

8 April 2024

DYNAMIC MODELLING PRODUCES OUTSTANDING RESULTS FOR RINCON LITHIUM PROJECT

HIGHLIGHTS

✦ **Dynamic modelling results indicate:**

- **brine can be pumped for a period of up to 42 years to produce 12,000tpa of lithium carbonate, or**
- **brine can be pumped for a period of up to 22 years to produce 24,000tpa of lithium carbonate**

Argosy Minerals Limited (ASX: **AGY**) ("**Argosy**" or "**Company**") is pleased to advise it has conducted additional independent dynamic modelling works following the Company's announcement (on 15 January 2024) of the significant upgrade to the JORC Code (2012) compliant Total Mineral Resource Estimate at our Rincon Lithium Project, located in Salta Province, Argentina.

The upgraded Total Mineral Resource Estimate (MRE) comprises 686,875 tonnes of lithium carbonate with a weighted mean average lithium concentration of 329mg/L, including an Indicated MRE of 606,313 tonnes of Li_2CO_3 with a weighted mean average lithium concentration of 326mg/L. and an Inferred MRE of 80,562 tonnes of Li_2CO_3 with a weighted mean average lithium concentration of 351mg/L.

The independent dynamic modelling works were conducted by AQ2 Pty Ltd to consider various brine abstraction scenarios for the upgraded MRE based on sustainable pumping rates and varying borefield configurations.

A dynamic model (numerical groundwater flow and transport model) has been developed to simulate production of brine from the Rincon Project. The objective was to confirm the duration for which sufficient brine can be pumped to produce 12,000tpa of lithium carbonate and assess expanded pumping operations to produce 24,000tpa of lithium carbonate.

The brine abstraction scenarios have been completed and allow for limits imposed by the upgraded MRE (ie. 686,875 tonnes of lithium carbonate and 387,000,000m³ of drainable brine). The modelled brine abstraction scenarios suggest that:

- Brine to produce 12,000tpa of lithium carbonate can be pumped for a period of up to 42 years (based on the MRE/drainable volume estimate) with pumping from the fractured halite and black sand aquifers (this scenario is considered the "base-case").
- Brine to produce 24,000tpa of lithium carbonate can be pumped for a period of up to 22 years (based on the MRE/drainable volume estimate) with pumping from the fractured halite and black sand aquifers. This scenario represents an expanded operation (and it is assumed the capex and opex estimates related to processing are proportionally scalable from the base case).

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Argosy Managing Director, Jerko Zuvela said ***"We are delighted with the updated dynamic modelling results, achieving another significant milestone and providing stronger support for the substantial scale and development potential of our Rincon Lithium Project."***

"With the anticipated 10,000tpa project expansion regulatory approval, this further validates Argosy's ambitions and near-term growth phase to fully develop our Rincon Lithium Project."

Summary of Dynamic Modelling Works

The groundwater model that supported the Preliminary Economic Assessment (PEA) and Environmental Impact Assessment (EIA) was updated to include aquifer geometry from the upgraded MRE. The groundwater flow and transport modelling approach uses Modflow USG. The flexible grid and block size allows a more efficient resolution of groundwater gradients and aquifer geometry in the project area and coverage of the salar and the upstream groundwater catchments. A minimum model grid size of 50m is included in the project area. A total of 16 model layers are used to define the brine held in aquifer and aquitard units.

The model has been calibrated against the measured groundwater response to pumping operations for Argosy's pilot and demonstration process plants (from January 2020 to mid-February 2024).

The dynamic modelling works have simulated brine abstraction (not lithium carbonate production). As such, they do not consider all modifying factors completely or a detailed economic analysis, which would be required to support a Mineral Reserve determination. However, the scenarios considered in the modelling are underpinned by reasonable assumptions derived from an extension of the PEA. Key assumptions are:

- ▶ The PEA showed robust project economics and a positive NPV for a wide range in lithium carbonate prices, and it is assumed production costs of approximately US\$7500 per tonne (as per the production cost indicated in the PEA, with cost escalation factors included to reflect present operating costs of current similar operations) such that future economic development is expected.
- ▶ The increase in capital expenditure related to upscaled production (ie. to 12,000tpa and 24,000tpa) is either more efficient or proportional, such that when combined with an extended mine life, it does not materially change project economics (or capital intensity).
- ▶ Regulatory approval and/or permits for upscaled production are forthcoming.
- ▶ Available tenure is sufficient to allow the installation of the required number of bores and the construction of processing plant and evaporation ponds. Currently evaporation ponds for the planned 12,000tpa operation will occupy less than 50% of the associated tenure, and so upscaling on a proportionate basis (for the expanded operation) appears feasible. The dynamic model includes the simulation of enough bores to meet both abstraction scenarios, within the project area.
- ▶ The dynamic model is a 3D flow and solute transport model that simulates fluid flow and the movement of solutes within the brine (ie. the model simulates lithium concentrations produced from brine over the life of the project). The model is calibrated against 4-years of operational data from abstraction for the existing

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process plant operations, and it is assumed the calibrated model provides a realistic forecast of long-term produced grade.

No detailed consideration has been given to the development of other (third-party) projects on the Salar del Rincon. There is no publicly available information on the proposed detail of other projects and such projects are not yet operational. In the current modelling, some notional sensitivity analysis has been undertaken to determine impacts (if any) on project life or production rate.

The dynamic modelling has simulated operational borefields that supply sufficient brine to achieve production scenarios of 12,000tpa and 24,000tpa of lithium carbonate. The borefields are of reasonable proportions and operating criteria, and fall within the scale of the development considered during the PEA. However, detailed borefield optimisation development scenarios have not been undertaken as part of the studies to date.

The base case and expanded operation predictions assume:

- ▶ Lithium mass recovered (in brine) is multiplied by 5.347 to estimate lithium carbonate recovery.
- ▶ Overall losses of 24%. The losses reflect hydrogeological and operational inefficiencies.
- ▶ Given the high degree of hydraulic connection between units that has been demonstrated by operational pumping and pumping tests to date, the brine is abstracted from the entire aquifer sequence.
- ▶ No pumping from third party projects.
- ▶ No optimisation of pumping (trade-off between number of bores in the fractured halite and black sand versus total drawdown and pumping costs/pipeline lengths).

High transmissivity and hydraulic connection through the fractured halite aquifer will mean that long term production forecasts will need to consider other brine operations in the groundwater catchment (ie. the potential interference effects of third-party operations). Production simulations to assess various sensitivities have also been completed to estimate the impact of third-party operations. These sensitivity predictions suggest that production schedules of 12,000tpa and 24,000tpa of lithium carbonate (based on the MRE/drainable volume estimate and pumping from the fracture halite and black sand aquifers) will be impacted by other operations and that additional bores and/or deeper bores will need to be included to achieve Argosy's production targets in the long term. However, detail of notional third-party operations was not included in this work as there is no public data to define their scope.

The modelling works were undertaken to simulate brine abstraction for lithium carbonate production at the Rincon Project. The production assessment has considered 12,000tpa and 24,000tpa lithium carbonate production facilities. The production simulation does not support a Mineral Reserve Estimate as not all modifying factors have been evaluated completely, nor has a full economic analysis been completed for the two scenarios. However, the simulations are underpinned by reasonable assumptions that include: key characteristics of previous studies (for 10,000tpa lithium carbonate) are scalable, that the project can retain a production cost as indicated in the PEA, with cost escalation factors included (to reflect

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present operating costs of current similar operations), and that the project is not sensitive to uncertainties related to capital cost in brine production (for example the number of pumping bores that are ultimately required).

The production simulations show brine abstraction for 12,000tpa lithium carbonate production can be sustained for 42 years and brine abstraction for 24,000tpa can be sustained for 22 years. The development of third-party projects on the Salar del Rincon may affect both the number of bores required to maintain a specific production rate and/or restrict the annual production rate such that it takes longer to recover the brine resources contained within Argosy's project. Regardless, it is simulated that in all cases, between 660,000 tonnes lithium carbonate and 680,000 tonnes lithium carbonate can ultimately be recovered.

Cautionary Note: A Production Target is a projected estimate of potentially mineable mineralised material based on the application of modifying factors. The process and assumptions used to establish the Production Targets for Argosy's operations and development projects are those used to prepare the Mineral Resource Estimate announced on 15 January 2024 (which is available at www.argosyminerals.com.au and www.asx.com.au). Production Targets are derived from Measured, Indicated and Inferred Mineral Resource classifications. The Company has been guided by ASX Listing Rules Chapter 5.16 to 5.19 for the preparation of Production Targets.

The Company highlights the following cautionary note in relation to confidence in the estimation of Production Targets that incorporate Mineral Resources from the Inferred classification:

There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the Production Target itself will be realised. The stated Production Targets are based on the Company's current expectations of future results and events and should not be solely relied upon by investors when making investment decisions.

The estimated Mineral Resource Estimate that underpins the Production Targets have been prepared by Competent Persons in accordance with ASX Listing Rules Appendix 5A. The Inferred portion of the Production Targets is not the determining factor in each mine's viability and does not feature as a significant proportion early in the mine plan.

Argosy has independently engaged the services of AQ2 Pty Ltd to conduct the mineral resource estimation works, hydrogeological modelling and associated brine analysis works for the potential development of a lithium carbonate production operation at the Rincon Lithium Project. Argosy has previously engaged Primero Group to assess the technical and economic viability to a Preliminary Economic Assessment level with regards to producing lithium carbonate at the Project. Whilst the current modelling works have yielded robust outcomes and provided independent perspective on the opportunity to produce lithium carbonate, there is no guarantee that Argosy will choose to adopt the outcomes of the works conducted.

ENDS

This announcement has been authorised by Jerko Zuvela, the Company's Managing Director



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For more information on Argosy Minerals Limited and to subscribe for regular updates, please visit our website at www.argosyminerals.com.au or contact us via admin@argosyminerals.com.au or Twitter @ArgosyMinerals.

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Forward Looking Statements: Statements regarding plans with respect to the Company's mineral properties are forward looking statements. There can be no assurance that the Company's plans for development of its mineral properties will proceed as expected. There can be no assurance that the Company will be able to confirm the presence of mineral deposits, that any mineralisation will prove to be economic or that a mine will successfully be developed on any of the Company's mineral properties.

Cautionary Statements: Argosy 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 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. Argosy confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

ASX Listing Rules Compliance

Argosy advises references to the Company's current target of producing 2,000tpa of battery quality lithium carbonate product at the Rincon Lithium Project should be read subject to and clarified by the Company's current intention that, subject to feasibility, finance, market conditions and completion of development works at the Rincon Lithium Project, the 2,000tpa production target is intended to form a modular part of the 10,000tpa operation from its commencement.

Argosy further advises that references in this ASX release in relation to the 10,000tpa production target are extracted from the report entitled "Argosy delivers exceptional PEA results for Rincon Project" dated 28 November 2018, available at www.argosyminerals.com.au and www.asx.com. Argosy confirms that it is not aware of any new information or data that materially affects the information included in the Announcement and, in the case of the Production Target, Mineral Resources or Ore Reserves contained in the Announcement, that all material assumptions and technical parameters underpinning the estimates in the PEA announcement continue to apply and have not materially changed. Argosy confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the PEA announcement.

Competent Person's Statement – Rincon Lithium Project

The information contained in this ASX release relating to Exploration Targets, Exploration Results and Mineral Resource Estimates has been prepared by Mr Duncan Storey. Mr Storey is a Hydrogeologist, a Chartered Geologist and Fellow of the Geological Society of London (an RPO under JORC 2012). Mr Storey has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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.

Duncan Storey is an employee of AQ2 Pty Ltd and an independent consultant to Argosy Minerals Ltd. Mr Storey consents to the inclusion in this announcement of this information in the form and context in which it appears. The information in this announcement is an accurate representation of the available data from exploration at the Rincon Lithium Project.

Chemical Engineer's Statement: The information in this announcement that relates to lithium carbonate processing is based on information compiled and/or reviewed by Mr Pablo Alurralde. Mr Alurralde is the President of Puna Mining S.A. and consents to the inclusion in this announcement of this information in the



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form and context in which it appears. Mr Alurralde is a chemical engineer with a degree in Chemical Engineering from Salta National University in Argentina. Mr Alurralde has sufficient experience which is relevant to the lithium carbonate and lithium hydroxide processing and testing undertaken to evaluate the data presented.

Reference to Previous ASX Releases:

This document refers to the following previous ASX releases:

15th January 2024 – JORC Resource Upgrade for Rincon Lithium Project - Substantial 180% Increase

3rd August 2023 – Rincon Test Pumping Results

10th Feb 2021 – Clarifying Announcement

8th Feb 2021 – \$30M Placement to Fund 2,000tpa Production

28th Nov 2018 – Argosy delivers exceptional PEA results for Rincon Project

ABOUT ARGOSY MINERALS LIMITED

Argosy Minerals Limited (ASX: AGY) is an Australian company with a current 77.5% (and ultimate 90%) interest in the Rincon Lithium Project in Salta Province, Argentina and a 100% interest in the Tonopah Lithium Project in Nevada, USA.

The Company is focused on its flagship Rincon Lithium Project – potentially a game-changing proposition given its location within the world renowned “Lithium Triangle” – host to the world’s largest lithium resources, and its fast-track development strategy toward production of LCE product.

Argosy is committed to building a sustainable lithium production company, highly leveraged to the forecast growth in the lithium-ion battery sector.

Appendix 1: Rincon Lithium Project Location Map

