

Avalon Announces Updated Resource Estimate and Development Plans for Separation Rapids Lithium Project, Kenora, Ontario

written by Raj Shah | May 24, 2018



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May 23, 2018 ([Source](#)) – [Avalon Advanced Materials Inc.](#) (TSX: AVL) (OTCQX: AVLNF) (“Avalon” or the “Company”) is pleased to announce a mineral resource estimate update for the Separation Rapids lithium deposit which includes results from the 2018

winter drilling program disclosed in the Company’s news release dated [April 3, 2018](#). In this program, four holes extended the known deposit to depth on both its east and west ends, resulting in a 10% increase in overall tonnage. This brings the total Measured and Indicated Resources to 8.405 million tonnes at 1.408% Li₂O, with an additional Inferred Resource of 1.791 million tonnes at 1.349% Li₂O (as summarized in Table 1 below). The deposit remains open to depth. The new resource estimate will be incorporated into an updated Preliminary Economic Assessment (“PEA”) now in preparation and targeted for completion by June 30, 2018.

Project Development Update

Development has been focused on evaluating several variants on the project model based on the relative proportions of the various potential lithium products. The current model, which

will be the basis for the updated PEA, contemplates a staged development approach which begins with a Phase 1 plant capable of initially producing 75,000 tonnes per annum ("tpa") of lithium mineral concentrate (petalite) for sale as an industrial mineral product to consumers in the glass industry, in addition to a further 40,000 tpa of lepidolite concentrate for sale to lithium chemical producers. Once scaled up, this plant will produce almost 180,000 tpa of lithium mineral concentrate. The plant will also have the potential to produce a feldspar concentrate by-product for other markets.

Phase 2 would involve a demonstration-scale hydrometallurgical pilot plant to begin producing trial quantities of the lithium battery material derivative product (lithium hydroxide or carbonate) for evaluation by potential end-users. Following acceptance of the product in the market, the Company would then proceed with a scale-up of the hydrometallurgical plant in Phase 3 to produce up to 10,000 tpa of lithium battery materials in addition to continuing to serve its other customers with industrial mineral products.

This development model has several potential significant economic benefits that could greatly reduce overall investment risk compared to the model used in the Company's 2016 PEA that contemplated a relatively large initial capital investment (\$450 million) to construct a 14,500 tpa dedicated lithium hydroxide production facility. These benefits include the potential of a relatively low initial CAPEX, (targeting in the range of \$50-70 million), early positive cash flow from industrial minerals product sales and flexibility in product design to ensure broad market acceptance before incurring the larger capital investment required to build the Phase 3 hydrometallurgical plant.

Interest in the Company's lithium mineral (petalite) product from glass industry consumers is high due to its exceptional

purity, which is an increasingly important factor in many new high-strength glass formulations. The Company is in advanced discussions with several glass industry customers with a view toward securing the offtake commitments required to finalize the project engineering and plant design and secure project financing.

With the completion of the updated PEA by June 30, 2018 and the necessary financing in place, Avalon intends to proceed with the necessary project engineering and process testwork to take the PEA development model to the Pre-Feasibility or Feasibility level of confidence on capital and operating cost estimates.

Sustainability and Permitting

The small environmental footprint, including low GHG emissions, and almost non-existent air emissions planned in the first stage, makes this phased development approach advantageous to the permitting process. There are no anticipated environmental impacts of concern at the project, with the mineral deposit and waste rock being non-toxic and non-acid generating, with minimal water discharge anticipated. Avalon continues to update and validate its completed 2007 environmental baseline study and the tailing management system design. The Company is planning to formally start the permitting process this summer, once sufficient engineering data and project financing are in place. Avalon is also currently working with Hydro One to determine the optimal route to deliver clean hydro-electric power to the site from one of the nearby dams on the English River.

The staged development approach is also advantageous to Avalon's potential Indigenous partners by providing time to consider opportunities for direct participation in project development and time for individual members to obtain the necessary training for jobs at the site. Engagement is ongoing with local

Indigenous communities, regulators, and local government who continue to be supportive of the project.

The technical information included in this news release has been reviewed and approved by the Company's Vice President, Exploration, Dr. William Mercer, P. Geo (Ont), and Dave Marsh, FAusIMM (CP), Senior Vice President, Metallurgy and Technology Development, both Qualified Persons under NI 43-101.

About Avalon Advanced Materials Inc.

Avalon Advanced Materials Inc. is a Canadian mineral development company specializing in niche market metals and minerals with growing demand in new technology. The Company has three advanced stage projects, all 100%-owned, providing investors with exposure to lithium, tin and indium, as well as rare earth elements, tantalum, niobium, and zirconium. Avalon is currently focusing on its Separation Rapids Lithium Project, Kenora, ON and its East Kemptville Tin-Indium Project, Yarmouth, NS. Social responsibility and environmental stewardship are corporate cornerstones.

This news release contains "forward-looking statements" within the meaning of the United States Private Securities Litigation Reform Act of 1995 and applicable Canadian securities legislation. Forward-looking statements include, but are not limited to statements that the new resource estimate will be incorporated into an updated PEA now in preparation and targeted for completion by June 30, 2018, that the current model, will be the basis for the updated PEA, statements about the proposed plant production and potential capex, cash flow and flexibility, that this development model has several significant economic benefits that greatly reduce overall investment risk, that with the completion of the updated PEA and the necessary financing in place, Avalon intends to proceed with the necessary project

engineering and process testwork to take the PEA development model to the Pre-Feasibility or Feasibility level of confidence on capital and operating cost estimates, that there are no anticipated environmental impacts of concern at the project and that the Company is planning to formally start the permitting process at the end of June, when engineering data and financing are available. Generally, these forward-looking statements can be identified by the use of forward-looking terminology such as "potential", "scheduled", "anticipates", "continues", "expects" or "does not expect", "is expected", "scheduled", "targeted", "planned", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will be" or "will not be" taken, reached or result, "will occur" or "be achieved". Forward-looking statements are subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of Avalon to be materially different from those expressed or implied by such forward-looking statements. Forward-looking statements are based on assumptions management believes to be reasonable at the time such statements are made. Although Avalon has attempted to identify important factors that could cause actual results to differ materially from those contained in forward-looking statements, there may be other factors that cause results not to be as anticipated, estimated or intended. Factors that may cause actual results to differ materially from expected results described in forward-looking statements include, but are not limited to market conditions, and the possibility of cost overruns or unanticipated costs and expenses as well as those risk factors set out in the Company's current Annual Information Form, Management's Discussion and Analysis and other disclosure documents available under the Company's profile at www.SEDAR.com. There can be no assurance that such statements will prove to be accurate, as actual results and

future events could differ materially from those anticipated in such statements. Such forward-looking statements have been provided for the purpose of assisting investors in understanding the Company's plans and objectives and may not be appropriate for other purposes. Accordingly, readers should not place undue reliance on forward-looking statements. Avalon does not undertake to update any forward-looking statements that are contained herein, except in accordance with applicable securities laws.

Table 1: Separation Rapids Lithium Deposit Mineral Resources Estimate as at May 22, 2018 (PZ refers to Petalite Zone and LPZ refers to Lepidolite-Petalite Zone)

	PZ					LPZ				
	Mt	% Li ₂ O	% Ta ₂ O ₅	% CsO	% Rb ₂ O	Mt	% Li ₂ O	% Ta ₂ O ₅	% CsO	% Rb ₂ O
Measured	2.425	1.440	0.005	0.010	0.322	0.939	1.410	0.008	0.027	0.473
Indicated	3.992	1.391	0.006	0.012	0.338	1.049	1.402	0.009	0.025	0.469
Measured + Indicated	6.416	1.409	0.006	0.011	0.332	1.989	1.406	0.009	0.026	0.471
Inferred	1.308	1.351	0.007	0.017	0.342	0.483	1.346	0.008	0.020	0.427
	Total PZ+LPZ									
	Mt	% Li ₂ O	% Ta ₂ O ₅	% CsO	% Rb ₂ O					
Measured	3.364	1.431	0.006	0.015	0.365					
Indicated	5.041	1.393	0.007	0.014	0.366					
Measured + Indicated	8.405	1.408	0.007	0.015	0.365					
Inferred	1.791	1.349	0.007	0.018	0.365					

Footnotes:

1. This resource estimate is valid as of May 22, 2018.

2. CIM definitions were followed for Mineral Resources.
3. The Qualified Person for this Mineral Resource estimate is William Mercer, PhD, P.Geo. (ON).
4. The resource estimate is based on Avalon's drilling of 74 previous holes totalling 11,644 metres drilled between 1997 and 2017 and a further four holes totalling 1,282 metres in 2018.
5. Drill data was organized in Maxwell DataShed and for estimation purposes was transferred to Geovia GEMS 6.8 software, wherein the block model was developed.
6. The geological units were modeled as outlined by drill core logs.
7. Resources were estimated by interpolating composites within a block model of 10 x 10 x 3 metre blocks oriented along the deposit strike.
8. Grade interpolation used the Ordinary Kriging method combined with variograms and search ellipses modeled for each rock unit. For PZ unit, search ellipses of 50 x 35 x 15 m and 175 x 125 x 45 m were used for Passes 1 and 2, respectively. For LPZ unit, search ellipses of 35 x 25 x 8, 75 x 50 x 15 and 115 x 75 x 25 were used for Passes 1, 2 and 3, respectively.
9. Measured material was defined as blocks interpolated using Passes 1 and 2, using composites from ≥ 4 drill holes and a distance ≤ 25 m to the nearest composite and additional blocks with excellent geological and grade continuity. Indicated material includes blocks interpolated with Pass 1 and 2 search ellipses, using ≥ 3 drill holes and a distance ≤ 35 m to the nearest composite and blocks with geological and grade continuity. Inferred material was defined as blocks interpolated with all Passes, composites from ≥ 2 drill holes and interpolated geological continuity up to 40 m below diamond drill holes.
10. Two metre composites were used and no capping was

necessary.

- 11. The mean density of 2.65 t/m³ was used for unit 6ABC and 2.62 t/m³ for unit 6D.*
- 12. The cut-off grade reported in this resource estimate, 0.6% Li₂O, is consistent with the previously published resource estimates by Avalon (Preliminary Economic Assessment, 2016; November 15, 2017 resource estimate).*
- 13. Mineral resources do not have demonstrated economic viability and their value may be materially affected by environmental, permitting, legal, title, socio-political, marketing or other issues.*