



## LAKE RESOURCES N.L. (ASX:LKE)

ASX Market Announcements Office

3 April 2019

### **KACHI PFS TO UNLOCK TOP 10 GLOBAL LITHIUM BRINE RESOURCE**

- **Pre-feasibility study (PFS) commences at Lake's Kachi Lithium Brine Project following securing of new investor support.**
- **Kachi project ranked amongst top 10 global lithium brine resources, comprising a large lithium brine-bearing basin over 20km long, 15km wide, and 400m to 800m deep with an Indicated and Inferred Resource of 4.4 Mt LCE (lithium carbonate equivalent) (Indicated 1.0Mt and Inferred 3.4Mt).**
- **Phase 1 engineering study has shown great potential for operating costs in the lowest cost quartile of US\$2600/t LCE, using a direct extraction technique, which has shown 85-90% recoveries and lithium brine concentrations in excess of 25,000 mg/L lithium.**

One of the Top 10 largest lithium brine resources globally is poised for development, with **Lake Resources NL (ASX: LKE)** announcing today the commencement of a pre-feasibility study (PFS) at its 100% owned Kachi Lithium Brine Project (Figure 2). It is located in a highly prospective area for lithium brine, being situated south of Livent/FMC's lithium production centre, which has been operating for over 20 years, and near Albemarle's Antofalla project in Catamarca Province. The region has been subject to significant corporate transactions recently involving lithium brine assets, implying an acquisition cost of US\$50-\$110 million per 1 million tonnes of LCE resources.

Lake recently announced a maiden resource for Kachi of 4.4 million tonnes lithium carbonate equivalent (LCE) within an exploration target of 8-17 million tonnes LCE (refer ASX announcement 27 November 2018). This occurs within consolidated mining leases enlarged to cover 69,000 hectares and covers almost the entire salt lake. This places the Kachi resource amongst the top 10 lithium brine resources globally, at a time when there is an increasing demand for new lithium supply sources and constrained production from major producers.

In the coming weeks, an international engineering company will be announced to be working with Lake at Kachi on the PFS. This study will examine the project's technical and economic viability, including both conventional processing and direct extraction methods, project engineering design, product specifications, optimisation of recovery, and operating and capital costs. It is expected that there will be significant cost reductions (projected to be within the lowest quartile cash costs) and superior recoveries for direct extraction compared to evaporation ponds. As part of the project development, an on-site pilot plant is being planned to further assess the ion exchange technology developed by Lilac Solutions (refer ASX announcement 10 December 2018).

Lake is currently in discussions with a number of parties with respect to production development funding and partnership at its Kachi project that would assist with financing the feasibility study that is likely to follow on from the PFS. The Company has sufficient funds from Amvest for the PFS.

**Lake's Managing Director** Steve Promnitz said: "Today's announcement is a significant milestone for Lake and for the Kachi project, the most advanced of Lake's four wholly owned lithium projects in Argentina. The Kachi project has the potential to become a globally significant lithium brine resource and a major lithium producer.

“Discussions will soon be completed with various technical providers of internationally acceptable PFS studies, so that the Company can demonstrate how Kachi can be taken into production using new direct extraction methods at a competitive cost. We are keenly aware of the opportunity at Kachi and are determined to advance its development into production, together with our Olaroz-Cauchari projects. Kachi is one of the largest wholly owned lithium brine basins in the ‘Lithium Triangle’, responsible for half the world’s lithium output and at the lowest-cost.”

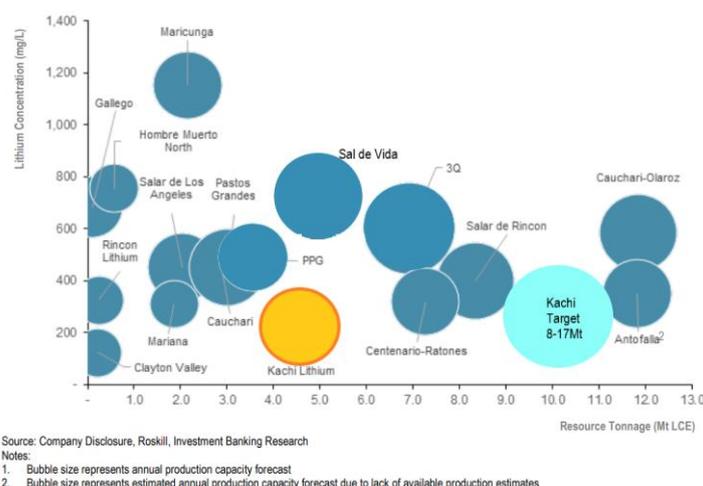
## Summary

Lake Resources’ 100%-owned Kachi Lithium Brine Project in Catamarca province, NW Argentina, covers a consolidated package of 36 mining leases recently expanded to 69,000 hectares (170,000 acres), centred around a previously undrilled salt lake within a large lithium brine-bearing basin. Kachi is one of the few salt lakes in Argentina with substantial identified lithium brines fully controlled by a single owner, Lake.

The Kachi project’s maiden JORC Mineral Resource estimate released in late November 2018 is 4.4 million tonnes of contained Lithium Carbonate Equivalent (LCE) in Inferred and Indicated Categories extending to 400m below ground level in porous permeable sediments. This contains 1 Mt LCE as Indicated resources, and 3.4 Mt of LCE as Inferred resources, with a resource depth of 400m for both areas (see Table 1) at an average grade of 211 mg/L lithium and Mg/Li ratio of 4.7. In total, this comprises 1,092,500 tonnes of lithium metal (4.4 million tonnes of lithium carbonate), and 30 million tonnes of potassium chloride. This is within the top 10 lithium brine projects globally and a similar size to major lithium brine producers in Argentina and Chile. Brine-bearing sediments remain open at depth and laterally, with the opportunity for resource expansion through additional deeper drilling and extending the exploration footprint

The Phase 1 engineering study completed with technology partner Lilac Solutions showed the potential for lithium production costs to be US\$2600/tonne (+/-30%), which is in the lowest quartile of the cash cost curve, using Lilac’s direct extraction process on the Kachi brines. Lilac’s extraction technology also offers the potential for a reduced environmental impact due to the removal of evaporation ponds, helping preserve an aqueous resource in an arid environment.

High lithium recoveries of 85-90% were confirmed from multiple brine samples, with lithium concentrations greater than 25,000 mg/L produced from ~300 mg/L lithium brine. An on-site pilot plant is under discussion for 2019. The pre-feasibility study (PFS) is a precursor to full-scale commercial project offering rapid, low-cost production with low environmental impact. 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 materials.



**Figure 1. Kachi Lithium Project - Current resource and exploration target in relation to global lithium brine projects. Kachi among Top 10 global lithium brine resources** (Source: Galaxy releases; Roskill; Company releases 31 Jan 2019)

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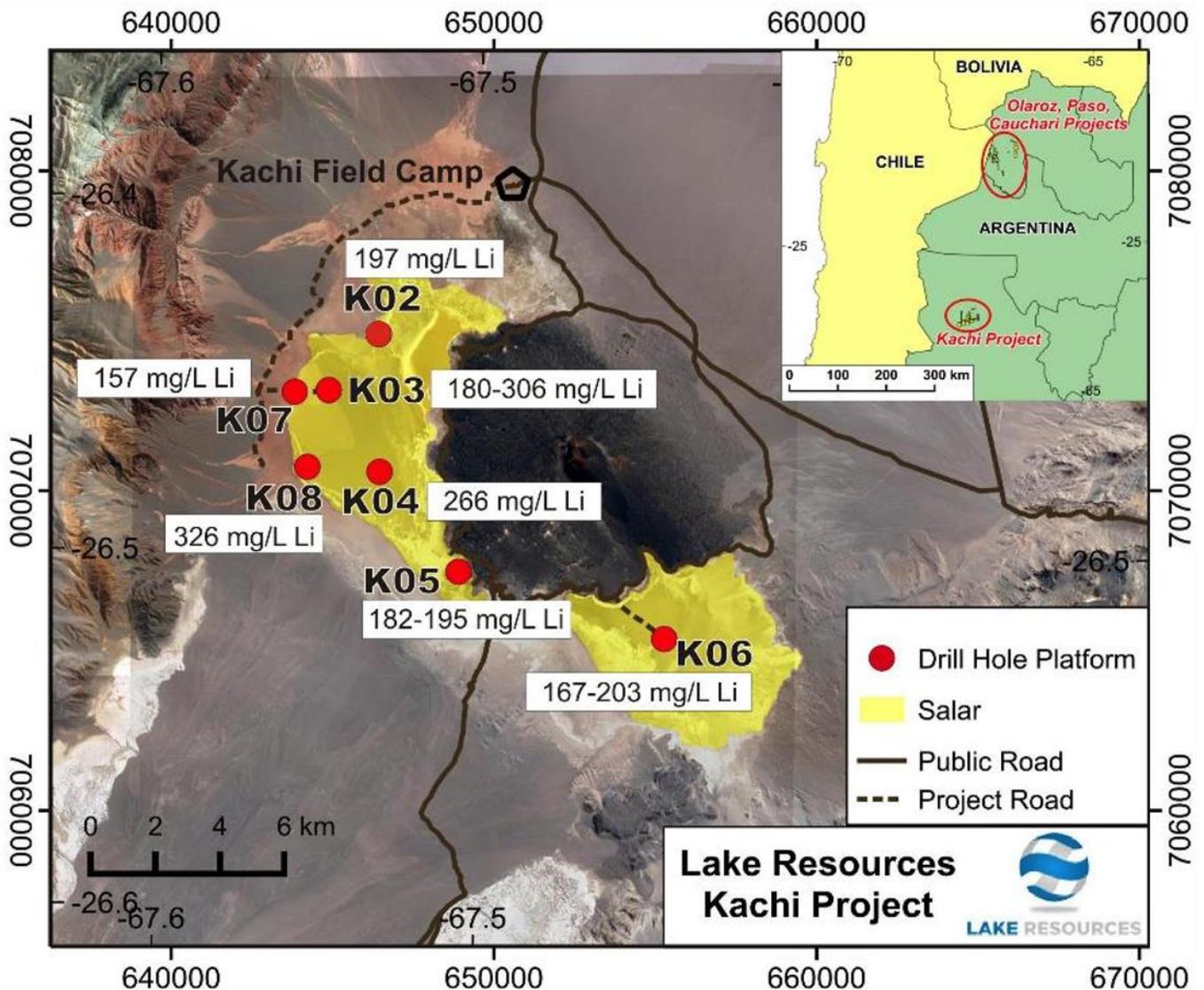
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**Figure 2. Kachi Lithium Project showing drilling locations and details of the drilling platforms with averaged lithium concentrations for each drill hole.**

#### **About Lake Resources NL (ASX:LKE)**

Lake Resources NL (ASX:LKE, Lake) is a lithium exploration and development company focused on developing its three lithium brine projects and 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 (~200,000Ha) secured in 2016 prior to a significant 'rush' by major companies. The large holdings provide the potential to provide consistent security of supply demanded by battery makers and electric vehicle manufacturers.

The Kachi project covers 69,000 ha over a salt lake south of FMC's lithium operation and near Albemarle's Antofalla project in Catamarca Province. Drilling at Kachi has confirmed a large lithium brine bearing basin over 20km long, 15km wide and 400m to 800m deep. Drilling

over Kachi (currently 16 drill holes, 3100m) has produced a maiden indicated and inferred resource of 4.4 Mt LCE (Indicated 1.0Mt and Inferred 3.4Mt) within a 8-17 Mt LCE exploration target (refer ASX announcement 27 November 2018).

A direct extraction technique is being tested in partnership with Lilac Solutions, which has shown 80-90% recoveries and lithium brine concentrations in excess of 15000 mg/L lithium. Phase 1 Engineering Study results have shown operating costs forecast at US\$2600/t LCE in the lowest cost quartile. This process 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 Olaroz-Cauchari and Paso brine projects are located adjacent to major world class brine projects either in production or being developed in the highly prospective Jujuy Province. 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.

An additional new rig is being deployed to increase the depth capacity and speed of the drill rig currently at Cauchari. High fluid pressures, while encouraging, have meant that conditions are challenging. Results are expected to extend the proven resources in adjoining properties into LKE's area. This will be followed by drilling extensions to the Olaroz area in LKE's 100% owned Olaroz leases.

Significant corporate transactions continue in adjacent leases with development of Ganfeng Lithium/Lithium Americas Cauchari project with Ganfeng announcing a US\$237 million for 37% of the Cauchari project previously held by SQM. Nearby projects of Lithium X were acquired via a takeover offer of C\$265 million completed March 2018. The northern half of Galaxy's Sal de Vida resource was purchased for US\$280 million by POSCO in June 2018. LSC Lithium is under offer for C\$111 million with a resource size half of Kachi. These transactions imply an acquisition cost of US\$55-110 million per 1 million tonnes of lithium carbonate equivalent (LCE) in resources.

The demand for lithium continues to be strong for lithium ion batteries in electric vehicles, according to recent data from the leading independent battery minerals consultant, Benchmark Mineral Intelligence. Supply continues to be constrained suggesting good opportunities for upstream lithium companies.

For more information on Lake, please visit <http://www.lakeresources.com.au/home/>