Avalon Improves Thor Lake Resource with High Grade Heavies

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With Thor Lake, Avalon Ventures (TSX: AVL) has one of the most unique rare earth and heavy rare earth deposits in the world where it recently delineated a new zone of high grade HREEs. This new discovery has altered the economics of the project and, according to President and CEO Don Bubar, lead to a rethinking of how the deposit will be mined.

Don Bubar

Global Resource Reference: Your February resource estimate update is for the Lake Zone with the new high grade zone called the Basal Zone. What is the significance of that zone and the new estimate?

Don Bubar: Our objective was to define a higher grade sub-zone within this large resource called the Lake Zone. We had identified a large low grade rare earth resource last year with the Scoping Study. We knew there was some internal zoning, so it was a matter of defining the high grade sub-zones with the 2008 drilling program. We discovered that the richest mineralization and the more valuable heavy rare earths are in a layer at the base of the deposit, which we now call the Basal Zone.

GRR: One of the important aspects of that new resource is the heavy rare earths and the grades you're coming up with.

DB: Yes. The total rare earth content of the ore at around 2% is good, but the heavy rare earth component of the total is what makes it so attractive. In a typical rare earth deposit, 2-3% of the total is represented by the heavy rare earths is common, whereas in the Basal Zone we are finding upwards of 20% of the total rare earths represented by the more valuable heavy earths. This gives the Basal Zone ore a high gross metal value and this will make a big difference in the economics of the deposit going forward.

GRR: Why are heavy rare earths so important?

DB: What is happening today is that innovation is marching down the periodic table and scientists are finding many more applications for heavy rare earths. A couple of specific ones that are growing rapidly are the use of the heavy rare earths europium, terbium and yttrium as phosphors for generating the colors in flat screen display panels. All display panels such as PDAs, computers flat screens and BlackBerrys require these rare earth phosphors and there are no substitutes.

Another important application for heavy rare earths is in high-strength permanent magnets. Notably, the heavy rare earth dysprosium alters the thermal properties of magnets, allowing them to retain their magnetic properties even when heated. This has important ramifications for the automobile industry and hybrid vehicles in particular, as well as other appliances like air conditioners that get hot. All electric motors can now be made more energy efficient through the use of rare earth magnets.

As demand for these products grow, demand for heavy rare earths grows. And more importantly, sources of supply are very few. There is only one significant source of heavy rare earths right now in China. Thor Lake offers a significant size alternative supply source for the heavy rare earths.

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GRR: Now that you've discovered this high grade heavy rare earth Basal Zone, what will you do to advance the project?

DB: A pre-feasibility study, but there is more work to do before we have all the inputs required to get this study going. We have to do more drilling to tighten up the spacing and move more of the resource to the indicated level of confidence. Also, the highest grades and thicknesses in the Basal Zone that we've seen to date are near the southern limit of the known resource and could continue further south, so we have to do more drilling in that area to see if even higher grade mineralization may be discovered. Also, we will continue to work on the metallurgical process flow sheet and do more test work to define how best to recover the rare earths.

GRR: You've also been able to raise $1.5 million in spite of the market conditions. What is the plan with that? Is that going toward these new drill programs?

DB: That's right. We wanted to top up a little bit just in case this market stays ugly for a while yet. There was some flow through financing available at the end of last year, so we decided to take advantage of that.

GRR: What is your capital position now?

DB: We have about $9 million in the bank, of which we'll spend about half in 2009 on our projects, administration and overheads.

GRR: How are changing markets improving your position in the global market for rare earths?

DB: The market is certainly evolving rapidly. We see continued growth in demand for rare earths generally, despite the recessionary environment, in all the new applications related to green energy technology. Also, increasing constraints on supplies out of China as China continues to put more restrictions on exports is creating an even greater need for alternative sources of heavy rare earths. Japan in particular, is very reliant on China as a source of supply for their rare earths. Without a reliable alternative source of supply, Japan's rare earths consuming industries such as electronics and automotive will be vulnerable to disruptions in production. Becoming that alternative source of supply, for the heavy rare earths in particular, is the opportunity that is emerging for Avalon. GRR