September 9, 2020

Standard Lithium Ships First Large Volume of Lithium Chloride Product From Arkansas Facility

HIGHLIGHTS

- **20,000 liters of lithium chloride product shipped**
- **Conversion to lithium carbonate will be done using conventional batch process and also proprietary SiFT process**
- **Design work begins on first commercial Direct Lithium Extraction plant**

EL DORADO, Ark., Sept. 09, 2020 (GLOBE NEWSWIRE) -- **Standard Lithium Ltd.** ("Standard Lithium" or the "Company") (TSXV: SLL) (OTCQX: STLHF) (FRA: S5L), an innovative technology and lithium project development company has shipped its first large volume of lithium chloride product from the Company's Direct Lithium Extraction (DLE) Demonstration Plant for final conversion to lithium carbonate.

Direct Lithium Extraction
The Company's first-of-its-kind in the world DLE Demonstration Plant is installed at LANXESS' South Plant facility near El Dorado, Arkansas. The Demonstration Plant utilizes the Company's proprietary "LiSTR" technology and is designed to continuously process an input tail brine flow of 50 gallons per minute (gpm; or 11.4 m^3/hr) from the Lanxess South Plant, which is equivalent to an annual production of between 100-150 tonnes per annum of lithium carbonate.

Dual Track Program for Lithium Carbonate Conversion
As the Company continues to de-risk the south Arkansas project, it is undertaking a dual-track testing program for the conversion of lithium chloride to lithium carbonate. The Company is shipping an initial total volume of 20,000 liters of lithium chloride product for conversion to battery quality lithium carbonate using: (1) a third-party OEM/vendor in Plainfield, Illinois for lithium carbonate conversion using a conventional process; and (2) Saltworks Technologies Inc. in Richmond, B.C. to continue work currently underway using the company's proprietary SiFT crystallization process.

SiFT Plant Update
The Company's industrial-scale lithium carbonate SiFT crystallization pilot plant, located in Richmond, B.C., has been operating successfully since mid-July using a lithium chloride solution that was produced last year by the Company's mini-pilot DLE plant (note, this lithium chloride solution was produced from Arkansas brine). The SiFT plant has been making high-purity lithium carbonate crystals from this lithium chloride and is now ready to receive the large volume of product coming from Standard Lithium's continuously-operating plant in Arkansas for final conversion to battery-quality lithium carbonate. Photos of the product prior to shipping are shown in Figure 1 below, and live viewing of the lithium carbonate

crystallization process from the SiFT Pilot Plant is shown in Figure 2.

Figure 1: A few of the totes of lithium chloride product ready to be shipped from Standard Lithium's DLE Demonstration Plant in El Dorado, Arkansas, USA up to the SiFT Pilot Plant in Richmond, BC, Canada: https://www.globenewswire.com/NewsRoom/AttachmentNg/499e5613-24e1-4246-a1d6-f4c4b2aeb08d

Figure 2: SiFT Pilot Plant chemical engineer viewing live images of high-purity lithium carbonate crystals being produced at the Pilot Plant, in Richmond, BC, Canada: https://www.globenewswire.com/NewsRoom/AttachmentNg/99273330-0ec7-49bb-bd18-b3eacc1ead11

Commercial Plant Design

Standard Lithium and its technical team have begun the process of scoping and designing the first commercial Direct Lithium Extraction plant for the Arkansas project. The design process is being aided by data generated from the Company's continuously-operating LiSTR demonstration plant, and original equipment manufacturers (OEMs) have been engaged for early involvement in the design process.

Dr. Andy Robinson, president and COO of Standard Lithium commented, *"Standard Lithium keeps on delivering and de-risking our pre-commercial plants. We've been successfully operating our first-of-its-kind industrial scale DLE plant in Arkansas, and we've been continuously making lithium chloride product for months. We're now at the point where we've got our SiFT pilot plant running, and we can use it to convert the lithium chloride product from Arkansas. This is a very exciting time for us because we're approaching the point where we can demonstrate the continuous extraction of lithium from Smackover brine and conversion into battery-quality material."*

About Standard Lithium Ltd.

Standard Lithium (TSXV: SLL) is an innovative technology and lithium development company. The company's flagship project is located in southern Arkansas, where it is engaged in the testing and proving of the commercial viability of lithium extraction from over 150,000 acres of permitted brine operations. The Company has commissioned its first-of-a-kind industrial scale Direct Lithium Extraction Demonstration Plant at LANXESS' South Plant facility in southern Arkansas. The Demonstration Plant utilizes the Company's proprietary LiSTR technology to selectively extract lithium from LANXESS' tailbrine. The Demonstration Plant is being used for proof-of-concept and commercial feasibility studies. The scalable, environmentally-friendly process eliminates the use of evaporation ponds, reduces processing time from months to hours and greatly increases the effective recovery of lithium. The company is also pursuing the resource development of over 30,000 acres of separate brine leases located in southwestern Arkansas and approximately 45,000 acres of mineral leases located in the Mojave Desert in San Bernardino County, California.

Standard Lithium is listed on the TSX Venture Exchange under the trading symbol "SLL"; quoted on the OTC - Nasdaq Intl Designation under the symbol "STLHF"; and on the Frankfurt Stock Exchange under the symbol "S5L". Please visit the Company's website at www.standardlithium.com

On behalf of the Board of Standard Lithium Ltd.

Robert Mintak, CEO & Director

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Source: Standard Lithium