



**AVALON**  
ADVANCED MATERIALS INC.

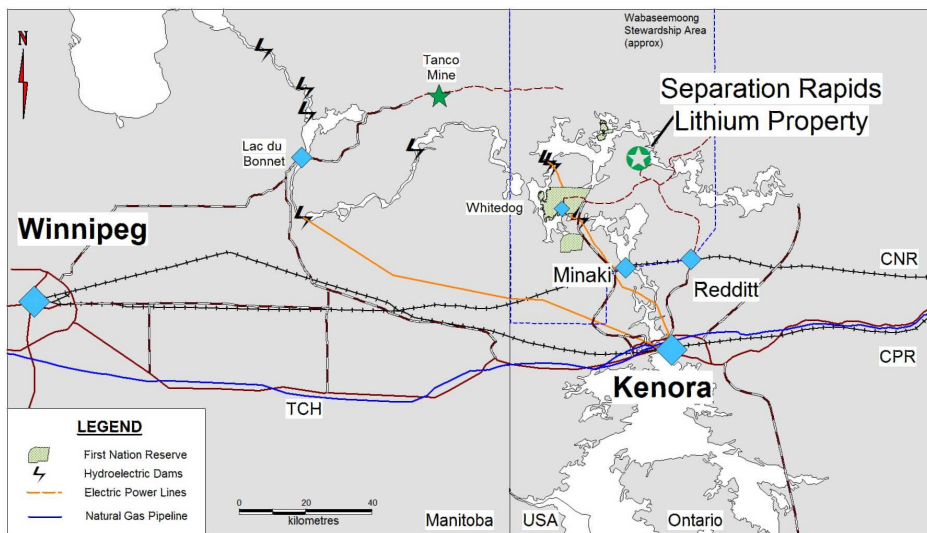
TSX: AVL & OTCQB: AVLNF

As at April 23, 2019

## Separation Rapids Lithium Project: A unique deposit of the rare lithium mineral petalite

### Project Overview

The 100% owned Separation Rapids property is host to a “complex-type” lithium-cesium-tantalum (LCT) pegmatite deposit, unusual in its enrichment in the rare, high purity lithium mineral petalite. Separation Rapids is a potential producer of lithium chemicals for the lithium ion battery market and lithium minerals for glass and ceramics. The property covers a total of 6,000 acres and is situated close to road, rail and power infrastructure approximately 70 km north of Kenora, Ontario, Canada.



### PEA Development Model

The current development model results in a small environmental footprint, including low GHG emissions and almost non-existent air emissions.

There are no anticipated environmental impacts of concern, with the mineral deposit and waste rock being non-toxic and non-acid generating and minimal water discharge being anticipated.

#### PEA (August 2018) highlights include:

- Simplified business model with initial focus on production of lithium mineral concentrates for glass and ceramics
- Production of 71,500 tpa petalite, 11,800 tpa lepidolite
- Initial CAPEX: C\$77.7m (475,000 tpa mill capacity)
- Feldspar circuit added in Year 6 (C\$13.7m CAPEX)
- 20 year operational life
- Average Annual Revenues: C\$90m
- Average Annual Costs: C\$60m
- NPV pre-tax (8% discount rate): \$156m
- IRR (pre-tax): 27.1%
- IRR (post tax): 22.7%

### Avalon's Sustainable Strategy

**Product Design:** Working with customers to create the best quality products to serve their needs at attractive prices

**Innovative Metallurgy:** Designing an efficient process to produce the best quality product at the lowest cost

**Staged Development:** Start with a demonstration plant to prove process and scale up after products are optimized

**Minimizing Environment Impacts:** Recycling of reagents and creating markets for by-products

**Sustainable Development:** Utilize renewable energy and maximize use of the ore body

*The PEA is preliminary in nature, includes Inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the PEA will be realized.*

## Sustainability at Avalon

At Avalon, sustainability means adopting leading industry standards for the management of health, safety and the environment, and engagement with local communities. In November 2018, Avalon released its seventh Sustainability Report in accordance with GRI Standards: core option and MAC TSM standards. The full report can be downloaded from Avalon's website.



## Current Activities and Future Plans

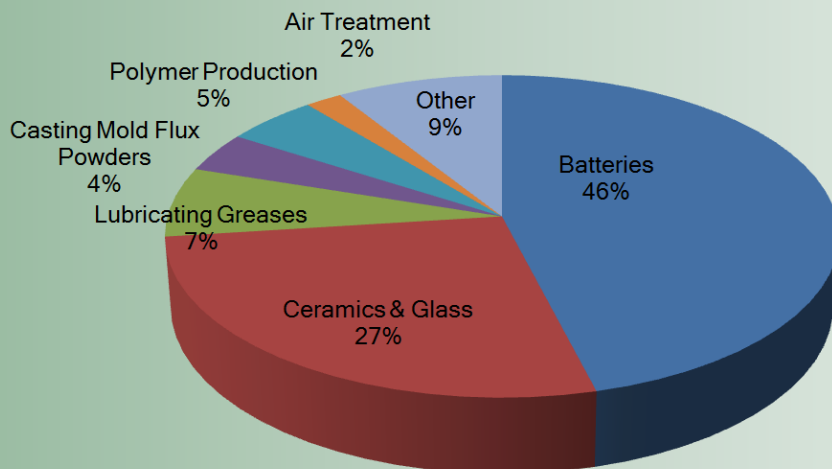
The next step in the project's development is to proceed with a short pilot program to finalize reagent recycling and water treatment processes, after which a comprehensive Feasibility Study will be completed. This work is expected to proceed in 2019, once off-take agreements are concluded and additional financing is in place. Some additional drilling will be undertaken to bring more of the Inferred resources into the Measured and Indicated categories.

Avalon continues to explore for new lithium pegmatites, including a detailed mapping and sampling program on the western extension area.

*Please note that the projected timeline is reliant on a positive Feasibility Study as well as offtake commitments, project financing, and timely receipt of all permits and environmental approvals.*

## Lithium Demand

- Shift to electric vehicles (EVs) driven by production quotas, preferred licensing regulations & other government policies
- China planning to dominate the lithium battery supply chain as well as EV production; already accounts for >40% of global lithium demand
- Lithium carbonate prices now exceed \$21,000/tonne and are expected to reach \$25,000/tonne by 2021 before supply demand balance achieved



Source: USGS March 2018

[www.AvalonAM.com](http://www.AvalonAM.com)



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The technical information contained in this document, unless otherwise noted, has been reviewed and approved by Don Bubar P. Geo. (ON), President & CEO of Avalon, the qualified person for the purposes of National Instrument 43-101.

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