



CENTRAL AMERICA NICKEL INC.

NEWS RELEASE

CENTRAL AMERICA NICKEL ANNOUNCES FILING OF PATENT FOR SEPARATION OF LIGHT AND HEAVY RARE EARTHS

Montreal, Quebec / November 6, 2023 Central America Nickel Inc. (the “Company” or “CAN”) is pleased to announce it has filed an International application No. PCT/CA2023/051387 titled “*Process for Extraction of Rare Earth Elements.*” The Patent Cooperation Treaty (PCT) presently has 157 contracting states. Moreover, CAN has filed a patent application in the Democratic Republic of Congo (DRC) for the same technology.

- The patent-filed process is based on a metallurgical process to create light and heavy commercial rare earth concentrates, specifically a process for the extraction and recovery of rare earth elements using one or more leaching steps, with the use of CAN’s ultrasound technology, the Ultrasound Assisted Extraction (UAEx), as a process intensifier. This metallurgical process involves the separation and recovery of the rare earth elements into a heavy and a light rare earth element fraction by selective roasting.
- The implications of this metallurgical process are dramatic in terms of CAPEX/OPEX reduction and in terms of producing large quantities of commercial rare earth concentrates including neodymium (Nd), praseodymium (Pr), dysprosium (Dy) and terbium (Tb), which are the critical materials for electric vehicle components and permanent magnets.
- Results indicate that when leveraging this proprietary metallurgical process of acid leach enhanced by both ultrasound and calcination at various stages, commercial concentrates of rare earths at grades up to 46.9% Nd, 14% Pr, 16.1% Dy and 3.4% Tb can be produced (*refer to Table 1*).
- CAN’s ultrasound technology, the UAEx, is recognized as an environmentally-friendly alternative to conventional processing methods which increases mineral recovery rates while reducing processing time, with the ability to extract complex minerals such as rare earths which are hard to separate from one another using conventional methods due to similar reactivity.

Given the complexity of separating and refining rare earths elements, the use of CAN’s proprietary technology and processes is a major extraction industry advancement. Rare earth elements are profoundly valuable and critical in a wide variety of the manufacturing of modern devices including high-strength magnets, batteries, displays, electronics, lighting and high-performance metal alloys, and are listed on the critical mineral lists outlined by the governments of Canada and the United States. Furthermore, the extraction and isolation of heavy rare earths such as Dy and Tb are of great significance to the vehicle manufacturing industry as they are necessary in order to reduce heat in the magnets that are key components of EVs.



Metallurgical testing for the extraction and separation of rare earth elements (REE) into elemental commercial concentrates has been conducted on material sourced from the Company’s joint venture partner’s, Auxico Resources Canada Inc. (“Auxico”), project in Vichada, Colombia (*refer to Table 1*); the testing was conducted at the Coalia research center in Thetford Mines.

	Nd	Pr	Dy	Tb	Y	La	Ce	Sm	Gd	Er
Light REE	46.9%	14.0%	1.0%	0.49%	1.1%	23.1%	1.3%	8.7%	2.8%	0.2%
Heavy REE	14.9%	0.0%	16.1%	3.42%	12.4%	0.0%	8.5%	9.8%	10.3%	7.5%

Table 1. Results of the test work on rare earth concentrates from Colombia (CAN joint venture partner property) by Coalia Lab

Of the rare earths subjected to this metallurgical process, Nd was concentrated at a rate of 5 times compared to the initial feed (grade of 8.73), Pr at a rate of 7 times (grade of 2.02), and Dy at a rate of 20 times (grade of 0.77). Both the light and heavy rare earth concentrates in Table 1 have been the object of further metallurgical testing in order to produce rare earths in refined elemental form using ligand chemistry, with initial results of up to 99% Nd, Pr, Sm and Gd.

Both CAN and Auxico have the objective of refining critical minerals into end user forms for the EV battery and power-train components manufacturing supply industry, and have jointly conducted scoping studies for the developing of processing and refining facilities while leveraging the UAEx, alongside technology partners including Impact Global Solutions Inc. (IGS), Coalia, Polytechnique Montréal, and McGill University. The main advantages of the UAEx process is that it enables minerals to separate from ore and into solution more efficiently and lower cost than traditional processing methods, with significantly less environmental impact, including substantially minimized CO₂ emissions, waste and energy requirements.

About The Company

Central America Nickel Inc. (“CAN”) is a privately-held corporation based in Montreal, focused on the processing and purification of critical minerals and energy metals using patented and patent-pending technologies, in partnership with strategic partners. CAN has access, directly or through joint ventures, to minerals projects including nickel, cobalt, scandium, vanadium, lithium and rare earth elements located in several countries, including Guatemala and the Democratic Republic of the Congo.

For more information on the Company, contact:

Pierre Gauthier
 Chairman & CEO, Central America Nickel Inc.
 Tel: +1 514-299-0881

Email: pg@centralamericanickel.com
 Website: www.centralamericanickel.com



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