

Avalon Advanced Materials Inc.

Critical Minerals for a Sustainable Future



Avalon Advanced Materials is a leader in developing new North American sources of **critical minerals for clean technology, such as rare earths and lithium**. Avalon is among a small group of emerging companies that are identifying their own strategic resources and process solutions to sustainably produce critical minerals **for new clean technologies and to enable full supply chains to be established in North America**. This includes extracting critical minerals from historic mine wastes, while remediating long term liabilities.

The Company has **four advanced stage projects**, providing investors with exposure to lithium, tin and indium, as well as rare earth elements, tantalum, cesium and zirconium. Avalon's flagship asset is now its **Separation Rapids Lithium Project** near Kenora, Ontario.

			
Culture of Responsible Mining in our history	Forefront of Energy Transition	Well positioned for Canadian Supply Chain	Top 5% Diversified Metals ESG Risk Rating from 150 companies

- There is now **rapidly growing demand for formerly-obscure elements** such as rare earths, lithium, tantalum, cesium, rubidium, indium, gallium, germanium, zirconium and tin.
- All are **critical minerals needed for clean energy, aerospace, defense, energy efficiency, modern electronics, medicine** and much more.
- However, such elements are often minor by-products of other mining operations, most are not traded on commodity exchanges and do not yet have well-established supply chains in North America.
- With its rich and diverse mineral resource endowment, **Canada can take the lead in implementing environmentally and socially responsible clean technology materials development.**
- We are already **seeing significant supply shortages for lithium, as increased demand growth** outpaces the development of new, secure supply chains for lithium battery materials needed for electric vehicles.

FACT SHEET

MARCH 2023

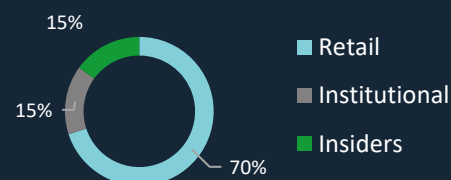
Capital Structure

Market Cap: C\$56 million
(as at March 3, 2023)

Shares outstanding: 417.5M
(as at November 30, 2022)

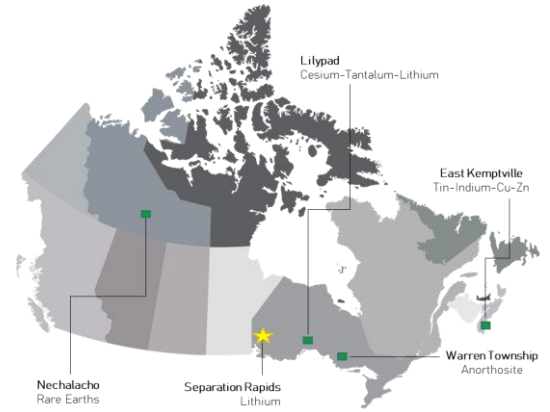
Fully diluted: 500.5 million
(as at November 30, 2022)

Long-term supportive shareholders:



Clean Technology Business Opportunities

Avalon has been evaluating several opportunities to apply **innovative new extraction technologies to recover critical minerals from historic mine wastes**, including acid mine drainage, at closed mine sites. There are many examples of closed mine sites developed decades ago to **recover one traditional commodity where the ore contained many other minerals that had no value then, but do today.**



Separation Rapids

Location: Kenora, Ontario
Project Phase: Preliminary Economic Assessment (PEA)
Metals: Petalite, Lithium Chemicals, Feldspars

- The Separation Rapids Lithium Project with a minimum 10 million tonne resource was discovered in 1996 and acquired by Avalon in 1997.
- Unusual in its enrichment in the rare high-purity lithium mineral petalite which has been in demand for many years for high tech glass-ceramic applications. It is a potential producer of both petalite for glass-ceramics and lithium hydroxide for battery applications.

- MOU signed in September 2022 to supply LG Energy Solution with battery-grade lithium hydroxide from AVL's planned lithium refinery in Thunder Bay
- Off-take agreement for petalite concentrates entered into September 2022 with major international glass-ceramics manufacturer and interest from others continues to grow



Lilypad

Location: Pickle Lake, Ontario
Project Phase: Preliminary Economic Assessment (PEA)
Metals: Cesium, Tantalum, Lithium

- 100% Avalon owned; staked in 2000 and hosts a significant resource of the rare cesium mineral **pollucite dyke** along with tantalum and lithium
- Project re-started in 2020-21 to collect pollucite samples for recovery test work, mapping and geochem sampling to identify new Cs pegmatite targets

- Cesium grades increase at depth, open at 300m below surface
- "Western extension" new, undrilled zone of dykes 200m to SW with two grab samples containing 4.62% and 2.11% Cs₂O
- Strong cesium litho-geochemical anomalies in surrounding volcanic outcrops



East Kemptville

Location: Yarmouth, Nova Scotia
Project Phase: Preliminary Economic Assessment (PEA)
Metals: Tin, Indium, Lithium

- Closed site where only tin was produced historically but the resource also contained indium, gallium, germanium and lithium
- Copper and zinc now sitting on surface in 25 million tonnes of wastes generating acid mine drainage

- The goal is to recover the elements of economic interest at a much lower cost compared to a new mining operation while fully remediating the long-term environmental liabilities
- Re-activate the Project as soon as it can secure the surface rights from BHP who continue to block Avalon's access with no plans for re-activating the site



Nechalacho

Location: Thor Lake, Northwest Territories
Project Phase: Feasibility Study
Metals: Heavy Rare Earth Oxides and Zirconium

- Rich polymetallic rare metals resource, with potential for economic recovery of the rare earth elements, as well as zirconium, niobium and tantalum
- Explored from 2006-14 primarily for its potential to produce heavy rare earths from the Basal Zone, with a Feasibility Study completed in 2013

- In 2019, Avalon and Cheetah Resources Pty Ltd. (a subsidiary of AUS listed company Vital Metals) entered into a definitive agreement in which Cheetah acquired the near surface T-Zone & Tardiff Zone light rare earth resources for C\$5 million
- Avalon retained 100% interest in the Basal Zone for future development once Cheetah gets the rare earth elements supply chain started in Canada

MANAGEMENT

Experienced team of resource professionals

Donald S. Bubar, M.Sc., P.Geo.
 CEO

Zeeshan Syed, M.Sc.
 President

Jim Andersen, CA, CPA
 V.P. Finance, CFO & Corporate Secretary

Rickardo Welyhorsky, P.Eng.
 COO and VP, Operations

Amiel Blajchman, MES, P.Ag.
 Manager, ESG & Sustainability

Georgi Doundarov, M.Sc. P.Eng.
 Senior Metallurgist

BOARD OF DIRECTORS

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 CEO, Director

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 Board Member

Naomi Johnson, BA, LL.B.
 Board Member

John E. Fisher, B.Sc., MBA
 Board Member

