LiTHOS Validates AcQUA™ Pre-treatment Technology on Lithium Enriched Brines provided by Multi-National Customer

- *Results validate nearly **flawless impurity removal** from Lithium Brines with AcQUA™ pre-treatment flowsheets using customer field brines.*
- *Results demonstrate superior Lithium recovery in comparison to its current competitors as well as traditional methods using evaporation ponds.*
- *Unlike other technologies, LiTHOS' patent-pending AcQUA™ brine processing technology **does not** require chemicals or any fresh water.*
- *The demonstration scale processing plant uses equipment that is available globally from a variety of **well-established vendors significantly reducing scale-up risk**.*

VANCOUVER, BC, Feb. 7, 2024 /CNW/ - LiTHOS Group Ltd. ("LiTHOS" or the "Company") (CBOE CA: LITS) (OTCQB: LITSF) (FSE: YU8) (WKN: A3ES4Q), a rapidly emerging leader in lithium brine pre-treatment and extraction technology solutions, is pleased to announce that it has validated impurity removal from raw field brines using its patent-pending *AcQUA*™ pre-treatment technology.

Scott Taylor, CEO of LiTHOS stated: "*The upstream impurity rejection results from our demonstration plant were in line with the high-performance expectations we set as a company. We can now scale up this system for on-site field deployment rapidly while leveraging a proven supply chain and an existing modular system design. It is imperative to emphasize that AcQUA™ does not use chemicals, reagents, or fresh water to remove impurities. This process delivers an optimal monovalent cation solution suitable for further concentration with DLE. One of the promised value propositions to DLE technology is reinjection of lithium deficient bines. This is most suitably performed with a brine processed by AcQUA™ - without reagents or chemicals.*"

Key Achievements:

LiTHOS, is pleased to announce the completion of conditioning and pre-treatment of super-saturated field brines whereby LiTHOS successfully achieved all technical and operational targets including:

- Lithium chloride recovery efficiency of at least 89% [1]
- >99% Magnesium rejection approaching rejection to non-detect
- 100% Sulfate (S04) rejection to non-detect
- 100% Boric acid rejection to non-detect
- Zero water usage.
- Zero chemical usage

This accomplishment represents a pivotal step in the company's mission of eliminating the use of evaporation ponds and scaling lithium supply and production efficiencies while minimizing local environmental impacts. Furthermore, the successful elimination of magnesium and sulfates is a key component to enable subsequent DLE throughput capacity at a meaningful industrial scale.

[1] *Measuring Lithium Chloride with a titration-based approach can often result in errors of up to 20%. Most DLE disclosures surrounding values of Lithium Chloride have this level of uncertainty and further, take the lithium yield after pre-treatment losses of lithium have occurred to generate an artificially impressive number. Lithos uses an advanced proprietary chloride measurement system which has a margin of error of up to 6%. We use and operate ICP-OES system for all our analysis with in-house personnel.

Comparison to Lilac Solutions Technology Q4 2023 Capabilities[2]

- LiTHOS demonstration scale pilot-plant has achieved **superior lithium recovery**.
- LiTHOS process uses **no acid consumption**.
- LiTHOS process uses **no fresh water** (net water consumption is zero).

Lilac Solutions was founded in 2017, has raised over USD$220 million at its most recent post-money valuation of more than USD$1 billion, and is arguably one of the most commercially mature DLE technology companies globally. Lilac implemented an impressive demonstration plant on Lake Resources (ASX:LKE) (OTC:LLKKF) Kachi lithium project and generated robust data.

On December 18, 2023 Lilac published the following results in **Table 1 Below.** Key performance indicators for Lilac IX unit in Kachi Demonstration Plant and DFS Commercial Design.

Parameter	Kachi Project	
	Demonstration Plant	DFS Commercial Design
Lithium Recovery	80%	80%
Overall Impurity Rejection (wt%)	99.9%	99.9%
Acid consumption (t 100% HCl / tLCE)	1.5	1.5
Net water consumption after water recovery (tH2O / tLCE)	20[1]	1.8[2]

Table 1 (CNW Group/Lithos Group)

(1) Assumes full utilization of reverse osmosis (RO) for water recovery, RO was partially implemented in the Demonstration Plant
(2) Mechanical testing of a commercial-scale lithium extraction unit with brine and water completed in Oakland indicated 11 tH2O/tLCE with RO water recovery and 1.8 tH2O/tLCE with mechanical evaporation. The DFS utilizes mechanical evaporation for water recovery.

[2] Lilac Solutions Celebrates Successful Completion of Kachi Demonstration Plant - Lilac Solutions

KEY ATTRIBUTES OF LITHOS *AcQUA*™ TECHNOLOGY

1. High Performance Removal of Key Impurities which choke downstream DLE performance:

- The demonstration plant showcases *AcQUA*™ pre-treatment technology robust impurity rejection rates.

2. Environmentally Sustainable.

- *AcQUA*™ eliminates the need for evaporation ponds traditionally used for processing brine.
- *AcQUA*™ eliminates any requirement for freshwater by 100% relative to conventional DLE technologies.
- *AcQUA*™ has no requirement for Acid reagents.

3. Scalability and Reliable Operations:

- LiTHOS' current pilot-demonstration plant uses equipment that is common in industrial applications and available globally from a variety of well-established vendors.
- This initial design and delivery approach significantly reduces scale-up risk and increases process uptime.

Macro Importance of Impurity Removal in Lithium Enriched Brines

The 2023 Goldman Sachs report[3] outlines the importance of the reservoir specific content of magnesium (Mg/Li ratio on Y-axis) and sulfates (SO4/Li ratio on X-Axis) and the requirement for their removal to enable DLE at a meaningful industrial scale: "*As impurity ratios will impact the ultimate recovery of projects, including in DLE implementation, we outline the impurity ratios of key projects vs. lithium concentration and resource size in the chart below, where typically in a traditional brine pond high impurities are more expensive to process.*"

[3] Global Metals & Mining. Direct Lithium Extraction: A potential game changing technology Page 17, Exhibit 23: Magnesium ratio (Mg/Li) vs. SO4 ratio (SO4/Li); bubble size of contained lithium resource.

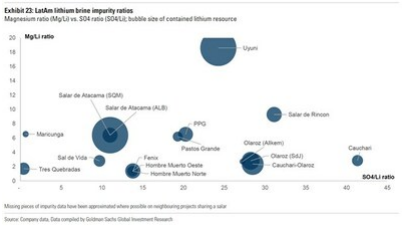

Exhibit 23 (CNW Group/Lithos Group)

About LiTHOS

Lithium is now among one of the world's most in-demand metals as the world "electrifies" to limit CO2 emissions, led by continuing growth in EV sales and the installation of hundreds of gigawatts of intermittent solar power generation capacity requiring partial battery storage solutions.

The Company's mission is to deliver sustainable lithium production without the use of evaporation ponds. AcQUA™ is LiTHOS' patent-pending technology that spans the complete value chain from the conditioning and pre-treatment of raw brines through the DLE phase into the polishing and purification of battery grade lithium feedstock. LiTHOS has two fully operational processing facilities: a 4,000 sq ft lab in Denver, CO and a 55,000 sq ft complex in Bessemer, AL.

LiTHOS is working under contract with multiple strategic mineral resource owners and processing brines from the largest Salars in Chile and Argentina, and the Smackover reservoir in the Southeastern United States. Our wholly owned subsidiary, Aqueous Resources LLC, is a US Department of Energy grant awardee and a Colorado Advanced Industries grant awardee.

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ON BEHALF OF THE BOARD

Scott Taylor - CEO

Forward-Looking Statements: This news release contains forward-looking statements and forward-looking information (collectively, "forward-looking statements") within the meaning of applicable Canadian legislation. All statements in this news release that are not purely historical are forward-looking statements and include statements regarding beliefs, plans, expectations and orientations regarding the future including, without limitation, the Company's market position in the industry of sustainable lithium production and increase in the capacity of the Company's facilities. Although the Company believes that such statements are reasonable and reflect expectations of future developments and other factors which management believes to be reasonable and relevant, the Company can give no assurance that such expectations will prove to be correct. Forward-looking statements are typically identified by words such as: "believes", "expects", "anticipates", "intends", "estimates", "plans", "may", "should", "would", "will", "potential", "scheduled" or variations of such words and phrases and similar expressions, which, by their nature, refer to future events or results that may, could, would, might or will occur or be taken or achieved. In making the forward-looking statements in this news release, the Company has applied several material assumptions, including without limitation, that the Company's facilities will be able to handle the increased demand. Forward-looking statements involve known and unknown risks, uncertainties and other factors which may cause the actual results, performance or achievements of the Company to differ materially from any future results, performance or achievements expressed or implied by the forward-looking information. Such risks and other factors include, but are not limited to, the failure of the Company's facilities to handle increased demand and the potential that that Company's market position does not increase as expected. Further, the ongoing labour shortages, inflationary pressures, rising interest rates, the global financial climate and the conflict in Ukraine and surrounding regions are some additional factors that are affecting current economic conditions and increasing economic uncertainty, which may impact the Company's operating performance, financial position and future prospects. Collectively, the potential impacts of this economic environment pose risks that are currently indescribable and immeasurable. Other factors may also adversely affect the future results or performance of the Company, including those risk and concerns more fully described in the Company's annual and quarterly management's discussion and analysis and in other filings made by the Company with Canadian securities regulatory authorities under the Company's profile at www.sedarplus.ca. Readers are cautioned that forward-looking statements are not guarantees of future performance or events and, accordingly, are cautioned not to put undue reliance on forward-looking statements due to the inherent uncertainty of such statements. These forward-looking statements are made as of the date of this news release and, unless required by applicable law, the Company assumes no obligation to update the forward-looking statements or to update the reasons why actual results could differ from those projected in these forward-looking statements.

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