ASX ANNOUNCEMENT

7 February 2024

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INFINITY LITHIUM

# LI-STREAM RPK™ LOCKED CYCLE TEST PROGRAM CONFIRMS EXCEPTIONAL RECOVERIES

## HIGHLIGHTS

- **Comprehensive Locked Cycle Test Work ('LCT') program completed at Simulus Group Laboratories results in confirmation of exceptional recoveries at San José.**
- **The LCT confirmed the successful utilisation of Li-Stream RPK™ with > 90% recoveries of the lithium from Run of Mine to the final end product.**
- **San José Run-of-Mine ore sample used to test and optimise Li-Stream RPK™ in support of engineering studies.**
- **LCT confirmed the consistent production of battery grade lithium hydroxide monohydrate from San José lithium bearing mica.**
- **LCT confirms and exceeds Updated Scoping Study lithium recoveries assumptions.**
- **Results provide data for future detailed engineering studies and optimisations through demonstration plant design.**

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INFINITY GREENTECH EXTREMADURA NEW ENERGIES

Infinity Lithium Corporation Limited ('**Infinity**', or '**the Company**') is pleased to announce the completion of its Locked Cycle Test Program ('**LCT**') conducted at Simulus Group laboratories. The LCT program confirmed exceptional lithium recoveries from prior Li-Stream RPK™ process test work (refer the ASX announcement 7 September 2023) and improved lithium recoveries from the recently finalised subsequent lock cycle simulations. All LCT test work completed at Simulus Group Laboratories were led and managed by the Infinity GreenTech Technical Advisory Committee.

The finalisation of LCT for Run of Mine ('**ROM**') to end product through the patent pending Li-Stream RPK™ process at the San José Lithium Project **(**'**San José**', or '**the Project**') supports recently completed engineering studies (refer to ASX announcement 9 November 2023 – Updated Scoping Study), and has provided data for further process optimisation to be incorporated in the next stages of Li-Stream RPK™ process development. The Company is assessing the next steps for a demonstration plant for the confirmation of increased scale of production at San José.

The test work conducted simulated the complete process and included recycle streams to assess steady-state operation of the mass flows. No major deviations were found from the expected steady state conditions of this process, confirming accuracy of the process model and further de-risking the next stages of up-scaled test work.

The results confirmed the suitability of the Li-Stream RPK™ process at San Josè and the optimal technical option for lithium recovery from ROM to end product.

The test work highlighted the successful and consistent production of battery grade lithium hydroxide monohydrate utilising Li-Stream RPK™. The implementation of materially industry standard hard rock backend processing method (neutralisation, evaporation, crystallisation and final production of battery grade end product) and the simplification of unit operations across the complete process (including the removal of traditional hard rock lithium chemical conversion unit operations such as the beneficiation and calcination stages) through the Li-Stream RPK™ process minimising process complexity and technical risk.

Infinity's Chief Technical Officer and Chair of Infinity GreenTech Technical Advisory Committee, Mr Jon Starink said the following regarding the latest results and process, *"The program confirmed the results of process simulations and validated key parameters underpinning the technical and commercial feasibility of extraction of lithium from the San José material and provides a solid foundation for further engineering towards a DFS and the pilot plant design"*.

The LCT provided battery grade products for all cycles with the following table showing the total impurities (< 0.1%) in the pure lithium hydroxide products:

| | %LiOH | %Na | %K | %Ca | $\%SO_4$ |
|---|---|---|---|---|---|
| **Cycle 1** | >56.5 | 0.004 | 0.003 | 0.001 | 0.074 |
| **Cycle 2** | >56.5 | 0.002 | 0.003 | 0.001 | 0.008 |
| **Cycle 3** | >56.5 | 0.002 | 0.002 | 0.001 | 0.006 |

**Table 1. Percentage of impurities found in the battery grade lithium hydroxide monohydrate product produced in each cycle.**

The LCT also showed that the Li-Stream RPK™ process is able to extract more than 90% of the lithium from ROM to the final product.

| Unit Operation | %Li Loss | |
|---|---|---|
| Leach Unit | 6.0 | **Front End Total – 6%** |
| Neutralisation Unit | 1.8 | |
| Calcium Precipitation | 0.3 | |
| Sodium Sulphate | 0.2 | **Back End Total – 2.4%** |
| Bleed | 0.1 | |
| **Total Lithium Loss** | 8.4 | |
| **Overall Lithium Recovery (%)** | **91.6%** | |

**Table 2. Average lithium losses from each unit operation and overall recovery.**

The procedures used were derived from a comprehensive series of background tests conducted at Simulus Group laboratories as part of wholly owned subsidiary Infinity GreenTech's assessment and ongoing process improvement through R&D activities aligned to lithium chemical conversion process opportunities. The initial tests were used to optimise process conditions focused predominantly at the front end of the process, noting the backend hydrometallurgical unit processes are in line with industry standard hard rock lithium processes.

This announcement was authorised by the Board. For further inquiries please contact.

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## About Infinity Lithium

Infinity Lithium is an Australian listed minerals company who is seeking to develop its 75% owned San José Lithium Project in Spain. The proposed fully integrated industrial Project is focused on the production of battery grade lithium chemicals from a mica feedstock that represents the EU's 2nd largest JORC compliant hard rock lithium deposit.

The Project would provide an essential component in the EU's development of a vertically integrated lithium-ion battery supply chain. The availability of critical raw materials and the production of battery grade lithium hydroxide in the EU is essential to ensure the long-term production of lithium-ion batteries for electric mobility and the transition of the EU's automotive industry towards electric vehicles.

## About Infinity's Technical Advisory Committee

Infinity's Technical Advisory Committee is led by the Company's Chief Technical Officer and Executive Director Mr Jon Starink and Chief Process Engineer Dr David Maree.

Mr Starink has over 45 years' experience in mining, engineering and process design. His qualifications include a Bachelor of Science with first class honours, a Bachelor of Chemical Engineering with first class honours and a Master of Applied Science from the University of Sydney. Mr Starink is a Fellow of the Australasian Institute of Mining and Metallurgy, the Institution of Engineers Australia and the Institution of Chemical Engineers.

His experience has included senior technical, engineering and advisory roles for global lithium companies and projects including Talison Lithium's Greenbushes and Spodumene Expansion Projects, Tianqi Lithium Australia's Lithium Hydroxide Project, Galaxy Lithium's Brine, Spodumene and lithium chemical conversion Projects, and Covalent Lithium's Mount Holland Project.

Dr David Maree holds a PhD in Chemistry from Rhodes University in South Africa and is a process development scientist with 20 years' experience which has included technical roles with Tianqi Lithium where he was responsible for overseeing improvement R&D activities, process improvement, piloting and commissioning preparation at the company's plant in Kwinana Western Australia. Dr Maree previously held a position as Principal Research Scientist with Talison Lithium with responsibilities including the development of hydrometallurgical flowsheets for the production of battery grade and high purity lithium carbonate and lithium hydroxide.

Mr Starink and Dr Maree have guided Infinity through its test work programs, process refinement and technical delivery of the San José Lithium Project and have worked with and directed the Company's external resources through various engineering and design and test work programs.

## Competent Persons Statement

The Mineral Resource estimates for the San José Lithium Project referred to in this announcement were reported by Infinity Lithium Corporation Limited in accordance with ASX Listing Rule 5.8 in its announcement of 23 May 2018. Infinity Lithium Corporation Limited is not aware of any new information or data that materially affects the information included in the ASX announcement of 23 May 2018 and confirms that all material assumptions and technical parameters underpinning the resource estimates in the announcement of 23 May 2018 continue to apply and have not materially changed.

The Mineral Resource estimates underpinning the production targets disclosed in this announcement have been prepared by a competent person in accordance with the requirements of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code), 2012 Edition. Snowden Mining (2017) and Cube Consulting (2018) estimated the total Mineral Resource for the San José lithium deposit using Ordinary Kriging interpolation methods and reported above a 0.1% Li cut-off grade. Full details of block modelling and estimation are contained in the ASX announcement dated 5 December 2017 and updated 23 May 2018. The information in this announcement that relates to the Mineral Resource Estimate and Metallurgical Sample Selection and representation was reviewed by Adrian Byass, an employee of Infinity Lithium Corporation Limited. Adrian Byass is a Member of Australian Institute of Geoscientists. Adrian Byass has provided written consent supporting information presented in this announcement.

Metallurgical test work results for the San José Lithium Project referred to in this announcement have been obtained through test work conducted by The Simulus Group Pty Ltd under the direction of Infinity Lithium Corporation (and its subsidiaries). The information in this announcement that relates to the Metallurgical test work results was reviewed by Jon Starink, an employee of Infinity Lithium Corporation Limited. Jon Starink is a Fellow of Australian Institute of Mining and Metallurgy, Fellow of the Institute of Engineers and a Fellow of the Institute of Chemical Engineers. Jon Starink has provided written consent supporting information presented in this announcement.

**JORC Code, 2012 Edition – Table 1 report template**
**Section 1 Sampling Techniques and Data**

(Criteria in this section apply to all succeeding sections.)

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| *Sampling techniques* | • *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.*<br>• *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*<br>• *Aspects of the determination of mineralisation that are Material to the Public Report.*<br>• *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.* | • Diamond drill core samples were taken over selective intervals ranging from 8.0m to 15.0m (typically 10.0m) downhole intervals from representative drill holes throughout the deposit. Qualitative care taken when sampling diamond drill core to sample the same half of the drill core. |
| *Drilling techniques* | • *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).* | • Drilling has been undertaken by diamond drilling (core) techniques.<br>• Diamond drill core is HQ size (63.5mm diameter) with triple tube used from surface and standard tube in competent bedrock. |
| *Drill sample recovery* | • *Method of recording and assessing core and chip sample recoveries and results assessed.*<br>• *Measures taken to maximise sample recovery and ensure* | • Individual recoveries of diamond drill core samples were recorded on a qualitative basis. Generally sample weights are comparable and any bias is considered negligible. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *representative nature of the samples.*<br>• *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.* | |
| *Logging* | • *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.*<br>• *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.*<br>• *The total length and percentage of the relevant intersections logged.* | • All drill holes were logged geologically including, but not limited to; weathering, regolith, lithology, structure, texture, alteration and mineralisation. Logging was at an appropriate quantitative standard for reconnaissance exploration. Particular note was made of the oxide, transition and fresh rock boundaries to ensure appropriate representative sample selection for metallurgical test work.<br>• Logging is considered qualitative in nature.<br>• All holes were geologically logged in full.<br>• Diamond drill core is photographed wet and dry before cutting. |
| *Sub-sampling techniques and sample preparation* | • *If core, whether cut or sawn and whether quarter, half or all core taken.*<br>• *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.*<br>• *For all sample types, the nature, quality and appropriateness of the sample preparation technique.*<br>• *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*<br>• *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*<br>• *Whether sample sizes are appropriate to the grain size of the* | • Diamond core was sawn in half and one- half quartered and selectively sampled over 0.5-2.0 intervals (mostly 1.0m).<br>• Diamond drill core field duplicates collected as ¼ core.<br>• Sample preparation is industry standard and comprises oven drying, jaw crushing and pulverising to -75 microns (80% pass).<br>• Drill sample sizes are considered appropriate for the style of mineralisation sought and the nature of the drilling program. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *material being sampled.* | |
| *Quality of assay data and laboratory tests* | • *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*<br>• *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.*<br>• *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.* | • Metallurgical samples were submitted to Simulus, Western Australia. Samples were selected based on being a representative combination of underground mine life as per the updated scoping study 9 November 2023 and composites.<br>• Certified analytical standards and blanks were inserted at appropriate intervals for diamond, RC drill samples<br>• Approximately 5% of samples submitted for analysis comprised QAQC control samples. |
| *Verification of sampling and assaying* | • *The verification of significant intersections by either independent or alternative company personnel.*<br>• *The use of twinned holes.*<br>• *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.*<br>• *Discuss any adjustment to assay data.* | • Results have been checked by the supervising metallurgist and Infinity geologist. Head grades from the metallurgical test work assays are in line with the equivalent drill intersection grade from the exploration assays.<br>• The use of twinned holes is not relevant for this metallurgical test work.<br>• Primary digital drill data was collected in the field and uploaded into the geological database. |
| *Location of data points* | • *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.*<br>• *Specification of the grid system used.*<br>• *Quality and adequacy of topographic control.* | • Diamond drill hole collar locations are initially recorded by INF employees using a handheld GPS with a +/- 2m margin of error.<br>• DGPS collar pick-ups replace handheld GPS collar pick-ups and have <1m margin of error.<br>• The grid system used for the location of all drill holes is UTM (Zone 30N). RLs were assigned either from 1 sec (30m) satellite data or DGPS pick-ups. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Data spacing and distribution* | • *Data spacing for reporting of Exploration Results.*<br>• *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.*<br>• *Whether sample compositing has been applied.* | • Samples for the metallurgical test work are selected and considered representative of all mineralised zones discovered to date at San Jose.<br>• Results from the drill holes used in the metallurgical test work are considered sufficient to assume any geological or grade continuity.<br>• Samples used for the metallurgical test work were composted to a master coarse crushed composite which subset composites were used. |
| *Orientation of data in relation to geological structure* | • *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*<br>• *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.* | • Drill holes used were drilled in an orientation to minimise sample bias. |
| *Sample security* | • *The measures taken to ensure sample security.* | • Samples were collected in in wooden boxes and then stored in the core processing facility at the project area. Samples were then couriered to the Metallurgical laboratory. |
| *Audits or reviews* | • *The results of any audits or reviews of sampling techniques and data.* | • No review has been carried out to date. |

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| *Mineral tenement and* | • *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests,* | • Exploration activities were conducted over PI 10-343, now covered by Exploration Permit Extremadura S.E 10C10386-00 |

| Criteria | JORC Code explanation | Commentary |
| --- | --- | --- |
| *land tenure status* | *historical sites, wilderness or national park and environmental settings.*<br>• *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.* | Castilla Mining SL.<br>• Tenure is held by Extremadura Mining (trading as Extremadura New Energies), a wholly owned subsidiary of Infinity Lithium Corporation Limited with a 75% ownership interest in a Joint Venture with Valoriza Mineria, a subsidiary of Sacyr (Spain).<br>• Access to ground was given under approval by relevant authorities. |
| *Exploration done by other parties* | • *Acknowledgment and appraisal of exploration by other parties.* | • Previous work was conducted in the 1980's and has been incorporated into JORC Mineral Resource Estimates prepared by Snowden Geological Consulting and reported by Infinity Lithium Corporation Limited. |
| *Geology* | • *Deposit type, geological setting and style of mineralisation.* | • The target deposit type is a metasomatic replacement style of lithium into sedimentary hosted alumina silicates (mica). The deposit is massive style. |
| *Drill hole Information* | • *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*<br>○ *easting and northing of the drill hole collar*<br>○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*<br>○ *dip and azimuth of the hole*<br>○ *down hole length and interception depth*<br>○ *hole length.*<br>• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly* | • Provided in previous ASX releases.<br>• No material information has been excluded. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | *explain why this is the case.* | |
| *Data aggregation methods* | • *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.*<br>• *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.*<br>• *The assumptions used for any reporting of metal equivalent values should be clearly stated.* | • No exploration results have been reported in this release. |
| *Relationship between mineralisatio n widths and intercept lengths* | • *These relationships are particularly important in the reporting of Exploration Results.*<br>• *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.*<br>• *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').* | • No exploration results have been reported in this release. |
| *Diagrams* | • *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.* | • Refer to figures as per ASX release November 17th 2020.<br>• No further drilling or exploration has been conducted on the permit subsequent to that release. |
| *Balanced reporting* | • *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.* | • No exploration results have been reported in this release.<br>• Samples elected for inclusion in test work composite are considered representative and there has been no preferential inclusion or exclusion of material.<br>• The sample composite used for the basis of this testwork at Simulus was derived from<br>  • Drill core: 25 individual samples ranging from 15-66kg |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | each for a combined 1,031kg of drill core sample.<br>• Surface Samples: 10 individual samples for a collective 464kg<br>• Samples had a weighted average grade of 0.76% $Li_2O$ |
| *Other substantive exploration data* | • *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.* | • No other exploration data is relevant with regards to the metallurgical test work program. |
| *Further work* | • *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).*<br>• *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.* | • Additional mineralogical and metallurgical test work is ongoing. |