

Voyageur Pharmaceuticals Ltd. Designs Carbon Neutral Pharmaceutical Manufacturing Plant with a Carbon Credit De-Carbonization Strategy for Customers

News Release – Calgary, Alberta – October 31, 2022: Voyageur Pharmaceuticals Ltd. (TSX.V: VM) (USA: VYYRF) (the "Company" or "Voyageur") announces the completion of the design of its carbon neutral pharmaceutical plant and as such has accelerated the revenue generation timeline for the Frances Creek barium sulfate project, compared to stated timeline of the SGS Canada Inc preliminary economic assessment. ACH Engineering Inc has estimated the total capital cost to be CAD \$30M (excluding land). The plant is designed to process approximately 5,000 tonnes per year of Frances Creek USP (US Pharmacopeia) grade barium sulfate (barite) concentrate. A first of a kind, carbon neutral pharmaceutical manufacturing facility, utilizing carbon capture technology to convert waste carbon dioxide into fullerene nano particles, for pharmaceutical contrast media drug development. 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.

Brent Willis, Voyageur CEO, stated *“North America is experiencing critical pharmaceutical supply chain challenges. It is becoming paramount for Canadian companies to focus on domestic production of pharmaceuticals to fulfill the needs of our health care system in North America. Voyageur’s integrative approach to carbon neutral contrast media manufacturing, will become an important factor for health care security, with a strong focus on our environment. Building the first carbon neutral pharmaceutical facility in Alberta, Canada, will be a major milestone for Voyageur. 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. Voyageur plans to build the sterile gmp pharmaceutical facility in 2023 that will produce contrast media drugs. This will allow Voyageur to optimise its processing and create high quality, profitable barium products. In parallel, Voyageur will import iodine API (active pharmaceutical ingredient) and plans to utilise the sterile injectable blow fill seal vial line to manufacture iodine contrast media products. Iodine drug manufacturing using imported iodine API is phase one of the Company’s staged in approach. Full integration of the iodine contrast manufacturing is planned for stage 2 and will focus on producing iodine from mineral brine water (from the well head to the vial).

Voyageur’s objective is to create a fully integrated, secure, environmentally responsible supply chain of barium, iodine, and fullerene contrast media for the North American and global markets. The facility design includes a state-of-the-art laboratory and R&D drug development wing, to enable in house testing and innovation. Voyageur will be utilizing the Rain Cage Carbon Inc.’s (RCC) carbon capture technology to capture CO₂ from the facilities’ off grid power plant exhaust stream. RCC and Voyageur are developing a plan to produce a significant quantity of carbon fullerenes each year from the captured waste CO₂ (the RCC technology creates fullerene carbon allotropes from captured CO₂ in its process).

The advanced carbon fullerenes will be used for contrast material development under the terms of the development agreement MOU, previously announced. Voyageur’s power generation will be designed to be over-sized to sell excess power to the grid and to produce significant carbon credits. Voyageur and Rain Cage are working jointly on creating a carbon credit distribution arrangement that could enable Voyageur to pass on carbon credits to its customer, helping customers meet their Environmental, Social & Governance (ESG) requirements.

Voyageur’s strategy to create the first fully integrated and net carbon zero pharmaceutical manufacturing company is coming to fruition. The added sales strategy of implementing the corporate de-carbonizing sales plan by transferring the carbon credits to the customers, is a unique and beneficial concept that Voyageur and RC look forward to developing together. Voyageur’s objective is too de-carbonize the supply chain network in the radiology drug market.

Globally, companies are looking for mechanisms to meet their ESG requirements. If successful, Voyageur's strategy will offer the market a new innovative low-cost path forward for decarbonization and will allow Voyageur to utilise carbon as a sales and marketing tool, to gain market share in the radiology drug market.

Voyageurs previously published preliminary economic assessment (PEA), by SGS Canada Inc, stated:

- Base Case Net Present Value @ 8% discount rate = \$464 M Pre tax, **\$344 M After tax**
- Initial Project horizon – 10 Years
- Total Capital Required over 3 years – \$36 M (*Management has reduced this cost 37% to \$22.5M, reduced the timeline, and added iodine, fullerene production and carbon capture = estimated \$30M*)
- Payback period after start of production – 11 Months
- Operating Gross Margins average 75% over the Project

The Company's consolidated financial statements and management's discussion and analysis ("MD&A") for the third quarter have been filed on SEDAR at www.sedar.com under the Company's profile.

About Voyageur

Voyageur is a Canadian public company listed on the TSXV under the trading symbol VM. Voyageur is focused on the development of barium, iodine and carbon Active Pharmaceutical Ingredients ("API") and high-performance cost-effective imaging contrast agents for the medical imaging marketplace. Voyageur's goal is to initially generate positive cash flow from operations using third party GMP pharmaceutical manufacturers in Canada. Ultimately, Voyageur has plans to build all the required infrastructure to become 100% self-sufficient across all manufacturing activities. Voyageur owns a 100% interest in three barium sulphate (barite) projects including the Frances Creek property, suitable in grade for the pharmaceutical marketplace, with additional interests in a high-grade iodine, lithium & bromine brine project located in Utah, USA. Voyageur is moving forward with its business plan of becoming the only fully integrated company in the radiology contrast media field, by controlling all primary input costs under the motto of: **"From the Earth to the Bottle"**.

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This news release may contain certain forward-looking information and statements, including without limitation, statements pertaining to: the construction of the pharmaceutical plant, the timing and costs of the construction and the pharmaceutical plant operating at the design specifications; the success of utilizing the carbon capture technology to convert waste carbon dioxide into fullerene nano particles; the ability to generate and transfer carbon credits; and availability of financing. All statements included herein, other than statements of historical fact, are forward-looking information and such information involves various risks and uncertainties. There can be no assurance that such information will prove to be accurate, and actual results and future events could differ materially from those anticipated in such information. A description of assumptions used to develop such forward-looking information and a description of risk factors that may cause actual results to differ materially from forward-looking information can be found in the Company's disclosure documents on the SEDAR website at www.sedar.com. Voyageur does not undertake to update any forward-looking information except in accordance with applicable securities laws.