Avalon’s ‘Holy Grail’ plan-of-operations for near term production of NA critical materials

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Avalon is a company with big plans. With several advanced critical materials projects all in the safe jurisdiction of Canada. Using smart extraction processes and technology, and in some cases JV project partners, Avalon aims to cost-effectively bring several new projects into production.

Additionally Avalon is working on extracting valuable materials from waste materials, that offer potential for near term revenue streams. Many Governments and large miners are interested to facilitate the removal and further processing of waste material.

Avalon Advanced Materials Inc. (TSX: AVL | OTCQB: AVLNF) is focused on critical minerals and cleantech materials including rare earths, lithium, tantalum, cesium, cobalt, nickel, tin, and others with near term production potential.

Avalon has adopted a strategy of sourcing low CapEx, high value projects which can be put into small scale production quickly and cost effectively. To this end Avalon has several JV partners in their different projects.

Avalon Advanced Minerals project pipeline

Source

Nechalacho Rare Earth Elements Property (Thor Lake, Northwest Territories, Canada) (3% NSR on T-Zone and Tardiff Zone bought by Cheetah Resources, and 100% owns the HREE Basal Zone).

Avalon has sold some of the project (the near surface T-Zone and Tardiff Zone resources) to Cheetah Resources for C$5 million cash. Avalon will receive a 3% NSR on these areas should they reach production. Cheetah Resources recently announced they are moving rapidly toward small-scale production of rare earths including neodymium and praseodymium.

The Basal Zone retained by Avalon contains a rich polymetallic rare metals resource, with potential for economic recovery of the heavy rare earth elements, neodymium, praseodymium, lithium, zirconium, beryllium, niobium and tantalum. A Feasibility Study was completed in 2013 on the Basal Zone resulting in a NPV10% of $1.35 billion.

You can read more in a recent InvestorIntel article.

Separation Rapids Lithium Project

Separation Rapids Lithium Project is 70 km by road north of Kenora, Ontario. The deposit is one of the largest “complex-type” lithium-cesium-tantalum pegmatite deposits in the world, unusual in its enrichment in the rare, high purity lithium mineral petalite. A PEA was completed in 2018 resulting in a pre-tax NPV8% of $156 million, post tax IRR of 22.7%, CapEx of $77.7 million with a 20 year mine life. Avalon is currently doing process development work to optimize the process flowsheet and produce new petalite product samples for glass-ceramic manufacturers who have expressed strong interest in Avalon’s product. Also of interest is that Avalon is testing advanced processing methods such as sensor-based ore-sorting and dense media separation.

Next steps include processing a larger bulk product sample for customer qualification, which would then lead to off-take agreements to support project development. In 2020, subject to financing, other work will include a $3-5 million program to prepare for construction of mine and process plant in 2020-21 to produce lithium mineral concentrates. Added to this will be a FS, environmental assessments, and project permitting.

Separation Rapids Lithium Project

Source

Will Scarlett Rare Earths Recovery Project (near Marion, Illinois, USA) – Avalon to earn-in up to 50% from project owner Coal Strategy Advisors

The Will Scarlett Project is interesting as Avalon plans to process rare earths from coal mine wastes. Sampling of the waste has revealed high concentrations of total rare earth oxides in excess of 500 ppm. Also notable is that no significant uranium or thorium has been detected associated with the rare earths at Will Scarlett. The coal mine also has other metallic elements such as cobalt, nickel, lithium, manganese and zinc in mine waste materials.

Avalon President and CEO, Don Bubar, stated:

“In our research to date on rare earths in coal mine wastes, Will Scarlett stands out as exceptional in terms of the levels of rare earths present in the AMD. Like our East Kemptville Tin Project in Nova Scotia, Will Scarlett provides Avalon with an opportunity to extract value out of previously-mined waste materials at a relatively low cost, and potentially fully remediate the long term environmental liability associated with

acid mine drainage at the site.”

Avalon plans to participate in the installation and operation of a demonstration facility (pilot plant) to scale up the process at the Will Scarlett site, assuming funding can be arranged. The goal is to demonstrate how this technology can recover separated rare earths at a much lower cost than traditional solvent extraction technology, thereby making it economic to recover rare earths from lower grade resources, such as mine wastes.

Lilypad Cesium Property

Lilypad Cesium Property (150 km northeast of Pickle Lake, Ontario) is at exploration stage with cesium-lithium-tantalum mineralization. Past discoveries has included cesium assaying up to 6.205% Cs_2O over 1.70 metres and tantalum mineralization assaying over 0.10%Ta_2O_5 found in numerous tantalum-cesium-lithium pegmatite dykes. This summer Avalon plans to follow up on encouraging results obtained during past work programs.

Warren Township Anorthosite Project

Warren Township Anorthosite Project (100 km west of Timmins, Ontario). The tenement hosts a significant resource of high purity anorthosite, consisting of up to 98% high calcium plagioclase feldspar. The PFS was completed in 2003.

East Kemptville Tin-Indium Project

East Kemptville Tin-Indium Project (45 km northeast of Yarmouth, Nova Scotia). PEA completed in 2018. There is the opportunity to sustainably fully rehabilitate the site through recovery of tin from stockpiles using new ore-sorting technology at a very low CapEx. Currently the project is on hold.