

Voyageur's quest to become the only fully integrated company in the radiographic contrast media field accelerates timeline with design of a carbon neutral pharmaceutical plant

written by Tracy Weslosky | November 1, 2022

Did you know that when you go to the doctor and require an X-Ray or scan in many cases they use what's known as 'contrast media' to help diagnose the problem? Today's company is working to become the [only fully integrated company](#) in the radiographic contrast media field, by developing barium and iodine generic radiographic contrast media.

The company is [Voyageur Pharmaceuticals Ltd.](#) (TSXV: VM) (Voyageur). Voyageur's long-term vision is to serve both the barium and iodine contrast media markets, from a fully integrated supply chain: "From The Earth To The Bottle". Voyageur also has potential with 'fullerene-based' contrast agents with Voyageur recently [signing an MOU with Rain Cage Carbon Inc.](#) to develop the product.

Voyageur owns the mineral projects and is now building out the next steps towards the commercialization of their barium and iodine products.

Voyageur [state](#):

“We have assembled a team of contrast media experts and world leading radiologists to drive our decision making for this important patient-led initiative, the starting point being several Health Canada licenses already approved for barium contrast media. Voyageur is now working with the FDA to register our products in the US market, whilst creating a drug dossier for the European and International markets. ”

Voyageur previously [guided](#) that U.S FDA approval could potentially come about 120 days after a June FDA meeting, effectively by October to November 2022, which would be right about now. Of course, this is subject to delay or change.

Voyageur is building a fully integrated supply chain, delivering high quality products to the market



Source: [Voyageur Pharmaceuticals website](#)

Voyageur's roadmap towards barite start of production in 2024

In a significant step forward towards achieving their vertical integration goal, Voyageur [announced](#) on September 22, 2022, that they have submitted a 'notice of work' with the BC Ministry of Mines for the removal of 2,000 tonnes of barite in 2023 from their Frances Creek Project. Upon approval, Voyageur intends to use the 2,000 tonne barite sample for testing on a new active pharmaceutical plant, tentatively scheduled to begin construction in 2023.

As [announced](#) on October 31, 2022 Voyageur has now completed the design of its carbon neutral pharmaceutical plant, with the total capital cost to be C\$30M (excluding land). Voyageur [states](#):

“The manufacturing facility is designed to produce revenue

streams from pharmaceutical barium and iodine contrast media products for the radiology drug market. The plant is expected to produce additional revenue stream from industrial barite sales and produce carbon fullerene allotropes for the new drug development program. Voyageur has chosen to set up operations in Alberta, Canada.....The added benefit of de-carbonizing our customer base by utilizing our carbon credits will make our product line unique and attractive to ensure potential high growth.....The timeline for construction of the pharmaceutical manufacturing and R&D facility will take an estimated 18 months to complete, subject to financing. Upon completion of the facility, the processing of Frances Creek barium will commence.”

Once the Frances Creek Project pilot plant is completed Voyageur will then submit a new ‘notice of work’ for a Small Quarry to the BC Ministry of Mines, with plans for full production in 2024.

By 2025 Voyageur plans to achieve ‘full’ vertical integration of barium and iodine contrast media products.

Voyageur’s timeline to achieve revenues and vertical integration



Source: [Voyageur company presentation](#)

Voyageur’s business strategy

Voyageur intends to initially generate positive cash flow from operations using third party contract pharmaceutical manufacturers in Canada and internationally. Next Voyageur has plans to build all the required infrastructure to become 100% self-sufficient with all manufacturing.

Voyageur Pharmaceuticals aims to be the only company in the world to develop barium sulfate & iodine contrast products from

100% natural resource



Source: [Voyageur company presentation](#)

Certainly, if Voyageur can pull off their ambitious plans to become a vertically integrated barium and iodine manufacturer then there is potentially good money to be made. The global addressable market for contrast media is forecast to grow from US\$4.7 billion in 2021 [to US\\$7 billion by 2028, at a CAGR of 7.7%](#).

Based on the PEA, the Frances Creek Project has [a NPV of \\$344 million with an IRR of 137%](#).

Voyageur Pharmaceuticals trades on a market cap of only ~[C\\$10M](#).

Voyageur Pharmaceuticals completes FDA submission milestone for first barium contrast product license application

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[Radiographic contrast media](#) are substances used in diagnostic imaging tests such as ultrasound, X-rays, CT scans and MRI to enhance the visibility of internal structures. Iodine and barium

sulfate are the typically used substances to provide the contrast media. [According to](#) IQ41 Research & Consultancy Pvt. Ltd: The global addressable market for contrast media is forecast to grow from US\$4.7 billion in 2021 to US\$7 billion by 2028, at a CAGR of 7.7%.

As of April 2022, Voyageur Pharmaceutical reports that barium sulfate prices are [up](#) 300% in the past 12 months, to \$17,000/tonne; due to a worldwide shortage of high-quality natural USP pharmaceutical barium sulfate which has forced most manufacturers to use synthetic, high-cost barite for their products.

[Voyageur Pharmaceuticals Ltd.](#) (TSXV: VM) (Voyageur) is advancing its plan to become the [only fully integrated company](#) in the radiographic contrast media field, by developing barium and iodine generic radiographic contrast media. Voyageur is unique, as it plans to source its own raw materials (barium sulfate & iodine) from its own mineral deposits located in Canada and USA respectively.

Progressing towards potentially achieving FDA approval in the USA

As [announced](#) on May 18, 2022, Voyageur has recently completed a milestone with their FDA submission. According to Voyageur: “Based on preliminary discussions with the FDA, Voyageur has submitted extensive documentation for the first barium contrast product license application. Voyageur is currently scheduled to meet with the FDA in June, to finalize submission requirements for this product and once this application is approved, the Company plans on submitting applications for additional products. Upon receipt of the application, the FDA may grant the license within 120 days, thus giving Voyageur the approval to market its first barium sulfate contrast agent in the United

States.”

The current timeline suggests the potential FDA licensing approvals may be obtained by October to November 2022, all going well.

Product development

Voyageur recently completed the design and testing of the first batch of its smoothie product line of barium sulfate contrast agent. Voyageur [says](#) that “once this testing is completed, the data will be used to support the initial marketing and sale of the Company’s line of barium sulfate imaging products that are approved for the Canadian market and in tandem will be used for the Food and Drug Administration (FDA) submission.”

Voyageur plans to achieve initial cash flow through third-party pharmaceutical manufacturing, sourcing third-party minerals, turnkey manufacturing, bottling, and distribution of barium and iodine radiographic pharmaceutical drugs. The longer-term plan is to be vertically integrated.

Voyageur Pharmaceuticals completed milestones



Source: [Voyageur Resources company presentation](#)

Next steps and a positive PEA announced in January 2022

Voyageur has engaged an engineering firm to design and build the barium processing and contrast manufacturing plant and the pharmaceutical product manufacturing plant. [According to Voyager](#): “These two facilities will become the foundation of the only fully integrated and totally controlled entry into the global imaging market for barium sulfate contrast agents. This control is intended to provide Voyageur with a low-cost

advantage that should support the gaining of market share and improved margins.”

The master plan is for the plant to be fed by Voyageur’s 100% owned barium sourced from the [Frances Creek Project](#). The Project is located near the town of Radium Hot Springs, British Columbia, Canada. All of the above is subject to funding.

The Frances Creek Pharmaceutical Barium Project Preliminary Economic Assessment (PEA) was [announced](#) in January 2022, resulting in a base case pre-tax net present value 8% (“NPV8%”) of C\$464 million and an internal rate of return (IRR) of 168%, while the post-tax NPV8% was C\$344 million with an IRR of 137%. The total capital required over 3 years for the Project was estimated at C\$36 million. Operating gross margins were estimated to average 75% over the Project.

Voyageur Pharmaceuticals 2022 PEA for the Frances Creek Pharmaceutical Barium Project



Source: [Voyageur Resources company presentation](#)

Closing remarks

Voyageur Pharmaceuticals already has a very high grade ([37.75%](#)) barium sulfate Indicated Resource and has released a solid PEA for the integrated Frances Creek Pharmaceutical Barium Project.

The next major steps mostly revolve around further product development testing, FDA regulation in the USA, project funding, and finally getting into production. Beyond that is development of the Company’s Iodine-lithium-bromine brine project in Utah and potentially some battery mineral projects as you can read [here](#).

2022 looks like being a key year for Voyageur Pharmaceuticals.

Voyageur Pharmaceuticals' X-Ray Contrast Media Provides a Dramatic Increase in Valuation

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Assuming you aren't a meme stock or an equity driven by the Reddit army, then you know you've told the market something it really wanted to hear when your stock is up 80% in one day. Even great news might get you a 5-10% bump so it has to be pretty exceptional to attract this kind of attention. Another indication of excitement is when this move occurs on volume that is 32x your average daily trading activity. If you didn't have [Voyageur Pharmaceuticals Ltd.](#) (TSXV: VM) on your watchlist (or in your portfolio) prior to today, you might want to put it on your radar now.

So, what was the news that drove this bullish rally? We'll get to that in a moment as a little background may be required unless you are up to speed on the uses and importance of barium sulfate. Barium sulfate (BaSO_4) is a naturally occurring environmentally friendly mineral with a high specific gravity (4.5) and very low solubility. Barium sulfate is used in many industrial applications and is in high demand. Voyageur is pursuing production into the highest margin market worldwide, having developed nine barium products for sale into the radiology pharmaceutical market for MRI, X-ray and CT scan applications.

Now that we've established that Voyageur is a drug manufacturing company focused on radiographic contrast media products for the healthcare market, we need to understand what separates it from most other companies. Voyageur is sourcing its own main ingredients from its own mineral deposits, building a business model that will allow it to be a fully integrated company in the radiographic marketplace. Voyageur is implementing a strategy to control its own supply chain and all input costs, leading to the Company motto "From the Earth to the Bottle". Which is where yesterday's news becomes important. The Company announced the results of its [Preliminary Economic Assessment](#) (PEA) for the development of its Frances Creek pharmaceutical barium sulfate project, located 40km from Radium Hot Springs in British Columbia. The base case economics for the project indicate a pre-tax net present value (NPV) of C\$464 million and internal rate of return (IRR) of 168%, while the post tax NPV is C\$344 million with an IRR of 137% at a discount rate of 8%. The project assumes a pre-production period of 2 years for equipment delivery and installation, and mine permitting with a payback period of 11 months.

At present, Voyageur's Frances Creek project is the only natural pharmaceutical grade barium sulfate project outside of China. Most companies use high-cost synthetically made barium due to supply and quality constraints. Which is why current pricing of 97.5% BaSO₄ available from China has a delivered price (to Calgary) of US\$4,760 per tonne, or C\$5,960 per tonne. This project is very convenient for Voyageur given its proximity to Calgary where the corporate head office and manufacturing facilities are located. It's less than a 2 hour drive and although I don't know exactly where their asset is situated I'm pretty sure I've either fished or hiked within 5 kms of the project.

Another reason for the robust PEA economics is a function of the

resource being a mere 2 meters below surface. I've said it before, and I'll say it again, any resource that can be accessed by someone with a good shovel has to have advantageous economics. The total capital cost estimate for the project is a miserly C\$36.4 million including a 15% contingency on process capital costs, which also contributes to the outstanding PEA economics.

And the best part is, Voyageur expects to be generating its own cash flow using third party barium active pharmaceutical ingredients and manufacturing in 2022. With its manufacturing partner Alberta Veterinarian Laboratories/Solvat it has [completed its first test batch of barium contrast media](#) and is working on clinical testing of this first batch to ensure quality and performance. Voyageur's goal is to complete testing for the Canadian product launch by February followed by a marketing campaign for sales into the Canadian radiology market. Ultimately, Voyageur has plans to build all the required infrastructure to become 100% self-sufficient with all manufacturing but for now, one step at a time.

This isn't the first time Voyageur has seen a massive one day move on enormous trading volume. On February 12, 2021, following news of [Health Canada approval for SmoothX](#), a barium radiographic contrast suspension that is specifically formulated for computer tomography procedures (CT Scans), the stock was up 228% on 7 million shares. You could say Voyageur has a flare for the dramatic and perhaps there is still opportunity for lightning to strike a third time. With roughly 101 million shares outstanding, the market cap was roughly C\$18.2 million based on yesterday's close of \$0.18 versus the PEA NPV after tax of \$3.38 per share. Obviously, there is some work to be done before the Frances Creek project becomes a reality, but there's also a pretty big gap between yesterday's price and what could be.

Voyageur Pharmaceuticals' Supply Chain Security Advantage – From the Earth to the Bottle

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With all the warnings issued in articles posted on InvestorIntel about rare earth supply security, the whole Suez Canal mess in March and vaccine supply issues surrounding the pandemic, supply chains have become a very real topic and very much in focus. Just in time management is being replaced by just in case management. As a Canadian with one AstraZeneca vaccine in me, I'm wondering if/when I'll even get a second one given no vaccines are currently manufactured in Canada and many countries are becoming pretty possessive of this commodity at present. Whatever the science is around waiting too long or having your second vaccine be a different manufacturer, I'm at the mercy of "the system" as to what and when (or if) I get fully vaccinated for this incredibly annoying and very real virus.

Perhaps that was a little melodramatic but my point is, supply chain security is important and becoming a higher profile issue in the world today. So wouldn't it be nice if a company had complete control of its destiny from the mine to the shelf, or in the case of [Voyageur Pharmaceuticals Ltd.](#) (TSXV: VM) – From the Earth to the Bottle. Voyageur has a somewhat unique business model in today's world of niche focused companies but maybe setting a trend for the future as society realizes Amazon can't overnight deliver everything you may need.

Voyageur is a drug manufacturing company focused on radiographic contrast media products, developing barium and iodine generic radiographic drugs, for the healthcare market. However, what separates Voyageur from most other companies is that it is sourcing its own main ingredients from its own mineral deposits. Voyageur is building a business model that will allow it to be a fully integrated company in the radiographic market place.

So let's look a little closer at the different aspects of Voyageur. The Corporation manufactures radio-graphic contrast agents, which are substances used to enhance the visibility of internal structures in X-ray-based imaging techniques such as computed tomography, magnetic resonance imaging and fluoroscopy. Without getting into the weeds of the science here, suffice it to say these are products vital to specific medical procedures performed globally, every day. The Corporation recently [announced two Health Canada approvals](#) and issuance of product licenses for MultiX Ba; Radiographic Barium Contrast. Then on Monday [Voyageur announced](#) it has received approval from Health Canada for its fifth product, MultiXthick barium sulfate suspension as well as plans to move forward with FDA device registrations for the US market.

On the mining side, Voyageur owns a 100% interest in three barium sulfate (barite) projects including two properties suitable in grade for the industrial barite marketplace, with interests in a potentially high-grade iodine, lithium & bromine brine project located in Utah, USA. The most advanced of these projects is the Frances Creek project located 40km from Radium Hot Springs, BC and easily accessible. The Corporation has launched the Preliminary Economic Assessment (PEA) of its Frances Creek project with the goal of completion within the next three months. Subsequent to the completion of the PEA, the Corporation is planning on proceeding with a Prefeasibility Study that will be expected in the third quarter of the 2021

fiscal year.

So how does one go about evaluating a fully integrated entity like Voyageur? I don't think there's a PEA to Earnings metric and even if there was, would it be useful? Great drill results aren't going to impact the demand for Barium radiographic contrast media products. So this is where you have to dig a little deeper and understand the full scope of what a company like this brings to the table. And there's a lot to digest so I encourage you to go to their [website](#) and snoop around a little.

Nevertheless, key to investors is that there currently is no revenue and it's going to cost money to get Voyageur to the next level. To that end, [the Corporation recently announced](#) it has closed the first tranche of a non-brokered private placement for gross proceeds of \$1.4 million, which will go a long way to advancing Voyageur forward. The exciting aspect is that this only takes the shares outstanding to approximately 99 million making the market cap roughly \$14.4 million based on yesterday's closing price of \$0.145/share.

With geopolitical risks rising all around the globe, Voyageur is diversifying itself to fill a void if supply chains become broken. It's hard to assess what that will be worth in the future.