

Lithium South Development Corporation: Doubling of Lithium Recovery From Brine with Chemphys Process

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- **80% lithium recovery from brine using Chemphys XFP-Lithium Direct Lithium Extraction (DLE) process**
- **Near doubling of lithium recovery rates from conventional evaporation extraction**
- **Bulk brine sample acquisition for pilot scale test work**

VANCOUVER, March 17, 2021 - [Lithium South Development Corp.](#) (the "Company") (TSX-V: LIS) (OTCQB: NRGMF) (Frankfurt OGPQ) is pleased to report completion of laboratory scale evaluation using synthetic brine modeled on the Hombre Muerto North Lithium Project (HMN Li Project) chemical composition. The test work was completed by Chengdu Chemphys Chemical Industry Ltd. (Chemphys) utilizing its proprietary XFP-Lithium Direct Lithium Extraction process, which selectively extracts lithium ions from brine. Testing was performed at the Chemphys ISO certified facility in Chengdu, China. Independent check sampling was completed at the PONY Testing International Group Co Ltd., an ISO/IEC 17020 and ISO/IEC 17025 certified laboratory. All work was completed under the supervision of Don Hains of Hains Technology Associates of Toronto, Canada, who is acting as the Qualified Person.

The process conditions were screened to select optimized parameters, (including operating at 25 oC). The average lithium recovery achieved was 80%, producing an intermediate lithium sulfate product enriched from 0.7 g/L Li to 1.7g/L Li. This represents a near 100% increase in lithium extraction, in comparison to the conventional evaporation process results completed by the Company. The laboratory test work shows good selectivity of the adsorption process, high Li adsorption, elution and total recovery rate and low adsorbent loss rate. Chemphys also determined that the intermediate lithium sulfate produced met the feedstock quality requirements to directly produce battery grade lithium carbonate.

Conventional lithium extraction involves the construction of large evaporation ponds to concentrate the lithium contained in the raw brine. The costs of pond construction is significant, the environmental footprint is large, and the production lead time is approximately 18 months. These factors contribute to the challenges of applying the traditional evaporation process to meet increasing market demand. The Chemphys process is part of an innovative class of lithium extraction technologies, Direct Lithium Extraction (DLE). The XFP-Lithium process allows for faster and more efficient extraction of lithium from brine with significantly reduced evaporation pond footprint. The Company is evaluating both conventional evaporation and DLE to determine the optimal process method for the HMN Li Project.

The next phase of test work will involve pilot plant cycle testing using synthetic brine and validation using a large bulk sample of HMN Li Project brine. The bulk brine sample acquisition will be conducted next week, with the sample expected in China by March. The pilot program will further validate the process conditions established by the laboratory test work on a larger scale, continuous cycle program, and also produce high quality lithium carbonate samples. The pilot testing is expected to be completed in 2Q 2021.

Qualified Person/Data Verification

The scientific and technical information included in this press release is based upon information prepared and approved by Donald H. Hains, P.Geol. Mr. Hains is a qualified person, as defined in NI 43-101 and is independent of [Lithium South Development Corp.](#) and Chengdu Chemphys Chemical Industry Ltd.. Mr. Hains has verified all sampling, analytical and test data underlying the information contained in this press release. There are no sampling, assay, recovery or other factors that could materially affect the accuracy and reliability of the data.

About Chemphys

Chemphys was established in 1998 and has operated its ISO 9001:2000 certified facilities since 2000. The company is a leader in high purity lithium carbonate and battery grade lithium hydroxide for the manufacturing of cathode materials and electrolytes of lithium-ion batteries. Its products are recognized by all major lithium-ion battery materials manufacturers and it is an integral part of the electric vehicle supply chain.

About Lithium South

Lithium South is focused on developing the Hombre Muerto North Lithium Project (HMN Li Project), located on the Hombre Muerto Salar, the premier lithium-producing salar in Argentina. The project is adjacent to land under development by the Korean multinational corporation POSCO, which acquired the ground from Galaxy Resources Ltd. for U.S. \$ 280 million. The Company completed a Preliminary Economic Assessment of the HMN Li Project in 2019, utilizing conventional evaporation extraction. The Company is focused on evaluating alternative extraction methods for the HMN Li Project and plans to become a leader in the application of Direct Lithium Extraction technology at the project level.

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