

A DOMESTIC SUPPLY CHAIN OF CRITICAL MINERALS COULD REVOLUTIONIZE ONTARIO'S NORTH

By Amanda Graff

AVALON ADVANCED MATERIALS PARTNERS WITH INDIGENOUS LEADERS TO CREATE A LOCAL CLEAN TECH HUB

Avalon Advanced Materials Inc. (TSX: AVL) is making good on their vision to revolutionize Northwestern Ontario by building a critical minerals supply chain that will fuel our green and clean future. The company is advancing the Separation Rapids Lithium project near Kenora and the Lilypad Cesium-Tantalum-Lithium project near Fort Hope, while looking to build a lithium battery materials process facility in Thunder Bay that will intake concentrates from these projects and other emerging producers across the region.

This supply chain will significantly strengthen the emerging clean economy in Northwestern Ontario, and Avalon's timing couldn't be better: lithium, cesium, and tantalum all made Canada's list of the minerals considered critical for the country's sustainable economic success, and they're in short supply across the globe.



Lilypad-Cesium-Tantalum-Lithium Project

"We have a glorious opportunity to start a domestic supply of critical minerals that other parts of the world are struggling to find," said Don Bubar, President & CEO, Avalon. "These minerals offer significant economic growth potential for Northwestern Ontario as we transition to a low-carbon future. The ability to source and sustainably process these minerals while creating a local battery materials industrial hub will provide an exceptional economic opportunity for local First Nations communities."

The company's clean tech vision aligns with a federal mandate to strengthen domestic critical mineral value chains, and the benefits will also reverberate on a local level. Part of Avalon's commitment to ESG which ranked in the top 5% of 150 companies analyzed globally, is an ongoing desire to empower local communities. The company has a long, successful track record of First Nations collaboration which was recently fortified through the appointment of former Chief of Eabametoong First Nation, Mr. Harvey Yesno, to Avalon's Board of Directors.

AN EMERGING CLEAN ECONOMY GUIDED BY INDIGENOUS LEADERSHIP

Harvey Yesno and Don Bubar first met 20 years ago while serving on the Smart Growth regional panel for Northwestern Ontario. Harvey recognized Don's deep interest in First Nations protocols and desire to foster mutually beneficial relationships while Don recognized Harvey's broad experience in the region and ability to find solutions to First Nations challenges related to government, the economy, and resource development. From there, a partnership was born.

"First Nations representation is needed in all segments of society to stimulate economic growth and knowledge," said Mr. Yesno. "This is where I come in - I can lend my knowledge of First Nations communities,



Mr. Donald Bubar, President & CEO, Avalon

government relations, and business financing to empower representation across a variety of sectors. My involvement on Avalon's Board will provide an Indigenous voice for how mining should proceed, ensuring a fair and transparent consultation process that protects the environment and traditional ways of life."

Mr. Yesno is a member and former Chief of the Eabametoong First Nation which he led for six terms, from 1977 to 1991, with an additional term from 2019 to 2021. He also served as Grand Chief of Nishnawbe Aski Nation from 2012 to 2015, and was President and CEO of the Nishnawbe Aski Development Fund (NADF) from 1993 to 2010. NADF is a non-profit financial institution that provides Indigenous entrepreneurs in Northern Ontario with access to capital for start-



Members of the WIN First Nation examine drill cores at Separation Rapids

ups and business growth. His impressive track record also includes serving as Director of Community Relations for Ontario's Ring of Fire Secretariat.

"Mr. Yesno is an influential Indigenous leader who is helping to communicate the key message that critical minerals supply chain development will provide significant economic development and

TSX: AVL  **OTCQX: AVLNF**
ir@AvalonAM.com
www.AvalonAdvancedMaterials.com



AVALON
ADVANCED MATERIALS INC.



CRITICAL MINERALS FOR CLEAN TECHNOLOGY

Diverse critical minerals portfolio, offering investors exposure to **lithium, cesium, tantalum and the rare earths in Canada**





The Separation Rapids Lithium deposit

new business opportunities for First Nations communities,” said Don Bubar. “I look forward to working closely with Harvey to inspire greater Indigenous business participation in sustainable development initiatives that will empower Ontario’s new clean economy.”

Mr. Yesno sees an opportunity for First Nations communities and entrepreneurs to become bigger participants in economic development and move towards self-sufficiency. He hopes to see more First Nations people join corporate boards and secure senior leadership roles similar to his at Avalon:

“Greater Indigenous participation at the boardroom level fosters inclusivity so we can move past the ‘us versus them’ mentality and make room for productive collaboration,” he said. “The Indigenous worldview incorporates big picture thinking and integrates a variety of perspectives. This approach to problem-solving not only benefits

First Nations communities but can also benefit the country as a whole.”

Mr. Yesno also remarked that First Nations involvement in the mining industry spans back decades, and he seeks to inspire younger generations to get more involved.

“During the Second World War, Indigenous peoples were heavily involved in mines around the Pickle Lake area, and these individuals are now Elders who visit mines to contribute their Traditional Knowledge,” he said. “My goal is to now inspire younger generations and raise awareness of the opportunities that exist, particularly with regards to a critical mineral like lithium which is needed to power everything from our cell phones to our computers to electric vehicles.”

Part of Mr. Yesno’s role on Avalon’s Board of Directors will include consulting on the Lilypad-Cesium-Tantalum-Lithium property which is located in the traditional territory of the Eabametoong First Nation (EFN), approximately 25 kilometres west of the community of Fort Hope. Mr. Yesno will facilitate early discussions and consultation with harvesters including

trappers and hunters, and will engage community leaders with a focus on environmental protection, cultural considerations, and business and employment opportunities.

Drawing from his extensive industry experience and decades-long work with communities in Northwestern Ontario, Mr. Yesno says the key to mutually beneficial partnerships starts with early and effective consultation: “Early consultation is essential to avoiding project delays down the line. I’ve seen many problems arise because bureaucrats approved permits without first securing adequate First Nations consultation. It’s worth making the upfront investment to have leaders from the resource development company meet with Chief and Council to avoid future conflict,” he said.

DEVELOPING A CLEAN TECH HUB FOR FIRST NATIONS COMMUNITIES

Building generational wealth on First Nations lands has often been impeded by systemic barriers dating back to the Indian Act. According to Mr. Yesno, overcoming these barriers on the road to self-sufficiency involves providing tools and support that foster project participation and ownership.

This vision of self-sufficiency aligns with Avalon’s ESG strategy as demonstrated by the company’s proposed partnership with the Fort William First Nation (FWFN) on the lithium battery materials refinery in Thunder Bay. Avalon was contacted by FWFN Chief Peter Collins who expressed an interest in collaborating on the development of the project, and this initial communication subsequently led to the signing of a Letter of Intent.

The refinery will be designed to accept and process lithium mineral concentrates from Avalon’s Separation Rapids Lithium project, as well as from other emerging lithium minerals producers in Northern Ontario. Next steps include confirming the refinery’s location on an industrial site with access to transportation infrastructure, hydro-power, and natural gas.

Once a strategic investing and off-take partner has been engaged, Avalon will embark on final engineering, site preparation, and construction

design studies, while capitalizing on funding support available from several government programs. The initial design capacity will aim to produce at least 15,000 tonnes per year of lithium hydroxide, lithium carbonate, and/or lithium sulphate, depending on demand, and the capacity will subsequently be finalized to accommodate future expansion as demand increases.

EXPLORING ONE OF THE WORLD'S LARGEST LITHIUM (PETALITE) PEGMATITE DEPOSITS

Avalon's 100% owned Separation Rapids Lithium project is located in the traditional territory of the Wabaseemoong Independent Nations (WIN), with whom Avalon first signed a Memorandum of Understanding in 1999 that was later renewed when the project was re-activated in 2013. WIN leadership continues to support Separation Rapids and Avalon encourages WIN's direct participation in project development.

Separation Rapids hosts one of the largest complex-type lithium-cesium-tantalum pegmatite deposits in the world and is unusually rich in rare, high purity lithium mineral petalite. Petalite offers potential to produce a high purity lithium chemical product at a relatively low cost to serve the needs of lithium-ion battery manufacturers. It's also in demand as a high purity lithium mineral for use in the manufacturing of durable glass-ceramic products, a growing and increasingly diverse market.

In 2020, Avalon completed a 5,000t bulk sample program at the project and is currently working towards acquiring a demonstration scale dense media separation (DMS) plant. This will allow the sample to be processed to facilitate additional battery materials process test work, and produce petalite concentrate product samples for the many international glass ceramic manufacturers that have expressed an interest. In commenting on the opportunities the project will provide, Don Bubar said:

“ Getting the DMS plant up and running this year will provide WIN members with

an opportunity to partake in facility operations and become familiar with the low-impact gravity process which can lead to further business opportunities for WIN members in the future.”

Encouraging results were recently received from a mapping program on the Northwestern part of the property to follow-up on a new petalite pegmatite discovery known as Snowbank. These latest results extend the known strike length by 50% and confirmed the widespread presence of coarse grained petalite mineralization which is an ideal additional source to supply the glass-ceramic markets. This year, the company plans to initiate diamond drilling to delineate the size potential of the Snowbank discovery while also testing other identified petalite pegmatite targets in the project area.

BECOMING A SIGNIFICANT PRODUCER OF A HIGHLY VALUED CESIUM MINERAL

Avalon's 100% owned Lilypad-Cesium-Tantalum-Lithium project consists of 14 claims totalling 3,108 hectares across a field of cesium, tantalum, and lithium-rich granitic pegmatites. It has exceptional potential to become a significant new producer of the rare cesium mineral known as pollucite in addition to tantalum and lithium. By including a separate circuit to process pollucite concentrates, the Thunder Bay lithium refinery could accept concentrates from the project to produce cesium carbonate. To put this opportunity in perspective, cesium carbonate is in very short supply and currently attracting prices as high as \$5,000 per kilogram. In commenting on the project, Don Bubar said:

“ The Lilypad project is proving to be a globally unique example of a large field of cesium-enriched LCT pegmatite dykes with significant resource potential. With cesium continuing to be in very

short supply, the company is in a strong position to help Ontario become a global leader in cesium production including the innovation of new downstream applications.”

Considering cesium's current value, Avalon would begin with a small-scale production of pollucite concentrates using a simple dry process like DMS. The product would then be flown from Fort Hope to Thunder Bay for further processing which would create a near-term economic development opportunity for the Eabametoong First Nation.

Because cesium mineralization occurs in fields of relatively small pegmatite dykes, it's amenable to a low-impact development approach such as large diameter core drilling to recover the mineralized rock without the need to build a mine or create significant waste. Once road access is established, production could also be expanded to include lithium and tantalum. Don Bubar commented:

“ The mineral industry in Canada is finally starting to embrace innovative, sustainable recovery and extraction techniques for critical minerals that leave a minimal environmental footprint. There's also enormous potential to innovate new applications for rare elements like cesium in support of local technology materials supply chains. With the abundance of critical mineral resources across Northern Ontario, First Nations are well positioned to become future leaders of this supply chain development.”

For more information on Avalon Advanced Materials Inc., please visit: avalonadvancedmaterials.com