



Critical One - High-Grade, Low-Cost Uranium Recovery at Khan Project

TORONTO, Jan. 02, 2025 -- [Critical One Energy Inc.](#) (formerly Madison Metals Inc.) (“**Critical One**”) (CSE: CRTL) (OTCQB: MMTLF) (FSE: 4EF0) is pleased to share the results of initial metallurgical test work at its [Khan Uranium Project](#) at Madison West in Namibia’s highly prospective Erongo uranium province. The results demonstrate excellent uranium recovery rates and low acid consumption, reinforcing the project’s potential as a high-quality, cost-efficient uranium asset.

Highlights of the Metallurgical Test Work:

- **Uranium Recovery:** Initial test work achieved recovery rates ranging from **71.1% to 86.6%**, indicating strong extractability.
- **Low Acid Consumption:** Acid consumption was measured at a maximum of **14.2 kg/t**, significantly below regional benchmarks like the Husab Mine, which averages **34 kg/t**.
- **Minimal Refractory Minerals:** Low levels of niobium (Nb) and tantalum (Ta) suggest limited betafite, enhancing processing simplicity.

"These results firmly position our Khan project as a game-changer in the uranium industry," said Duane Parnham, Executive Chairman and CEO of Critical One. "With exceptional recovery rates and unparalleled cost efficiency, we are advancing toward redefining what’s possible in uranium production."

Evaluation of the results was carried out by Mr. Bernard Sililo. Mr. Sililo brings over 20 years of expertise in uranium metallurgy, having served as a metallurgist at Rössing Uranium and currently as a lecturer at the Namibia University of Science and Technology (NUST).

As at other significant uranium deposits in the region, such as Rössing, Husab and Valencia, uranium at Critical One’s Khan Project is hosted mainly in D-type leucogranites with limited mineralization at the contact zones with the country rocks. The Company conducted bottle roll leach tests from three reverse circulation samples collected during the August 2024 drilling campaign (see Table 1).

The main aim of the test work was to obtain an indication of acid consumption to be expected (acid consumption index - ACI) and ascertain U_3O_8 recovery. Uranium extraction achieved ranges from 71.1% to 86.6%. Acid consumption is low at a maximum of 14.2 kg/t, much lower than the Husab Mine at 34 kg/t. Although preliminary and limited in scope, the results are very promising and have provided further confidence in Critical One’s Khan Uranium Project.

Additionally, the samples were analyzed for Nb and Ta, which are minor elements present in betafite—a refractory uranium-bearing mineral found in Rössing ore. At Rössing, betafite typically can constitute 4% of the ore. The low Nb value and undetected Ta indicate the potential for low betafite in the Khan leucogranites.

Table 1: Results of the initial metallurgical test work

Drillhole ID	Depth (metre)	Sample ID	Head grade (U_3O_8 ppm)	Recovery %	Acid consumption (kg/t)	Nb (ppm)	Ta (ppm)
RC003	144-145	F5124	360.6	82.00	14.21	8.8	<5
RC005	61-64	F5125	562.7	86.60	2.45	17.2	<5
RC005	115-116	F5126	567	77.10	4.41	14.1	<5

Critical One remains optimistic about these preliminary results and is committed to advancing the company’s understanding of the project’s potential. Further studies to be addressed during the next drilling phase will build on these findings to refine processing strategies and assess economic viability.

The Company is also pleased to report that the vendors have agreed to extend the contract ([see news release dated April 27, 2023](#)) for an additional three months after the Company has spent NAD\$16 million to date.

Qualified Person

Mary Barton, a Professional Natural Scientist (SACNASP) and a Qualified Person for the purposes of National Instrument 43-

101 (NI 43-101) Standards of Disclosure for Mineral Projects for ML86A, has reviewed, verified, and approved the technical information contained in this news release.

About Critical One Energy Inc.

Critical One Energy Inc. (formerly Madison Metals Inc.) is a forward-focused critical minerals and upstream energy company, powering the future of clean energy and advanced technologies. Backed by seasoned management expertise and prime resource assets, Critical One is strategically positioned to meet the rising global demand for critical minerals and metals. Its mine exploration portfolio is led by antimony in Canada and uranium in Namibia, Africa. By leveraging its technical, managerial, and financial expertise, the Company upgrades and creates high-value projects while joint venturing non-core assets to generate cash flow, driving growth and delivering value for its shareholders.

Additional information about Critical One Energy Inc. can be found at madisonmetals.ca and on the Company's SEDAR+ profile at sedarplus.ca.

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