Lake Resources NL: Further Drilling at Flagship Kachi Project

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Sydney, Australia - Clean lithium developer Lake Resources NL (ASX:LKE) (FRA:LK1) (OTCMKTS:LLKKF) reports that deeper drilling at the Kachi lithium brine Project ("Kachi" or the "Project") in Catamarca Province, Argentina indicates significantly larger horizontal and vertical extents of the lithium-bearing brine than previously understood.

In Lake's resource update on June 15, 2023, the Company reported that future drilling was targeting additional step out holes and exploring the deeper resource beyond 400 metres below ground surface. This update provides highlights from drillhole K23D40 which is the first hole at the Project drilled beyond 430 metres below ground surface to a total depth of 610 metres below ground surface.

The data from this drillhole will be used to support planned resource updates and the hydrogeologic models being developed to simulate the extraction and injection wellfields as part of the Project's Definitive Feasibility Study (DFS) for Phase 1.

"The latest drilling intercept results indicate that this resource is much larger than initially anticipated as the known lithium brine extent continues to expand laterally and vertically," commented Michael Gabora, Director of Geology and Hydrogeology of Lake Resources.

"The K23D40 hole represents the first time Lake has drilled significantly beyond 400 metres to over 600 metres.

Even more exciting is that average lithium grades in all brine samples collected between 400 and 600 metres are above 209 mg/L, proving that the brine extends at depth to over 600 metres at K23. This has big implications for what may be present in the central resource area at these depths."

Lake CEO David Dickson commented, "In drilling 180 metres deeper than we have before, we are excited to find lithium-bearing brine the whole way down, increasing the extent of known brine in the vertical dimension by 30%."

"These findings could have a major impact on the resource if it is also present at these depths in the remainder of the brine footprint. This work will contribute to further resource updates, which we expect to provide in September, in support of the completion of our Phase 1 DFS."

The Kachi Project has shown continual increases in mineral resource estimates since the maiden estimate of 4.4 Mt of contained battery grade Lithium Carbonate Equivalent (LCE) in Inferred and Indicated categories was announced in November 2018. The resource was significantly upgraded in January 2023 with a Measured and Indicated resource of 2.2 Mt of LCE and approximately 3.1 Mt of LCE of Inferred mineral resources. The total resource was again increased in June of 2023 with more than 2.9 Mt LCE in Measured and Indicated and approximately 5.3 Mt of LCE in the Inferred category for a total resource estimate of more than 8.1 Mt of LCE. As reported in the the Company's June 15, 2023 ASX announcement, the lithium grade of the Measured Resource (0-400 metres) across the salar is 210 mg/L lithium, the Indicated Resource immediately south-east is 174 mg/L lithium, and the surrounding Inferred Resource (0-400m) has a concentration of 199 mg/L lithium.

Recent extraction and injection testing has built on the existing knowledge around the large lithium brine resource and demonstrated that the reservoir in the resource area is permeable and that productive wells can be drilled and constructed. The additional drilling and testing results from K23D40 provided in this announcement demonstrate that the resource is present significantly further west and north of the core resource area and extends to more than 600 metres, which is significantly deeper than previously defined.

Step out hole K23D40 (K23 Platform), drilled about 3.5 kilometres northwest of K22D39 (K22 Platform; Figure 1*), has an average lithium grade of 232 mg/L from twelve (12) samples collected between 288 and 610 meters below ground surface. All samples were collected with single packer configurations generally with a test interval of about 10 metres, although this varied depending on hole conditions. Standard operating procedures are followed with significant development of the test interval, at least 3 borehole volumes (measured from surface to hole bottom), and sampling only occurs once brine is clear and field

chemistry parameters are stable and indicative of reservoir fluids.

A standpipe piezometer was installed and screened between 372 to 384 metres below ground surface and was developed and sampled via air-lifting and a measured lithium concentration of 224 mg/L (Alex Stewart Laboratory, Jujuy, Argentina), which is consistent with the packer test sample from 360 metres to 390 metres below ground surface which measured 230 mg/L (Table 1*).

Multiple exploration targets for injection of spent brine, locations north and south of the Project (K21, K22, and K23; Figure 1*), have all encountered lithium-bearing brine above 200 mg/L. The results for K21 and K22 have been reported previously by Lake Resources with average lithium grades of 219 and 283 mg/L lithium, respectively. Results from K23, approximately 3.5 km northwest of K22, indicate that brine is also present beneath the present-day surface expression of the alluvial fan west of the salar (Table 1, Figure 1*). Results reaffirm Lake's conceptual model of the presence of lithium brine within the alluvial fan deposits west of the central resource area. A highlight from the results is that the lithium brine occurs within coarser grained materials such as gravelly sands, sandy gravels, and clean sands (Figure 2 and Figure 3*).

As a result of the significant spatial expansion of the known lithium-bearing brine intercepted to both the north and south of the central resource area, additional exploration drilling and testing for suitable injection locations will be necessary. As injection targets are located further outside the central resource area, coarser-grained, more permeable sediments have been encountered (e.g. K22 and K23). Permeable coarse-grained stratigraphy would provide conditions even more favorable for injection than that demonstrated with the positive results from the injection trials at KB and KC (see Lake's 16 August 2023 ASX announcement - Lake Resources Completes Intermediate Milestone to Achieve DFS with Successful Extraction and Injection Tests at its Flagship Kachi Project). Results from K23D40 confirm that the basin consists of coarse-grained sediments west and northwest of the central resource area.

Additional infill drilling in the southern region of the Project area is ongoing at K24D41 (K24 Platform) and K25D42 (K25 Platform) (Figure 1*). The objective of drilling and testing at these locations is to improve understanding of the hydrogeologic system in addition to collecting brine samples, which could potentially allow for the upgrade of resource areas from inferred to indicated and indicated to measured, subject to additional testing (Figure 1 and Table 2*).

*To view tables and figures, please visit:
https://abnnewswire.net/lnk/9U3297CH

About Lake Resources NL:

Lake Resources NL (ASX:LKE) (OTCMKTS:LLKKF) is a clean lithium developer utilising state-of-the-art ion exchange 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 ion exchange extraction technology 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.

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