EMA REE PROJECT PRODUCES FIRST HIGH GRADE MREC FROM FIELD TRIAL

High grade MREC containing 50% TREO generated from low grade off-spec field solution

Highlights

- Ema Project delivers **export-quality** mixed rare earth carbonate **(**MREC) **grading 50% TREO**, validating rare earth recovery under real field conditions
- **First MREC batch successfully** generated using 1,000l of off-spec lower grade pregnant leach solution (PLS)
- **High grade MREC** produced from a low-grade feed solution **grading 326 ppm TREO**
- Recovered **~300g MREC** confirming effective rare earth precipitation despite **low feed grade**
- **Successful recovery** of rare earths demonstrated from **representative field PLS sample** under real conditions
- **ANSTO** has commenced follow-up tests to **optimise pH and carbonate dosing** parameters for improved efficiency
- Results confirm that the carbonate precipitation pathway is commercially viable, providing a strong foundation for optimisation work ahead of the DFS

Brazilian Critical Minerals Limited (**ASX: BCM**) ("**BCM**" or the "**Company**") is pleased to report the successful generation of a mixed rare earth carbonate product from low grade (PLS) recovered during the in-situ recovery (ISR) field trials at the Ema Project in Brazil. The outcome confirms that with simple adjustment of pH, a very high grade, export quality MREC can be generated meeting commercial specifications and confirming the viability of the in-situ scale up.

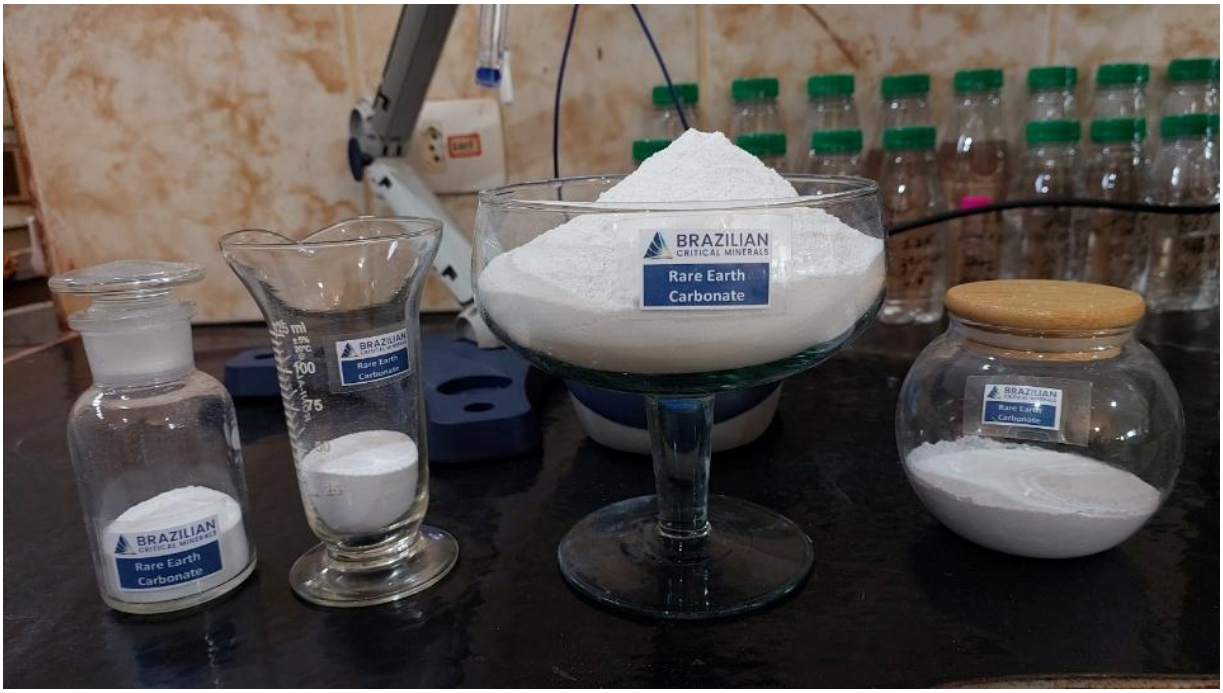

Figure 1. MREC product produced from low-grade field trial PLS containing on average approximately 50% by volume TREO (total rare earth oxides)

To view the video of MD, Andrew Reid, discussing this announcement, click on the link below

https://braziliancriticalminerals.com/link/rkDbLP

Andrew Reid, Managing Director, commented:

"Producing a 50% TREO carbonate from our first investigative batch is an excellent result and places BCM in line with commercial benchmarks for MREC quality. Anything >45% TREO is typically referred to as a high-grade MREC or export-quality carbonate and is consistent with commercial specifications for MREC products.

Production of the MREC followed the same simple process flow sheet utilising the same chemicals and same set of conditions to be used in commercial scale up resulting in a quality product ready for market.

This test also gave us insights into chemical handling, reaction and pH control and impurity removal. Given that BCM considered this an off-spec product, the final result of a high-grade rare-earth concentrated MREC containing low impurities gives us immense confidence as we move into full ANSTO optimisation trials."

Comments on Results

A sample of lower-grade PLS (averaging 326 ppm TREO) was collected before the target leaching pH (<4) had been achieved and was therefore considered *off-spec* by the Company and suitable for ad hoc testing requirements.

A series of laboratory tests and trials were completed to assess the following parameters:

- MgO and CO_2 handling;
- Reaction control and kinetics;
- $Mg(OH)_2$ production;
- Mg bicarbonate generation; and
- pH selection for impurity removal and MREC precipitation.

The results demonstrated high levels of impurity removal, fast reaction kinetics, and the successful production of a Mixed Rare Earth Carbonate (MREC) containing approximately 50% TREO by volume (Table 1).

Table 1. MREC basket price and composition on a 100% basis of REE elements collected from low-grade PLS from Ema field trials containing 326ppm TREO. **(Link: REE Prices as of 17.10.25)**

SPOT MREC BASKET		BCM Ema	
	Head Grade (ppm)	326	
	Reagent	Magnesium Sulfate	
	Time	ISR Field Trial	
	pH	<4	
	Product	MREC	
Oxide	Price (17.10.25) USD/kg	%	Basket $
La2O3	0.63	30.67	0.19
CeO2	1.6	23.12	0.37
Pr6O11	81.89	6.71	5.50
Nd2O3	81.04	26.67	21.61
Sm2O3	2.26	4.06	0.09
Eu2O3	24.88	0.48	0.12
Gd2O3	23.26	2.27	0.53
Tb4O7	982.4	0.24	2.38
Dy2O3	231.15	0.96	2.22
Ho2O3	71.88	0.18	0.13
Er2O3	46.79	0.40	0.19
Tm2O3	115.01	0.10	0.11
Yb2O3	14.09	0.35	0.05
Lu2O3	725.87	0.04	0.32
Y2O3	6.62	3.76	0.25
Basket Price US$/kg (TREO)		**34.05**	
Basket Price US$/kg (NdPrDyTb)		**31.70**	
MREO %		34.6	
TREO %		100	

The resulting MREC product in table 1. exhibits a favourable rare earth distribution, yielding a strong economic basket price comparable to or exceeding that of higher-grade feed sources. This indicates that the value lies not only in the grade of the feed but also in the efficiency of the recovery process and the composition of the rare earth elements recovered. Overall, the ability to transform low-grade input into high-value output underscores the scalability and commercial potential of the extraction and refining process at Ema.

The basket value in table 1 of USD$34.05/kg TREO compares favourably to the value of USD$30.93 used in the scoping study **(ASX: 26 Feb 25)** which defined a project with an NPV of USD$498 and IRR of 55%.

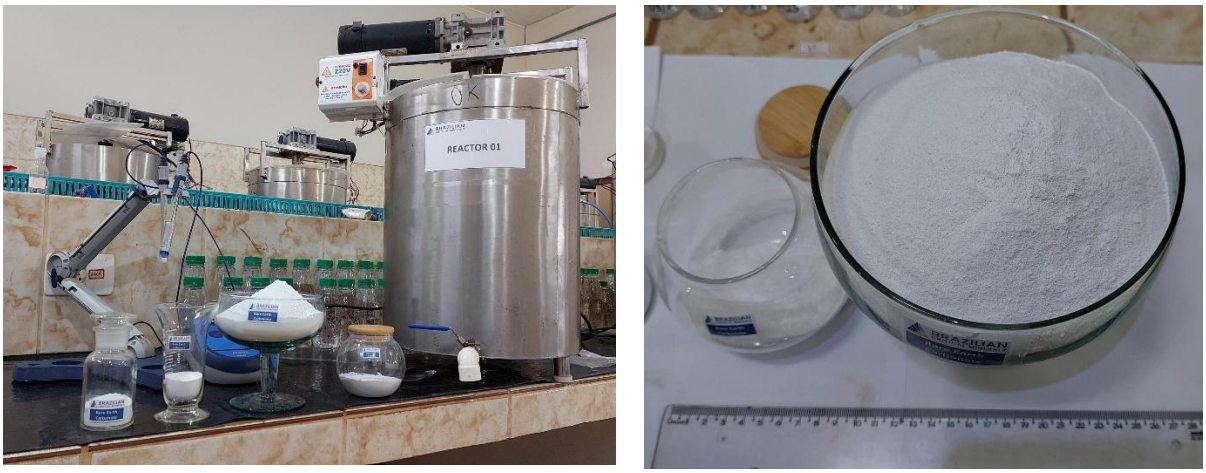

Figure 2. MREC precipitation cell (left) and final MREC product (right) produced at the BCM laboratories Brazil.

The testwork was designed and implemented to closely replicate the conditions expected in a commercial process plant and to establish a set of control parameters and data points for the upcoming ANSTO optimisation trials, which will determine final selectivity outcomes for the Definitive Feasibility Study (DFS).

The ease with which a high-grade MREC (~50% TREO) was generated marks the final step in validating the in-situ recovery (ISR) process. It also confirms the rapid kinetics and high efficiency with which the Ema mineralisation liberates rare earths through all extraction phases, and the degree of process control BCM can apply to minimise impurities to commercially acceptable levels.

This outcome represents a major advancement in BCM's MREC technology development, achieved within a short timeframe, and provides strong confidence for outcomes from the ANSTO testwork program over the coming weeks.

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

Enquiries

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

Its major exploration focus is Brazil, in the Apuí region, where BCM has discovered a world class Ionic Adsorbed Clay (IAC) Rare Earth Elements deposit. The Ema IAC project is contained within the 781 km² of exploration tenements within the Colider Group and adjacent sediments.

BCM has defined an indicated and inferred MRE of 943Mt of REE's with metallurgical recoveries averaging 68% MREO, representing some of the highest for these types of deposits anywhere in the world.

The Company has commenced a bankable feasibility study due for completion in Q1 2026, is engaging with regulators regarding permitting approvals and has commenced a resource extension drilling program which will inform the BFS economic analysis.

Ema REE Global Mineral Resource Estimate @COG 500ppm TREO

JORC Category	cut-off ppm TREO	Tonnes Mt	TREO ppm	NdPr ppm	DyTb ppm	MREO ppm	MREO: TREO %
Indicated	500	248	759	176	16	192	25
Inferred	500	695	701	165	16	181	26
Total	**500**	**943**	**716**	**168**	**16**	**184**	**26**

The information in this announcement relates to previously reported exploration results and mineral resource estimates for the Ema 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, 02 Apr 2024, 08 Oct 2024 19 Nov 2024, 21 Jan 2025, 17th Feb 2025, 26th Feb 2025, 10th March 2025, 13th March 2025, 28th April 2025, 27th May 2025, 28th May, 13 June 2025, 01 July 2025, 18 August 2025, 01 Sep 2025, 22 Sep 2025 and 20 Oct 2025. The Company confirms that is not aware of any new information or data that materially affects the information included in the above-mentioned releases and CONTINUES TO APPLY and have not materially changed in accordance with listing Rule 5.23.2.

Competent Person Statement

The information in this announcement that relates to exploration results is based on information compiled by Mr. Antonio de Castro, BSc (Hons), Member of AusIMM, CREA, who acts as BCM´s Senior Consulting Geologist through the consultancy firm, ADC Geologia Ltda. Mr. de Castro has sufficient experience which is relevant to the type of deposit under consideration and to the reporting of exploration results and analytical and metallurgical test work to qualify as a competent person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Castro consents to the report being issued in the form and context in which it appears.

Appendix 1: Table 1 Ema project – JORC Code (2012 Edition) metallurgical sampling techniques and data.

Item	JORC code explanation	Comments
Sampling Techniques	• Nature and quality of sampling. • Include reference to measures taken to ensure sample representativity and the appropriate calibration of any measurement tools or systems used. • Aspects of the determination of mineralisation that are Material to the Public Report.	• Exploration results are based on solution samples extracted during ISR field trials conducted by WSP with support of BCM´s exploration team. • The data presented is based on solution collected from the monitoring holes after percolation through soils and saprolite, mined by in-situ techniques. • Sampling and measurements were supervised by the Chief Metallurgist and WSP´s hydrogeologist. • Sample was extracted from deep wells drilled down to bedrock basement whereby solution was pumped to the surface for collection and further analysis • Solution samples were tested for pH with a probe called Incoterm brand pen-type digital pH meter, after calibration. • Rare Earths + impurities were precipitated by the addition of sodium carbonate. • These results are specific for the tracer test area.

Item	JORC code explanation	Comments
Drilling Techniques	• Drill type (eg core. reverse circulation. open-hole hammer. rotary air blast. auger. Bangka. sonic. etc) and details (eg core diameter. triple or standard tube. depth of diamond tails. face-sampling bit or other type. whether core is oriented and if so. by what method. etc).	• All auger holes in the test area were drilled with 6" bit. • The deep injection holes in H2 area were the only ones cased with 2" sliced PVC pipes, all others were cased with sliced 4" PVC pipes. • Coarse gravel sand was inserted between the pipes and the edges of the holes to create the filter zone. • Cement around the collars were built to prevent running waters from rain to contaminate the underground water. • Holes drilled are not included in any Mineral Resource Estimation.
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.	• Not used in current testwork
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. • The total length and percentage of the relevant intersections logged.	Not used in current testwork
Sub-Sampling Techniques and Sampling Procedures	• 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 representativity 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.	• Not used in current testwork

Item	JORC code explanation	Comments
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 (eg standards. blanks. duplicates. external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established	• The filtered solution samples were assayed using a Varian ICP-OES instrument (model Vista MPX710), calibrated using Specsol certified standards for each of the rare earth elements. Quality control is conducted using a standard reference sample previously prepared from Ema mineralisation and assayed by SGS in Vaspasiano, Brazil. The reference sample is read for each element before and after running each assay batch. Any batches in which the standard sample result plots outside two standard deviations from the established value are re-run. • The assaying methodology is in line with industry standard and is considered appropriate for rare earth solutions. The technique is considered to be total.
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.	Not used in current testwork
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 UTM WGS84 zone 21S grid datum is used for current reporting. The drill holes collar locations were picked up by a licensed surveyor using a Trimble total station (+/-5cm), referenced to a government survey point.
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.	Not used in current testwork
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.	• Not used in current testwork

Item	JORC code explanation	Comments
Sample security	• The measures taken to ensure sample security.	• The solution samples sealed in plastic bags were sent directly to Catalão by airfreight and courier to the laboratory. The Company has no reason to believe that sample security poses a material risk to the integrity of the assay data.
Audit or Reviews	• The results of any audits or reviews of sampling techniques and data.	• The sampling techniques and data have been reviewed by the Competent Person and are found to be of industry standard.

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

Criteria	JORC code explanation	Commentary
Mineral Tenement and Land Tenure Status	• Type. reference name/number. location and ownership including agreements or material issues with third parties such as joint ventures. partnerships. overriding royalties. native title interests. historical sites. wilderness or national park and environmental settings. • The 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 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. • The company is not aware of any impediment to obtain a licence to operate in the area.
Exploration done by Other Parties	• Acknowledgment and appraisal of exploration by other parties.	• No exploration by other parties has been conducted in the region.
Geology	• Deposit type. geological setting and style of mineralisation.	• The REE mineralisation at EMA is contained within the tropical lateritic weathering profile developed on top of felsic rocks. rhyolites as per the Chinese deposits. • The REE mineralisation is concentrated in the weathered profile where it has dissolved from the primary mineral. such as monazite and xenotime. then adsorbed on to the neo-forming fine particles of aluminosilicate clays (e.g. kaolinite. illite. smectite). • This adsorbed iREE is the target for extraction and production of REO.

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.
	• 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.
		• Auger locations and diagrams are presented in this announcement.
		• Details are tabulated in the announcement.

Criteria	JORC code explanation	Commentary
Data aggregation methods	• In reporting Exploration Results. weighting averaging techniques. maximum and/or minimum grade truncations (eg. cutting of high grades) and cut-off grades are usually Material and should be stated. • 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.	• REE grades reported refer to solution collected to monitor the ISR process. • No metal equivalent values are reported.
Relationship between mineralization widths and intercepted 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 (eg 'down hole length. true width not known').	• REE grades reported refer to solution collected to monitor the ISR process. • Mineralisation orientation is assumed to be flat.
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.	• Maps and tables of the auger hole's location and target location are inserted.
Balanced reporting	• Where comprehensive reporting of all Exploration Results is not practicable. representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	• REE grades reported refer to solution collected to monitor the ISR process.
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.	• No other significant exploration data has been acquired by the Company.

Criteria	JORC code explanation	Commentary
Further Work	• The nature and scale of planned further work (eg 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.	• Additional metallurgical test work with magnesium sulphate leach. • Extraction of PLS for stream line precipitation and impurity removals at ANSTO. • Detail topography survey with LIDAR for mine planning • Geophysics survey, Electro resistivity to define the saprolite/fresh rock boundary and faults in the rock.