12 September 2023

EKOSOLVE ™ DLE EXTRACTS 92.1% OF LITHIUM FROM FORMENTERA BRINES

- Ekosolve™ Direct Lithium Extraction (DLE) technology pilot plant test work at University of Melbourne achieves 92.1% lithium extraction efficiency from brines with average lithium concentration of 267 ppm lithium (of the sample).
- Lithium recovered from 267 ppm Li in brine was 246 ppm Lithium.
- In comparison with other processes **92.1% is an outstanding result** – very high recovery of the available lithium from the brine
    - ponds using fractional crystallisation (the traditional extraction method) typically achieve 40-50% recovery.
    - DLE methods such as ion exchange and membranes typically achieve 60-80% recovery, adsorption up to 85% recovery[1].
- Lithium chloride produced is now being converted into Lithium Carbonate in the next stage of processing.
- Ekosolve is a unique DLE process in that it can manage high concentrations of magnesium without front end scrubbing and in a single process.

Patagonia Lithium Ltd (ASX:PL3, Patagonia or **Company)** is pleased to advise that the results for the 10-stage solvent extraction Ekosolve™ process performed on lithium brines recovered from Formentera has demonstrated the lithium extraction efficiency achieved was 92.1% after passing through a 10 stage extraction cycle.

University of Melbourne Associate Professor (Chemical Engineering) Dr Kathryn Mumford commented:

"Lithium extraction from the Patagonia brines has proven to be efficient, especially at low A/O (brine to solvent) ratios due to the relatively high lithium concentration in the brine compared to other lithium brines tested. The lithium extraction efficiency is 31.21% after 1st EX stage pass and it increases up to 92.06% after passing through another 9 additional extraction stages (equivalent to the operating A/O ratio = 0.1). Only 50% of the finishing compound was loaded in the organic solvent during the Regeneration step. Therefore, the lithium extraction performance from Patagonia Lithium brine using the Ekosolve™ process can potentially be better than the current results."

[1] Global Metals & Mining Direct Lithium Extraction - A potential game changing technology (goldmansachs.com)

Testing of efficiency of the removal of cations (ions with a positive charges) was conducted, with boron, calcium, potassium and magnesium extracted to the solvents and sodium stripped into the brine. The lithium chloride produced via the Ekosolve™ method is now being further processed to produce a battery grade lithium carbonate product.

Executive Chairman, Phillip Thomas commented:

"We are impressed with the University of Melbourne Ekosolve™ pilot plant test work results with more than 92% recovery of the lithium content, and we look forward to the final results in terms of lithium carbonate production and a re-run with the full load of finishing compound. It demonstrates that the extraction organic solvent has a good extractability for the lithium in the Patagonia brines at low A/O ratios."

Upcoming major catalysts include:

- drill permits at Formentera,
- exploration wells at Formentera,
- resource and reserve estimates at Formentera,
- a scoping study, and
- feasibility study.

The Patagonia team in Argentina and Australia as well as the local community in Jama and Susques, Jujuy Province (Argentina) are keen to see the project develop as it provides employment and other benefits to the communities.

Authorised for release by the Board of the Company. For further information please contact:

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Our socials – twitter@pataLithium, Instagram, facebook, pinterest and youtube

About Patagonia Lithium Limited

Patagonia Lithium has two major lithium brine projects – Formentera/Cilon in Jujuy province and Tomas III at Incahuasi Salar in Salta Province of northern Argentina in the declared lithium triangle. Since listing on 31 March 2023, recharge water analysis, surface sampling and MT geophysics have been completed in preparation of an upcoming drill program at Formentera, and MT Geophysics at Tomas III that was very prospective. Samples as high as 1,100ppm lithium (2 June 2023 announcement) were recorded at Formentera and resistivity values as low as 0.3Ω.m were recorded during the MT Geophysics survey at Formentera making the project highly prospective. The Company confirms it is not aware of any new information or data that materially affects the information in this announcement.

Competent Person Statement

The information in this announcement that relates to the Argentine Li Brine project is based on, and fairly represents information compiled by Phillip Thomas, MAIG FAusIMM, Technical Adviser of Patagonia Lithium Limited, who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Thomas has sufficient experience relevant to the style of mineralisation (lithium brines) and type of deposit under consideration, and to the activity which he has undertaken, to qualify as a Competent Person as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Mr Thomas consents to the inclusion in this announcement of the matters based on this information in the form and context in which it appears.

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

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.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *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*	• An motorised augur with a 20cm screw drill was used to obtain core samples of the top 1-3m of stratigraphy of the salar. Table one in the accompanying announcement dated 2 June 2023 sets out the locations, depths and conditions of the brine sampling. • One litre Brine samples using a bailer were taken from each hole after 30 minutes of settling of sediments. The bucket and bottles were flushed three times to eliminate contamination before being sampled. • Each bottle was labelled and sealed and put into a security chest with tape around the cap. • 19 brine samples were collected from sample locations 1-24. Two of the wells were dry to 2.5 metres. Three of the wells were in soft salt sediments which were very wet and unstable. • Sediments were logged for fineness and clay content as the augur was removed from the hole at 0.5m intervals.
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).*	• A 6" (20cm) bit was used to drill the holes and after 0.5m was drilled the operators removed the drill and a sample was taken from the drill bit. Then the operators reinserted the drill and continued down to 2-3m depending on the amount of brine flow and ground water level. It was then analyzed for resistivity and pH.
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.* • *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *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.*	• Brine samples were collected at each point. There was no sample bias due to brines contained in clays as we waited for 30 minutes for them to settle after they had been mixed when the augur was retrieved. • Brine quality is not related to the quality of core samples. The porosity, transmissivity and permeability of the lithologies where samples are taken influences the rate of brine inflow and brine characteristics. • Drilling is required to determine the flow characteristics of the underlying aquifers, surface sampling gives an idea of the presence of lithium and boron.

Criteria	JORC Code explanation	Commentary
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.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	All core was logged by two geologists and the CP geologist. Representative samples were taken every 0.5m or when the augur was removed. This was subject to the dryness and compaction of the sediments being drilled.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *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.* • *Whether sample sizes are appropriate to the grain size of the material being sampled.*	• Brine samples were collected by allowing the hole to re-fill with brine then extracted using a bailer. • Duplicate sampling is undertaken for quality control purposes. Five duplicates were taken, and two blanks (distilled water and two standards were also provided to SGS laboratories for analysis. • There was no sub-sampling but the bailer was moved from the bottom of the well to the surface level so it collected a representative sample of the brine,
	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *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.* • *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.*	• The SGS laboratory was used for analyses and is also certified for ISO/IEC Standard 17025:2017 • Security control was kept with each bottle being taped closed and contained in a locked chest which was opened by SGS staff. • A garmin X650T hand held GPS with more than 10 satellites in signal was used to record the location of the wells. • Two blanks were sent with the bottles, one at 120ppm lithium and the other at 175ppm. The analysis was within 0.5% of the blanks. • There was very good correlation between duplicates except for one sample which will be re-assayed. We believe the sampling error is a function of the sampling as the lithium level was quite high. • Sampling of the 20L sample sent to Ekosolve University of Melbourne showed the following assays:

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td rowspan="2"></td><td rowspan="2">Sample Position</td><td colspan="2">Dilution: 50 times. Unit in mg/L or ppm.</td></tr>
<tr><td colspan="2">[Li]</td></tr>
<tr><td rowspan="9">Patagonia Lithium brine</td><td>Top #1</td><td>248.33</td><td rowspan="3">263.80</td></tr>
<tr><td>Top #2</td><td>307.76</td></tr>
<tr><td>Top #3</td><td>235.32</td></tr>
<tr><td>Middle #1</td><td>264.92</td><td rowspan="3">290.64</td></tr>
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</table>
</td></tr>
<tr><td>Verification of sampling and assaying</td><td>
• The verification of significant intersections by either independent or alternative company personnel.
• The use of twinned holes.
• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.
• Discuss any adjustment to assay data.
</td><td>
• Field duplicates, standards and blanks are used to monitor potential contamination of samples and the repeatability of analyses.
• The drum containing the brine was first shaken to aid in ensuring a homogeneous distribution. Following this brine samples were taken three times individually from the bottom, the middle, and the top sections of the 20-liter container. These nine brine samples were diluted at three ratios (50-, 500- and 2500-times dilution) for all cations except for lithium, and anions, including chloride, nitrate and sulphate. The lithium concentration in the salt lake brine samples were analyzed by the lithium spike method previously developed and disclosed. Specifically, 0 ppm, 10 ppm, 25 ppm, 50 ppm and 100 ppm lithium, sourced from a 1000 mg/L lithium ICP standard solution supplied by Merck, was spiked in the brine samples, and the resulting solution was diluted as a 50 times dilution. The diluted samples for cations were sent for concentration analysis using inductively coupled plasma – optical emission spectroscopy (ICP-OES) in house, and three samples for each of the bottom, middle and top was analyzed for anion concentrations using Ion Chromatography.
• The pH of the salt lake brine was measured in triplicate and the average pH was 7.82.
</td></tr>
<tr><td>Location of data points</td><td>
• 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.
• Specification of the grid system used.
• Quality and adequacy of topographic control.
</td><td>
• The survey locations were located using handheld GPS with an accuracy of +/- 5m.
• The grid System used is POSGAR 94, Argentina Zone 3
• Topographic control was obtained by handheld GPS
• The topography is flat.
</td></tr>
<tr><td>Data spacing and distribution</td><td>
• Data spacing for reporting of Exploration Results.
• 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
</td><td>
• Brine samples were collected within the hole based upon the depth required to access brines.
</td></tr>
</table>

Criteria	JORC Code explanation	Commentary
	classifications applied. • *Whether sample compositing has been applied.*	
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.* • *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.*	• The brine concentrations being explored for generally occur as sub-horizontal layers and lenses hosted by conglomerate, sand, halites, silt and/or clay. Vertical diamond drilling is ideal for understanding this horizontal stratigraphy and the nature of the sub-surface brine bearing aquifers. • Surface sampling allows us to determine the presence of lithium and other minerals such as boron and presence of anions.
Sample security	• *The measures taken to ensure sample security.*	• Data was recorded and processed by employees and contractors to the Company and overseen by senior management CP on-site. • Samples were transported from the drill site to secure storage at the camp on a daily basis.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• No audits or reviews have been conducted to date. The sampling is at a very early stage however the Company's independent consultant and Competent Person has approved the procedures to date and were present at sampling.

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 land tenure status	• *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, historical sites, wilderness or national park and environmental settings.* • *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.*	• The Formentera/Cilon Lithium Project consists of two tenements located in Jujuy Province, Argentina. The tenement is owned by Patagonia Lithium SA. The Company executed a purchase agreement on 18 December 2022 and paid for it on 19 December 2022.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• No historical exploration has been undertaken on this licence area • Cilon exploration licence was previously mined for ulexite
Geology	• *Deposit type, geological setting and style of mineralisation.*	• The Formentera/Cilon licence area covers most of the salar proper with minor alluvial cover to the southwest. The lithium concentrated brine is sourced locally from hot fluids passing through lithium minerals and altered intrusives and is concentrated in brines hosted within basin alluvial sediments and evaporites.
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:* ○ *easting and northing of the drill hole collar* ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar* ○ *dip and azimuth of the hole* ○ *down hole length and interception depth* ○ *hole length* ○ *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 explain why this is the case*	See the table 1 in the release dated 2 June 2023 "Sampling at Formentera and Cilon Assays 1,122ppm lithium" for northing and eastings, elevation, the dip is vertical, and depths.

Criteria	JORC Code explanation	Commentary
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.* • *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.* • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	• Assay results will be derived by SGS method using ICP-OES. The actual test summary for each element is contained at the top of the heading of table 2.
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *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').*	• The brine layers are horizontal to sub- horizontal therefore the intercepted thicknesses of brine layers would be true thickness as the sample hole is vertical. • The brine flowed from the walls of the hole in a section from 0.25-2m so the intercept width is variable depending on the porosity and transmissitivity of the surrounding sands and clays.
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 maps, figures and tables in the attached announcement dated the 2 June 2023 "Sampling at Formentera and Cilon Assays 1,122ppm lithium"
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.*	• All assay results are reported as received from the lab. • Additional analysis was completed by University of Melbourne

<table>
<tr><th>Criteria</th><th>JORC Code explanation</th><th>Commentary</th></tr>
<tr><td>Other substantive exploration data</td><td>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.</td><td>All meaningful and material information is reported
Lithium assay is set out below in ppm
Table 1 Lithium concentrations of the Patagonia Lithium brine
<table>
<tr><th></th><th>Sample Position</th><th colspan="2">Dilution: 50 times. Unit in mg/L or ppm.
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</table>
A 10-stage bench-scale counter-current solvent extraction process has been designed and conducted to simulate the lithium extraction in a pulsed solvent extraction column.
Reaction time for each stage was less than 30 seconds.
The lithium concentrations for the 1st batch Patagonia Lithium brine passing through 1st EX, 2nd EX, ... 10th EX stages
<table>
<tr><th></th><th>[Li] mg/L</th><th>Extraction efficiency %</th><th>A/O ratio</th></tr>
<tr><td>Original brine</td><td>266.76</td><td></td><td>--</td></tr>
<tr><td>1st batch brine after 1st EX stage</td><td>183.49</td><td>31.21%</td><td>1/1</td></tr>
<tr><td>1st batch brine after 2nd EX stage</td><td>166.43</td><td>37.61%</td><td>1/2</td></tr>
<tr><td>1st batch brine after 3rd EX stage</td><td>114.47</td><td>57.09%</td><td>1/3</td></tr>
<tr><td>1st batch brine after 4th EX stage</td><td>108.14</td><td>59.46%</td><td>1/4</td></tr>
<tr><td>1st batch brine after 5th EX stage</td><td>73.09</td><td>72.60%</td><td>1/5</td></tr>
<tr><td>1st batch brine after 6th EX stage</td><td>62.66</td><td>76.51%</td><td>1/6</td></tr>
<tr><td>1st batch brine after 7th EX stage</td><td>46.54</td><td>82.55%</td><td>1/7</td></tr>
<tr><td>1st batch brine after 8th EX stage</td><td>36.06</td><td>86.48%</td><td>1/8</td></tr>
<tr><td>1st batch brine after 9th EX stage</td><td>30.05</td><td>88.73%</td><td>1/9</td></tr>
<tr><td>1st batch brine after 10th EX stage</td><td>21.18</td><td>92.06%</td><td>1/10</td></tr>
</table></td></tr>
<tr><td>Further work</td><td>The nature and scale of planned further work (eg; tests for lateral extensions or depth extensions or large-scale step-out drilling).
Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</td><td>A Magnetotelleric (MT) geophysical survey was completed 12 June 2023 across the Formentera license to view lithological structures at a deeper level to 2000m, refine drill hole targeting followed by diamond drilling.
Refer to the ASX release dated 4 July 2023, “Geophysics Generates Prospective Drill Targets “
Magnetotellurics (MT) is a passive geophysical method which uses natural time variations of the Earth's magnetic and electric fields to measure the electrical resistivity of the sub-surface.
As soon as the drill plan for Cilon and Formentera is produced a 2000m program over 10 drill holes will be implemented.
The results of the extraction efficiency tests using the Ekosolve process will be run again with the higher finishing compounds.
Lithium Carbonate will be produced from the lithium chloride solution produced by the current tests</td></tr>
</table>