



Avalon Rare Metals

17 April 2009

Avalon Rare Metals latest drilling results enhance Thor Lake's remarkable potential

According to legend Avalon was a magical, fortunate island where everything grew in abundance and it was ruled by nine sisters according to a "pleasing set of laws". Maybe some similarities then with its namesake, TSX-listed Avalon Rare Metals Inc, as the company has an abundance of rare metals (twenty five different types of them) at its five projects in Canada, and it places great store on "pleasing laws"; of environmental and social responsibility, and sustainability. Moreover the company has just published some auspicious drilling results extending the known mineralisation of its flagship Thor Lake project, which now seems to be shaping up to be one of the largest and richest undeveloped deposits of rare earth elements in the world.

Rare Metals and the Rare Earth Elements

Before looking in more detail at Avalon and the latest results it may be worth a quick spin around the world of rare metals. Broadly speaking they are the 60+ metals on the periodic table which are not precious, base or ferrous. The 15 rare earth elements (REEs) are a subset of these which always occur together in the earth's crust (and also on the periodic table where they form the bottom two rows). These rare earths share a number of characteristics which are becoming increasingly important in many new and green technologies.

Supply-Demand Fundamentals

Since prices of rare metals are negotiated directly between producers and fabricators and the metals are not traded on exchanges price tends to be driven by supply-demand fundamentals rather than speculation. Of course each rare metal has different supply/demand fundamentals. Good sources for researching each metal individually include Avalon's own very informative website, the USGS (US Geological Service) and the UK Minor Metals Trade Association. Nonetheless some generalisations can be made to assist in understanding Avalon's strategy and potential.

1. Rare metals have myriad uses: and the number of applications is growing rapidly as materials scientists continue to investigate their chemical, optical, fluorescent, electrical, metallurgical, catalytic and physical properties. The metals in Avalon's portfolio are used in glass, ceramics, laptops, cell phones, electronics, superalloys, aerospace, chronometry, lubricants, medicine, catalysts, magnets, and so the list goes on. An Apple iPhone for example uses indium in the touch-screen and solders, tantalum in the capacitors, gallium and germanium in the chips, neodymium in the voice coil, disk drive and earphone magnets, beryllium-copper in the connectors, rare earth phosphors in the screen, zirconium ceramics in the audio circuits and a lithium ion rechargeable battery.
2. The REEs are particularly vital in new green technologies: Their uses in supermagnets, motors, thin film solar panels, energy efficient lighting, wind turbines and rechargeable batteries are particularly important in increasing energy efficiency. A

Price: C \$0.56
Market Cap: C \$38.17m

1 Year Share Price Graph



Share Information

Code: AVL
Listing: TSX
52 week High: C\$1.92
52 week Low: C\$0.31
Sector: General Mining
Website: www.avalonraremetals.com
www.avalonventures.com

Company Synopsis:

Avalon Rare Metals, formerly Avalon Ventures Ltd, (AVL: TSX) is a Canadian junior mineral exploration and development company with a primary focus on the rare metals and minerals that are in increasing demand for high technology and environmentally-beneficial applications. These include lithium, tantalum, indium, gallium, rare earth elements ("REE") such as neodymium and terbium and rare minerals such as calcium feldspar. Avalon presently owns five rare metals and minerals projects in Canada, three of which are at an advanced stage of development.

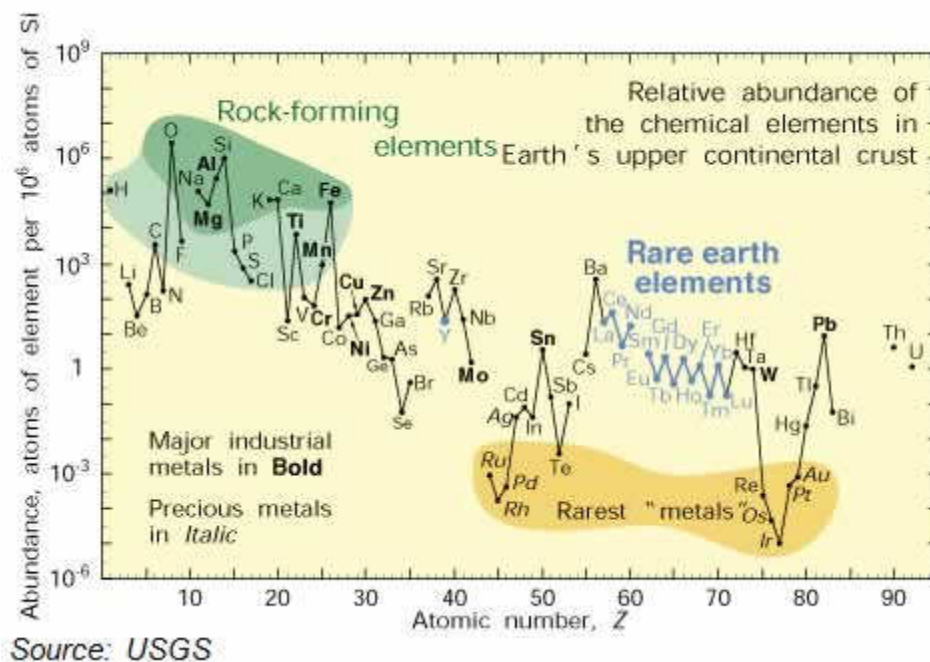
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supermagnet in an air conditioner, for example, can reduce power consumption by 50%. A hybrid car, with its lower emissions and better fuel economy than conventional cars, uses 30kg of REEs.

- Demand is therefore growing rapidly. Demand growth for REEs averaged 8%pa between 2003 and 2008 and will continue to grow at a similar or even faster rate to 2014 according to figures presented at PDAC in March 2009 by Dudley Kingsnorth of IMCOA, with particularly strong growth in REE use in magnets and metal alloys.
- However there are currently only a few producers of rare earth and rare metals. Strictly speaking the terms rare metals and rare earth elements are misnomers. As the chart shows, the more common of the rare earths are as abundant as copper and zinc, and even the rarest are around 200 times more abundant than gold. However these metals are rarely found in concentrations that are economically viable, so there are currently only a handful of commercial sources around the world.

Abundance of the Elements in the Earth's Crust



Rare metals (including rare earth metal) are produced in far smaller quantities than base metals; compare, say, the 40 million tonnes of aluminium produced worldwide each year with the 27,000 tonnes of lithium or 125,000 tonnes of the combined rare earth elements.

- China plays a very dominant role in the REE market: currently accounting for around 95% of global production and 60% of consumption. According to Clint Cox the Chinese view REEs as strategic and are "vigilant to protect the REE industry within China" with tight export quotas, no foreign ownership of REE mines and high export tariffs.
- Although the rare earth elements are always found together the distribution is nearly always skewed towards the five Light Rare Earths (LREE) which typically account for 97-99% of the resource while the ten heavy rare earths (HREE) are just 1-3%. The LREEs therefore tend to have much lower prices than the heavies, with the cheapest, Samarium Oxide, currently having an indicative price of around \$4.50/kg compared with the heavy Europium Oxide at \$430/kg.

The bottom line is that there has been a massive swing in the supply-demand balance. In the 1990s when rare metals were used only in niche applications there was significant over-production and low prices led to almost all non-Chinese producers shutting down their operations. Since 2004 while supply has remained concentrated in China demand has been accelerating rapidly as the number of end-uses has spiralled leading to concerns about future availability. There have already been shortages of dysprosium, neodymium, europium and terbium, though these have eased in the current economic climate.

However looking ahead it is almost certain that new supplies of rare metals, and rare earths in particular, will be needed, and that there will be a requirement for sources outside China. The future supply-demand balance could be favourable indeed for Avalon, which could become a producer by 2013.

Avalon: Strategy and Projects

Avalon aims to offer shareholders exposure to a broad set of rare metals and minerals. Its strategy is to explore and develop rare metal and industrial mineral projects with a view to becoming a producer in the medium term, to encourage the development of end-use markets for these rare metals and minerals, and to acquire further rare metal assets. It currently owns seven projects in Canada, of which five are active, and has small royalty interests on two other projects,

Project	Province	Target commodities	Notes
Thor Lake	North West Territories	Rare earths, yttrium, beryllium, tantalum, niobium, zirconium, gallium	Flagship project. Updated NI-43-101 resource Feb 2009
Warren Township	Ontario	Anorthosite (>90% calcium feldspar)	Near road, rail and market
Separation Rapids	Ontario	Lithium, tantalum, niobium	One of largest rare metal pegmatite deposits in world
East Kemptville	Nova Scotia	Indium, tin, gallium	Resource estimate pending
Lilypad Lakes	Ontario	Tantalum, cesium	Awaiting new road and improvement in tantalum & cesium markets

At present Thor Lake, which is located 100km south east of Yellowknife, is Avalon's prime focus. It is considered to have the most attractive fundamentals as the REEs currently offer the best opportunity to create value for shareholders. The project is particularly attractive because of both the size and the unusually high concentration of heavy (and high value) REEs in the Lake Zone deposit. For example the latest N43-101 mineral resource update published in February 2009 showed that the heavy rare earths accounted for at least 20% of the Basal Zone part of the Lake Deposit compared with the more normal distribution worldwide of 1-3%. The initial results from the 2009 winter drilling programme, published earlier this week, were even more remarkable with one hole (L09-142) including 28 metres at 1.91% total rare earth oxides (TREO) of which 26% was heavy rare earths with a sub-interval of 2m at 3.09% TREO and an astonishing 55.5% HREO.

Lake Zone NI-43-101 Mineral Resources Summary, February 2009 (Note that Lake Zone is just one of 6 mineralised zones at Thor Lake)

	M tonnes	TREO (%)	HREO (%)	HREO/TREO (%)
Indicated				
Basal Zone	2.2	2.14	0.43	20.0
Upper Zone	1.9	1.96	0.19	9.7
Total	4.1	2.06	0.32	15.5
Inferred				
Basal Zone	28.4	1.99	0.44	22.1
Upper Zone	32.7	2.10	0.17	8.2
Total	61.2	2.05	0.30	14.5

at the 1.60% TREO cut-off grade where TREO=Total Rare Earth Oxides and HREO=Heavy Rare Earth Oxides, Europium through Lutetium

The weather will permit Avalon just a few more days drilling before the spring break-up will force work to be suspended until summer. So far this season it has drilled 22 holes totalling 4630 metres with a view to improving the confidence of the resource estimate and delineating the southern limits of the Lake Zone deposit where some of the highest grades and greatest thicknesses have been encountered; results from the first seven have been published. It is also undertaking metallurgical test work to optimise recovery rates. To date the best results have yielded 99% recovery but testing is continuing to improve reagent consumption.

For the rest of the year the company will continue to conduct further drilling, metallurgical, mining, environmental and pre-feasibility studies. If these all proceed as hoped then the next three years will be spent conducting a full feasibility study, setting up permits, negotiating offtake agreements and constructing the mine with a view to beginning production in 2013. Production could begin sooner on some of the other properties.

Investment Case

A number of risks and issues have been raised by analyst Michael Fulp and others including:

- the relatively low liquidity of the shares
- the remote location of Thor Lake, which will increase the costs of the operation
- the uncertainty over timely receipt of operating permits
- the metallurgy of the unique deposit. REEs are relatively difficult to separate and the unique composition of Thor Lake will make this a new technical frontier.
- the quasi-monopolistic impact of the Chinese on the REE market and prices

However there are some strong bull points for Avalon including:

- the very positive fundamentals of the REE and rare metals markets, which are riding the green wave
- the very large size of the Lake Zone resource at Thor Lake, and its favourable skew towards the heavy, more valuable, rare earth elements
- the potential for Avalon's other projects to move into production
- Avalon's early mover advantage in the sector
- its considerable management expertise and experience in a niche market
- the location of all the projects in a politically stable jurisdiction
- the projects represent one of the few potential sources of critical REEs outside China
- Avalon's strong relations with the local First Nations communities and its strong corporate ethics and CSR policy.
- Avalon's cash reserves of C\$7.5m compared with 2009 budget expenditure of \$4.5m which means that Avalon probably has the wherewithal to survive the current storm.
- the potential for Avalon to qualify as a green/ethical investment
- Avalon's promotion from the Venture to the full Toronto Stock Exchange in February 2008 which could allow for increased access to equity and debt funding and increased exposure to institutional investors.
- the potential to increase the resource which is open in all directions
- the potential interest from end-users as strategic partners.

Avalon has been striving to minimise risk of permitting delays at all of its projects by employing best practice principles and consistently operating in an environmentally and socially responsible manner. It has also taken a proactive stance on its community relations and health and safety policies, working closely with all stakeholders. The results from the remaining 15 winter season holes, the metallurgical and pre-feasibility studies will be important milestones this year, giving investors better insight into the potential project economics. If the company is successful in deriving an appropriate metallurgical process for Thor Lake then the economics of the project could look favourable indeed.

The company, like the legendary island, is unique. And like Avalon Island it could eventually be producing in abundance and be well positioned for a green future.



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