PepinNini Lithium Limited

ASX RELEASE 27 June 2018 ASX:**PNN**

ABOUT
PepinNini Lithium Limited is a diversified ASX listed Exploration Company focused on exploring and developing a lithium brine resource and production project in Salta Province Argentina within the Lithium Triangle of South America. The Company also holds strategically located exploration tenements in the Musgrave Province of South Australia. The company also holds a copper-gold exploration project in Salta Province, Argentina

DIRECTORS

Rebecca Holland-Kennedy
Managing Director
Sarah Clifton-Brown
Finance Director
Philip Clifford
Non-Executive Director
Justin Nelson
Company Secretary

CONTACT
PepinNini Lithium Limited
ABN 55 101 714 989

Level 1, 6/68 North Terrace
Kent Town SA 5067
TEL:+61 (0)8 8218 5000
FAX:+61 (0)8 8212 5717
EMAIL: admin@pepinnini.com.au

FURTHER INFORMATION
Ms Rebecca Holland-Kennedy
Managing Director
TEL: +61 (0)8 8218 5000
www.pepinnini.com.au

Salta Lithium Rincon Project Initial JORC Resource

PepinNini Lithium Ltd (PNN,PepinNini, the Company) is pleased to report an initial lithium (“Li”) and potassium (“K”) resource statement for its Rincon Lithium Brine project in the Salta province of Argentina. The JORC 2012 resource statement, detailed in Table 1 below, includes 60,000 tonnes of lithium carbonate (“Li_2CO_3”) equivalent (LCE) and 270,000 tonnes of potash (“KCl”) equivalent in the Measured and Indicated Resource categories, with an additional 6,000 tonnes of Li_2CO_3 and 26,000 tonnes KCl in the Inferred Resource category.

Rebecca Holland-Kennedy the Managing Director of PepinNini Lithium, commented on the initial resource for the Rincon Project, *We are very excited to see an initial JORC resource estimate from our hydrogeological consultants. The Company now has a first defined resource estimate in place for our Lithium Project which given the current price of LCE it is a valuable resource. It forms the basis for subsequent resources estimates from our other projects to allow us to continue to advance to the next level of development for lithium production.*

Table 1 - Rincon Project Brine Resource Statement

Resource Category	Brine Volume (m^3)	Avg. Li (mg/L)	In situ Li (tonnes)	Li_2CO_3Equivalent (tonnes)LCE	Avg. K (mg/L)	In situ K (tonnes)	KCl Equivalent (tonnes)
Measured	2.7×10^7	252	7,000	36,000	6,040	161,000	307,000
Indicated	1.9×10^7	233	5,000	24,000	5,512	109,000	208,000
M+I	**4.6×10^7**	**244**	**12,000**	**60,000**	**5,815**	**270,000**	**515,000**
Inferred	3.7×10^6	288	1,000	6,000	7,001	26,000	49,000

No cutoff grade was applied; lowest grade brine observed was 197 mg/L
The reader is cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability.

The resource estimate was prepared in accordance with The JORC Code 2012 and uses best practice methods specific to brine resources, including a reliance on core drilling and sampling methods that yield depth-specific chemistry and effective (drainable) porosity measurements. The resource estimation was completed by independent competent person Mr. Michael Rosko, M.Sc., C.P.G. of the international hydrogeology firm E.L. Montgomery & Associates (M&A).

The resource is defined over a 2.54 square kilometer footprint using results from core drilling and depth-specific packer sampling. The initial measured, indicated, and inferred resource was derived from polygons surrounding exploration boreholes, totaling 210 metres of core drilling.

A pumping well is planned for the project to provide additional data on lithium grade and test recharge rates of the brine. An upgraded resource would then be calculated.

Mineral Resource Calculation Methodology - Montgomery & Associates

Total area of the polygonal blocks used in the resource calculations is 254hectares or 2.54 square kilometers (km^2), as shown on Figure 1.

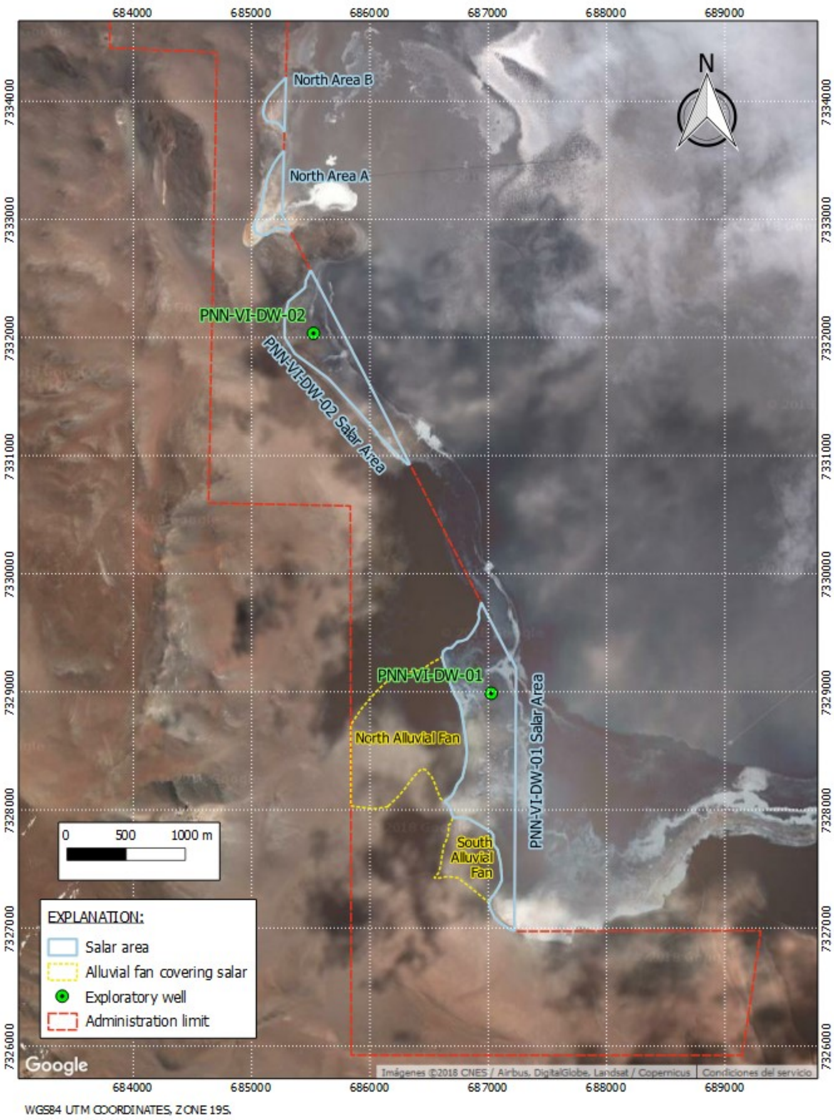


Figure 1 Well Locations and Polygons used for Resource Calculations

Diamond Drilling Program

The exploration diamond drilling program was designed by Exploration Manager Marcela Casini to develop a resource estimate for the project. Drilling and construction were conducted during December 2017. Locations for the Rincon exploration wells are shown on Figure 1. The diamond drilling program included drilling two vertical coreholes using a diamond core rig to total depths of 80 and 130 meters (Figures 2 and 3). Drilling and construction services were provided by Hidrotec SRL, and were documented by PepinNini in internal company drilling reports of 2017 and 2018.

Sample Analyses

Brine chemistry samples were analyzed by SGS Argentina S.A., Salta, Argentina; SGS has extensive experience with lithium-bearing brines. Porosity analyses on selected core samples were conducted by Geosystems Analysis Inc. (GSA), Tucson, Arizona; GSA has worked on many Argentine brine projects during the last several years. Well and sample locations are summarized in Table 2. Laboratory results for the brine chemistry and drainable porosity samples are shown on Figures 2 and 3.

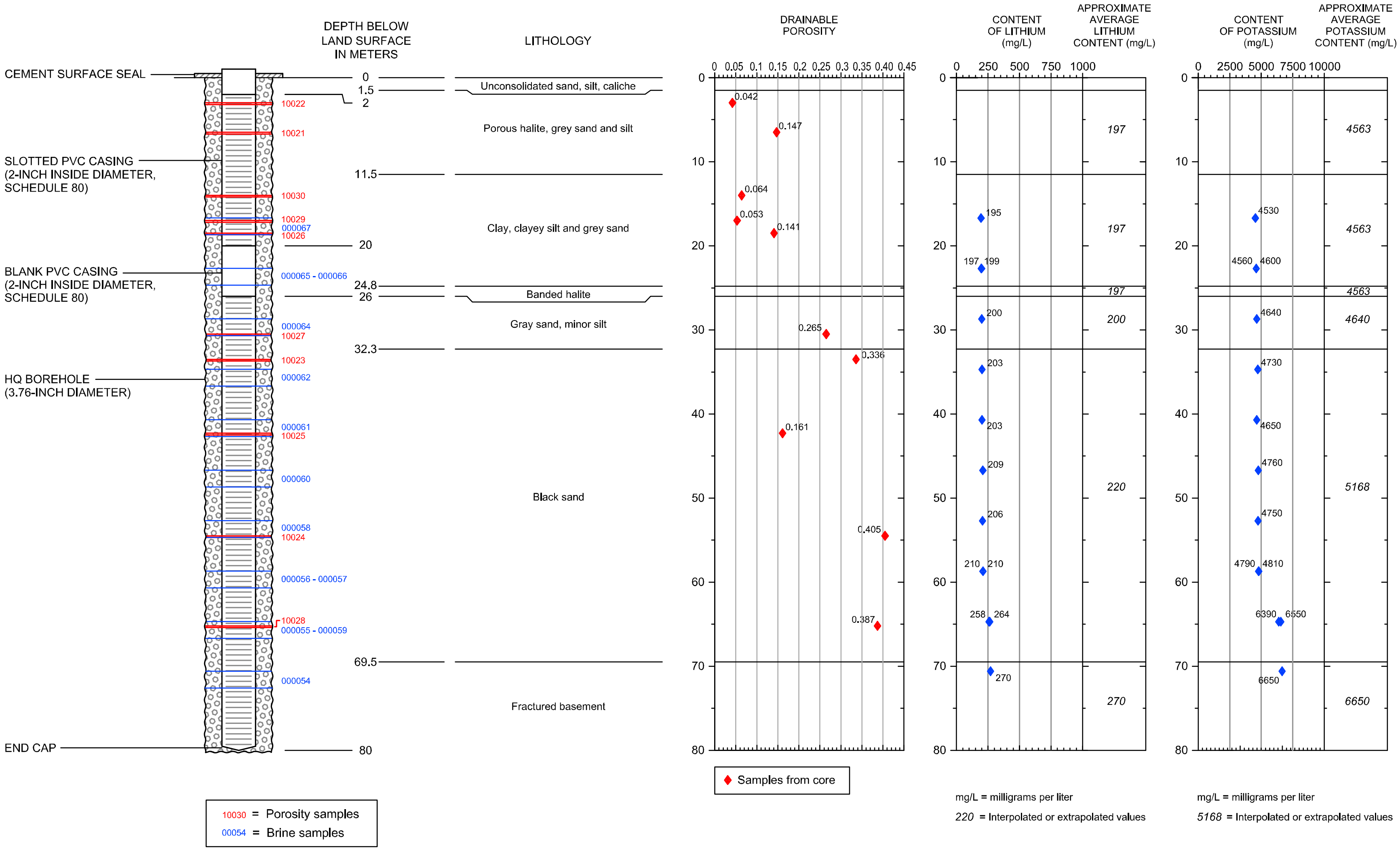


FIGURE 2. SCHEMATIC DIAGRAM OF CONSTRUCTION OF EXPLORATION WELL PNN-VI-DW-01

L:\projects\3534.03_Wells\Fig.X_PNN-VI-DW-01_26Jun18

MONTGOMERY & ASSOCIATES

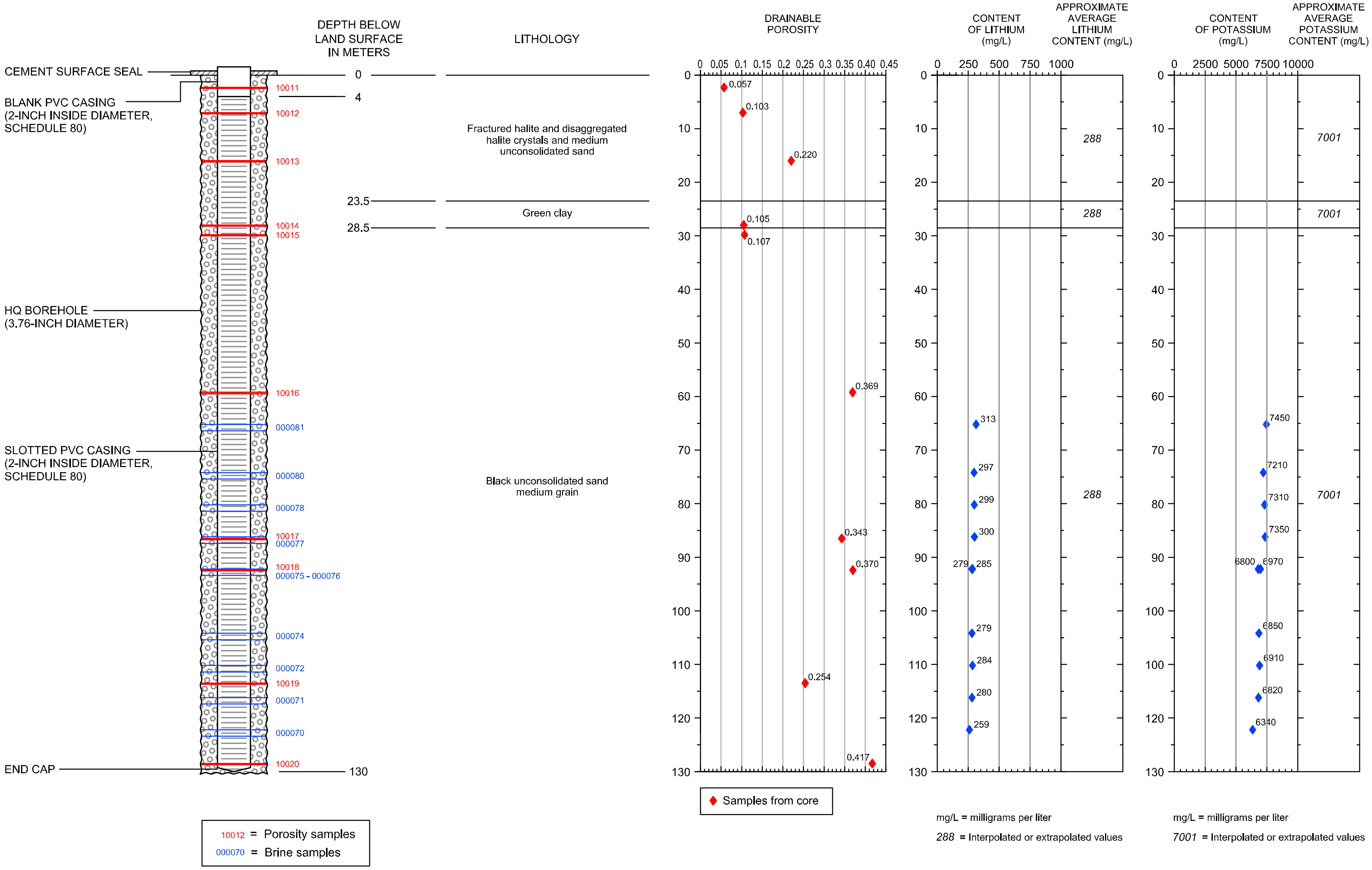


FIGURE 3. SCHEMATIC DIAGRAM OF CONSTRUCTION OF EXPLORATION WELL PNN-VI-DW-02

Table 2 - Summary of Well Locations and Samples

Corehole Identifier	Total Depth (metres)	UTM Easting[1] (metres) Posgar 94	UTM Northing[1] (metres) Posgar 94	Nimber of drainable porosity samples collected	Number of drainable porosity samples analyzed	Number of depth specific brine samples collected and analyzed
PNN-VI-DW-01	80	3,380,586	7,333,640	10	10	13
PNN-VI-DW-02	130	3,382,155	7,330,630	10	10	10
	Total = 210			Total = 20	Total = 20	Total = 23

[1] UTM Easting and Northing surveyed by Mercoaguas; altitude of both wells are 3,654 meters above mean sea level

NOTE: Includes duplicate brine samples

Results from the drilling and testing work are considered to be favorable for the Project. Brine was evident throughout the entire sections drilled for each of the wells. Lithium values were fairly consistent from land surface to total depth for each of the boreholes. Results for lithium and potassium are shown on Figures 2 and 3.

Quality Control

Duplicate brine samples were submitted to the same laboratory to confirm laboratory repeatability as part of the Quality Assurance and Quality Control (QA/QC) procedure. To date, a total of four duplicate samples were submitted during the exploration program. SGS Laboratory results for the samples and their duplicates are given in Table 3.

Table 3 - Laboratory Results and Duplicate Values

	Li (mg/L)[1]		Mg (mg/L)		SO_4 (mg/L)		K (mg/L)	
SAMPLE NUMBERS (ORIGINAL AND DUPLICATE)	ORIGINAL	DUPLICATE	ORIGINAL	DUPLICATE	ORIGINAL	DUPLICATE	ORIGINAL	DUPLICATE
PNN-VI-DW-01								
1745 - 0013/0014	199	197	2,660	2,640	11,441	11,493	4,600	4,560
1745 - 0004/0005	258	210	2,540	2,530	14,798	14,926	4,810	4,790
1745 - 0003/0007	258	264	2,590	2,660	23,664	23,295	6,390	6,550
PNN-VI-DW-02								
1759 – 0007/0008	276	285	2,990	3,070	17,703	17,684	6,800	6,970

[1] mg/L = milligrams per liter

Results from the duplicate samples suggest that the samples are being analyzed similarly, and that a large difference between the results does not exist.

Definition of Polygon Blocks and Thicknesses

The area covered by the polygon blocks used for the resource calculation is 2.45 square kilometres and covers north and south zones. Two of the polygons(PNN-VI-DW-01 Salar Area, and PNN-VI-DW-02 Salar Area) encompass the two diamond drill holes (Figure 1), The other polygon areas called North Area A and B were explored with Vertical Electrical Surveys (VES) geophysics (Mercoaguas 2017, 2018b) and were calibrated with the results from the exploration boreholes. These two polygon blocks are within the basin floor of the Salar del Rincon basin, and include basin areas as defined by photo interpretation of satellite images. Two additional polygon areas(North Alluvial Fan, and South Alluvial Fan) in the south of the tenement cover basin sediments and alluvial fan material west from the salar crust and were defined by VES geophysical surveys; conducted by Mercoaguas (2018b) to determine the depth to bedrock beneath the fans and to confirm the presence of aquifer material. Hard rock units both underlying the basin fill aquifer and in the west part of the concessions were excluded from polygon blocks, even though some of these rocks may contain brine resources within fractures.

Although there is no direct evidence that lithium brine exists below the alluvial fan sediments (North Alluvial Fan, and South Alluvial Fan) on the west side of the concessions (Figure 1), it has been demonstrated in other Argentine salars (Montgomery & Associates, 2018) that the dense brine will flow into the sediments surrounding the salar basin and displace fresh water. Therefore, these alluvial fans were included based on the authors' conceptualization of hydrogeologic conditions and on geophysical interpretation. The estimated thickness of the saturated brine unit under the fans was estimated based on the VES geophysical survey and was 65 meters. Therefore, thicknesses for the hydrogeologic units were reduced proportionally to a total estimated thickness of 65 meters (versus the 80 meters that was drilled at well PNN-VI-DW-01).

The alluvial fans that are near well 1 are considered to be Indicated, and not Measured because only geophysical information is available (Mercoaguas, 2017, 2018b). For the same reason, the northern-most polygons are also considered to be Indicated. And finally, geophysics (Mercoaguas 2018a) suggests that another 30 meters of saturated brine aquifer exists below a depth of 130 meters at well PNN-VI-DW-02. We considered this to be an Inferred resource.

To account for that fact that the concessions include the boundary of the basin where the hydrogeologic units are most likely less thick than at the drilled wells, we reduced the polygon sizes for the salar sediment polygons by 10%. The geophysical surveys support the conceptualization that these boundaries are not vertical, but rather angled toward the salar.

Definition of Hydrogeologic Units

Results of diamond drilling indicate that basin-fill deposits in Salar del Rincon can be divided into hydrogeologic units that are dominated by six lithologies. Figures 2 and 3 and show locations and results for the depth-specific core samples that were submitted to GSA in Tucson, Arizona for analysis. Predominant lithology, number of analyses for drainable porosity, and average of these units are given in Table 4. The average values below were used to estimate the resource.

Table 4 - Summary of Drainable Porosity Values

Predominant Lithology of Conceptual Hydrogeologic Unit	Number of Analyses	Mean Drainable Porosity
Unit 1: Porous halite, silt and sand	4	.13
Unit 2: Mixed sand, silt, and clay	3	.09
Unit 3: Silty clay*	0	.02
Unit 4: Silty sand	1	.26
Unit 5: Unconsolidated sand	11	.30
Unit 6: Fractured bedrock*	0	.01

*Units without analytical results were assigned reference values (Johnson, 1967)

Total Resource Estimation(Hydrogeologic Units)

Each borehole was divided into hydrogeologic units using the six lithologies given above. Drainable porosity values for each hydrogeologic unit within a single polygon were computed by averaging the available drainable porosity data from within the hydrogeologic unit at the polygon borehole. For the instances in which a hydrogeologic unit within an individual borehole had no chemical determinations, the analyses from the nearest samples both above and below the unit were averaged and that value applied to the entire unit. Shallow trenching confirmed that brine occurs in the salar sediments approximately 1 meter below land surface.

Drainable porosity and lithium and potassium content are weighted by hydrogeologic unit thickness. Hydrogeologic units are shown for each well on Figures 2 and 3. Saturated thickness for the uppermost hydrogeologic units is estimated from the depth to water in the polygon's central well to the base of the hydrogeologic unit. Thickness of the lowermost hydrogeologic unit is limited by total depth of the core hole. It is assumed that the properties at the borehole for hydrogeologic unit thickness, drainable porosity, lithium, and potassium extend continuously throughout the entire polygon. The resource computed for each polygon is independent of adjacent polygons. The computed resource for each polygon was the sum of the products of saturated hydrogeologic unit thickness, polygon area, drainable porosity, and lithium and potassium content. No cut-off grade was applied, but the lowest lithium grade observed was 197 mg/L.

Except for the deep Inferred resource in the well PNN-VI-DW-02 polygon, we have assigned all of the estimated Resource as either Measured or Indicated. This is consistent with recommendations by Houston et. al (2011) where they suggest that a Measured Resource be no farther than 3-4 kilometers to the nearest well in a mature salar like Salar del Rincon. Considering the relatively small size of the polygons, extrapolation of the lithologic units was also small.

Summary of Measured, Indicated, and Inferred Resource

Using the method outlined above, the estimate for the total Salar del Rincon project resource is as follows(*Table 1 reported on page 1*):

Resource Category	Brine Volume (m^3)	Avg. Li (mg/L)	In situ Li (tonnes)	Li_2CO_3Equivalent (tonnes)LCE	Avg. K (mg/L)	In situ K (tonnes)	KCl Equivalent (tonnes)
Measured	2.7×10^7	252	7,000	36,000	6,040	161,000	307,000
Indicated	1.9×10^7	233	5,000	24,000	5,512	109,000	208,000
M+I	**4.6×10^7**	**244**	**12,000**	**60,000**	**5,815**	**270,000**	**515,000**
Inferred	3.7×10^6	288	1,000	6,000	7,001	26,000	49,000

No cutoff grade was applied; lowest grade brine observed was 197 mg/L
Totals may not agree due to minor rounding errors
The reader is cautioned that mineral resources are not mineral reserves and do not have demonstrated economic viability.

The overall lithium grades range from about 200-300 mg/L; potassium grades range from about 4,500 - 7,000 mg/L. Exploration borehole PNN-VI-DW-02 has better lithium and potassium grades (Figures 2 and 3). This may be explained by possible minor dilution that occurs near well PNN-VI-DW-01 due to influx of fresh water associated with the alluvial fans to the west (Figure 1).

A standard chemical relationship indicative of lithium brine quality is the ratio of magnesium to lithium (Mg:Li). Calculated ratios using non-weighted, average magnesium and lithium sample results are 11.8 for well PNN-VI-DW-01, and about 10.4 for PNN-VI-DW-02.

Dominant Hydrogeologic Units

The dominant hydrologic unit encountered during drilling for the Salar del Rincon project was a very weakly consolidated black volcanic sand. The sand dominates the drainable brine resource, and the lithium and potassium resource contained in the brine. We believe that the transmissivity of future wells completed in this unit would be favorable for extracting brine because of the favorable aquifer conditions associated with the uniformly-sized and weakly-consolidated sand unit (See photo below).

Photo 1 - Black Sand in PNN-VI-DW-02 from 92-107metres depth.

References

Houston, J, Butcher, A., Ehren, P., Evans, K., and Godfrey, L., 2011. **The evaluation of brine prospects and the requirement for modifications to filing standards.** Economic Geology, 106 (7). 1225-1239. 10.2113/econgeo.106.7.1225.

Johnson, A. I., 1967. **Specific yield – Compilation of specific yields for various materials:** U.S. Geological Survey Water Supply Paper 1662-D, 74 p.

Mercoaguas, 2017. **Prospeccion geoelectrica en la pertenencia Villanovena, Salar del Rincon, Departmento Los Andes, Provincia de Salta.** Technical report prepared for PepinNini Lithium Limited, August 2017, 33 pp.

__________, 2018a. **Reinterpretacion de SEV**. Technical report prepared for PepinNini Lithium Limited, 6 pp.

______, 2018b. **Prospeccion geoelectrica en la pertenencia Villanovena, conos aluviales, Salar del Rincon, Departmento Los Andes, Provincia de Salta.** Technical report prepared for PepinNini Lithium Limited, May 2018, 26 pp.

Montgomery & Associates, 2018. **Measured, indicated, and inferred lithium and potassium resource estimate, Pastos Grandes Project, Salta Province, Argentina.** Technical NI-43-101 report prepared for Millennial Lithium Corporation, 515 pp. including appendices.

PepinNini Lithium Limited, 2017. **Technical report for construction of exploration borehole PNN-VI-DW-01**. Internal report. 15pp.

_______, 2018. **Technical report for construction of exploration borehole PNN-VI-DW-02**. Internal report. 19pp.

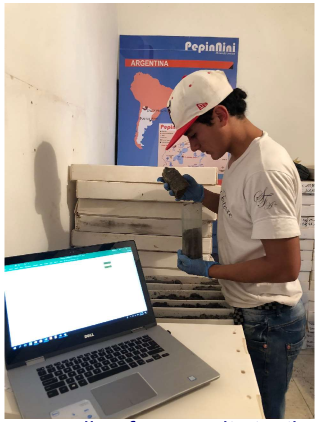
This announcement on the Salta Lithium project has been prepared with information compiled by Mr. Michael Rosko, M.Sc., C.P.G. of the international hydrogeology firm E.L. Montgomery & Associates, Mr Rosko is a Registered Member of the Society for Mining, Metallurgy and Exploration which is a Recognised Professional Organisation under JORC. Mr. Michael Rosko has sufficient experience which is 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". Mr. Michael Rosko is a Principal Hydrogeologist with E.L. Montgomery & Associates and as such is an independent consultant to PepinNini Lithium Limited Mr Rosko consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

JORC Table 1

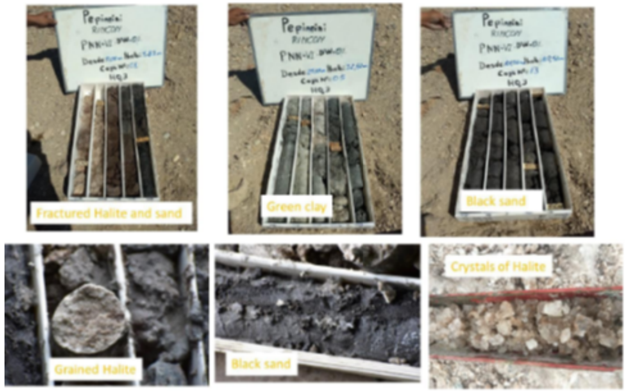
Section 1 Sampling Techniques and Data

(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.* • *Include reference to measures taken to ensure sample representability 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.*	• Liquid samples were collected using borehole packers over 1.2 metres thickness at 6 metre intervals • Borehole fluid density, temperature conductivity and Ph were recorded at time of sampling  • During the packer test, several 250l drums are filled in order to remove drilling fluids contaminants . • To collect a representative sample the borehole must be cleaned taking out the amount of brine that represents 200 to 250% of the borehole volume capacity at any given depth, at this point the field parameters including Density and conductivity are typically found to become constant with each consecutive drum. • Core samples were collected from drill core drilled at HQ3 diameter for RBR(Rapid Brine Release) testing to determine porosity and specific yield - carried out by Geosystems Analysis Inc, Tucson, Arizona, USA - methodolodgy outlined in attached poster The samples were collected every

Criteria	JORC Code explanation	Commentary
		20 m intervals, if a lithological change occurs between the sample points the interval was reduced  Core sampling for porosity testing
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).*	      • Diamond core drilling – HQ3 diameter drilled vertically, triple tube • Boreholes were converted to piezometer wells for observation and re-sampling on completion of drilling

Criteria	JORC Code explanation	Commentary
		
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.*	• The boreholes were drilled and cored to 80m and 130 m respectively. • Drill core recoveries were recorded at time of drilling and recorded with lithological interpretation and sample intervals. Core recoveries ranged from 0-100% depending in lithology; sand and gravel lithologies generally had lower recovery than halite and clay lithologies. Under-consolidated sand intervals with lower recovery are typically associated with higher brine yield.
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.*	• Core is geologically logged by measurement and observation for lithology and photographed. core samples of 20 cm length were sent for RBR (Rapid Brine Release) testing to determine porosity and specific yield - carried out by Geosystems Analysis Inc, Tucson, Arizona, USA -

Criteria	JORC Code explanation	Commentary
		• Field parameters are measured for brine samples. These include density,  temperature , conductivity and PH These are included in the bore hole descriptive log.  • The boreholes were drilled and cored to 80m and 130 m respectively. • Borehole PNN-VI-DW-01 was geophysically logged, spontaneous potential, single point resistance, short and long normal resistivity
Sub-sampling techniques and sample	• *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.*	• The boreholes must be cleaned by extracting brine before sampling can commence • Liquid samples were collected using the double packer.

Criteria	JORC Code explanation	Commentary
preparation	• *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 representativity 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.*	• Sample bottles are partly filled and rinsed with the brine to be sampled, emptied and then re-filled before the bottle top is installed and securely taped. • 30% of the samples are duplicates and blank, inserted as blinds in the string of samples . These samples are meant to control the quality assurance of the lab, According to the Competent Person requirements  •
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.* • *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 (i.e. lack of bias) and precision have been established.*	• A chain of custody was maintained for samples from drilling location to laboratory receipt.
Verification of	• *The verification of significant intersections by either independent or*	• A Competent person(CP) is used for oversight verification of sampling

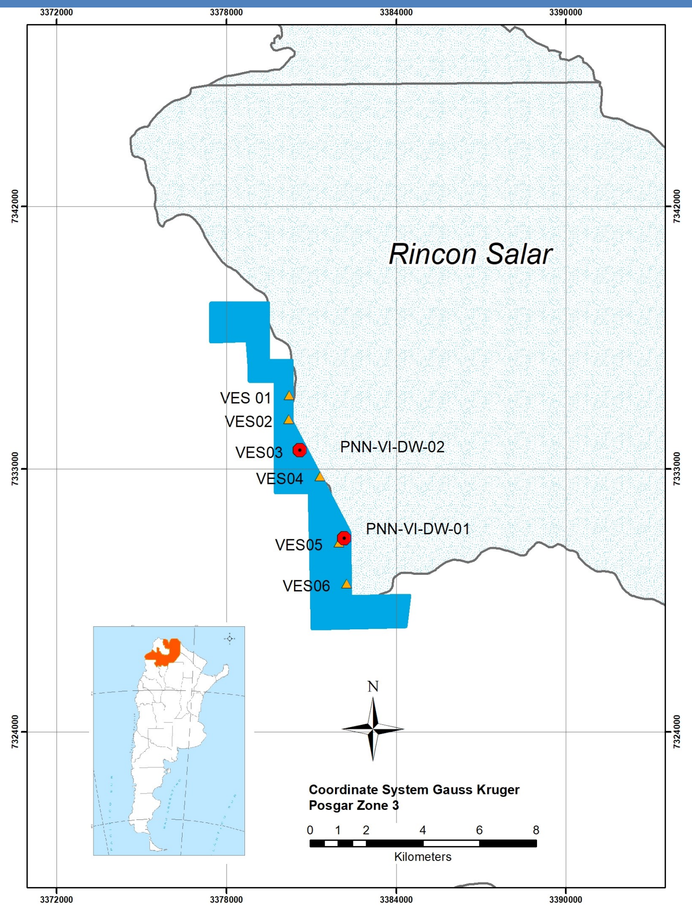
Criteria	JORC Code explanation	Commentary
sampling and assaying	*alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	techniques, laboratory verification and reporting review • 30 samples were taken from both Rincon bore holes of which 9 are control samples as per CP requirements
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.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	• Geographic positioning control for borehole location using both latitude and longitude and Gauss_Kruger POSGAR (WGS-84) • Vertical Electrical Sounding(VES) using tetrapolar configuration, Schlumberger with wing extensions up to 1000 meters • Handheld GPS device for traverse and point locations • The grid system used is Argentina Gauss_Kruger POSGAR (WGS-84) Zone 3. • Digital Elevation Model(DEM) from Google Earth appropriate for geophysical survey lines • Interpretation software used RESIST 92 Ipiwin 2000
Data spacing and distribution	• *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 classifications applied.* • *Whether sample compositing has been applied.*	• Samples taken every 6 metres within the boreholes • Up to 1.5km between geophysical stations • Geographic positioning control appropriate for exploration survey lines
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.*	• Boreholes drilled vertically to intersect salar horizontal layering
Sample security	• *The measures taken to ensure sample security.*	• A chain of custody is established for samples from field to laboratory with each stage signed off and handed over to final receipt by laboratory • Survey data collected, collated and interpreted by Mercoaguas - Servicios Hidrogeologicos Y Ambientales and securely distributed via electronic communications to Competent Person(CP) for confirmation and review.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	• Data collection, processing and analysis protocols aligned with industry best practice.

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.*	• Mina Villanovena 1 File Number 19565, Held 100% by PepinNini SA an Argentina entity wholly owned by PepinNini Lithium Ltd. • Held under grant from Mining Court of Salta Province, Argentina Tenure (Mina) held in perpetuity and appropriately maintained.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	• Exploration carried out by ADY - Energi Group Enirgi Group's Lithium Project - Salar del Rincón , Salta, Argentina - News Release17 April 2017 www.enirgi.com • Rincon Lithium Project Maiden JORC Mineral Resource - Argosy Minerals Ltd(ASX:AGY) 19 June 18
Geology	• *Deposit type, geological setting and style of mineralisation.*	• PepinNini is primarily exploring for brine aquifers in salars (dried salt lakes) and the geological setting is suitable for lithium bearing brines in commercial quantities. • Brine aquifers are indicated by high conductivity/low resistivity responses considered prospective for lithium brine
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.*	**Borehole PNN-VI-DW-02** • Borehole coordinates: GK Posgar Zone 3: 7333639.91E -3380585.57N Elevation:3730 masl • Start drilling date: 16 Dec 2017 • Finish drilling date: 23 Dec , 2017 • Total Depth: 130 meters • Drilling Methodology: Diamond Drilling • Drilling Company: Hidrotec • Rig: HT06LF90 **Borehole PNN-VI-DW-01** • Borehole coordinates: GK Posgar Zone 3: N 3382155.2/E 7330630.6

Criteria	JORC Code explanation	Commentary
		Elevation:3,731 masl • Start drilling date: Dec 7, 2017 • Finish drilling date: Dec 9, 2017 • Total Depth: 80 meters • Drilling Methodology: Diamond Drilling • Drilling Company: Hidrotec • Rig: HT06LF90
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.*	• No data aggregation used,
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').*	• Boreholes drilled vertically and core reported as true depths and intersection lengths, salar lithologies are horizontal
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.*	• Borehole location and geophysical data points plan

Criteria	JORC Code explanation	Commentary
		
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.*	• Results from boreholes PNN0VI-DW-01 and 02 reported
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;*	• The grid system used is Argentina Gauss_Kruger POSGAR (WGS-84) zone 3.

Criteria	JORC Code explanation	Commentary
	bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	
Further work	• *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.*	• boreholes have been converted to a piezometer wells for standing level observation and future sampling and pumping tests will be carried out to provide additional information on the hydrogeologic properties of the aquifers and potential extractability of brines.

A New Rapid Brine Release Extraction Method in Support of Lithium Brine Resource Estimation

Tzung-mow, Mike Yao[1*], Michael Milczarek[1], Daniel Weber[2], Edward Peacock[2], Frits Reidel[3], and Murray Brooker[4]
*Corresponding author: myao@gsanalysis.com;

[1]GeoSystems Analysis Inc., Tucson, AZ, USA, [2]Montgomery & Associates, USA, [3]Flosolutions, Chile, [4]Hydrominex Geoscience, Australia

Background

Lithium brine mining via groundwater extraction and concentration in large evaporation ponds accounts for approximately half of the world's lithium production. Lithium brine mineral resources and reserves are typically located in large lacustrine evaporite closed basins (salt pans or salars) associated with high-angle faulting and hydrothermal fluids containing lithium migrating into the basins (Figure 1). Lithium concentrations can be variable across a lithium deposit and the host aquifers typically consist of highly heterogeneous layered sediments. Whereas aquifer pumping tests can provide data on large-scale aquifer hydraulic characteristics, results typically cannot resolve explicit estimates of mineral grade and drainable porosity for multi-layer aquifer systems - such as lithium concentrations and specific yield of fine-grained hydrogeologic units versus coarse-grained hydrogeologic units. Consequently, brine mineral resource estimation requires supporting data from both field and laboratory testing programs to estimate the lithium concentrations associated with the various lithologies.

Figure 1. (A)World map of lithium deposits. (B) Detail in South America. (C) Histogram showing the bimodal latitudinal distribution of Li brine deposits. (Bradley et. al., 2013)

Specific Yield/Drainable Porosity

As a first step in determining economic viability, the lithium brine deposit is evaluated using statistically representative measurements of depth specific brine sample lithium concentrations, as well as core samples to determine drainable porosity (specific yield) of the host aquifer materials. Specific yield is assumed to be equivalent to the amount of brine solution that may be released under gravity drainage conditions from groundwater pumping of the brine deposit. The corresponding amount of water retained is referred to as specific retention and the sum of the specific yield and specific retention is equal to the total porosity. Via laboratory testing, the potential volume of brine release can be estimated as the difference between the total porosity and the specific retention to derive the specific yield.

Rapid Brine Release (RBR) Laboratory Method

Laboratory methods to determine brine release/specific yield range from moisture retention characteristic (MRC, ASTM D6836-16. 2016), and centrifugal tests (ASTM D6836-16. 2016) to simple suction methods (Relative Brine Release Capacity, RBRC, Stormont et. al., 2011), to establish drainage. The traditional MRC tests are time consuming and expensive; the RBRC tests are rapid, but could result in significant errors due to uncontrolled boundary conditions and unknown equilibrium times. GeoSystems Analysis, Inc. has developed a Rapid Brine Release (RBR) test based on a modified MRC method and equipment (Figure 2) to determine the specific yield characteristics of core samples collected during exploration drilling. The laboratory method takes less than one week and dozens of samples can be run simultaneously using various core sample types (i.e., sonic, HQ, PQ diamond core, Figure 3). To date this method has been used to determine specific yield characteristics on hundreds of samples from seven different brine deposits in North and South America. Case studies from Clayton Valley, NV Lithium Project (Pure Energy Minerals, Blois, et.al.,2017) and Minera Salar Blanco (Maricunga Joint Venture Project, Worley Parsons Resources & Energy, 2017) are presented

Figure 2. Test cell assembly with micropore filter paper at bottom

Figure 3. HQ core and test ring

Rapid Brine Release Test Design

The MRC method for direct measurement of total porosity (MOSA Part 4 Ch. 2, 2.3.2.1), specific retention (MOSA Part 4 Ch3, 3.3.3.5), and specific yield (Cassel and Nielson, 1986) is used.

Total Porosity = Specific Retention + Specific Yield

A simplified Tempe cell design (Modified ASTM D6836-16) is used to test intact core samples (Figure 4). These cells can be arranged to handle large number of tests simultaneously (Figure 5).

Drainable porosity is measured at 100-150 mbar and 330 mbar of pressure (Nwankwor et al., 1984, Cassel and Nielsen, 1986) :

- Brine release at 120 mbar: Represents drainable porosity from sandy sediment and macropores
- Brine release at 1/3 bar : The specific yield, represents intermediate to finer texture sediments

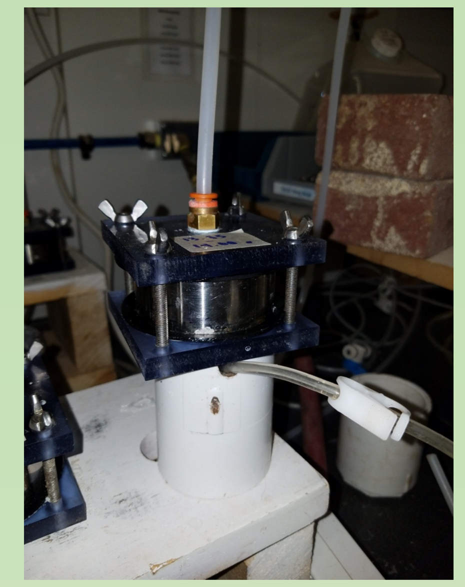


Figure 4. Simplified Tempe Cell

Major advantages:

- Direct measurement using standard MRC methods
- Simple setup and testing procedures
- Ability to run many test cells simultaneously
- Test procedure allows sample to reach equilibrium and reduce potential errors
- Two drainable porosities measured to represent both coarse and fine texture sediments
- Particle density can also be estimated from the test data

Figure 5. Simultaneous testing of forty cells

Results and Discussion

Clayton Valley Lithium Project

(Blois et.al., 2017)

48 samples (HQ size) from three boreholes at Clayton Valley were tested by GSA using the RBR lab method, 10 duplicate samples were sent for RBRC testing by DBS&A (Stormont et. al., 2011), and 5 samples to Vista Clara using the NMR Corona laboratory method (Vista Clara, Behroozman et.al., 2015). Lithologies ranged from fine sand to silt and ash deposits. Results from boreholes CV-7 (A) and CV-8 (B) are shown in Figure 6.

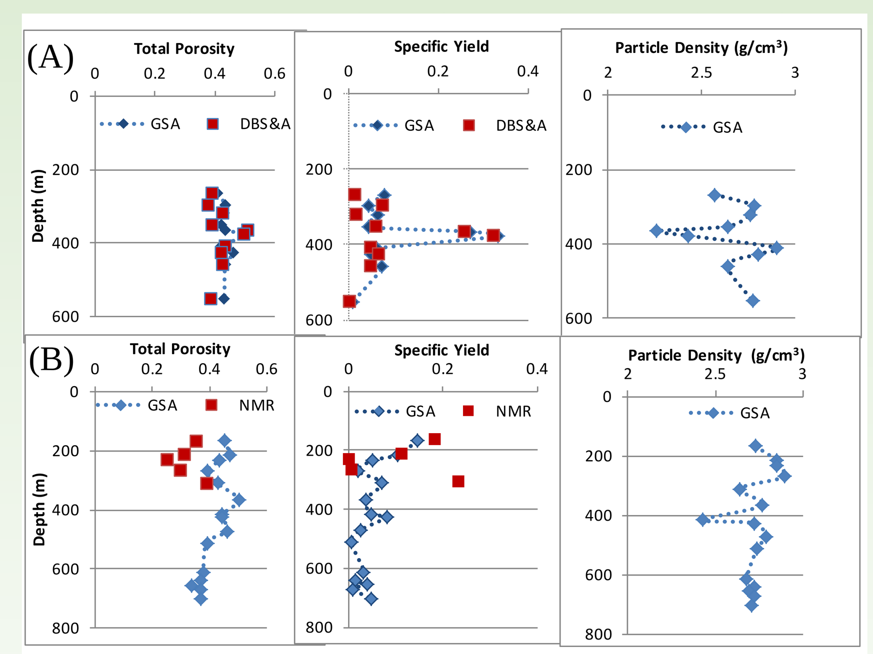


Figure 6. Comparison of RBR (GSA), RBRC(DBS&A), NMR (Vista Clara) methods for total porosity and specific yield results, and particle density estimates by GSA from (A) CV-7 and (B) CV-8 boreholes

- Good agreement between the RBR and the RBRC tests for high yield volcanic ash sediments, and comparable results for fine-grained, low specific yield sediments
- Larger RBR values of total porosity by GSA than NMR Corona potentially due to initial brine content of the samples upon receipt and re-saturation methods used by NMR Corona method. Except for one anomalous measurement comprised of pellet ash, specific yield measurements are in agreement. This anomaly may be related to the high proportion of ash in the sample and re-saturation conditions used by each of the labs.
- Coarser volcanic ash and fine sand material showed higher specific yield and total porosity, and low particle density
- GSA results using RBR for all 48 samples showed the mean of specific yield at 6.9%

Maricunga Lithium Project

(Worley Parsons, 2017)

165 PQ samples from 4 sonic boreholes were tested by GSA, 28 duplicate samples were sent for testing by Core Lab (Centrifuge). Six different lithologies were identified as summarized in Table 1.

Table 1. Total porosity and specific yield test results and summary

Lithological Group	Core Lab Total Porosity (P_t)			GSA Total Porosity (P_t)			Core Lab Specific Yield (S_y)		GSA Specific Yield (S_y)	
	N	Mean	StdDev	N	Mean	StdDev	Mean	StdDev	Mean	StdDev
Clay dominated	6	0.53	0.05	59	0.44	0.08	0.02	0.03	0.03	0.04
Sand dominated	3	0.45	0.08	21	0.38	0.07	0.05	0.04	0.07	0.06
Gravel dominated	3	0.32	0.02	22	0.34	0.06	0.10	0.07	0.17	0.10
Volcaniclastic	13	0.46	0.05	41	0.45	0.06	0.13	0.05	0.15	0.06
Halite	2	0.35	0.08	17	0.33	0.13	0.07	0.05	0.09	0.09
Ulexite	1	0.49	N/A	5	0.35	0.09	0.04	N/A	0.05	0.04

- Total porosity and specific yield were profiled (Figures 7 and 8) for four boreholes and statistically analyzed for 5 corresponding lithology types (Figure 9, insufficient samples for Ulexite)
- Acceptable agreement with centrifuge test results, though higher yields on average from GSA's brine release test, possibly due to shorter equilibrium times for the centrifuge test
- Volcano clastic and gravel material showed high specific yield, lower specific yields for clay, sand, and halite samples
- Lower particle densities for volcano clastic and halite samples (data not shown)

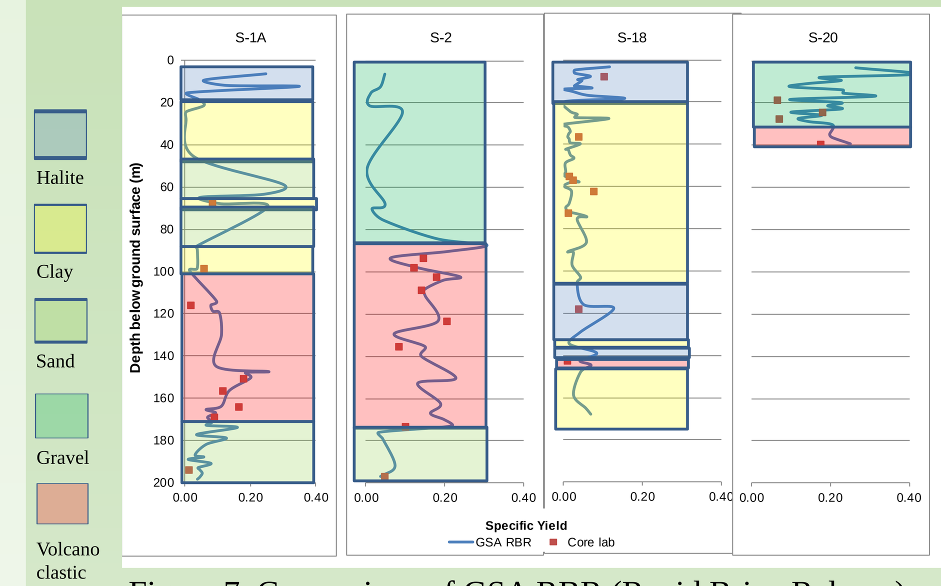


Figure 7. Comparison of GSA RBR (Rapid Brine Release) and Core Lab (Centrifuge) for specific yield

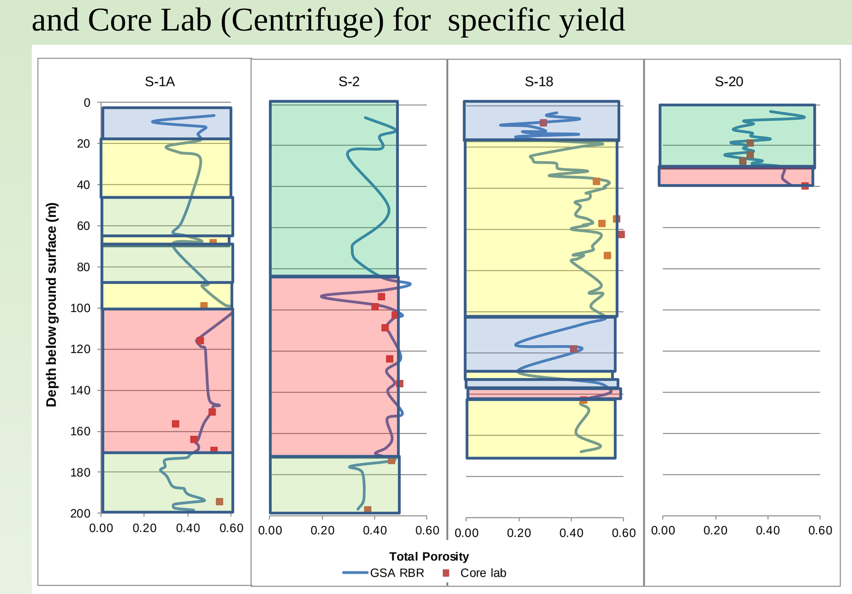


Figure 8. Comparison of GSA RBR (Rapid Brine Release) and Core Lab (Centrifuge) for total porosity

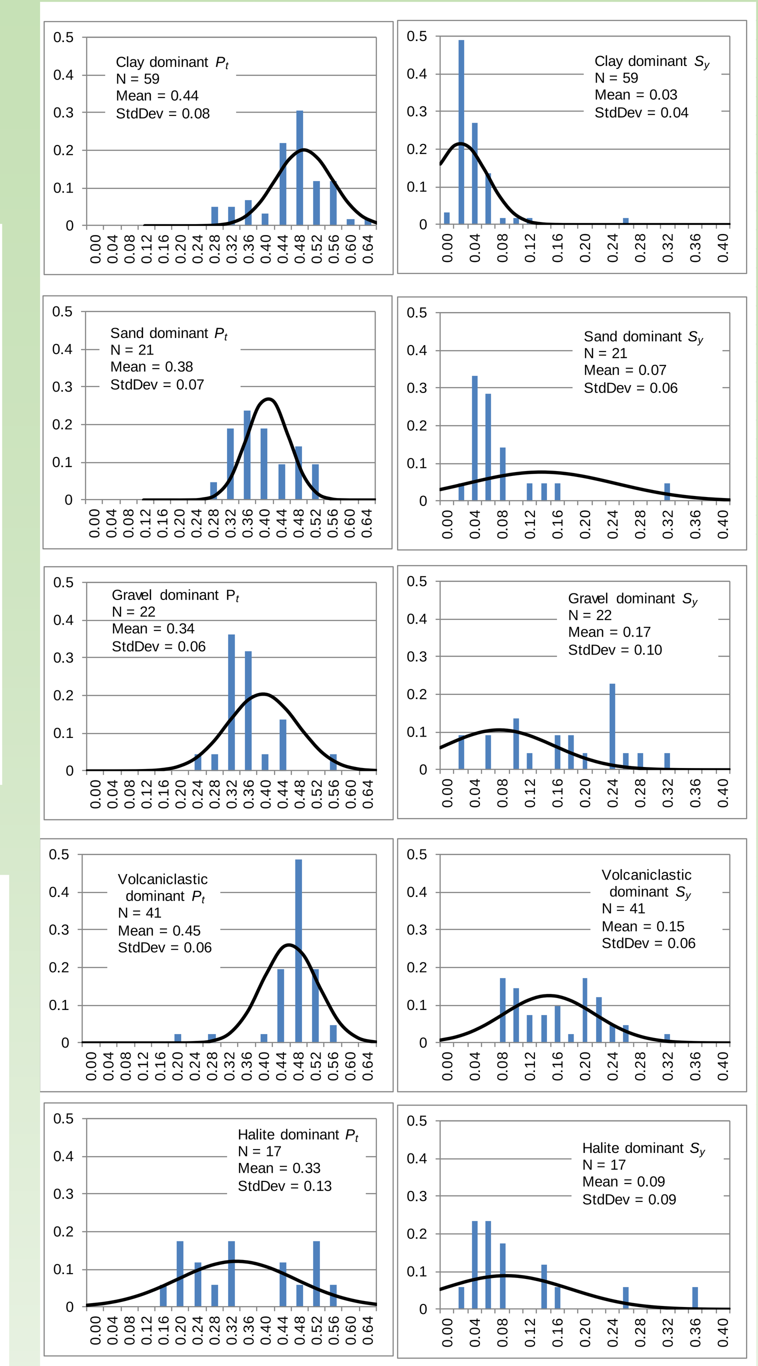


Figure 9. Lithologically classified P_t and S_y distributions and statistics (y-axis is fraction of samples). Curves in plots are the best fit normal distribution

Conclusions

The RBR (Rapid Brine Release) method developed by GSA is an improvement over existing brine release laboratory test methods. It is based on proven and standard laboratory procedures which allow samples to be measured at equilibrium and two drainage points can be measured. Duplicate sample testing indicates general agreement with other brine release methods though slightly higher estimated drainable porosity values, possibly due to differences in equilibrium conditions. Additional benefits include the ability to calculate/estimate particle density.

Acknowledgement

We thank Pure Energy Minerals Ltd. and Minera Salar Blanco for permission to use their data.

References

ASTM D6836-16, Standard Test Methods for Determination of the Soil Water Characteristic Curve for Desorption Using Hanging Column, Pressure Extractor, Chilled Mirror Hygrometer, or Centrifuge, ASTM International, West Conshohocken, PA, 2016.

Behroozman, A., K. Keating, and E. Auken, 2015. A review of the principles and applications of the NMR technique for near surface characterization. Surveys in Geophysics, 36(1), 27-85.

Blois, M.D.S., Weber, D.S., Burga, E., and Sawyer, V., 2017, Clayton Valley Lithium Project, Esmeralda County, NV., NI43-101 Technical Report, prepared for Pure Energy Minerals.

Bradley, D., L. Munk, H. Jochens, S. Hynek, and K. Labay, 2013, A Preliminary Deposit Model for Lithium Brines: USGS Open-File Report 2013–1006

Cassel, D. K., and Nielsen, D. R., 1986, "Field Capacity and Available Water Capacity," Methods of Soil Analysis, Part 1, Chap. 36, A. Klute, Ed., American Society of Agronomy, Madison, WI, pp. 901–926.

Lorraine E. Flint and Alan L. Flint, 2002, SSSA Book Series, Methods of Soil Analysis (MOSA): Part 4 Physical Methods, *Ch. 2, 2.3.2.1*, 5.4:241-254.

Methods of Soil Analysis (MOSA): Part 4 Physical Methods, *Ch. 3, 3.3.3.5*, 5.4:721-738

Nwankwor, G. I., Cherry, J. A. and Gillham, R. W., 1984, "A Comparative Study of Specific Yield Determinations for a Shallow Sand Aquifer," Ground Water, Vol. 22, No. 6, pp. 764–772.

Stormont, J. C., Hines, J. S., O'DOWD, D. N., Kelsey, J. A., & ERIC PEASE, R. (2011). A Method to Measure the Relative Brine Release Capacity of Geologic Material. *ASTM geotechnical testing journal*, *34*(5), 406-412.

Worley Parsons Resources & Energy, 2017, Preliminary Assessment and Economic Evaluation of the Salar Blanco Project Atacama Region, Chile, NI 43-101 Technical Report, Prepared for Minera Salar Blanco, Santiago, Chile

Core Lab = Core Laboratories, Houston, TX, DBS&A = Daniel B. Stephens and Associates, Albuquerque, NM, Vista Clara = Vista Clara Inc., NMR Geophysics, Mukilteo, WA