



## Corporate Fact Sheet

As at November 12, 2017

TSX: AVL & OTCQX: AVLNF

### Corporate Profile

Avalon Advanced Materials is a Canadian mineral development company headquartered in Toronto, focused on specialty metals and minerals with clean technology applications. Avalon is developing three advanced projects, with the Separation Rapids Lithium and East Kemptville Tin-Indium projects being top priorities. Both projects offer opportunities to achieve initial production in the near term at a small scale.

Avalon is a leader among junior miners in adopting best practices and reporting on its performance in reducing its environmental footprint, engaging with local communities and protecting the health and safety of its people.

### Capital Structure

|                |  |
|----------------|--|
| Trading Symbol | AVL: TSX    AVLNF: OTCQX   |
| Shares Issued  | Common: 207.1 m Preferred: 430   |
| Fully Diluted  | 245 m (not including convertible preferred shares)                                       |
| Market Cap     | CAD\$28 million (S/O @\$0.135)   |
| Year High/Low  | CAD\$0.23 - \$0.11   |
| Shareholders   | Insiders: 15%<br>Institutional: 15% (UBS, Empery, CPP, Marquest & others)<br>Retail: 70% |

### Advanced Materials

- Global demand for **lithium** is growing rapidly in tandem with the demand for lithium ion rechargeable batteries: the energy storage solution of choice for electric vehicles, renewable energy and a host of other applications. Global lithium demand is forecast to at least double over the next 5-10 years.
- Due to lead toxicity concerns, **tin** is now the preferred alternative for solders used on all electronic circuit boards. This application now accounts for over 50% of global tin demand.
- Demand for **REE** (rare earth elements) is growing rapidly because of their application in high strength permanent magnets (now vital in electric vehicle technology), wind turbines and many other consumer electronic products.

### Investment Highlights

- Avalon holds a diverse specialty metals and minerals property portfolio, offering investors exposure to **lithium, tin, indium, tantalum, niobium, zirconium, rubidium, cesium, beryllium, gallium, germanium and REE**. All of these commodities are seeing growing demand in clean technology, including renewable energy, energy storage and electric vehicles.
- The 100% owned **Separation Rapids** property is host to one of the largest “complex-type” lithium-cesium-tantalum (LCT) pegmatite deposits in the world, unusual in its enrichment in the rare high purity lithium mineral petalite. It is also enriched in a second valuable lithium mineral called lepidolite. Separation Rapids is a potential producer of lithium chemicals for the lithium ion batteries and lithium minerals for glass applications. The property is situated close to road, rail and power infrastructure approximately 70 km north of Kenora, Ontario, Canada. Construction of a Phase 1 demonstration plant is planned for 2018-19 to introduce Avalon’s lithium products to the market.
- Avalon is working toward re-starting tin production at the past-producing **East Kemptville** Project in Nova Scotia, where a significant tin-indium (+copper-zinc-silver) resource remains undeveloped. The property also hosts large low-grade tin stockpiles that, with higher tin prices, are potentially economic to process to recover tin concentrates. Growing demand for tin in the electronics sector has created an opportunity to achieve initial production at a low CAPEX in 2018-19, utilizing the stockpiles as feed for a small-scale gravity concentrator.\*
- With a completed Feasibility Study, the **Nechalacho** Rare Earth Elements Project, NWT, is ready to re-activate with recovering demand for REE, which is underway due to the importance of rare earth magnets in electric vehicle technology. The unique mineral resources at Nechalacho are also enriched in beryllium, lithium, zirconium, tantalum, niobium and gallium.

\*Cautionary Note: The economic scenario for the East Kemptville Project presented here is preliminary in nature, based on resources that are considered “Inferred” under NI43-101 guidelines and should therefore not be relied upon.

## Project Summary

Avalon's mineral property assets are all 100% owned and located in Canada.

Avalon first explored its **Separation Rapids** project located near Kenora, Ontario in 1997, shortly after the discovery of a large LCT pegmatite enriched in the rare, high purity lithium mineral petalite. Petalite is a preferred industrial mineral in the glass industry for making thermal shock resistant glass-ceramics.

The project was re-activated in 2014 to evaluate its potential for producing a lithium compound for the battery market. Initial leach tests on the petalite concentrate have successfully demonstrated the potential to recover a high purity **lithium hydroxide product**. A Preliminary Economic Assessment on the battery materials opportunity was completed in September 2016. The next steps are focused on establishing a Phase 1 demonstration plant in 2017-18 to begin producing trial quantities of the lithium products and other potential by-products. Additional drilling was conducted in 2017 to update the geological model to reflect the lithium mineralogy, particularly the lepidolite rich sub-zones, and identify specific targets for future resource expansion.

At **East Kemptville**, located near Yarmouth, Nova Scotia, Avalon is evaluating the potential for re-establishing tin production at the past producing mine that has been

closed since 1992. In 2016, Avalon recognized an opportunity to take advantage of large, low grade stockpiles totaling 5.87 million tonnes averaging 0.112% tin (Inferred Resource) to re-start production at a small scale and low CAPEX.\* A 2400tpd gravity concentrator could support tin concentrate production at a rate of 1,100-1,600tpy for 8-10 years beginning in 2018.\* Avalon is presently completing environmental studies and negotiations toward securing full tenure to the site under a mining lease.

The **Nechalacho** Rare Earth Elements Project, located at Thor Lake, NWT, was explored from 2006-14 primarily for its potential to produce **REE**. Avalon has invested over \$100 million to date in taking the project through completion of a positive, comprehensive Feasibility Study released in April 2013. The project is currently inactive due to reduced demand for rare earths. In the meantime, Avalon is monitoring the rare earths market for recovery in demand and participating in new research initiatives into more efficient rare earth extraction techniques that can reduce costs. The Nechalacho deposit is a rich polymetallic rare metals resource, with potential for economic recovery of other rare metals, including niobium, tantalum, zirconium, beryllium and lithium.

## Project Strategy

**Product design:** working with our customers to serve their needs

**Innovative metallurgy:** the best quality product at the lowest cost

**Staged development:** start producing from a demonstration plant

**Minimizing environmental impacts:** recycling reagents and by-product sales

**Sustainable development:** utilize renewable energy and maximize use of ore bodies

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## Experienced Management Team

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The technical information contained in this document has been reviewed and approved by Donald Bubar, P. Geo. (ON), President and CEO of Avalon, the qualified person for the purposes of National Instrument 43-101. This document contains or incorporates by reference "forward looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995 and applicable Canadian securities legislation, which may not be based on historical fact. Readers can identify many of these statements by looking for words such as "believe", "expects", "will", "intends", "projects", "anticipates", "estimates", "continues" or similar words or the negative thereof. Statements that are not based on historical fact contained in this presentation, including through documents incorporated by reference herein, are forward-looking statements that involve risks and uncertainties that could cause actual events or results to differ materially from estimated or anticipated events or results reflected in the forward-looking statements. Such forward-looking statements reflect the Company's current views with respect to future events and include, among other things, statements regarding targets, estimates and/or assumptions in respect of reserves and/or resources, and are based on estimates and/or assumptions related to future economic, market and other conditions that, while considered reasonable by the Corporation, are inherently subject to risks and uncertainties, including significant business, economic, competitive, political and social uncertainties and contingencies. These estimates and/or assumptions include, but are not limited to: grade of ore; rare earths and by-product commodity prices; metallurgical recoveries; operating costs; achievement of current timetables for development; strength of the global economy; availability of additional capital; and availability of supplies, equipment and labour. Factors that could cause the Company's actual results, performance, achievements, developments or events to differ materially from those expressed or implied by forward-looking statements include, among others, but are not limited to, market

conditions, the possibility of cost overruns or unanticipated costs and expenses, the impact of proposed optimizations at the Company's projects, actual results of exploration activities, mineral reserves and mineral resources and metallurgical recoveries, discrepancies between actual and estimated production rate, mining operational and development risks and delays, regulatory restrictions (including environmental), activities by governmental authorities, financing delays, joint venture or strategic alliances risks, or other risks in the mining industry, as well as those risk factors discussed or referred to in the Company's annual Management's Discussion and Analysis and Annual Report filed with the securities regulatory authorities in all provinces and territories of Canada, other than Québec, and available at [www.sedar.com](http://www.sedar.com). Most of the foregoing factors are beyond Avalon's ability to control or predict. Although the Company has attempted to identify important factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors that cause actions, events or results not to be as anticipated, estimated or intended. There can be no assurance that the plans, intentions or expectations upon which these forward-looking statements are based will occur. The forward-looking statements contained herein are qualified in their entirety by this cautionary statement. Readers should not place undue reliance on the forward-looking statements, which reflect management's plans, estimates, projections and views only as of the date hereof. The forward looking statements contained herein are presented for the purpose of assisting readers in understanding the Corporation's expected financial and operating performance, and the Company's plans and objectives, and may not be appropriate for other purposes. Avalon does not undertake to update any forward-looking statements that are contained herein, except in accordance with applicable securities law.

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