



#### **ASX RELEASE**

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**PNN** 

#### **REGISTERED OFFICE**

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# **PROJECTS**

## **Argentina**

Salta Lithium Project

Santa Ines Copper-Gold Project

#### **Australia**

Eyre Peninsula Kaolin-Halloysite-REE Project

Musgrave Nickel-Copper-Cobalt-PGE Project

# **Excellent Results from Power's First Lithium Brine Pumping Well at Incahuasi, Argentina**

- Power has successfully completed its initial lithium brine pumping well tests at Incahuasi salar
- Rotary well PM24-IN-RW-01 completed to 360m depth with 8inch diameter slotted casing
- Pumping step tests indicated it is a highly productive aquifer, and this is being confirmed by continuous tests
- Drawdown curve analysis from step tests indicates aquifer can yield up to 40 L/sec (144m³/h) with a drawdown of just 10m
- Well achieved efficiency above 70%
- Productivity of Incahuasi aquifer indicates a higher transmissivity compared to nearby salares
- Ongoing pumping tests will provide key engineering information for Power's Pre-Feasibility Study

Power Minerals Limited (ASX: **PNN**, **Power** or **the Company**) is pleased to announce it has successfully completed its initial lithium brine pumping well tests at Incahuasi, part of its Salta Lithium Project in Argentina.

Rotary drillhole PM24-IN-RW-01 was completed to 360m depth at 8-inch diameter, then stabilised and prepared with slotted casing for pumping tests, which indicated it is a highly productive aquifer, despite the discharge rate being limited by pump capacity and casing diameter.

The well has achieved efficiency above 70%, and productivity of the aquifer indicates Incahuasi is a mature salar with higher transmissivity than compared to other salares in the region.

Brine samples from each step were sent to Alex Stewart NOA laboratory in Jujuy, with results expected early May.

Initial step results set the base for a longer-term pumping test, which has just been completed; results yet to be compiled.





"Power is very pleased with these excellent results of the initial pumping well at Incahuasi; the brine flow rates and aquifer porosity are very encouraging for our future development plans.

I am proud of and thankful to the Power operating team in Argentina, which performed this work safely and professionally in a timely manner.

These positive initial results strongly position Power for the exciting evaluation phase of lithium production."

**Power Minerals Managing Director Mena Habib** 



Figure 1. Power's Incahuasi pumping well progress

Ongoing continuous pumping tests for 12 days (6 days extraction and 6 days recovery) will provide key engineering information for PNN's Pre-Feasibility Study, including:

Production engineering planning and wellfield configuration





 Number of pumping wells and infrastructure required to support 5,000-10,000tpa DLE pilot plant.

In addition, it will provide critical information for:

- Li mineral resource to mineral reserve conversion.
- Hydrology model and optimal brine extraction rates.

# **Next Steps**

- Results from continuous pumping tests need to be compiled and analysed to provide input to the Pre-Feasibility Study and provide bulk lithium brine samples for additional DLE test work.
- Further evaluation work in conjunction with JV partner Summit Nanotech, including hydrological model and water / brine balances.

Authorised for release by the Board of Power Minerals Limited.

# -ENDS-

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## **About Power Minerals Limited**

Power Minerals Limited is an ASX-listed lithium-focused exploration and development company, committed to the systematic exploration and development of its core asset, the Salta Lithium Brine Project in the prolific lithium triangle in the Salta Province in Argentina. It is currently undertaking a major JORC Mineral Resource expansion drilling campaign at Salta, and is focused on expediting development of the Project in to a potential, future lithium producing operation. Power also has a portfolio of other assets in key, demand-driven commodities including; kaolin-halloysite-REE, nickel-copper-cobalt and PGEs plus copper-gold.







# **Competent Persons Statement**

This announcement regarding the Salta Lithium project has been prepared with information compiled by Marcela Casini, MAusIMM (CP). Marcela Casini is an experienced and highly qualified consultant hydrologist working with PNN Argentina, and has sufficient experience relevant to the style of mineralisation and type of deposit under consideration 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". Marcela Casini consents to the inclusion in the report of the matters based on her information in the form and context in which it appears.

# **Forward looking Statements**

This announcement contains 'forward-looking information' that is based on the Company's expectations, estimates and projections as of the date on which the statements were made. This forward-looking information includes, among other things, statements with respect to the Company's business strategy, plans, development, objectives, performance, outlook, growth, cash flow, projections, targets and expectations, mineral reserves and resources, results of exploration and related expenses. Generally, this forward-looking information can be identified using forward-looking terminology such as 'outlook', 'anticipate', 'project', 'target', 'potential', 'likely', 'believe', 'estimate', 'expect', 'intend', 'may', 'would', 'could', 'should', 'scheduled', 'will', 'plan', 'forecast', 'evolve' and similar expressions. Persons reading this announcement are cautioned that such statements are only predictions, and that the Company's actual future results or performance may be materially different. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the Company's actual results, level of activity, performance, or achievements to be materially different from those expressed or implied by such forwardlooking information.

# **JORC Table**

# JORC Code, 2012 Edition – Table 1 Report

# Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverized to produce a 30 g charge for fire assay'). In other</li> </ul>	<ul> <li>Brine sampling was completed using the discharge flow rate. Sampling for brine characterization has been completed at the beginning and end of each step.</li> <li>Brine samples were measured at the time of sampling for conductivity density, temperature and pH.</li> <li>Brine samples (plus quality control samples) from each step have been sent to be analysed for a suite of elements, density, electrical conductivity and pH.</li> </ul>

Criteria	JORC Code explanation	Commentary		
	cases, more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralization types (e.g. submarine nodules) may warrant disclosure of detailed information.			
Drilling techniques	<ul> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).</li> </ul>	<ul> <li>Contractor Conosur SA completed the pumping well using a Rotary Mud Drilling Rig. The Pumping well was completed to 360 metres.</li> </ul>		
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximize sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	Cutting chips were sampled and described every 3 metres to confirm lithology of the aquifer.		
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate</li> </ul>	<ul> <li>Cutting chips were logged by company geologists to identify lithologies, drillers recorded penetration rates.</li> <li>The entire length of the drillhole has been logged.</li> <li>The Observation was located at 10.75 m from the pumping</li> </ul>		

Criteria	JORC Code explanation	Commentary	
	<ul> <li>Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	well was previously geophysically logged for resistivity and spontaneous potential (SP) to assist in identifying the aquifer salinities.	
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used</li> </ul>	The Alex Stewart (Norlab) laboratory in Palpala, Jujuy,     Argentina, is used as the primary laboratory to conduct the	

Criteria	JORC Code explanation	Commentary
	<ul> <li>and whether the technique is considered partial or total.</li> <li>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.</li> <li>Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.</li> </ul>	<ul> <li>assaying of the brine samples collected as part of the sampling program. The Alex Stewart laboratory is specialized in the chemical analysis of brines and inorganic salts, with experience in this field.</li> <li>Control samples included standards, duplicates and blanks were used to monitor potential contamination of samples and the repeatability of analyses. Four of 10 samples were inserted in every batch.</li> <li>The control samples, including were all within acceptable ranges.</li> <li>Alex Stewart also provided results for one laboratory duplicate with all values within acceptable variances.</li> </ul>
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>On completion of the drilling the logging and sampling data is entered into spreadsheets and is then checked by the Exploration Manager and then stored in company's server</li> <li>No holes were twinned.</li> <li>Data is input into MS Excel spreadsheets which are then emailed to database manager for input into MS Access. The data is interrogated, and all discrepancies are communicated and resolved with the field teams to ensure only properly verified data is stored in the Access database.</li> </ul>
Location of data points	<ul> <li>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.</li> </ul>	<ul> <li>All drill hole collar was initially surveyed with a hand held GPS.</li> <li>No drillhole downhole orientation surveys were conducted on the vertical hole.</li> <li>All work has been carried out using standard WGS84 UTM</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	Zone 19S coordinate system.
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>This pumping drillhole was on the east side of the Incahuasi Salar (Salta) at 10.75 metres distance from the DDH drillhole PM22-IN-01, which acted as an observation well during the pumping test</li> <li>The distance between Rotary and DDH well is expected to be sufficient to establish hydraulic parameters of the aquifer.</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralized structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>The salt lake (salar) deposits that contain lithium-bearing brines generally have sub-horizontal beds and lenses that contain sand, gravel, salt, silt and clay. The vertical drill holes will provide a better understanding of the stratigraphy and the nature of the sub-surface brine bearing aquifers.</li> <li>Reported depths are all down-hole depths in metres.</li> </ul>
Sample security	<ul> <li>The measures taken to ensure sample security.</li> </ul>	<ul> <li>Brine Samples were transported to the laboratory for chemical analysis in sealed 500mL rigid plastic bottles with sample numbers clearly identified. Samples were transported by a trusted member of the team or courier.</li> <li>The brine samples were moved from the drillhole site to</li> </ul>

Criteria	JORC Code explanation	Commentary
		secure storage at the camp on a daily basis
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>All planned sampling techniques and procedures for data capture were deemed to be of industry standard and satisfactory; being supervised by the company's senior and experienced geologists.</li> </ul>

# 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	<ul> <li>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.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a license to operate in the area.</li> </ul>	<ul> <li>Mina 'Sisifo' File Number 20545 in the Salta Province of Argentina, is held 100% by Power Minerals SA, an Argentina entity wholly owned by Power Minerals Ltd (ASX:PNN).</li> <li>The Mina is held under grant from the Mining Court of Salta Province, Argentina in perpetuity and is appropriately maintained.</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	There is no public data exploration in this local area by other parties.
Geology	Deposit type, geological setting and style of mineralization.	<ul> <li>The sediments within the salar consist of salt/halite, clay, sand and silt horizons, accumulated in the salar from terrestrial sedimentation and evaporation of brines.</li> <li>Brines within the Salt Lake are formed by the solar concentration of fluids containing trace amounts of elements such as lithium. The lithium originated as a product of geothermal fluids and the weathering of volcanic rocks.</li> <li>Geology was recorded during the diamond drilling.</li> </ul>
Drill hole Information	A summary of all information material to the understanding of the exploration	Sisifo Drill holes

Criteria	JORC Code explanation	Commentary							
	results including a tabulation of the following information for all Material	Drillhole	East	North	Altitude	Azimuth	Dip To	otal Depth	
	drill holes:  o easting and northing of the drill hole	PM24-IN-RW-01	650489.8	7319331.6	3474.0	0	-90	360.00	
	collar  o elevation or RL (Reduced Level –	PM22-IN-01	650467.1	7319321.6	3474.0	0	-90	400.00	
	elevation above sea level in meters) of the drill hole collar	PM22-IN-02	650855.3	7316288.1	3473.0	0	-90	320.50	
	o dip and azimuth of the hole	PM23-IN-03	651672.0	7321505.8	3482.0	0	-90	200.50	
	<ul> <li>down hole length and interception depth</li> <li>hole length.</li> </ul>	PM23-IN-04	650998.6	7314075.7	3492.0	0	-90	120.00	_
	<ul> <li>If the exclusion of this information is justified on the basis that the</li> </ul>	Number	5				Total	1,041.00	
	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.								
Data • In reporting Exploration Results, aggregation weighting averaging techniques, methods maximum and/or minimum grade		The step test w measured the s				w every 60	minutes,	recovery wa	ıS
retirous	truncations (e.g. cutting of high grades)	PM24-IN-RW-01		1 Step	2	Step	3 Step	4 St	tep
	and cut-off grades are usually Material	Flow Rate I (L/s)			5	10		15	2
	<ul> <li>and should be stated.</li> <li>Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation</li> </ul>	Flow Ratel (m3/h)			18	36		54	75.
		Dynamic Level(m)			1.24	2.04	3	3.05	4.5
		Drawdown (m)		(	).85	1.65	Ź	2.66	4.
		Efficiency (%)		9	91.1	83.6	7	77.3	70
	procedure used for such aggregation		1	21.2	21.8	2			

• The assumptions used for any reporting

Criteria	JORC Code explanation	Commentary
	of metal equivalent values should be clearly stated.	
Relationship between mineralization widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralization with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul> <li>The drillhole was drilled with dip of -90 degrees (vertical). The upper 16 metres of the well was isolated with cement to avoid contamination with the fresher water and dilution of the brine.</li> <li>Mineralisation interpreted to be horizontally lying and drilling is perpendicular to this.</li> <li>The pumping well was finished with 310.17 m of slotted casing and 49.33 of solid casing.</li> </ul>
J	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should</li> </ul>	The drawdown curve of the well indicate that the well can be pumped at 41.6L/sec and the drawdown will be 10 metres.  PM24-IN-RW-01 Estimated Drawdown Performance
	include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.	2.52
		4.52 4.00
		0.00 Dawy (iii) 8.52 8.00 Dawy (iii) 8.52 8.00 Graph (iii) 8.52 Graph (
		10.52 - 10.00
		0 20 40 60 80 100 120 140 160 180  Discharge Rate (m3/h)
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable,	•

Criteria	JORC Code explanation	Commentary
	representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	
Other substantive exploration data	<ul> <li>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         <ul> <li>size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</li> </ul> </li> </ul>	No meaningful data has been omitted.
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	Long term pumping test on the well is being performed.