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COMPREHENSIVE TEST PROGRAM FOR LITHIUM CARBONATE REFINERY IN PROGRESS

Highlights

- Metallurgical testing on various international sources of spodumene
- Lithium Refinery to have robust capability
- Able to process spodumene from any part of the world
- Spodumene feedstock optionality whilst Canadian supply develops
- Targeted Refinery site has river and port access for global spodumene supply
- Under the guidance of lithium expert Dr. Jingyuan Liu (NED)
- First program achieves 99.7% LiCO_3 above the battery grade spec of 99.5% LiCO_3
- Company is full steam ahead, amidst decline in lithium prices
- Opportunity to conclude feasibility studies before the next cycle
- Real opportunities for LU7 in this market

Lithium Universe Limited (“**Lithium Universe**”, the “**Company**” or ASX: “**LU7**”) is pleased to announce that in response to the Lithium conversion capacity gap in the North American market, the Company has initiated metallurgical testing on various sources of spodumene. This process involves utilizing the flow sheet developed for the Québec Lithium Processing Hub Refinery. As previously disclosed, the QLPH refinery will mirror the successful Jiangsu Lithium Carbonate plant, incorporating all the enhancements made during commissioning and startup.

The objective of establishing a downstream standalone lithium refinery is to design it with the robust capability to process spodumene feedstock from any part of the world, subject to freight and transportation costs. Samples from Australia and South America featuring various lithium grades have been collected and are currently undergoing metallurgical laboratory processing in LU7’s contracted laboratory. It is critical that the proposed refinery has the capability to efficiently process spodumene feedstock from diverse sources worldwide. This adaptability ensures that the lithium production operation remains robust and flexible, offering optionality in spodumene feedstock while the Canadian supply chain continues to develop. This strategic approach positions the proposed lithium refinery to navigate fluctuations in the global spodumene market, maintaining operational continuity and stability. The proposed site that the Company is targeting has port and river access allowing spodumene import from Africa and South America.

Under the guidance of lithium expert Dr. Jingyuan Liu (NED), the testing protocol faithfully replicates the lithium carbonate process established for the Company's proposed Québec Lithium Carbonate Refinery. The program is strategically designed to demonstrate the viability of the process in generating battery-grade lithium carbonate from various spodumene concentrates available in the market.

Lithium Universe has meticulously selected a diverse range of commercial spodumene concentrates for these tests, encompassing a broad spectrum of lithium grades, particle sizes, and impurities. The comprehensive test program encompasses calcination, sulphation, leaching, impurity removal, precipitation, and final purification, all aimed at achieving a battery-grade product. Currently, the testing is progressing smoothly, and no challenges have been identified with any of the spodumene samples. Each test program is thorough and spans several weeks, with one complete program already concluded successfully achieved 99.7% LiCO_3 against the international battery grade specification of 99.5% Li CO_3 . All impurity levels were well within specification limits.



Figure 1 – Lithium Universe contracted laboratory test facilities

The ongoing testwork program is an integral component of the engineering study being conducted by Hatch Ltd (Hatch) for the Company's Québec Lithium Processing Hub (QLPH) multi-purpose battery-grade lithium carbonate refinery. The Refinery is designed to handle a capacity of 16,000 metric tons per annum, assuming a spodumene feed grade of approximately 5.5% Li_2O . Within the scope of this program, spodumene samples, ranging from 5.0% to 6.0% Li_2O with diverse particle sizes, are being subjected to comprehensive testing. This initiative aligns with the overall engineering study aimed at ensuring the efficacy of the lithium carbonate production process within the specified parameters of the QLPH refinery.

The laboratory testing process for lithium carbonate production from spodumene involves several key steps:

1. **Calcination:** Spodumene is heated to 1080°C to undergo calcination, a process that removes impurities and prepares the material for further processing.

2. Dry Milling: The calcined spodumene is dry-milled to reduce particle size to less than 300 µm.
3. Sulphation and Roasting: The milled spodumene is mixed with concentrated sulfuric acid and roasted at 250°C, resulting in sulphated spodumene.
4. Leaching: The sulphated spodumene is cooled and introduced into the leach circuit to extract lithium.
5. Thickening and Filtration: The combined leached solids and precipitated impurities undergo thickening and are then filtered using a belt filter.
6. Polishing and Ion Exchange: The filtrate, combined with thickener overflow, is processed through a polishing sand filter and an ion exchange column to remove residual calcium, magnesium, and other multivalent cations.
7. Lithium Carbonate Production Area: The solution is heated and reacted with a hot sodium carbonate solution in a single crystallizer operating at 95°C.
8. Crystallization: Coarse crystals from the crystallizer are thickened before passing to filtration.
9. Purification to Battery Grade: Raw lithium carbonate undergoes further purification using the carbonation process. The solution is slurried in demineralized water, forming soluble lithium bicarbonate through the bubbling of carbon dioxide gas.
10. Filtration and Recrystallization: The solution is filtered, and lithium carbonate is re-crystallized by heating with injected steam. Carbon dioxide gas generated in this step is recycled to the front end of the purification process.
11. Centrifugation and Drying: Battery-grade lithium carbonate is centrifuged and then dried at 120°C.

This series of laboratory tests ensures the transformation of spodumene into high-purity battery-grade lithium carbonate through a systematic and controlled process, (See Figure 2 Process Flow Diagram).

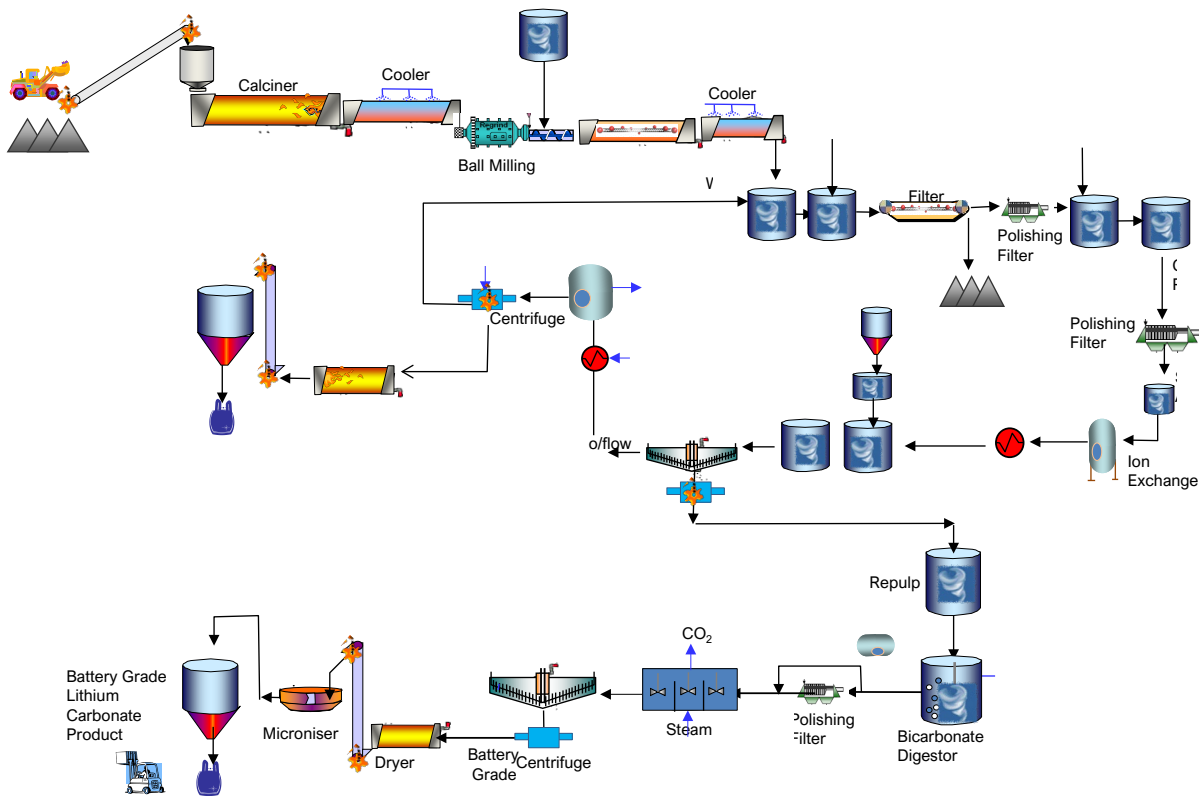


Figure 2 – QLPH Lithium Refinery Process Flow Diagram



Figure 3 – Calcination of Spodumene – Before and After



Figure 4 – Sulphation Roasting (L) and Leaching (R)

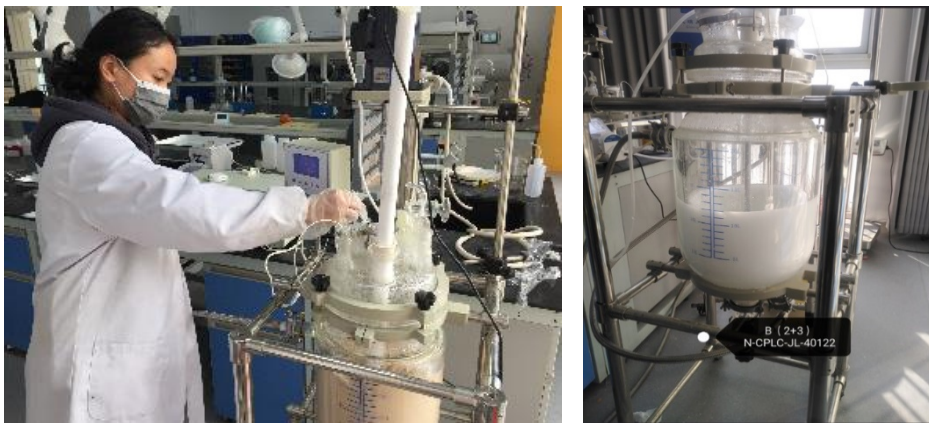


Figure 5 – Oxidation Impurity Removal (L) and Li Carb Precipitation (R)

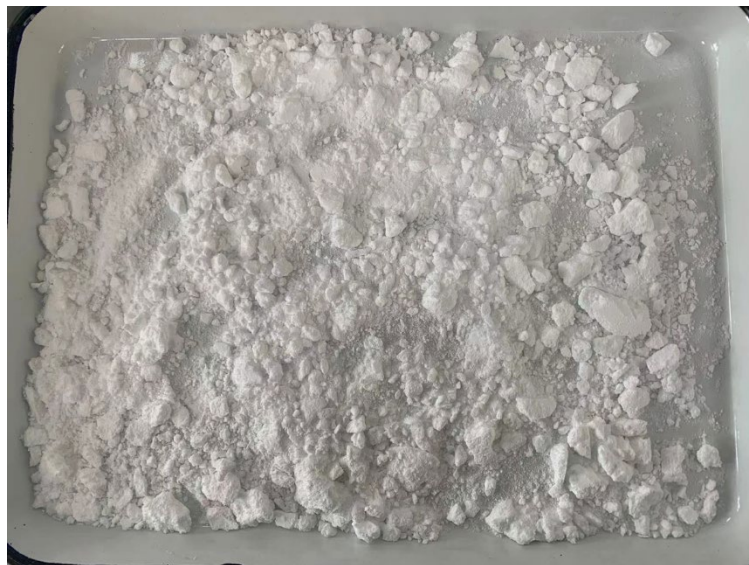


Figure 6 – Battery Grade Lithium Carbonate

Commenting on the test work, Chairman, Mr. Iggy Tan expressed his satisfaction with the remarkable advancements in metallurgical test work and the swift setup process. *"I appreciate Dr. Jingyuan Liu's outstanding efforts and connections that enabled the initiation of this test work program six months post-listing.*

Despite the decline in lithium prices affecting numerous industry players, Lithium Universe is full steam ahead. We view the current short-term dip in lithium prices as an advantageous window to finalize feasibility studies before the onset of the next cycle. These moments present tangible opportunities for our organization." he said.

-Ends-

Authorisation

This announcement had been authorised for release by Iggy Tan, Chairman of Lithium Universe Limited.

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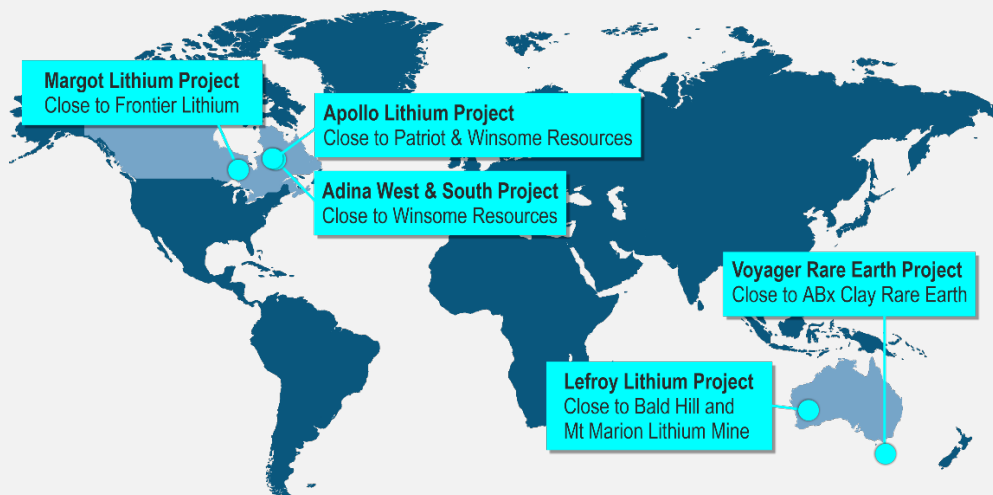
Forward-looking Statements

The Company wishes to remind investors that the presence of pegmatite does not necessarily equate to spodumene mineralization. Also that the presence of pegmatite and spodumene mineralization on nearby tenements does not necessarily equate to the occurrence on Lithium Universe Limited's tenements. This announcement contains forward-looking statements which are identified by words such as 'anticipates', 'forecasts', 'may', 'will', 'could', 'believes', 'estimates', 'targets', 'expects', 'plan' or 'intends' and other similar words that involve risks and uncertainties. Indications of, and guidelines or outlook on, future earnings, distributions or financial position or performance and targets, estimates and assumptions in respect of production, prices, operating costs, results, capital expenditures, reserves and resources are also forward looking statements. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions and estimates regarding future events and actions that, while considered reasonable as at the date of this announcement and are expected to take place, are inherently subject to significant technical, business, economic, competitive, political and social uncertainties and contingencies. Such forward-looking statements are not guarantees of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of our Company, the Directors and management. We cannot and do not give any assurance that the results, performance or achievements expressed or implied by the forward-looking statements contained in this announcement will actually occur and readers are cautioned not to place undue reliance on these forward-looking statements. These forward looking statements are subject to various risk factors that could cause actual events or results to differ materially from the events or results estimated, expressed or anticipated in these statements.

About Lithium Universe Limited (ASX:LU7)

LU7's main objective is to establish itself as a prominent Lithium project builder by prioritizing swift and successful development of Lithium projects. Instead of exploring for the sake of exploration, LU7's mission is to quickly obtain a resource and construct a spodumene-producing mine in Québec, Canada. Unlike many other Lithium exploration companies, LU7 possesses the essential expertise and skill to develop and construct profitable projects. Additionally, Lithium Universe Limited has access to significant Lithium opportunities in Tier 1 mining jurisdictions in Canada and Australia.

Tier 1 Lithium Inventory



Apollo Lithium Project (80%)

Commanding a land position spanning over 240 km², Apollo is located in the same greenstone belt and only 29 kilometres south-east of the Corvette Lithium Project owned by Patriot Battery Metals (market cap of over A\$1.4 billion). Patriot's most successful drill result was a remarkable 156 meters at 2.12% Li₂O at CV5. Similarly, 28 kilometres to the east, Winsome Resources Limited (market capitalization of over A\$300 million) recently announced drilling hits of 107 meters at 1.34% Li₂O from 2.3 meters (AD-22-005) at their Adina Project. Apollo has 17 pegmatite outcrops reported on the tenement package. Given the exceptional results from these neighbouring projects, the Apollo Lithium Project has the potential to be equally successful.

Adina South & Adina West Lithium Project (80%)

The project is situated in close proximity to the Adina discovery, which is owned by Winsome Resources, a Company with a Market Capitalisation of over A\$300m in the market. The Adina Project has produced a visual pegmatite intersection of over 160m in drills, lying beneath outcropping 4.89% Li₂O. Recently, Winsome Resources reported successful drilling results, with AD-22-005 yielding 107m at 1.34% Li₂O from 2.3m at their Adina Project. The Adina South & Adina West Lithium Project boasts one of the largest prospective land holdings near Winsome Resources Limited. Aerial satellite images have revealed similar pegmatite occurrences at the surface.

Margot Lake Lithium Project (80%)

The Margot Lake project is located in north-western Ontario, in the premium lithium mineral district of Ontario's Great Lakes region. The project is situated 16km southeast of Frontier Lithium's (TSX-V: FL) PAK Deposit, which contains 9.3Mt at 2.0% Li₂O, and 18km away from Frontier's Spark Deposit, which contains 32.5Mt at 1.4% Li₂O. The tenement contains nine confirmed and mapped pegmatites and is located in a highly competitive district due to recent major discoveries of lithium. Frontier Lithium, with a market capitalization more than CAD\$450 million, is a significant player in the region.

Lefroy Lithium Project (100%)

Lefroy is in the mineral-rich Goldfields region of Western Australia. This strategically located project is in close proximity to the Bald Hill Lithium Mine, which has a top-quality spodumene concentrate with low levels of mica and iron, as well as significant tantalum by-product production. The Bald Hill mine has a resource of 26.5 million tonnes at 1.00% Li₂O. The Lefroy project is also located near the Mt. Marion Lithium Mine, which is owned by Mineral Resources and has a market capitalization of A\$17B. Mt. Marion produces 900,000 tonnes of mixed-grade spodumene concentrate annually and is approximately 60 kilometres from the Lefroy project.

Voyager Rare Earth Project (80%)

The Voyager project is north tenements are positioned between ABx Group tenures, where clay-hosted rare earth elements (REE) and niobium have been discovered and hold resources of 27Mt. These areas are analogous with Ionic Adsorption Clay (IAC) deposits that have produced REE in southern China using simple leaching. ABx stated that early testwork indications show their rare earth elements are easily leached and could be concentrated at low cost, with no deleterious elements. Geological mapping of Voyager's tenures indicates the presence of various areas of clay and bauxite, which is the ideal geological environment for the occurrence of rare earth elements.