1.1455	Ho2O3
		La	1.1728	La2O3
		Lu	1.1371	Lu2O3
		Nd	1.1664	Nd2O3
		Pr	1.2082	Pr6O11
		Sm	1.1596	Sm2O3
		Tb	1.1762	Tb4O7
		Tm	1.1421	Tm2O3
		Y	1.2699	Y2O3
		Yb	1.1387	Yb2O3
		<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>TREO (Total Rare Earth Oxide) = La2O3 + CeO2 + Pr6O11 + Nd2O3 + Sm2O3 + Eu2O3 + Gd2O3 + Tb4O7 + Dy2O3 + Ho2O3 + Er2O3 + Tm2O3 + Yb2O3 + Y2O3 + Lu2O3</p> <p>LREO (Light Rare Earth Oxide) = La2O3 + CeO2 + Pr6O11 + Nd2O3 + Sm2O3 + Eu2O3</p> <p>HREO (Heavy Rare Earth Oxide) = Gd2O3 + Tb4O7 + Dy2O3 + Ho2O3 + Er2O3 + Tm2O3 + Yb2O3 + Y2O3 + Lu2O3</p> <p>MREO (Magnetic Rare Earth Oxide) = Nd2O3 + Pr6O11 + Tb4O7 + Dy2O3</p> <p>NdPr = Nd2O3 + Pr6O11</p> <p>DyTb = Dy2O3 + Tb4O7</p>		
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>	<ul style="list-style-type: none"> <li>Auger collar locations were surveyed initially by GPS, at an estimated accuracy of 2m.</li> <li>Posterior to the end of the drilling campaign, the collar locations were picked up by a licensed surveyor using a Trimble total station (+/- 5cm), referenced to a government survey point. All drill holes have been checked spatially in 3D.</li> <li>The grid system used for all data types in a UTM projection is SIRGAS Zone 21 Southern Hemisphere. No local grids are used.</li> </ul>		

Item	JORC code explanation	Comments
		<ul style="list-style-type: none"> <li>The auger holes collar coordinates for the holes used in the resource estimation were surveyed to sub-decimetres accuracy by a licenced surveyor.</li> </ul>
<b>Data Spacing and Distribution</b>	<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>	<ul style="list-style-type: none"> <li>Auger holes were over 200m to 800m apart, designed for testing iREE mineralization in the regolith over the mapped Proterozoic volcanic rocks – rhyolites and ignimbrites.</li> <li>The data spacing and distribution is sufficient to establish the level of REE elements present in the target area and its continuity along the regolith profile appropriate for a Mineral Resource.</li> <li>No sample composition was applied.</li> </ul>
<b>Orientation of Data in relation to Geological Structure</b>	<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>	<ul style="list-style-type: none"> <li>The location and depth of the sampling is appropriate for the deposit type.</li> <li>Relevant REE values are compatible with the exploration model for ionic REEs.</li> <li>No relationship between mineralisation and drilling orientation is known at this stage.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>The auger samples in sealed plastic bags were sent directly to SGS by bus and then airfreight. The Company has no reason to believe that sample security poses a material risk to the integrity of the assay data.</li> </ul>
<b>Audit or Reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>The sampling techniques and data have been reviewed by the Competent Person and are found to be of industry standard.</li> <li>As part of the Mineral Resource estimation, GE21 reviewed the documented practices employed by BCM with respect to the powered auger drilling, sampling, assaying and QAQC, and believes that the processes are appropriate, and that the data is considered inside acceptance limits and in accordance with best practices of mining industry and suitable for use in Mineral Resource estimation.</li> </ul>

## JORC (2012) Table 1 - Section 2: Reporting of Exploration Results

Criteria	JORC code explanation	Commentary
<b>Mineral Tenement and Land Tenure Status</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The Ema and Ema East leases are 100% owned by BCM with no issues in respect to native title interests. historical sites. wilderness or national park and environmental settings.</li> <li>GE21 is not aware of any impediment to obtain a licence to operate in the area.</li> </ul>
<b>Exploration done by Other Parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>No exploration by other parties has been conducted in the region.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type. geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The REE mineralisation at EMA is contained within the tropical lateritic weathering profile developed on top of volcanic rocks – rhyolites and ignimbrites.</li> <li>The REE mineralisation is concentrated in the weathered profile where it has dissolved from the primary mineral. such as monazite and xenotime, then migrates downwards where is adsorbed on to the neo-forming fine particles of aluminosilicate clays (e.g. kaolinite. illite. smectite).</li> <li>This adsorbed REE is the target for extraction and production of REO.</li> </ul>
<b>Drill Hole Information</b>	<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</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Drill results and hole locations relating to the current mineral resource estimate have been released by BCM on 22 May 2023, 17 July 2023, 19 July 2023, 31 July 2023, 13 Sep 2023, 19 Oct 2023, 06 Dec 2023, 06 Feb 2024, 22 Feb 2024, 13 Mar 2024 and 02 Apr 2024.</li> <li>All Drill-holes are vertical and did not have a down-hole survey due the total length of less than 50m.</li> </ul>

Criteria	JORC code explanation	Commentary
	<ul style="list-style-type: none"> <li>– 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> <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>	
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>• 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.</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>	<ul style="list-style-type: none"> <li>• Weighted averages were calculated for all intercepts.</li> <li>• 500ppm TREO cut-off grade was applied to define the relevant intersections.</li> <li>• No metal equivalent values reported.</li> </ul>



Criteria	JORC code explanation	Commentary
<b>Relationship between mineralization widths and intercepted lengths</b>	<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 (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Significant values of REE were reported for the auger samples.</li> <li>Mineralisation orientation is not known at this stage, although assumed to be flat.</li> <li>The downhole depths are reported, true widths are not known at this stage.</li> </ul>
<b>Diagrams</b>	<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>	<ul style="list-style-type: none"> <li>Drillhole locations and diagrams are presented in the relevant previous ASX announcements related to the exploration results.</li> </ul>
<b>Balanced reporting</b>	<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>	<ul style="list-style-type: none"> <li>Relevant REE mineralisation with grades higher than 500ppm TREO in auger holes was reported.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations;</li> </ul>	<ul style="list-style-type: none"> <li>No other significant exploration data has been acquired by the Company.</li> </ul>

Criteria	JORC code explanation	Commentary
	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.	
Further Work	<ul style="list-style-type: none"><li>• The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li><li>• Diagrams clearly highlighting the areas of possible extensions. including the main geological interpretations and future drilling areas. provided this information is not commercially sensitive.</li></ul>	<ul style="list-style-type: none"><li>• Further Infill drilling across the 15Ha area with high grades TREO grades with deeper drilling to incorporate high grade zones in the MRE and improve the MRE classification and quality.</li><li>• Measure specific densities in the mineralized horizons</li><li>• Metallurgical leaching tests</li></ul>

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**JORC (2012) Table 1 – Section 3: Estimation and Reporting of Mineral Resources**

Criteria	JORC code explanation	Comments
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>The Ema &amp; Ema East drilling database was received in CSV format, and GE21 produced the Access datasets.</li> <li>GE21 carried out an electronic validation of the databases with Leapfrog Geo software. No errors, such as gaps or overlapping data, or other material inconsistencies were found.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A site visit was undertaken by Mr Leonardo Rocha to the Ema/Ema East Project between January 15<sup>th</sup> to 24<sup>th</sup> 2024.</li> <li>Competent Person, Mr de Castro has planned, managed and/or conducted work programmes, including the drilling, for the Ema/Ema East Project. He has visited site on numerous occasions.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>Confidence on the geological interpretation of the rare earth mineralization in saprolite rocks is very high as exploration activities were made using a regular drill spacing and conducted the assays in addition of the REE of the major oxides (ICP95A) required to define the Chemical Index of Alteration (CIA).</li> <li>Mineralisation, geological and oxidation domains were set up using Leapfrog™ Geo software implicit method based on a geological code on the database, applying the CIA.</li> <li>GE21 interpreted the following geological zones and grades ore zones: HW (High Weathering) with CIA <math>\geq 93</math>, IW (Intermediate Weathering) with CIA <math>\geq 82</math>, LW (Low weathering) with CIA <math>&lt; 82</math> and Fresh Rock at the EOH (End of Hole).</li> </ul>

Criteria	JORC code explanation	Comments
		<ul style="list-style-type: none"> <li>For the REE mineralisation hosted by clays, which is difficult to visually identify in the drilling, the CIA is critical.</li> <li>Alternative interpretations are unlikely to have a material impact on the global resource volumes.</li> <li>All wireframes from geological model were cut by the topographic surface.</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</li> </ul>	<ul style="list-style-type: none"> <li>The mineralisation has been restrained in depth considering the EOH of the auger drilling;</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> </ul>	<ul style="list-style-type: none"> <li>Three 3D block model were constructed for resource estimation purposes. The block dimensions were defined as 100m x 100m x 4m and minimum sub-block dimensions were defined as 25 x 25 x 2m to assure a good adherence between the geological model and block model.</li> <li>The block size is based on an assessment of the grade continuity.</li> <li>Grades were individually estimated using ordinary kriging parent cell estimation for.</li> <li>Grade estimation was by Ordinary Kriging using Leapfrog Edge™ software.</li> <li>The visual and volumetric comparison between the geological wireframes and the block model shows a good fit for modelled units, with volumetric ratio (wireframe volume/block model volume) values inside the acceptable variation limit (98% to 103%).</li> <li>No top-cuts (capping) or cut-offs were applied based on the results of an exploratory data analysis (EDA).</li> <li>Search ellipse ranges were based on the results of the variography along with consideration of the drillhole spacing, with the same search neighbourhood parameters used for all elements to maintain the metal balance and</li> </ul>

Criteria	JORC code explanation	Comments
	<ul style="list-style-type: none"> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	<p>correlations between elements. A three-pass search strategy was used (i.e. if initial search criteria are not met, an expanded search ellipse is used). A minimum of 3 and maximum of 12 samples, considering a maximum of 2 samples by drillhole, was applied on the neighbour search strategy for ordinary kriging interpolation.</p> <ul style="list-style-type: none"> <li>Grade estimates were validated against nearest neighbouring composites. The nearest neighbour was applied as the comparative value for the kriging estimates using NN-Check statistical analysis and Swath Plots along three coordinate axis. Global biases and local biases were checked, and values were considered inside acceptance limits.</li> <li>A combined TREO grade was calculated using the estimated individual grades.</li> <li>There is no operating mine, and no production data is currently available.</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	<ul style="list-style-type: none"> <li>All tonnages have been estimated as dry tonnages.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>The basis of the adopted cut-off grade(s) or quality parameters applied</li> </ul>	<ul style="list-style-type: none"> <li>A set of cut-offs were applied on sample assay results and considered on the mineralisation zone modelling interpretation. Internal waste grades were locally included in mineralised intercepts.</li> <li>The Mineral Resource has been reported with cut-off grade of 500ppm TREO application directly over the block model. A pit optimisation with assumptions based on REO prices, metallurgical recoveries and operating costs was applied as the limit of mineral resource classification.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always</li> </ul>	<ul style="list-style-type: none"> <li>A conceptual mining study has been completed to support the open cut for the Ema/Ema East.</li> <li>Mining of the open cut deposit is assumed to use conventional</li> </ul>

Criteria	JORC code explanation	Comments
	necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	<p>equipment without the need of blasting.</p> <ul style="list-style-type: none"> <li>Pit optimisation results for mineral resource classification of the Ema are presented in the body of this report.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</li> </ul>	<ul style="list-style-type: none"> <li>Metallurgical test work is ongoing. Assumptions related to the metallurgical recoveries for the Mineral Resource grades were based on Aclara's Technical Report NI 43-101, 2023, and this value was applied for the pit optimisation study for Mineral Resource classification.</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this</li> </ul>	<ul style="list-style-type: none"> <li>It is assumed that mine waste and tailings can be stored on site, however no environmental or mining studies have been conducted at this stage.</li> <li>The Company will be required to obtain the necessary environmental permits and comply with environmental laws. GE21 does not have information about any factors that could affect the acquisition of environmental licences.</li> </ul>



Criteria	JORC code explanation	Comments
	should be reported with an explanation of the environmental assumptions made.	
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vughs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul style="list-style-type: none"> <li>The density applied in the block model was defined from the mean of values obtained from field density test of oxide material at 2-metre depth determined by Sand Replacement Method.</li> <li>Deeper pits will be required to acquire the density of deeper mineralized horizons.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul style="list-style-type: none"> <li>Basis for the mineral classification was the QAQC results, style and geometry of mineralisation, sampling grid size and density of information and mining process optimisation for mineral resources.</li> <li>The Mineral Resource has been classified as an Inferred Resource and it has been limited to the depth assessed by auger drilling.</li> <li>The Mineral Resource classification appropriately reflects the view of the Competent Person, who recommends a further infill drillhole campaign to increase the confidence level of the geological model and grade estimate. The Mineral Resource Grade Tonnage table is included in the body of this announcement.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of Mineral Resource estimates.</li> </ul>	<ul style="list-style-type: none"> <li>The current model has not been audited by an independent third party but has been subject to GE21 and BCM's internal peer review processes.</li> </ul>

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<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	<ul style="list-style-type: none"> <li>The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code.</li> <li>The statement relates to global estimates of tonnes and grade.</li> <li>The Mineral Resource has been validated both globally and locally against the input composite data using nearest neighbour estimate. Given the relatively sparse data at this stage of the project, the Inferred Resource estimate is considered to be globally accurate. Closer spaced drilling is required to improve the confidence of the short-range grade continuity.</li> <li>No production data is available for comparison with the Mineral Resource estimate at this stage.</li> </ul>