



# 2019 President's Message

I want to start by expressing my sincere appreciation to Avalon's long-time loyal shareholders for your continuing support through a very challenging period. While our share price remains depressed, I am confident that your patience will soon be rewarded. We remain committed to our goal of establishing new critical mineral supply chains in North America and it looks like our time has come! In 2019, with security of supply concerns arising from the US/China trade war, critical minerals finally began to receive the attention they have long deserved from government policymakers in both the US and Canada.

After President Trump issued an Executive Order to encourage the creation of a North American rare earths supply chain, the United States Department of Defense (DoD) conducted an assessment of North America's critical infrastructure, including evaluating the main barriers to getting product to market experienced by domestic business. Shortly after that announcement, Avalon, as an experienced player in the North American rare earths space, was invited to partner in a project in the US to look at recovering rare earths from coal mine wastes at a site in Southern Illinois known as Will Scarlett. This represents an exciting opportunity to produce rare earths from acid mine drainage utilizing a new low cost, high efficiency extraction technology developed by researchers in the United States. Together with our partner Coal Strategy Advisors LLC (CSA), we submitted a proposal in response to the DoD's Request for Information (along with a separate proposal related to the Nechalacho Project) which noted that the two main barriers to entry for

domestic rare earth extraction projects are access to venture capital and lengthy project permitting timelines.

In Canada, Avalon has since been asked to participate in conversations with federal and provincial officials on what government can do to assist. We are emphasizing the importance of developing more efficient extraction technologies for rare earths and are encouraging government to look at supporting establishing new pilot scale process plant facilities in Canada to support the necessary research work to prove recovery processes from the many different rare earth resources in Canada. We also point out that by creating new primary supplies, there is a further opportunity to attract more of the downstream users of rare earths and other critical minerals to establish manufacturing facilities in Canada.

## SEPARATION RAPIDS LITHIUM

Avalon's Separation Rapids Lithium Project, located near Kenora, Ontario, contains the rare high purity lithium mineral petalite: a preferred form of lithium used in certain high strength glass formulations. The glass industry represents 25-30% of global demand for lithium and surging demand from the battery industry is creating supply chain risk for glass industry consumers. Accordingly, we planned for the extraction of a 5,000 tonne bulk sample for trial processing in order to recover larger quantities of petalite product for customer evaluation and process flowsheet optimization.

In 2019, Avalon submitted a Project Description, Notice of Material Change and draft closure plan to the Ontario Ministry of Energy, Northern Development and Mines to modify

Avalon's existing Closure Plan for the planned 5,000 tonne bulk sample. A multi-ministry meeting was held in early May to engage on this proposal and associated plans, where no serious concerns were identified. In another example of how unreasonably lengthy permitting timelines have become, approval on the amended closure plan for the bulk sampling program was still pending as of December 2019. Unfortunately, Avalon was unable to move ahead with the program to provide the petalite product samples requested by several potential customers early in 2019.

However, there continues to be strong interest in the petalite product and we do anticipate moving forward with this program in 2020, once financing is arranged with prospective joint venture partners. Once product off-take commitments are secured, Avalon can finalize the design and engineering of the Separation Rapids process plant to Feasibility Study level of confidence; continue to fulfill its permitting requirements; and secure the financing needed to proceed with further site development.

## EAST KEMPTVILLE TIN

Avalon continues to plan to move forward with its innovative site rehabilitation development model for the East Kemptville Tin Project in Yarmouth County, Nova Scotia. The plan involves economic recovery of tin from low grade stockpiles that are a source of acid mine drainage (AMD), as well as mining higher grade fresh tin ore from which a clean tailing product would also be recovered to cover the stacked tailing pile and remediate it as a source of AMD. However, the project has been delayed following requests for additional

studies on the clean tailings cover model by the surface rights holder.

Avalon also continues to work with Cronimet Mining Processing SA (Pty) Ltd. on applying sensor-based ore-sorting technology to process the low grade stockpiles and economically recover a tin concentrate, independent of mining any fresh ore for additional processing. Preliminary ore-sorting test results were very encouraging, with tin recoveries exceeding initial expectations. Avalon is now planning to proceed with Cronimet to implement the ore-sorting technology at the site in 2020 pending completion of the final agreement with the surface rights holder.

### NECHALACHO RARE EARTH ELEMENTS

In 2019, Avalon entered into an agreement with Cheetah Resources Pty Ltd., under which Cheetah purchased ownership of the near-surface rare earth resources at the Nechalacho Rare Earth Elements property for \$5 million in cash, a much-needed injection of working capital for Avalon's treasury.

Cheetah intends to pursue the small scale development model conceived for the T-Zone by Avalon in 2018. Avalon received its final payment from Cheetah in October, and is currently in the progress of finalizing the co-ownership agreement, under which Avalon will retain ownership of its heavy rare earth rich Basal Zone resource as a future development opportunity.

### WILL SCARLETT RARE EARTHS AND OTHER NEW PROJECT OPPORTUNITIES

Avalon is actively looking at new project opportunities that meet the principle

criterion of offering near term revenue potential. With this strategy in mind, Avalon signed a binding Letter of Intent in October 2019, with CSA, a private US company, to partner in the re-development of the Will Scarlett closed coal mine site as a rare earths recovery project (as discussed above).

The potential for economic recovery of rare earths from coal mine wastes and fly ash has been receiving a lot of attention in the United States. These unusual occurrences represent an interesting opportunity to create a primary rare earths supply relatively quickly and at a low cost, compared to typical hardrock resources. It is also an opportunity to implement a very promising innovative new extraction technology developed in the US at the demonstration plant scale at Will Scarlett in 2020, potentially with financial support from the new US government funding program.

Like our East Kemptville Tin Project, Will Scarlett represents another opportunity to apply our model of utilizing new technology to extract valuable commodities from waste materials. We will continue to look for more such opportunities offering near term revenue potential in 2020.

### LILYPAD CESIUM

Avalon's Lilypad Cesium Project is another critical mineral resource with unusual enrichment in the rare cesium mineral pollucite. Cesium demand is growing, but has very limited supply. Located near the well-known Ring-of-Fire district in Northern Ontario, Lilypad may soon benefit from improved access and growing interest among local First Nations in supporting more economic development in the area. Following

the election of new leadership there in 2019, communications resumed with the Eabametoong First Nation at the nearby community of Fort Hope. We are planning to resume exploration on the property in 2020, with a focus on its cesium potential.

Creating opportunities for increased Indigenous participation in the mineral industry continues to be a passion of mine, and I am a frequent participant and speaker at conferences on this subject. I was honoured to receive the Prospectors and Developers Association of Canada (PDAC)'s Distinguished Service Award for my work in this area, at the 2019 PDAC annual convention last March.

In September, 2019, I was delighted to welcome Naomi Johnson to Avalon's Board of Directors: a lawyer with many years of experience in community engagement in different parts of the world. Director Jane Pagel will not be standing for re-election at the 2020 AGM in order to focus on enjoying her retirement. I want to thank Jane for her years of providing valuable input on sustainability matters for Avalon's Board.

Avalon is now well-positioned with its diversified critical minerals asset base and expertise in developing innovative process solutions to achieve its goal of becoming a profitable producer in the near term. Clearly, our share price has yet to reflect the underlying value of our assets, but we expect improvement in our market valuation in 2020, with increased awareness of the importance of establishing new sustainable critical mineral supply chains and recognition of Avalon's leadership in this area.

Once again, I thank you, our shareholders, for your patience and loyal support.

On behalf of Avalon's Board of Directors,



Donald S. Bubar  
President and Chief Executive Officer

January 8, 2020

## Critical minerals for a sustainable future



Please refer to Avalon's website at [www.AvalonAM.com](http://www.AvalonAM.com) for further company information.

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