ASX Announcement **15 June 2023**

PRAIRIE LITHIUM BRINE PROJECT UPDATE

HIGHLIGHTS

- **Upgrade commenced of the Prairie Project's JORC Inferred Mineral Resource of 4.1 million tonnes of lithium carbonate equivalent (LCE) at 111 mg/L Li (the highest quality inferred lithium brine resource in Canada and a world class lithium resource.)**[1-2]
- **Commenced Pre-Feasibility Study (PFS) to confirm the internally produced economic model with highly robust economic numbers anticipated.**
- **Existing lithium brine production is of high quality with costs of production in the lowest 25% of lithium producers.**
- **Contract signed with third party DLE provider to mobilise pilot plant to Canada. Phase 1 and Phase 2 scale testing has produced exceptional results and Phase 3 with the operation of a Pilot Plant is planned for November 2023.**
- **Continuing Development of the Company's proprietary Direct Lithium Extraction (DLE) technology with the Canadian pilot plant being relocated to the Lithium Research Centre (LRC) in Phoenix, Arizona.**

Arizona Lithium Limited (ASX: AZL, AZLOA, OTC: AZLAF) ("Arizona Lithium", "AZL" or "the Company"), a company focused on the sustainable development of two large lithium development projects in North America, the Big Sandy Lithium Project ("Big Sandy",) and the Prairie Lithium Project ("Prairie"), is pleased to announce an update on its Prairie Lithium development project.

AZL has been evaluating and testing multiple DLE technologies to determine the appropriate DLE to deploy at it's 100% owned Prairie project located in Saskatchewan, Canada. The Company evaluated DLE technologies based on:

- Extraction efficiency
- Lithium recovery
- Contaminant rejection
- Technology readiness
- Lithium recovery.

To date the Company has completed the first two phases of offsite testing on the selected DLE technology, which have yielded highly encouraging results. Subsequently, AZL has elected to move forward with a larger third phase DLE pilot in Saskatchewan planned for November 2023, with the goal of the pilot being able to use the data to scope and design how a commercial DLE facility may function on its Prairie Project.

DLE evaluation is of the highest priority for AZL's Board and management team as it could immediately unlock significant value for the Company and shareholders. The process of evaluating third party DLE providers and the development of AZL's proprietary DLE technology, will be run in tandem to maximise the potential economic benefit for shareholders.

[1] Announcement March 27, 2023, Prairie Lithium Acquisition
[2] Prairie Lithium – Announcement by AZL (21/12/22)

Arizona Lithium Managing Director, Paul Lloyd, commented: *"We have a world class resource at the Prairie Lithium Project that carries with it a significant in-ground value. Our priority is to unlock that in-ground value for the benefit of all shareholders with the implementation or development of DLE technology. We are also very focused on the pathway to production and Saskatchewan ticks the following boxes:*

- *One of the top mining jurisdictions*
- *Access to robust infrastructure*
- *Historic oil and gas production profile*
- *Highly supportive Provincial government seeking to replace oil and gas revenues*
- *Well developed permitting process for oil and gas industry*

With the ability to scale up production on a modular basis, the Prairie Lithium brine project could potentially deliver significant returns without the utilisation of large capital expenditures."

This announcement is authorised for release by the Board.

For further information please contact:

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Project Locations

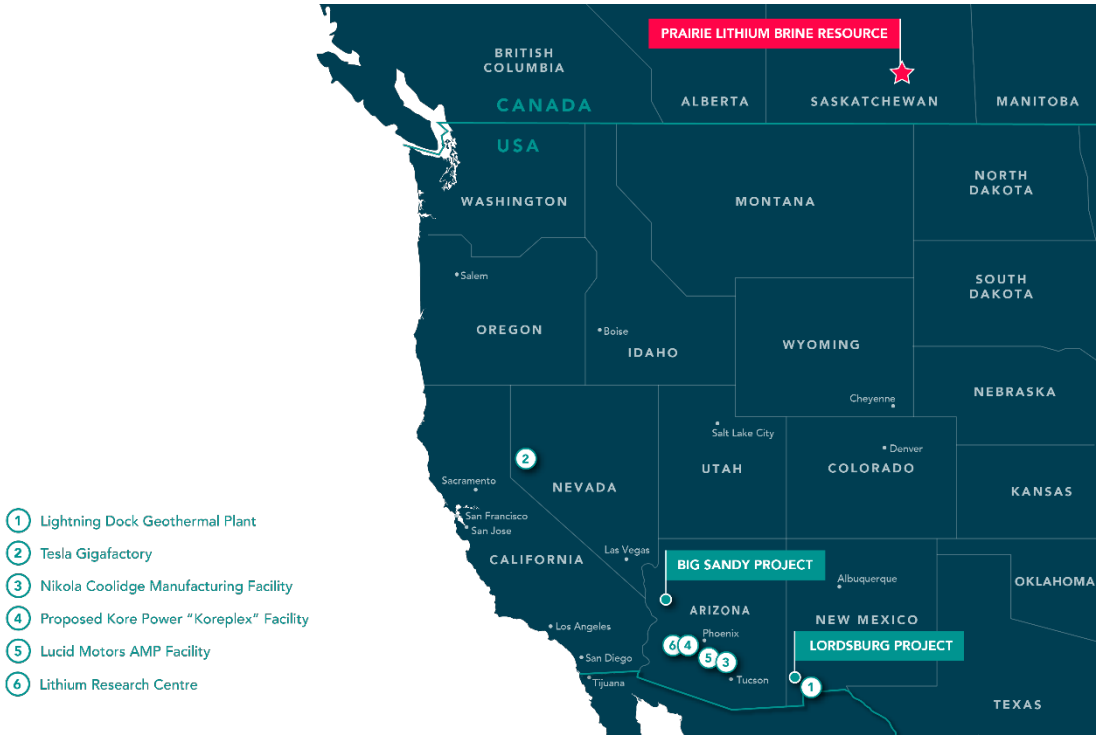

Figure 1 – Prairie Lithium's resource further diversifies AZL into Canada and brines

Lithium Research Centre

As announced on 20 June 2022, Arizona Lithium signed a 5-year lease to establish a world class Lithium Research Centre (LRC) to be located on a 9,700m^2 property in Tempe, Arizona, approximately 15km southwest of Phoenix Sky Harbor International Airport.

The Lithium Research Centre, which will function as a technology incubator focused on the extraction of lithium from a variety of ores and brines, as well as the production of battery-grade lithium chemicals for current and future battery technologies.

The build out of the LRC continues with the lab fully operational and the bulk of the pilot plant to be constructed during the June quarter. The Company will then be able to commence operations of the pilot plant to treat some of the bulk sample taken from the Big Sandy Lithium project.

Big Sandy Lithium Project (Arizona)

The Big Sandy Project, is a very shallow, flat lying mineralised sedimentary lithium resource and with excellent available infrastructure, has the potential to be developed with a very low environmental footprint.

JORC Mineral Resource Estimate

Arizona Lithium's successful 2019 drill program at Big Sandy (37 HQ diamond holes totalling 2,881m) resulted in the estimation of a total Indicated and Inferred JORC Mineral Resource of 32.5 million tonnes grading 1,850 ppm Li for 320,800 tonnes Li_2CO_3[3] (Table 1).

Table 1 – Big Sandy Project Mineral Resource Statement (above 800 ppm Li cut-off)

Resource Classification	Tonnes (Mt)	Li Grade (ppm)	Contained Li Metal (t)	Contained LCE (t)
Indicated	14.6	1,940	28,400	150,900
Inferred	17.9	1,780	31,900	169,900
Total	**32.5**	**1,850**	**60,300**	**320,800**

This represents 4% of the Big Sandy Project area that contains an estimated exploration target of between 271.1Mt to 483.15Mt at 1,000 - >2,000ppm Li[4] (Table 2).

Exploration Target

Exploration on the Big Sandy Lithium Project including geological mapping, drilling and surface sampling in Blocks B, C and D in the Northern Mineralised Zone (NMZ) and geological mapping and surface sampling in Blocks SMZ 1 and SMZ 2 in the Southern Mineralised Zone (SMZ), have resulted in the identification of the potential for between 271.1Mt to 483.15Mt at 1,000 - >2,000ppm Li as summarised in Table 2 below.

The Exploration Target in Blocks B, C and D in the NMZ, has been estimated using a range of thicknesses for the mineralised sedimentary material, calculated from data point elevations, drill hole data from prior Exploration Target Block A, lying between Blocks B and C, that has been converted to an inferred / indicated mineral resource and geological mapping. The grade estimates a range of values demonstrated from surface sampling.

[3] Announcement Sept 26, 2019, Big Sandy Lithium Project, Maiden Mineral Resource
[4] Announcement Nov 7, 2019, Big Sandy Lithium Project, Exploration Target Update

The Exploration Target in Blocks SMZ 1 and SMZ 2 in the SMZ, has been estimated using a range of thicknesses for the mineralised sedimentary material, calculated from data point elevations, geological mapping and knowledge of the mineralisation controls and alteration witnessed in the NMZ. The grade estimates a range of values demonstrated from surface sampling.

Table 2 – Summary of Exploration Target

Zone	Resource Block	Grade Range Li ppm	Thickness Lower (m)	Thickness Upper (m)	Lower (Mt)	Upper (Mt)
North	B	1000 - >2,000	40	60	82,800,000	124,200,000
North	C	1000 - >2,000	20	35	27,000,000	47,250,000
North	D	1000 - >2,000	20	35	39,600,000	69,300,000
South	SMZ 1	1000 - >1,500	30	60	83,700,000	167,400,000
South	SMZ 2	1000 - >1,500	30	60	38,000,000	75,000,000
				TOTALS	**271,100,000**	**483,150,000**

Note that the potential quantity and grade of the estimated geological potential (Exploration Target) is conceptual in nature. There has been insufficient exploration to estimate a mineral resource and it is uncertain whether future exploration will result in the definition of a mineral resource. It has been estimated using a range of thicknesses for the mineralised sediments calculated from drill intercepts, surface sampling and geological mapping. The grade estimates a range of values demonstrated from drilling and surface sampling.

The Permit of Exploration (POE) that includes a proposed 145 exploration holes and a bulk sample at the Company's Big Sandy Lithium project in Arizona is awaiting Bureau of Land Management (BLM) approval. Community involvement is welcomed to ensure mutually beneficial outcomes for all stakeholders and the Company is very confident that drilling program can be completed without environmental impact and to the satisfaction of all stakeholders. The validity of the proposed exploration target will be tested in the next drilling program. The Company is awaiting drilling approval from the BLM as detailed above.

Competent Persons Statement

The information in this announcement that relates to the Exploration Target is based on and fairly represents information compiled by Gregory L Smith who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM) and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity to which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr. Smith is a consultant to the Company and holds shares in the Company. Mr. Smith consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears. Information in this announcement which relates to Exploration Results relevant to the Exploration Target has been extracted from the Company's announcements released to ASX on 28 March 2019, 28 August 2019, 7 November, 2019 and 21 December 2022.

Information in this announcement that relates to Mineral Resources have been extracted from the Company's announcement released to ASX on September 26, 2019.

The announcements are available to view on the Company's website: www.arizonalithium.com. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

About the Prairie Lithium Project

AZL's Prairie Lithium Project is located in the Williston Basin of Saskatchewan, Canada, with Arizona Lithium also holding a proprietary lithium extraction process technology that selectively removes lithium from Brine. The Prairie Project holds the highest quality Inferred lithium brine resource in Canada, with 4.1MT LCE total JORC Inferred Mineral Resources at 111 mg/L Li[5], with significant expansion potential. Located in one of the world's top mining friendly jurisdictions, the projects have easy access to key infrastructure including electricity, natural gas, fresh water, paved highways and railroads. The projects also aim to have strong environmental credentials which should result in less use of freshwater, land and waste, aligning with AZL's sustainable approach to lithium development.

The Prairie Lithium Ion Exchange (PLIX) is an ion-exchange material that selectively extracts lithium from brine, using equipment which is anticipated to be readily available at commercial scale. PLIX may have a global application, with the process currently being tested on lithium resources from around the world (including encouraging results with Big Sandy). While Prairie Lithium continues to develop, scale and operate its own DLE technology, the company is also testing other DLE technologies to ensure it deploys the most cost-effective technology onto its resource.

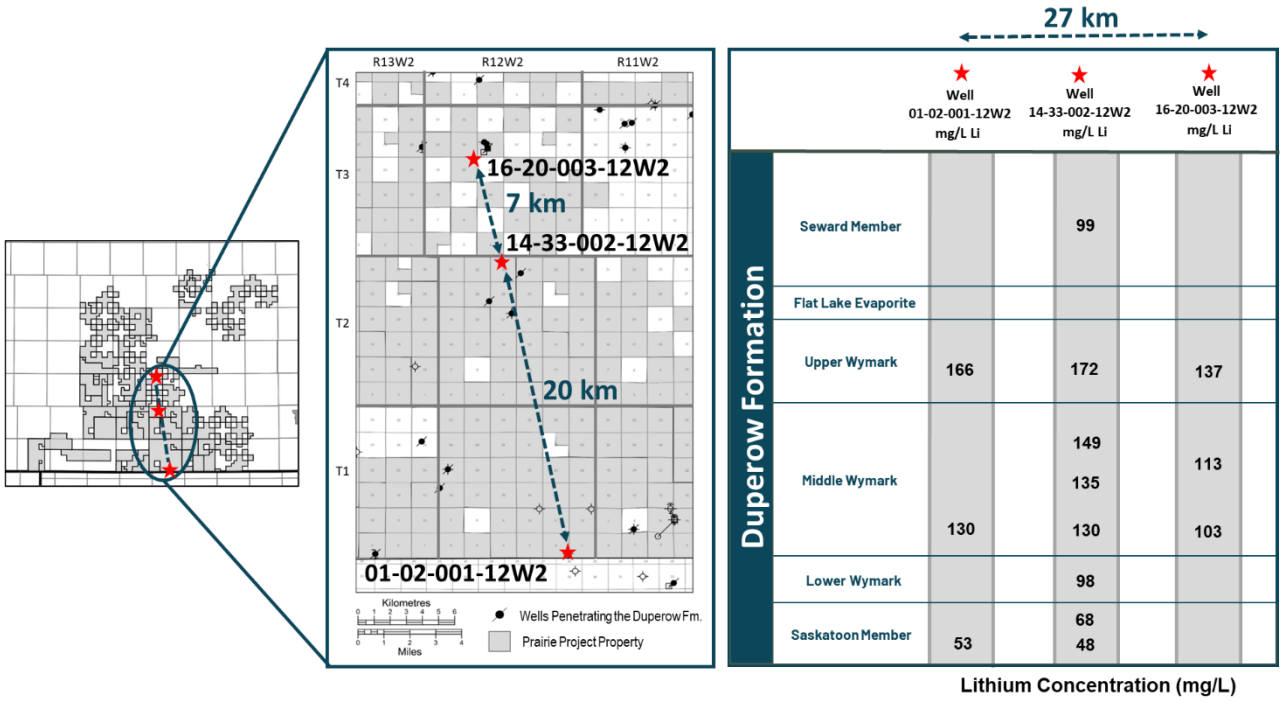

Figure 2 – Location map and representative lithium concentrations from Arizona Lithium's test wells
(Lithium concentrations measured by Isobrine Solutions and confirmed by one other commercial laboratory in Edmonton, Alberta)

Competent Persons statement for Prairie and Registered Overseas Professional Organisation (ROPO) and JORC Tables

Gordon MacMillan P.Geol., Principal Hydrogeologist of Fluid Domains, who is an independent consulting geologist of a number of brine mineral exploration companies and oil and gas development companies, reviewed and approves the technical information provided in the release and JORC Code – Table 1 attached to this release. Mr. MacMillan is a member of the Association of Professional Engineers and Geoscientists of Alberta (APEGA), which is ROPO accepted for the purpose of reporting in accordance with the ASX listing rules. Mr. MacMillan has been

[5] Refer to Appendix 1 (Summary of 72 subsurface mineral permits where Prairie Lithium has 100% working interest across the Duperow Formation), Appendix 2 (Summary Table of Drill Holes) and the JORC 2012 Table 1 Report annexed to this announcement for further details.

practising as a professional in hydrogeology since 2000 and has 22 years of experience in mining, water supply, water injection, and the construction and calibration of numerical models of subsurface flow and solute migration. Mr. MacMillan is also a Qualified Person as defined by NI 43-101 rules for mineral deposit disclosure.

Information in this announcement that relates Exploration Results or to Mineral Resources have been extracted from the Company's announcement released to ASX on 21 December 2022. The announcement is available to view on the Company's website: www.arizonalithium.com. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of estimates of Mineral Resources or Ore Reserves, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which Mr MacMillan's findings are presented have not been materially modified from the original market announcement.