The Chinese Rare Earths Monopoly Saga Continues

written by Jack Lifton | September 12, 2023 The blather in the media suggesting that China could or already be weaponizing the export of their "rare earths" to the rest of the world is so one-sided that it must make the Chinese wonder if non-Chinese "analysts" and "experts" ever bother to see the world from the perspective of "others." For more than a decade China has been aggressively acquiring outright or buying the output of non-Chinese rare earth sources. At this point in time, China is the overwhelming buyer, worldwide, for example of the mineral monazite, which is produced primarily as a byproduct of the processing of heavy mineral sands, which are the source of zircon and ilmenite, source minerals for, respectively, zirconium and titanium.

A profitable Energy Fuels acquires a rare earth project in Brazil and leads the way for critical minerals in the USA

written by InvestorNews | September 12, 2023
Energy Fuels Inc. (NYSE American: UUUU | TSX: EFR) ("Energy

Fuels") has been going from strength to strength in 2023. As the leading US uranium producer, recent expansion to rare earths processing has made Energy Fuels a leading US supplier of critical minerals.

Leo Power of Search Minerals on its Rare Earths Project in Canada and Recent \$5M Government Grant

written by InvestorNews | September 12, 2023

In this InvestorIntel interview during PDAC 2023, Chris Thompson talks with Leo Power, Interim President, CEO, and Chairman of <u>Search Minerals Inc.</u> (TSXV: SMY | OTCQB: SHCMF) about its rare earths project in Newfoundland and Labrador.

Leo discusses the recent announcement that the Canadian government has granted \$5 million towards building the Company's \$9.3 million demonstration plant to test its direct extraction technology to separate rare earths from ore.

He provides an overview of Search's two significant deposits, Deep Fox and Foxtrot, and its 2022 Preliminary Economic Assessment ("PEA") that outlined a 26-year mine life to produce the valuable magnet rare earths – neodymium (Nd), praseodymium (Pr), terbium (Tb), and dysprosium (Dy).

Finally, Leo outlines catalysts for this year that includes starting to work on the Feasibility report and further regional

exploration.

To access the full InvestorIntel interview, <u>click here</u>.

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About Search Minerals Inc.

Search Minerals is focused on finding and developing Critical Rare Earths Elements (CREE), zirconium (Zr), and hafnium (Hf) resources within the emerging Port Hope Simpson – St. Lewis CREE District of South East Labrador. Search controls two deposits (Foxtrot and Deep Fox), two drill-ready prospects (Fox Meadow and Silver Fox), and numerous other regional rare earths ("REE") prospects, including Fox Valley, Foxy Lady, and Awesome Fox, along a 64 km long belt forming an REE District in Labrador. Search has completed a preliminary economic assessment ("PEA") report for Deep Fox and Foxtrot.

Search Minerals has continued to optimize its patented Hydrometallurgy Direct Extraction Process technology with support from the Department of Industry, Energy and Technology, the Government of Newfoundland and Labrador, and from the Atlantic Canada Opportunity Agency. It has completed two pilot plant operations and produced highly purified mixed rare earth carbonate concentrate and mixed REO concentrate for separation and refining.

Search Minerals was selected to participate in the Government of Canada Accelerated Growth Service ("AGS") initiative, which supports high-growth companies. AGS, as a 'one-stop shop' model, provides Search with coordinated access to Government of Canada resources as Search continues to move quickly to production and contribute to the establishment of a stable and secure rare earth element North American and European supply chain. To learn more about Search Minerals Inc., <u>click here</u>.

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If you have any questions surrounding the content of this

interview, please contact us at +1 416 792 8228 and/or email us direct at <u>info@investorintel.com</u>.

Zeeshan Syed of Avalon Advanced Materials Discusses Plans for Lithium Processing in Canada

written by InvestorNews | September 12, 2023 In this InvestorIntel interview during PDAC 2023, Tracy Weslosky talks with Zeeshan Syed, President of <u>Avalon Advanced Materials</u> <u>Inc.</u> (TSX: AVL | OTCQB: AVLNF) discussing Avalon's latest news and progress, particularly in regards to lithium.

Zeeshan says he is most excited about Avalon's Separation Rapids Lithium Project to take advantage of the market's current strong interest in lithium. He discusses the 2018 drilling campaign at the Separation Rapids Project that discovered almost 10 million tonnes of lithium. He mentions there is a new drilling program underway at the Project and that Avalon should soon have an update out on that for investors. He states: "We are quite optimistic on the results there."

Zeeshan also discusses their strategic partnership with battery giant LG Energy Solutions ("LGES") and <u>Avalon's plans for a</u> <u>lithium processing facility in Canada</u> to supply LGES, as well as the strategic importance of these Projects for Canada. He referenced his discussion today with Canada Innovation and Science Minister Francois-Philippe Champagne.

To access the full InvestorIntel interview, click here.

Subscribe to the InvestorIntel YouTube channel by <u>clicking here</u>.

About Avalon Advanced Materials Inc.

Avalon Advanced Materials Inc. is a Canadian mineral development company specializing in sustainably-produced materials for clean technology. The Company now has four advanced-stage projects, providing investors with exposure to lithium, tin, and indium, as well as rare earth elements, tantalum, cesium and zirconium. Avalon is currently focusing on developing its Separation Rapids Lithium Project near Kenora, Ontario while continuing to advance other projects, including its 100%-owned Lilypad Cesium-Tantalum-Lithium Project located near Fort Hope, Ontario. Social responsibility and environmental stewardship are corporate cornerstones.

To learn more about Avalon Advanced Materials Inc., <u>click here</u>.

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Chris Thompson of eResearch talks about his Search Minerals "Holy Grail" rare

earths research report

written by InvestorNews | September 12, 2023 In this InvestorIntel interview, host Tracy Weslosky talks to eResearch Corporation's President & Director of Research, Chris Thompson, about his recently released 72-page Initiation Equity Research Report on Search Minerals Inc. (TSXV: SMY | OTCQB: SHCMF).

Talking about the need for a comprehensive report, Chris tells Tracy: "The report on Search Minerals contained a lot of information on the rare earth minerals because a lot of people don't know a lot about them. So, and since there are 17 different minerals in that grouping, it was like writing a report on 17 different minerals in one report." He goes on to talk about the importance of rare earths to modern industries like electric vehicles, wireless imaging and solar power: "All these modern technologies rely on one or many of these rare earths and they are critically important because you cannot substitute them, so you cannot take another mineral and substitute them into the product, so you need these minerals and that's what makes them very important."

Discussing Search Minerals, Chris continued that "the important thing is that Search Minerals is a Canadian company that's focusing on developing a project in Labrador, so it's a homegrown project for the very important rare earths sector and it looks like that may be driving forward to be one of the first operating mines and processors in North America." With a revised PEA and improved economics, he continues that "I think the important thing about this company and the project is the fact that it is a district scale project, and it can go on for over 20 years, which is important when you're developing a project of this size." To access the full InvestorIntel interview, click here

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About Search Minerals Inc.

Led by a proven management team and board of directors, Search is focused on finding and developing Critical Rare Earths Elements (CREE), Zirconium (Zr) and Hafnium (Hf) resources within the emerging Port Hope Simpson – St. Lewis CREE District of South East Labrador. Search controls two deposits (Foxtrot and Deep Fox), two drill ready prospects (Fox Meadow and Silver Fox) and numerous other REE prospects, including Fox Valley, Foxy Lady and Awesome Fox, along a 64 km long belt forming a REE District in Labrador. Search has completed a preliminary economic assessment report for **DEEPFOX** and **FOXTROT**. Search is also working on three exploration prospects along the belt which include: **FOX MEADOW, SILVER FOX** and **AWESOME FOX**.

Search has continued to optimize our patented Direct Extraction Process technology with the support from the Department of Industry, Energy ad Technology, Government of Newfoundland and Labrador, and from the Atlantic Canada Opportunity Agency. We have completed two pilot plant operations and produced highly purified mixed rare earth carbonate concentrate and mixed REO concentrate for separation and refining. We also recognize the continued support by the Government of Newfoundland and Labrador for its Junior Exploration Program.

Search Minerals was selected to participate in the Government of Canada Accelerated Growth Service ("AGS") initiative, which supports high growth companies. AGS, as a 'one-stop shop' model, provides Search with coordinated access to Government of Canada resources as Search continues to move quickly to production and contribute to the establishment of a stable and secure rare earth element North American and European supply chain.

To learn more about Search Minerals Inc., click here

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Don Bubar of Avalon Advanced Materials on delivering lithium for batteries and advanced ceramics

written by InvestorNews | September 12, 2023 In this Critical Minerals Institute interview, host Jack Lifton talks to Avalon Advanced Materials Inc.'s (TSX: AVL | OTCQB: AVLNF) President, CEO and Director Don Bubar about establishing a North American lithium supply chain and Avalon's new off-take agreement with a major international glass-ceramics manufacturer for petalite concentrates.

In the interview, which can also be viewed in full on the InvestorIntel YouTube channel (click here to access InvestorChannel.com), Don talks about the competitive advantages of building Avalon's lithium refinery in Thunder Bay, Ontario. In addition to having recently signed an MOU with LG Energy Solution to supply battery-grade lithium hydroxide starting in 2025, Don tells Jack: "The main reason for establishing it there was also to basically open the door to other producers of lithium mineral concentrates from the many, many lithium pegmatites that occur throughout Northwestern Ontario…" In addition to lithium, Don says that Avalon provides exposure to multiple other minerals like rare earths, tantalum, and cesium.

Don also talks about a recently announced multi-year agreement for Avalon to supply a non-Chinese international glass ceramic manufacturer with petalite concentrates. "High strength glass ceramic products of various types," Don tells Jack, "that's a market you don't hear a whole lot about for lithium. It is growing now too through further innovation in other types of high strength glass products and ceramic products."

To access the full Critical Minerals Institute interview, <u>click</u> <u>here</u>

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About Avalon Advanced Materials Inc.

Avalon Advanced Materials Inc. is a Canadian mineral development company specializing in sustainably-produced materials for clean technology. The Company now has four advanced stage projects, providing investors with exposure to lithium, tin and indium, as well as rare earth elements, tantalum, cesium and zirconium. Avalon is currently focusing on developing its Separation Rapids Lithium Project near Kenora, Ontario while continuing to advance other projects, including its 100%-owned Lilypad Cesium-Tantalum-Lithium Project located near Fort Hope, Ontario. Social responsibility and environmental stewardship are corporate cornerstones.

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Don Bubar of Avalon Advanced Materials on signing key new agreements and the high demand for lithium

written by InvestorNews | September 12, 2023

In this InvestorIntel interview, host Tracy Weslosky talks to Avalon Advanced Materials Inc.'s (TSX: AVL | OTCQB: AVLNF) President, CEO and Director Don Bubar about the growing world demand for lithium for high strength glass ceramics, and its recent announcement that it has secured a firm commitment to purchase petalite concentrates produced at the company's Separation Rapids Lithium Project in Ontario, Canada.

In the interview, which can also be viewed in full on the InvestorIntel YouTube channel (click here to access InvestorChannel.com), Don tells Tracy that most people are aware of the growing importance of lithium in EV battery technology, but "one of the main uses from the past has always been in high strength glass ceramic products... It's actually the mineral that Corning used to invent CorningWare cookware, which was one of the first examples of high strength glass ceramic product." He goes on to say that there is increasing demand and innovative uses for other types of high strength glass ceramic products that require the high purity lithium aluminum silicate mineral petalite produced by Avalon. Don also discusses the new multi-year off-take agreement recently announced by Avalon for the delivery of petalite to a major non-Chinese international glass ceramic manufacturer.

Don also talks about Avalon being one of the three companies to sign a non-binding memorandum of understanding with LG Energy

Solution to supply them with a battery-grade lithium hydroxide starting in 2025. The MOU was signed during the visit of South Korea's President, Yoon Suk Yeol, to Canada in September. Under the terms of the MOU, Avalon would commit for an initial period of five years to provide LGES with at least 50% of its planned initial lithium hydroxide production. Don adds: "We've been getting the message out on our vision for creating the lithium battery materials refinery in Thunder Bay, and that would be an ideal location to serve the needs of companies that are now going to set up manufacturing facilities in Southern Ontario."

To access the full InvestorIntel interview, click here

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eResearch Report on Search Minerals offers investors a 'staggering' volume of information on the rare earths market

written by Tracy Weslosky | September 12, 2023 Over the years I have lost count of the times I have recommended that public companies secure a research report, simply because I personally love the benefit of third-party analysis and metrics. Toss in an analyst with more financial degrees than most CFOs such as eResearch's Chris Thompson, and the analysis can prove beneficial to everyone reading the content, including the company and all of us interested in critical minerals. Having followed rare earths company <u>Search Minerals Inc.</u> (TSXV: SMY | OTCQB: SHCMF) ("Search") for a decade now, the recent <u>eResearch</u> analyst report blind-sided me by the coverage in that it was a staggering 72-page overview, review and historical biography of not only Search Minerals, but a worthwhile read on the rare earths sector.

Now for my notes extracted from my review of the eResearch Report on Search, but again I urge you to access the <u>eResearch</u> <u>analyst report</u> directly to secure any answers you may be 'searching' for...

Search Minerals is developing their rare earths projects in Labrador, Canada. Their flagship project is the **Port Hope**

Simpson ("PHS") Property which includes the Foxtrot resource, Deep Fox resource, Silver Fox, Awesome Fox, and Fox Meadow deposits. The Property is prospective for rare earth elements ('REE') Neodymium (Nd), Praseodymium (Pr), Dysprosium (Dy), and Terbium (Tb), Zirconium (Zr) and Hafnium (Hf). Search Minerals plans mining and primary production of the Deep Fox and Foxtrot deposits all going well by 2025 in Labrador and further refining of concentrate into REE oxides and carbonates on the Island of Newfoundland thereafter.

The updated 2022 PEA resulted in a <u>post-tax NPV8% of C\$1.31</u> <u>billion</u> and a post-tax IRR of 41.5%. Initial CapEx was estimated at <u>C\$422 million</u> (including a C\$61 million contingency) with a mine life of 26 years.

Foxtrot and Deep Fox Resource estimate - 31 December 2021

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Source: <u>Search Minerals news April 11, 2022</u>

Search Minerals development timeline plan

×

Source: <u>eResearch report on Search Minerals p.15</u>

Highlights of the eResearch report ("The report") on Search Minerals, which was initiated on September 14, 2022:

The Importance of Rare Earth Elements (REE) – If you are new to rare earths, this report highlights the many uses of rare earths including their role in the EV sector. Of interest was the <u>quote on page 4</u>: "Neodymium (Nd) is the strongest known magnetic substance and Nd magnets are used in applications that require strong, compact permanent magnets, such as cellular phones, electric motors, hard disk drives, televisions, and medical devices." Also an interesting point for your next trivial discussion with friends over a glass of wine, is that the smartphone (screen and electronics) contains at least 9 rare earth elements.

- Search Minerals PEA (2022) Highlights (based on the Foxtrot and Deep Fox Resource) – Mine production of 2,000 tpd (720,000 tpa) over a 26-year mine life, including both open pit and underground operations....Underground mining capital in Year 7 of C\$54 million is funded from operations....Annual production of approximately 1,437 t of Magnet Rare Earths Oxides (Nd+Pr: 1,291 t, Dy: 125 t, and Tb: 21 t).
- Key Projects Funded for C2022: Funded for Deep Fox exploration, preparation of 70t bulk sample, and working towards the start of a Feasibility Study.
- Strong Management Team Management has extensive experience, geological knowledge of the region, and are experts in REE processing. Since I know many of the members of this team, I urge you to review the geological team as many in this sector often refer to them as the best in the business, specifically Dr. David Dreisinger whom Jack Lifton and I have used in numerous interviews over the years to help the InvestorIntel.com audience understand the rare earths market.
- Search Minerals Appears Inexpensive Using Different Valuation Metrics – The Report looked at several different valuation methodologies for Search Minerals. eResearch initiates coverage on Search Minerals and reports a Speculative Buy Rating.

Again, the eResearch report makes for compelling reading and I would encourage anyone serious about investing in rare earths investors to review the entire report.

Most certainly the potential 17x upside (p 5) if Search Minerals succeeds to production is something to consider, especially given the backdrop of forecast shortages of the key magnet rare earths this decade as the EV and wind energy sectors potentially boom. Investors should also consider the various risks that junior miners face as not all will succeed.

Search Minerals Inc. currently trades at C\$0.10 with a market cap of <u>C\$41 million</u>.

Disclosure: The valuations presented in this article are those of eResearch and not InvestorIntel. Search Minerals is a digital media advertiser on InvestorIntel.com and pays for both banner ads and interviews, however, neither eResearch nor Search Minerals have paid for this content.

A titan of titanium — with a big HAMR

written by InvestorNews | September 12, 2023 Companies that combine hard rock assets with technology have a unique appeal. It gives you the tangible and familiar steps of a mining company – drill, initial resource, PFS, and PEA progress that you can measure and monitor with reasonable transparency. But if it also has an innovative technology component, it also can offer the potential of a greater upside if the technology side of the business ends up being a game-changer. Granted you have to have the funding and the human resources to keep both aspects of the business moving forward in a way that is beneficial to shareholders, which can be a challenge depending on your size. But if you keep making positive progress on both fronts without sacrificing one aspect of the business or the other, then a shareholder can be handsomely rewarded. It's also good diversification if one of your business units lays an egg so to speak.

Today's company could also almost fit the bill for the <u>Dean's</u> <u>List</u> critical minerals series except that its mineral assets are in the U.S. Arguably, that's better for investors given the size of the market and the scale for potential government support. So let's dive into <u>IperionX Limited</u> (NASDAQ: IPX | ASX: IPX), a U.S. critical minerals company that is also pursuing a patented powder metallurgy process technology that allows for the production of titanium powders. The company aims to be a leading developer of sustainable critical mineral supply chains in the United States through a multi-pronged strategy comprising a variety of technology, integration, and sustainability focused initiatives.

Starting with the mining side of the business, IperionX holds a 100% interest in the <u>Titan Project</u> located in Tennessee, a very large titanium resource in North America which is also rich in rare earth minerals. The Titan Project is one of the largest titanium, zirconium and rare earth minerals deposits in the U.S., forming part of a large-scale critical mineralization trend in an area known as the Mississippi embayment. The Titan Project's unconsolidated, near-surface mineral sand hosted material allows the potential for simple, low-impact, low-cost and sustainable mineral extraction, unlike many hard rock mineral deposits.

IperionX released the result of a <u>scoping study</u> on the Project in late June which included an after tax NPV₈ of US\$692 million,

potential for significant cashflow generation including an average annual EBITDA of US\$117 million, and a 1.9 year payback period. Another highlight that I believe will help elevate the profile of this project is the development of a sequential mining method to allow for a low cost, reduced area footprint and environmentally sustainable mining process. Lastly, the location (aside from simply being in the U.S.) is near existing infrastructure including low-cost power and gas, with highcapacity transmission lines near the Project, abundant transportation infrastructure including the Norfolk Southern mainline running through Camden, the major I-40 highway just 10 miles south of Camden and a major barge-loading point 15 miles from the Titan Project connecting to all major U.S. customers and export ports. I believe once the U.S. gets the ball rolling on domestic supply of various commodities, that sustainability and carbon footprint will be the differentiator between a good project and a great project.

On the technology side, IperionX holds an exclusive option to acquire the <u>HAMR technology</u> and other associated technologies. The patented metal technologies, centered around Hydrogen Assisted Metallothermic Reduction (HAMR), were invented by world-renowned metallurgist, <u>Dr. Zak Fang</u>, Professor of Metallurgical Engineering at the University of Utah. The HAMR process allows for the production of titanium powders. This process can take almost any form of titanium or scrap titanium alloy feedstock and produce titanium powders at very low energy intensity, enabling the potential for low cost, low carbon emission production in a sustainable closed loop. I won't get into the details of the technology because it's way over my head and I'm not sure I'd explain it properly, but what's important is that its low cost, has reduced energy consumption, and has 100% titanium recycling potential.

IperionX is already producing titanium powder with its partner

BlackSand at a pilot facility operating in Salt Lake City, Utah, built with funding from the U.S. Department of Energy's ARPA-E. Development of a larger Titanium Demonstration Facility (TDF) is currently underway with a targeted production capacity of 125tpa. The TDF will serve a dual purpose of demonstrating scale while allowing for the commencement of powder production for commercial sales.

Next on the list of milestones for the company is to continue work to get the Titan Project construction ready, begin discussions with potential titanium metal strategic customers and scale-up titanium metal powder production capacity (the TDF noted above). Any or all of these could provide catalysts for IperionX's shareholders over the next few months.

Avalon Advanced Materials Don Bubar on the Acceleration of the Separation Rapids Lithium Project

written by InvestorNews | September 12, 2023

In this InvestorIntel interview with host Tracy Weslosky, <u>Avalon</u> <u>Advanced Materials Inc.</u>'s (TSX: AVL | OTCQB: AVLNF) President, CEO and Director Don Bubar talks about their lithium extraction technology and about securing a <u>\$3M convertible security funding</u> to accelerate Separation Rapids Lithium Project.

In the interview, which can also be viewed in full on the

InvestorIntel YouTube channel (<u>click here to access</u> <u>InvestorChannel.com</u>), Don starts, "We've been in this space for 25 years…while 25 years ago was a bit early for battery materials, we knew it would have a day and that day has finally come." Don also provides an update on reactivating Avalon's East Kemptville Tin Project which "was the only ever primary tin producer in North American history." Emphasizing how tin has emerged as a very important technology metal due to its growing usage in many technology applications, Don talks about Avalon creating a new supply.

To access the full InvestorIntel interview, click here

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If you have any questions surrounding the content of this interview, please contact us at +1 416 792 8228 and/or email us direct at <u>info@investorintel.com</u>.