

EMA FIELD TRIAL COMMENCES

Highlights

- In-situ recovery (ISR) mining trial injecting magnesium sulphate into shallow clay horizon has commenced at the Ema Project
- Pilot trial is being conducted by global industry ISR leader WSP Brazil and overseen by CERN environmental following successful trials conducted at ANSTO recently¹
- ISR field test program is designed to validate various deposit-specific characteristics of Ema, and to collect a database of geotechnical, hydrogeological, and metallurgical data to evaluate the deposit conditions, and optimise the proposed ISR mining of Ema
- Previous ANSTO testwork suggests the soft, friable, quartz rich nature of Ema mineralisation results in high recoveries of key magnet rare earth elements over short leaching duration periods, driving highly favourable operating costs
- ISR trial is expected to take up to three months to complete multiple scenarios and includes water washing and clay rehabilitation testwork

Andrew Reid, Managing Director, commented:

"24 months ago, we discovered the Ema deposit, 12 months ago we released a maiden 1Bt MRE, 3 months ago we delivered an ultra-low CAPEX/OPEX Scoping Study after extensive metallurgical testing.

Today we have commenced in-situ trials with the planned objectives to provide validation that the Ema deposit possesses the characteristics necessary for a full scale commercial ISR operation.

This trial is a further step advancing on the existing testwork completed within Brazil and ANSTO which underpinned the Scoping Study delivering a project NPV of US\$355M (even at current depressed spot prices), with a project capital requirement of just US\$55M.

The data collected will confirm hydraulic conductivity, demonstrate the clay permeability and allow us to collect metallurgical samples for further leach optimisation work planned.

On the back of the expected positive results, the Company plans to produce a Mixed Rare Earth Carbonate (MREC) from the collected solution. This MREC will then be provided to strategic partners for quality control testing and to progress the execution of offtake agreements."

Brazilian Critical Minerals Limited (**ASX: BCM**) (“**BCM**” or the “**Company**”) is pleased to announce that in-situ recovery field trials have commenced at the Ema Rare Earths Project in Brazil. This trial will enable the Company to assess the hydrogeological conditions, obtain valuable information on the leach characteristics of the rare earths, whilst collecting solutions rich in rare earths able to generate a final mixed rare earth carbonate product.

ISR is mainly suitable for ion-adsorption clays (e.g., in southern China, Malaysia and parts of Myanmar) with limited commercial-scale projects outside China, with the exception of Ema. The Ema project has such unique geological characteristics achieving high recoveries utilising an environmentally responsible reagent, magnesium sulphate, with the lowest capital intensity requirement of any western rare earth project.



Figure 1. view of the water storage and magnesium sulphate storage tanks piped to injection holes designed and drilled to optimise and test solution permeability.

Key Objectives of the trial include the following:

- **Confirm Hydraulic Conductivity:** Pump and injection tests to validate hydraulic connectivity of the test injection holes within the mineralized zone. Determining that there is sufficient permeability within the mineralised zone is a key criterion for the successful deployment of the ISR mining method.
- **Demonstrated Effective Permeability:** Demonstrate the suitability of the ISR method to the Ema deposit. Validate the conditions required to effectively permeate lixiviant and leach rare earths into solution for further downstream recovery.
- **Collect Metallurgical Samples for Leaching Characteristics:** Extract leached solutions within the trial area from the collection holes rich in rare earths so as to conduct impurity removal and precipitation tests to produce the final product, a mixed rare earth carbonate.

The trial includes the setup of various pump, injection, and trials designed to assess the permeability of the Ema deposit.

The test program will measure solution volumes and pressures of the magnesium sulphate lixiviant pumped into the holes which provides evidence of the deposit's hydraulic conditions and is indicative of the movement of solution in an ISR mining operation.

References

¹Brazilian Critical Minerals (ASX:BCM) – Ema Field Permeability Testing Successful 20th August 2024

²Brazilian Critical Minerals (ASX:BCM) – Massive Maiden Mineral Resource for Ema Project 22nd April 2024

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 converted the MRE central portion from Inferred into the Indicated category with an extensive drill program during 2024 which has underpinned the scoping study and economic analysis released in February 2025.



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 and 28th April 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.