

14 July 2022

Lake Resources is advancing project delivery, extraction technology, and operations to serve critical North American and Asian supply chains. Its flagship Kachi project, located in Argentina's Catamarca province, is a globally significant lithium resource.

A recent report issued by J Capital, a short-seller, puts forth incorrect information on technical matters and inaccurate assertions on Lake Resources' progress to-date with its technology partner Lilac Solutions.



*(The warehousing for the Kachi demonstration plant currently being erected for completion with Lilac's DLE module installation imminent.)*

Lilac's operating team arrives at the Kachi project site on 14th July 2022, with the demonstration plant modules delivered on site by 20th July 2022 when commissioning will commence.

The report's description of DLE processes does not pertain to Lilac's ion exchange technology. It is criticising the wrong process.

There are over 50 direct extraction processes in use across industries and Lake examined a number of different processes in order to select Lilac Solutions. With Lilac's proprietary ion exchange chemical process, Lake intends to efficiently deliver the large volumes of high-quality lithium chemicals needed by battery makers. Lilac has worked extensively with Kachi brine, generating the data needed for engineering studies.

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Importantly, lithium can be produced cleanly and in a way that respects and involves local communities and protects the environment.

**On the Lilac Solutions proprietary ion exchange technology:**

Lake believes DLE will become the primary method of lithium extraction because it is the only practical way to ramp up lithium supply sustainably and in a way that conforms to increasing ESG scrutiny on lithium projects. The chemical techniques employed are already well-established in the water industry and direct extraction by ion exchange is also widely used in the uranium sector.

However, in the lithium industry not all DLE processes are the same. This is why Lake has taken the time to identify the process that is not only most efficient but also delivers a product that represents the most socially and environmentally sustainable approach to lithium extraction through ion exchange DLE and brine managed reinjection.

The chemical process for Kachi was set out clearly in the pre-feasibility study (PFS) in 2020, which Lilac participated in. Lilac has completed extensive test work in support of the PFS to facilitate high-quality capital and operating cost estimates. Assertions of high costs, high water usage, and toxic waste do not pertain to the Lilac technology.

Lilac's proprietary ion exchange technology is a chemical process whereby the targeted ion (lithium) in brine is exchanged for hydrogen in a charged media in the form of a ceramic bead. The ion exchange process can be operated with zero net usage of fresh water by utilizing small amounts of brackish water which is not fit for human consumption or agriculture and is available in large quantities at the Kachi site. Pre-treatment of the brine to remove magnesium or calcium is not required as these ions are rejected in the ion exchange process. The bead is then stripped of lithium using hydrochloric acid to produce an aqueous lithium chloride solution. Test work with natural Kachi brine is consistently demonstrating over 500 cycles with these beads while maintaining high lithium recoveries, and the beads have demonstrated an ability to exceed 1,000 cycles with Kachi and other brines. The spent brine is returned to the aquifer by managed reinjection.

The brine is filtered and processed in the direct extraction plant, which recovers and concentrates lithium to a lithium chloride eluate stream using ion exchange. The lithium depleted brine from this step is reinjected into the Salar to maintain the brine aquifer and protect freshwater resources.

The concentrated lithium chloride eluate is converted into lithium carbonate through a standard treatment by mixing with sodium carbonate (soda ash). The only other by-product is small quantities of chemically inactive solid. Process water is recycled and reused throughout the process so that only low quantities of top-up water are required.

Pilot module test work on Kachi brine has been undertaken by Lilac in California since 2020, which has demonstrated a clean lithium chloride eluate, which was converted by an independent third party, Hazen, to a 99.97% lithium carbonate product. There is also potential for the production of lithium hydroxide at this stage.

The front end of the Kachi flow sheet involves a brine production bore-field and Lilac's modular direct lithium extraction ion exchange technology. Scaling up the bore field and Lilac's modular components is uncomplicated and capital cost effective when compared with expanding brine evaporation ponds or mineral projects.

The Kachi site is close to a major highway, an airstrip, a hospital and two small towns. The site's location is at a comparatively low 3,000 metres and has no effect on the chemical processes. The site is ideal for project scale solar energy, which is the preferred source of power and being planned.

COVID closed international borders and as soon as was practical in March 2022 a modular demonstration plant was built in California, packed into shipping containers, and shipped to Argentina.

Lake now employs almost 300 people in Argentina with federal and state governments supportive of environmentally sensitive lithium development.

#### **On the Disclosure of share trades:**

The company has a clear policy on share trading and on a single occasion there was an inadvertent non-compliance in respect of trades made during a close period when otherwise the market was fully informed. Lake made the market aware immediately.

As disclosed in the Form 3 Y, Stephen Promnitz traded some Lake shares on 20, 21 and 22 April 2022. The quarterly report was lodged on 21 April.

To trade in a closed period, Mr Promnitz was required under the Share Trading Policy to notify both the Chairman and Secretary of Lake and obtain written clearance to do so.

The chairman did not give approval for Mr Promnitz to sell before he sold. The chairman forwarded him the trading policy section regarding blackout periods and suggested Mr Promnitz could sell the day after the quarterly was released. Mr Promnitz applied for the Chairman's permission after the sales had taken place on the 25th. The Chairman approved the sale on the 26th.

Mr Promnitz did not due to oversight, notify a Secretary.

The administrative errors were failing to notify both the Chairman and a Secretary and obtain written clearance before trading.

Lake has undertaken a review of the various agreements with both past and present directors and is taking steps to update all employment and appointment "agreements" with a view to ensuring that all directors and senior management are both fully aware of the various statutory and ASX Listing Rule related duties and obligations.

Lake also intends as it grows and appoints more employees both in Australia, Argentina and elsewhere, to undertake periodic internal meetings with staff and board members to ensure that they are both familiar with and aware of the obligations under various company policies and also familiar with the consequences that may arise in the event of non-compliance.

Lake is presently in the process of updating its various agreements and letters with board members, with a view to implementing more comprehensive notification obligations on directors in respect of, inter alia, dealings in "securities" of the company.

The successful Court application made by the company earlier this year was in respect of whether a cleansing statement was in fact required to be issued to enable secondary sales of certain securities. The matter was highly technical and as a matter of caution Lake sought available curative orders in the interests of its investors at the earliest possible opportunity.

#### **Options to Brokers:**

Lake has as a listed company from time to time, appointed brokers and corporate advisors. In accordance with what is common practice, the agreed mandates involved the provision of options as part of the fee arrangements.

Lake expects these brokers to comply with their market and regulatory disclosures when issuing research.

## Memoranda of Understanding:

While the disclosed MOUs are largely non-binding, they have been entered into with globally recognised companies for the long-term supply of a material critical to their supply chains. The nature of the MOUs and the negotiations and ongoing dialogue toward terms of agreement by Lake with these companies gives Lake reasonable confidence that there will be outcomes which will assist in progressing the Kachi Project.

Authorised for release by the Chairman

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### About Lake Resources NL (ASX:LKE OTC:LLKFF) –

#### Clean high purity lithium using efficient disruptive clean technology - in demand by EV makers and lithium-ion batteries

Lake Resources NL (ASX:LKE, OTC: LLKFF) is a clean lithium developer utilising direct extraction technology for production of sustainable, high purity lithium from its flagship Kachi Project in Catamarca Province within the Lithium Triangle in Argentina among three other projects covering 220,000 ha.

This direct extraction method delivers a solution for two rising demands – high purity battery materials to avoid performance issues, and more sustainable, responsibly sourced materials with low carbon footprint and significant ESG benefits.

- 1. Climate-Tech:** Efficient, disruptive, clean, cost-competitive technology using well-known water treatment re-engineered for lithium (not mining). Technology partner, Lilac Solutions Inc, is supported by the Bill Gates led Breakthrough Energy fund, MIT's The Engine fund, Chris Sacca's Lowercarbon Capital, BMW, Sumitomo and SK Materials. Lilac will earn in to the Kachi Project, up to a 25% stake, based on certain milestones and then be expected to fund their c.US\$50 million pro-rata share (refer ASX announcement 22 September 2021)
- 2. High Purity:** 99.97% purity lithium carbonate samples for a premium price. Demonstrated high quality in nickel rich NMC622 lithium-ion batteries (refer ASX announcement 20 October 2020; 2 March 2021).
- 3. Sustainable /ESG:** Far smaller environmental footprint than conventional methods, that returns virtually all water (brine) to its source with a low CO2 footprint.
- 4. Prime Location, Large Projects:** Flagship Kachi project in prime location among low-cost producers with a large lease holding (74,000 ha) and expandable resource (4.4 Mt LCE) of which only 20% is used for 25 years production at 25,500tpa (JORC Resource: Indicated 1.0Mt, inferred 3.4Mt, refer ASX announcement 27 November 2018). Pre-feasibility study by tier 1 engineering firm shows large, long-life low-cost operation with US\$1.6 billion NPV pretax, and annual EBITDA of US\$260 million from 2024 (refer ASX announcement 17 March 2021; 28 April 2020). (No changes to the assumptions in the resource statement or the PFS have occurred since the announcement date. The DFS will use a base case of 50,000 tpa LCE.)

**5. Finance Indicatively Available:** Long duration, low-cost project debt finance for the Kachi Lithium Project is indicatively available from the United Kingdom's Export Credit Agency UKEF and Canada's EDC with Expressions of Interest to support approx. 70% of the total finance required for Kachi's development, subject to standard project finance terms (refer ASX announcements 11 August 2021; 28 September 2021).

An innovative direct extraction technique, based on a well-used ion exchange water treatment method, has been tested for over 18 months in partnership with Lilac Solutions, with a pilot plant module in California operating on Kachi brines and has shown 80-90% recoveries. Battery quality lithium carbonate (99.97% purity) has been produced from Kachi brine samples with very low impurities (refer ASX announcement 20 October 2020). The first samples of high purity (99.97% purity) battery quality lithium carbonate were tested in a NMC622 battery by Novonix with excellent results (2 March 2021).

This method of producing high purity lithium can revolutionise and disrupt the battery materials supply industry as it's scalable, low cost, and delivers a consistent product quality with a significant ESG benefit.

Lake's other projects include the Olaroz and Cauchari brine projects, located adjacent to major world class brine projects in production or construction, including Allkem's Olaroz lithium production and adjoins the impending production of Ganfeng Lithium/Lithium Americas' Cauchari project. Lake's Cauchari project has shown lithium brines over 506m interval with high grades averaging 493 mg/L lithium (117-460m) with up to 540 mg/L lithium. These results are similar to lithium brines in adjoining leases and infer an extension and continuity of these brines into Lake's leases (refer ASX announcements 12 June 2019, 23 March 2021).

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

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