

Lake Resources NL: Lilac Extraction Process Shows Potential

10.12.2018 | [ABN Newswire](#)

Brisbane, Australia - Argentine-focused lithium exploration and project development company [Lake Resources NL](#) (ASX:LKE) (FRA:LK1) announced today that its plans for a low-cost, rapid production lithium mine with significantly high lithium recoveries have received a boost, following the results of a Phase 1 Engineering Study conducted by California-based Lilac Solutions, Inc.

- Phase 1 Engineering Study with partner Lilac Solutions shows potential for lithium production costs to be US\$2600/tonne (+/-30%) in lowest quartile at Lake's 100% owned Kachi Lithium Brine Project, using Lilac's direct extraction process.

- High lithium recoveries of 85-90% confirmed from multiple brine samples, with lithium concentrations greater than 25,000 mg/L produced from ~300 mg/L lithium brine.

- On-site pilot plant eyed in 2019 as part of pre-feasibility study (PFS), as a precursor to full-scale commercial project offering rapid, low-cost production with low environmental impact.

The study examined lithium recoveries and the upgrading of lithium concentrate from brines at Lake's 100%-owned Kachi Lithium Brine Project in Argentina, together with estimated operating costs of a commercial sized Lilac Solutions production plant.

Significantly, the results showed high lithium recoveries of 85-90% from multiple brine samples from Kachi. Lithium brine concentrates were produced in just three hours using the Lilac process, with low impurities (Mg, Ca, Sr, B).

This compares favourably with conventional brine operations in South America, which have typical lithium recoveries below 50%, along with a lengthy 9 to 24 month waiting period for evaporation to produce a suitable lithium brine concentrate for processing.

Lithium concentrations greater than 25,000 mg/L lithium were produced from ~300 mg/L lithium brine using the Lilac process, together with evaporative dewatering. Commercially, this could be undertaken using the Lilac process together with conventional reverse osmosis and further evaporative dewatering.

This stream could then be processed downstream into battery-grade lithium carbonate product using conventional purification technologies in a conventional carbonate plant.

The study also showed that the process offers the potential for a globally-competitive cost of production, estimated to be US\$2600/tonne (+/-30%) in the lowest cost quartile for lithium carbonate production. (Note: The estimated costs of production are preliminary estimates based on the Phase 1 Engineering study.)

Lithium carbonate exported from South America (Chile/Argentina) currently sells for US\$13,500-14,375/tonne (Benchmark Mineral Intelligence, Nov 2018).

Welcoming the results, Lake's Managing Director, Steve Promnitz said they supported the Company's plans for the rapid development of a new mine, tapping into growing global demand for lithium on the back of the world's clean energy revolution in car and battery technology.

"Lilac's proprietary extraction process could put Lake ahead of rival projects in terms of cost and recovery rate, giving Kachi a significant boost in terms of profitability, as well as minimising its environmental impact," Mr Promnitz said.

"Increased grade through the enhancement process indicates that a 300 mg/L lithium brine could produce lithium carbonate or lithium chloride products. We look forward to further advancing this research as part of the upcoming PFS for Kachi."

The positive study follows Lake's milestone announcement on 27 November 2018 estimating Kachi's maiden Indicated and Inferred Resource of 4.4 Mt LCE (Indicated 1.0Mt and Inferred 3.4Mt) within an Exploration Target of 8-17Mt LCE, covering some 69,000 hectares over almost an entire lithium-bearing salt lake in

Catamarca Province.

(Note: The potential quantity of the Exploration Target is conceptual in nature. There has been insufficient exploration to estimate this Exploration Target as a Mineral Resource and it is uncertain if further exploration will result in the estimation of additional Mineral Resources.)

Pilot plant

Lilac has performed testing on multiple Kachi brine samples with grades of ~ 300 mg/L lithium, and used that information to develop a flowsheet for producing 25,000 tonnes per year of lithium carbonate with an expected overall lithium recovery of approximately 85-90%.

As a result, Lilac is in the process of providing a detailed proposal for an on-site pilot plant in 2019 as part of a PFS (Lake is also assessing conventional methods), with such a plant being a precursor to a full-scale commercial project.

The planned approach is to produce a concentrate of purified lithium brine on site and then convert to lithium carbonate at a location with more established infrastructure and workforce. Most reagents are easily sourced locally, except for proprietary reagents.

Lilac's extraction technology also offers the potential for reduced environmental impact compared to traditional processes used in Argentina, due to the removal of evaporation ponds. In addition, the remaining brine would be reinjected into the aquifer from which it is sourced without significantly affecting the water quality, thereby preserving an aqueous resource in an arid environment.

"Combining Lake's scale and project experience with Lilac's technology and process expertise is expected to enable a rapid path to low cost commercial production of lithium carbonate from the Kachi resource," Mr Promnitz added.

"Together with our other lithium projects in Argentina, Lake is in position for major advances in 2019, generating potential new jobs for the local community and wealth for shareholders."

About Lilac Solutions

Lilac Solutions is a lithium extraction company based in Oakland, California. Lilac offers a full-service ion exchange technology for lithium extraction from brine resources that is cheap, fast, effective, and environmentally friendly, and that is adaptable to a wide variety of brine chemistries.

It has been working with Lake to transform lithium production with its innovative ion exchange technology for extraction of lithium from brine resources. Lilac deploys unique ion exchange media and related processes to extract lithium from a wide variety of brine resources with high recoveries, minimal costs, and rapid processing times. This approach eliminates the need for evaporation ponds, which are expensive to build, slow to ramp up, and vulnerable to weather fluctuations.

A significant environmental benefit comes from the removal of evaporation ponds, which significantly reduces the footprint of the operation. Further, the method allows for the remaining brine to be reinjected into the same aquifer from where it is sourced, without significantly adjusting the water quality, thereby preserving an aqueous resource in an arid environment.

Lilac's technology can economically access brines with low lithium concentrations and high concentrations of other salts, such as magnesium. Cost advantages come from reduced time, higher recoveries and a simplified extraction flowsheet with fewer reagents. The technology is modular to suit various project sizes and integrates with conventional plant designs for production of battery-grade lithium carbonate and lithium hydroxide. The technology has been successfully tested with real brine samples from across the Americas.

For more information on Lilac, please visit <http://www.lilacsolutions.com/>

To view tables and figures, please visit:
<http://abnnewswire.net/lnk/T382PST3>

About Lake Resources NL:

[Lake Resources NL](#) (ASX:LKE) is a lithium exploration and development company focused on developing its 3 lithium brine projects and 1 hard rock project in Argentina, all owned 100%. The leases are in a prime location among the lithium sector's largest players within the Lithium Triangle where half of the

world's lithium is produced. Lake holds one of the largest lithium tenement packages in Argentina (~180,000Ha) secured in 2016 prior to a significant 'rush' by major companies. The large holdings provide the potential to provide security of supply demanded by battery makers and electric vehicle manufacturers.

The Kachi project covers 50,000 Ha over a salt lake south of FMC's lithium operation and near Albemarle's Antofalla project. Drilling at Kachi has confirmed a large lithium brine bearing basin over 22km long and over 400m deep. Drilling over Kachi is aimed to produce a resource statement in 2018, anticipated in Oct 2018. A direct extraction technique is planned to be trialled on site in tandem with conventional methods as part of a PFS to follow the resource statement. Scope exists to unlock considerable value through partnerships and corporate deals in the near-term.

The three key brine projects, Kachi, Olaroz/Cauchari, and Paso, are located adjacent to major world class brine projects either in production or being developed in the highly prospective Jujuy and Catamarca Provinces. The Olaroz-Cauchari project is located in the same basin as Orocobre's Olaroz lithium production and adjoins Ganfeng Lithium/Lithium Americas Cauchari project, with high grade lithium (600 mg/L) with high flow rates drilled immediately across the lease boundary.

Source:

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