

22 August 2016

# SAL DE VIDA: REVISED DEFINITIVE FEASIBILITY STUDY CONFIRMS LOW COST, LONG LIFE AND ECONOMICALLY ROBUST OPERATION

# Highlights

- Revised DFS validates a technically superior, highly profitable, long life lithium and potash project
- Post-tax NPV of US\$1.416 billion at 8% discount rate (real)
- Post-tax NPV of US\$1.043 billion at 10% discount rate (real)
- IRR of 34.6% with post-tax payback period of 2 years and 10 months
- CAPEX estimate of US\$376 million
- Average operating costs of US\$3,369/tonne before potash credits and US\$2,959/tonne net of potash credits
- Average annual revenues of US\$354 million and operating cash flow of US\$273 million before tax (net operating cashflow of US\$182 million after tax)
- JORC-compliant reserve estimate of 1.1mt of recoverable lithium carbonate equivalent
- Supports 25,000 tpa lithium carbonate and 95,000 tpa potash production

Galaxy Resources Ltd (ASX: GXY) ("Galaxy" or "the Company") is pleased to advise an update to its Definitive Feasibility Study ("DFS") on its Sal de Vida Project ("Sal de Vida" or "the Project") in Argentina, that has reaffirmed the strong potential for a low cost and long life operation.

The revised DFS now estimates a post-tax net present value ("NPV") of US\$1.416 billion at an 8% discount rate (US\$1.043 billion at a 10% discount rate). Sal de Vida has the potential to generate average annual revenues of US\$354 million and average operating cash flow of US\$273 million per annum. Average operating costs have been estimated at US\$3,369 per tonne before potash credits and US\$2,959 per tonne to produce battery grade lithium carbonate. The revised total capital cost is now estimated at US\$376 million.

The Mineral Reserve estimate of 1.1 million tonnes of recoverable lithium carbonate equivalent and 4.2 million tonnes of potassium chloride (potash or KCI) equivalent for the project supports annual production of 25,000 tonnes of battery grade lithium carbonate and 95,000 tonnes of potash over a period of 40 years. Total production is expected to be derived from Proven Reserves (16%) and from Probable Reserves (84%). The DFS has been modelled on an operation with production at these levels, assuming an initial 3-year ramp up for lithium carbonate production to achieve full capacity, with potash production assumed to be deferred by one year for production start with a 2-year ramp up to achieve its planned production capacity.

The capital costs that relate to the potash plant and related infrastructure are approximately US\$34 million, with operating cost credit of approximately US\$410 per tonne of lithium carbonate produced. The Company has the option to consider deferring the capital commitment on building the potash circuit subject to the market conditions for potash pricing.

Galaxy Managing Director Anthony Tse commented: "We are pleased to announce our revised DFS that highlights the strong economic fundamentals of the Sal De Vida project. The results of the revised DFS highlights the long project life and low operating cost of the project, firmly positioning Sal De Vida as the world's best low cost, high grade lithium project. This result was built on the hard work and dedication of a large number of people, including consultants, advisors and our Galaxy colleagues, and I would like to thank everyone who contributed to the updated study"



#### **DFS Financials Comparison**

Item	Units	August 2016	April 2013	Change (%)
Project Life	Years	>40	>40	-
Capital cost <sup>1</sup>	US\$m	376	369	+2%
Operating costs (Li <sub>2</sub> CO <sub>3</sub> units)	US\$/t	3,369	2,889	+17%
Production capacity (Li <sub>2</sub> CO <sub>3</sub> )	tpa	25,000	25,000	-
Production capacity (KCI)	tpa	95,000	95,000	-
IRR (post-tax)	% real	34.6%	19%	+16% (absolute) +82% (relative)
Payback (post-tax)	Time	2 years 10 months	4 years 7 months	Less 1 year 9 months
NPV <sub>8% real</sub> (post-tax)	US\$m	1,416	565	+151%
NPV <sub>10% real</sub> (post-tax)	US\$m	1,043	380	+174%
NPV <sub>8% real</sub> (post tax) @ AUDUSD 0.75	A\$m	1,888	753	+151%
NPV <sub>10% real</sub> (post tax) @ AUDUSD 0.75	A\$m	1,391	506	+174%

#### Notes:

#### **Background**

Galaxy acquired the Sal de Vida project in July 2012 from the merger with Lithium One Inc. and at that time, only a Preliminary Economic Assessment had been completed. The Company has since funded the completion of the original DFS, which included extensive hydrology work and modelling, drilling, pump tests, resource development, pilot plant testwork, flow sheet development and engineering, logistics, market and financial modelling. The review work of the formal revisions to the DFS was undertaken by Techint Engineering and Construction, a leading engineering firm in Argentina, and Resource Engineers Pty Limited. Montgomery & Associates have prepared an updated Mineral Resource estimate and reviewed the Mineral Reserve estimate in accordance with the 2012 edition of the JORC code.

The Sal de Vida DFS has been revised by updating the assumptions of the original DFS completed by Taging, of Argentina in 2013. The project is planned to produce battery grade lithium carbonate and potash products treating brines from the Salar del Hombre Muerto in the Salta-Catamarca region of Argentina. This DFS considers the production of 25,000tpa of battery grade lithium carbonate and 95,000tpa of potash for a project life of 40 years. The financial model was updated to account for revised CAPEX and OPEX estimations as well as for adjustments of new projected market prices for battery grade lithium carbonate, which is assumed to range from US\$11,000 to US\$13,911 per tonne and potash, which is assumed flat at US\$220 per tonne, throughout the life of the project.

<sup>1.</sup> Inclusive of capital costs associated with potash production facility

<sup>2.</sup> Pricing scenarios assume the following ranges throughout the life of the project for battery grade lithium carbonate and potash:

Li<sub>2</sub>CO<sub>3</sub> US\$11,000 to US\$13,911 and KCI US\$220 flat



The revised project CAPEX indicates an investment of US\$ 376 million and an assumed two and a half years construction period, with a one-year delay on the investment for the potash plant. The review primarily evaluated the impact of the inflation and devaluation of the currency in Argentina since 2013 and resulted in a variation to the order of around two percent above the capital cost estimate from the original DFS. The revised project OPEX includes an update on prices and transportation costs for reagents, reduction of manpower and revision of strategies for moving personnel and product/material onsite and out of the plant. Lower transportation costs represent a significant change from previous DFS. The operating cost for the production of lithium carbonate is now estimated at US\$ 3,369 per tonne (FOB Antofagasta, Chile) before potash credits, with an approximate potential credit of US\$410per tonne of lithium carbonate produced if a potash by-product is included.

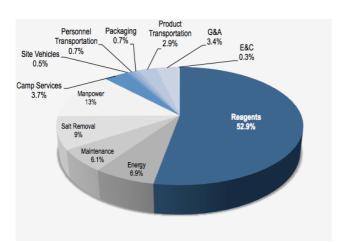
The revised financial model now also includes an annual incentive rebate throughout the life of the project equivalent to 5% of the revenue received from the export sales of lithium carbonate. This is in line with recent policy changes announced earlier this year after the change of government in Argentina. Aside from OPEX revisions, the model also includes a revised set of expenses related to royalties, taxes and other official payments for the business operation.

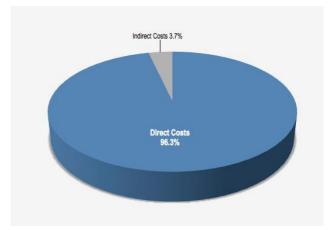
#### **Project Details**

Sal de Vida is located in the Puna Region, an area that is part of the lithium triangle, in the North West region of Argentina, which borders Chile and Bolivia. It is situated in the eastern part of the Salar del Hombre Muerto, adjacent to FMC Lithium's operations, located in the western part of the salar and which has been in operation there over the past two decades. The project area is approximately 390 km from Salta City, accessible via all season roads with approximately six hours of traveling time. The salar is well serviced by nearby infrastructure, which includes major highways, a national and international rail link which connects Pocitos (approximately 115 km away) to Antofagasta in Chile, a power grid and gas pipeline. Sal de Vida's brine chemistry is highly favourable, with high levels of lithium and potash, and low levels of magnesium and sulphate impurities.

#### **Operating Costs**

Revised DFS operating costs are estimated to be US\$3,369 per tonne before potash credits and US\$2,959 per tonne after a potash credit of US\$410 per tonne for each tonne of lithium carbonate produced. The most significant constituent of the operating cost are reagents (the large majority of which is made up by costs attributable to lime, soda ash and carbon dioxide), followed by manpower, salt removal and energy. Direct costs and indirect costs made up 96.3% and 3.7% respectively of the pre-potash credit operating cost.





Note: Allocation is based on US\$3,369 per tonne



#### **Capital Costs**

The revised capital costs are now US\$375.5 million, representing a US\$6.5 million increase from the previous US\$369 million when the DFS was originally completed in April 2013. This represents a 0.27x multiple of the NPV at an 8% discount rate (real) and a 0.36x multiple at a 10% discount rate (real), versus 0.65x and 0.97x of the NPV at 8% and 10% discount rate (real) respectively, under the original DFS, providing much more attractive potential financial returns. The payback period on the capital costs have also now been significantly decreased from 4 years and 7 months in the original DFS to 2 years and 10 months under the revised DFS.

The capital costs relating to the potash plant are approximately US\$34 million, and the Company has the option to consider deferring the capital commitment on building the potash circuit subject to potash pricing conditions.

## **Revised DFS Capital Costs**

Cost Item	US\$m	%
Direct costs		
General	7	2%
Brine Extraction Wells	27	7%
Evaporation & Liming Ponds	89	24%
Lithium Carbonate Processing Plant (Battery Grade)	63	17%
Potash Processing Plant (Not including Related Infrastructure)	25	7%
Reagents	7	2%
On Site Infrastructure	53	14%
Supporting Buildings & Sanitary Treatment	4	1%
Offsite Infrastructure	5	1%
Transfer station	1	0%
Direct costs subtotal	281	75%
Indirect costs		
Indirect costs subtotal	61	16%
Contingency	34	9%
Total capital expenditure	376	



#### **Financial Sensitivity Analysis**

The results of the revised DFS is considered to be sensitive to changes in revenue and discount rates.

A number of different scenarios were identified to analyse the NPV sensitivity on a post-tax basis as follows:

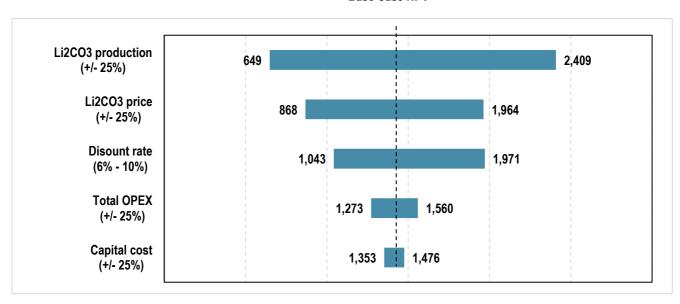
Post Tax NPV (US\$'m)		Discount Rates	(real)	IRR
Pricing Scenario	6%	8%	10%	
Low	1,199	843	603	26.4%
Base	1,971	1,416	1,043	34.6%
High	3,360	2,462	1,857	48.7%

Note: Pricing scenarios assume the following ranges throughout the life of the project for battery grade lithium carbonate and potash: Low – Li<sub>2</sub>CO<sub>3</sub> US\$10,000 flat and KCl US\$210 flat, Base Li<sub>2</sub>CO<sub>3</sub> US\$11,000 to US\$13,911 and KCl US\$220 flat, High Li<sub>2</sub>CO<sub>3</sub> US\$18,000 to US\$20,541 and KCl US\$230 flat.

The financial model was further evaluated for different sensitivities to the NPV using a variety of input parameters – including lithium carbonate production rates, lithium carbonate pricing, discount rates, operating expenditure and capital costs. The results show that production capacity expansion is the most sensitive driver to the NPV, after assessing the impact with a +/- 25% sensitivity. Pricing sensitivity has been completed on +/- 25% of the base case pricing assumption. The project valuation is further enhanced using a lower or nominal discount rate of 6% and at a higher rate of 10%, still yields attractive economics. Potential variances in capital costs have a minimal effect on the project valuation.

#### **NPV Sensitivity Analysis**

#### Base Case NPV1



Note: 1. Base case assumptions for Li<sub>2</sub>CO<sub>3</sub> and KCl production capacities of 25,000 and 95,000 tpa respectively, base case pricing assumption and a real discount rate of 8%



#### **Battery Grade Production**

The DFS assumes a purification technology at Sal de Vida, similar to the process previously adopted at now sold Jiangsu Plant in China, to produce high quality battery grade lithium carbonate, with a purity of 99.5% or higher. The product strategy is to focus on producing high quality material that can be used directly by battery material producers in manufacturing cathode and electrolyte for lithium-ion batteries.

#### Sal de Vida Resource and Reserve Estimates

#### **Mineral Resource Estimation**

Consultants Montgomery & Associates ("M&A") were engaged to estimate the lithium and potassium resources and reserves in brine for various areas within the Salar de Hombre Muerto basin in accordance with the 2012 edition of the JORC code ("JORC 2012"). Although the JORC 2012 standards do not address lithium brines specifically in its guidance documents, M&A followed the NI43 43-101 guidelines for lithium brines set forth by the Canadian Institute of Mining, Metallurgy and Petroleum (CIM 2012) which M&A considers complies with the intent of the JORC 2012 guidelines with respect to providing reliable and accurate information for the lithium brine deposit in the Salar del Hombre Muerto. The updated Mineral Resource estimate of lithium (Li), lithium carbonate (Li<sub>2</sub>CO<sub>3</sub>), potassium (K) and potassium chloride (KCI) for the Sal de Vida Project is as follows:

Table 1 - Mineral Resource Estimate

Resource Category	Brine Volume (m³)	Avg. Li (mg/l)	In situ Li (tonnes)	Li₂CO₃ Equivalent (tonnes)	Avg. K (mg/l)	In situ K (tonnes)	KCI Equivalent (tonnes)
Measured	7.2 x 10 <sup>8</sup>	787	565,000	3,005,000	8,695	6,241,000	11,902,000
Indicated	7.0 x 10 <sup>8</sup>	712	501,000	2,665,000	8,021	5,641,000	10,757,000
M+Ind	1.4 x 10 <sup>9</sup>	750	1,066,000	5,670,000	8,361	11,882,000	22,659,000
Inferred	3.8 x 10 <sup>8</sup>	764	294,000	1,562,000	8,428	3,237,000	6,174,000
TOTAL M+Ind+Inf	1.8 x 10 <sup>9</sup>	753	1,360,000	7,232,000	8,377	15,119,000	28,833,000

Note: Assumes 500 mg/L Li cut off

#### **Mineral Reserve Estimation**

M&A have reviewed the Mineral Reserve estimate and consider that there has been no change to the estimate as a result of the updated Mineral Resource estimate.

Total tonnages for the economic Mineral Reserve values provided in Table 2 account for anticipated leakage and process losses of lithium and potassium. Table 2 gives results of the Proven and Probable Reserves from the Southwest and East well fields when these percent estimated processing losses are factored in, assuming a continuous average brine extraction rate of 30,000 m<sup>3</sup>/d.

Table 2 - Probable and Proven Reserve Statement

Reserve Category	Time Period (Years)	Tonnes Li Total Mass	Tonnes Equivalent Li <sub>2</sub> CO <sub>3</sub>	Tonnes K Total Mass	Tonnes Equivalent KCl
Proven	1 - 6	34,000	181,000	332,000	633,000
Probable	7 - 40	180,000	958,000	1,869,000	3,564,000
Total	40 years total	214,000	1,139,000	2,201,000	4,197,000

Note: Assumes 500 mg/L Li cut off



### Additional Summary Information - JORC 2012 Table 1

The Sal da Vida Project is based on the Altiplano-Puna which is a high-elevated plateau within the central Andes. The average elevation of the Puna is 3,700 masl (meters above sea level) and covers parts of the Argentinean provinces of Jujuy, Salta, Catamarca, La Rioja y Tucuman. The Altiplano-Puna Volcanic Complex (APVC) is located between the Altiplano and Puna, and is associated with numerous stratovolcanoes and calderas. Recent studies have shown that the APVC is underlain by an extensive magma chamber at 4-8 km depth (de Silva et al., 2006). It is likely that this could be the ultimate source of the anomalously high values of lithium in the area.

Diamond drill cores were obtained in the field for both drainable and total porosity. Porosity samples were sealed in plastic tubes and shipped to Core Laboratories in Houston, Texas, for analysis. Depth-specific brine samples were collected from the in situ formation, ahead of the core bit. Four additional methods were used to obtain brine samples. Brine samples used to support the reliability of the depth-specific samples included analyses of brine centrifuged from core samples, brine obtained from low flow sampling of the exploration coreholes, brine samples obtained near the end of the pumping tests in the exploration wells, and brine samples obtained during reverse-circulation air drilling. After the samples were sealed on site, they were stored in a cool location, then shipped in sealed containers to the laboratories for analysis.

Borehole and well spacing is in general about 4 kilometres in most areas, and is consistent with guidelines determined by Houston et al., 2011) for evaluation of brine-based lithium resources in salar-type systems. The drilling density was sufficient to demonstrate a high degree of confidence in the understanding of the location and nature of the aquifer, and brine grade both horizontally and vertically. The Sal de Vida area has been drilled and logged with vertical exploration boreholes and wells.

The resource was estimated using the polygon method. To estimate total amount of lithium and potassium in the brine was first sectioned the basin into polygons based on location of exploration drilling. Polygon sizes were variable. Each polygon block contained one diamond drill exploration hole that was analyzed for both depth specific brine chemistry and drainable porosity. Boundaries between polygon blocks are generally equidistant from diamond drill holes. For some polygon blocks, outer boundaries are the same as basin boundaries, as discussed above.

Within each polygon shown on the surface, the subsurface lithologic column was separated into hydrogeologic units. Each unit was assigned a specific thickness based on core descriptions, and was given a value for drainable porosity and average lithium and potassium content based on laboratory analyses of samples collected during exploration drilling. Correlation between depth and lithium and potassium concentration in the brine was observed and lent increased confidence in the method. 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.

As brines are fluids and mobile in the subsurface, the Mineral Reserve values have been determined using the groundwater numerical flow model for the Sal De Vida Project covering the areas included in the Mineral Resource estimate.

A cutoff grade of 500 mg/L of lithium was used. Hydrogeologic units within each polygon with lithium content less than cutoff grade were not included in the lithium and potassium resource calculations. The resource computed for each polygon is independent of adjacent polygons, but adjacent borehole geology was used to confirm stratigraphic continuity of the units surrounding each borehole.

Mining methodology ultimately would be via well pumping in areas identified as favourable for brine extraction.

An on-site pilot plant demonstrated the ability to extract the lithium and potassium from the brine.

JORC Code, 2012 Edition – Table 1 Report follows.

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#### About Galaxy (ASX: GXY)

Galaxy Resources Limited ("Galaxy") is a global lithium company with lithium production facilities, hard rock mines and brine assets in Australia, Canada and Argentina. It owns the currently producing Mt Cattlin spodumene and tantalum project near Ravensthorpe in Western Australia and the James Bay lithium pegmatite project in Quebec, Canada.

Galaxy is advancing plans to develop the Sal de Vida lithium and potash brine project in Argentina situated in the lithium triangle (where Chile, Argentina and Bolivia meet), which is currently the source of 60% of global lithium production. Sal de Vida has excellent potential as a low cost brine-based lithium carbonate production facility.

Lithium compounds are used in the manufacture of ceramics, glass, and consumer electronics and are an essential cathode material for long life lithium-ion batteries used in hybrid and electric vehicles, as well as mass energy storage systems. Galaxy is bullish about the global lithium demand outlook and is aiming to become a major producer of lithium products.

#### **Competent Persons Statements**

#### Sal de Vida Project

The information in this document that relates to Mineral Resources and Reserves is based on an fairly represents information and supporting documentation compiled by Mr Michael Rosko. Mr Rosko, is a member of a recognised Overseas Professional Organisation. Mr Rosko is a full time employee of E.L. Montgomery and Associates and has sufficient relevant experience of the style of mineralisation and type of deposit under consideration and of the activity that he is undertaking 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 Rosko consents to the inclusion in this document of the matters based on his information in the form and context in which it appears.

#### **Caution Regarding Forward-Looking Information**

This document contains forward-looking statements concerning Galaxy.

Forward-looking statements are not statements of historical fact and actual events and results may differ materially from those described in the forward looking statements as a result of a variety of risks, uncertainties and other factors. Forward-looking statements are inherently subject to business, economic, competitive, political and social uncertainties and contingencies. Many factors could cause the Company's actual results to differ materially from those expressed or implied in any forward-looking information provided by the Company, or on behalf of, the Company. Such factors include, among other things, risks relating to additional funding requirements, metal prices, exploration, development and operating risks, competition, production risks, regulatory restrictions, including environmental regulation and liability and potential title disputes.

Forward looking statements in this document are based on Galaxy's beliefs, opinions and estimates of Galaxy as of the dates the forward looking statements are made, and no obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.



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# JORC Code, 2012 Edition - Table 1 Report

**Section 1 Sampling Techniques and Data** 

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>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.</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 (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.</li> </ul>	Diamond drill cores were obtained in the field for both drainable and tota porosity. Porosity samples were sealed in plastic tubes and shipped to Core Laboratories in Houston, Texas, for analysis.  Depth-specific brine samples were collected from the in situ formation ahead of the core bit. Four additional methods were used to obtain brins samples. Brine samples used to support the reliability of the depth-specific samples included analyses of the following:   • brine centrifuged from core samples,  • brine obtained from low flow sampling of the exploration coreholes,  • brine samples obtained near the end of the pumping tests in the exploration wells, and  • brine samples obtained during reverse-circulation air drilling  Neither porosity samples (core) nor chemistry samples (brine) were subjected to any further preparation prior to shipment to participating laboratories. After the samples were sealed on site, they were stored in a cool location, then shipped in sealed containers to the laboratories for analysis.
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).	Core size was either HQ or NQ. For each drill core, recovery percentage was recorded. Core was logged on site and stored in labeled plastic core boxes. Once drill operation is completed, 2-inch schedule 80 PVC, and Slot-40 (1 mm) PVC screen is installed in the coreholes.  All larger diameter wells were drilled by conventional circulation mud rotary, except for portions of the pilot borehole at SVWW11_03, which was drilled using reverse-air circulation. Drilling fluid was polymer mixed with native brine. A 6-meter length of 14-inch diameter steel surface casing was installed in most of the wells. Drilled borehole diameter was 17 <sup>11/4</sup> inch for the surface casing, 8 <sup>11/2</sup> inch for the pilot borehole, and 14 <sup>31/4</sup> for the final borehole.  For each exploration well, time to drill 2 meters was recorded to monitor penetration rate. Once drilling was completed, 8-inch blank PVC casing, and slotted PVC well screen was installed (slot size 0.5, 0.75 or 1 mm). 6 inch PVC casing and screen was installed in well SVWW11_07. Gravel pack (1-2 mm diameter) was installed in the annular space surrounding the well screen. Above the gravel pack a bentonite seal was installed and fill material was installed to land surface.
Drill sample recovery	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise 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</li> </ul>	Diamond core and RC cuttings recoveries were monitored closely, recorded and assessed regularly over the duration of the drilling programs.  Diamond core is drilled slowly to maximise recovery; core loss is recorded in the field.
	due to preferential loss/gain of fine/coarse material.	In general, decreased clay content and cementation result in increased

core loss. Therefore, some of the most permeable and porous aquifer



		zones may not be represented in the drainable porosity samples due to inability to conduct testing on loose sediment. However, this would tend to underestimate the average drainable porosity values, resulting in conservatively smaller values.
Logging	<ul> <li>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.</li> </ul>	Core and chip samples were logged in accordance with guidelines developed by the hydrogeologists All drill holes were logged in full. Geological logging was qualitative.
	<ul> <li>Whether logging is qualitative or quantitative in nature.</li> <li>Core (or costean, channel, etc) photography.</li> </ul>	Recording of core recovery was quantitative.
	<ul> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	All DD core was photographed. Representative 2m samples of drill cuttings from rotary drilling were collected in chip trays for future reference and photographed.
Sub-sampling techniques and	If core, whether cut or sawn and whether quarter, half or all core taken.  """  """  """  ""  ""  ""  ""  ""  "	Only un-split core samples were submitted for testing due to the nature of the laboratory porosity analysis.
sample preparation	<ul> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling</li> </ul>	Thee sample sizes and integrity of the core samples submitted for testing were considered appropriate by the laboratory for the analytical methods used.
	<ul> <li>stages to maximise representivity of samples.</li> <li>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.</li> </ul>	Sub-sampling of brine samples only occurred at the laboratory as needed to obtain specific sample size required for analyses. Sample sizes for brine submitted for chemical analyses were in accordance with recommended volumes required by the laboratory.
	<ul> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	
Quality of assay data and laboratory tests	<ul> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used 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 (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	Porosity analyses were conducted by Core Laboratories Petroleum Services Division, Houston, Texas. Selected representative samples were submitted for laboratory analyses. Brine chemistry samples from Sal de Vida were analyzed by Alex Stewart Assayers of Mendoza, Argentina, who have extensive experience analyzing lithium-bearing brines. Selected duplicate samples were sent to the University of Antofagasta, Chile, as part of the QA/QC procedure.  Standard analyses indicate acceptable accuracy and precision through the expected range of grades for analyses conducted at Alex Stewart laboratory. Sample and laboratory duplicate analyses indicate acceptable precision for Li, K and Mg analyses conducted at Alex Stewart laboratory. The Alex Stewart analyses also show acceptable accuracy and precision, and anion-cation balance for resource estimation.  Analytical quality was monitored through the use of randomly inserted quality control samples, including standards, blanks and duplicates, as well as check assays at independent laboratories. Each batch of samples
		submitted to the laboratory contained at least one blank, one low grade standard, one high grade standard and two sample duplicates.  Approximately 38 percent of the samples submitted for analysis were quality control samples.
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>	Significant intersection of brine at depth was verified internally through the implementation of several different methods to verify aquifer chemistry with respect to depth. These methods included depth-specific sampling (primary), micro samples of brine obtained from centrifuge of core submitted to the laboratory for porosity valuation, down-hole electrical conductivity logging (correlated to total dissolved solids and lithium concentration), low flow sampling of near surface water, and brine samples obtained during reverse-circulation air drilling. Brine chemistry was also confirmed by analysis fluid produced during 24-hour and 30-day pumping tests.
		Although twinned holes were not specifically used, adjacent boreholes and wells typically demonstrated good correlation both stratigraphically and with respect to depth grade of lithium and potassium values.

Galaxy implements a series of industry standard routine verifications to



ensure the collection of reliable exploration data. Documented exploration procedures exist to guide most exploration tasks to ensure the consistency and reliability of exploration data. The data generated in the field are transferred by the field personnel into customized data entry templates. Field data are verified before being loaded into the Access Database.

The Access Database was reviewed by Galaxy, Montgomery & Associates, and by Geochemical Applications International.

Laboratory assay certificates are loaded directly into the Access database by use of an import tool. Quality Control reports are generated automatically for every imported assay certificate and reviewed by the Qualified Person to ensure compliance acceptable quality control standards. The Qualified Persons have verified the drainable porosity and chemistry data.

In addition to the use of randomly inserted quality control samples, including standards, blanks and duplicates, brine samples sent to the Alex Stewart analyses show acceptable accuracy and precision for Li and K analyses resource estimation based on check analyses at University of Antofagasta and ACME that validated the results.

No adjustments were made to any laboratory porosity or brine results.

# 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.

The topographic surveys were carried out by PDOP-Topografía Minera of Salta using differential GPS. Equipment included two Trimble R3 units with a minimum horizontal precision of 10 mm (±0.5 parts per million (ppm)) and a minimum vertical precision of 20 mm (±1.0 ppm). Data was obtained and processed according to the GPS Geodetic Standard of 1996 and Trimble Navigation Standards (www.trimble.com).

The survey was tied-in to P.A.S.M.A. Punto 08-008 (Vega del Hombre Muerto) of the Argentine grid, using POSGAR 94 with the Gauss Krugger Projection. The coordinates for this point are:

- 7,179,539.06 meters North
- 3,400,524.96 meters East
- Elevation: 4,018.827 meters above land surface (masl)

The following locations were professionally surveyed using the Trimble differential GPS:

- coreholes SVH10\_05 through SVH11\_28,
- exploration wells SVWW11\_01 through SVWW11\_13, and
- reverse circulation boreholes SVRC11\_02 and SVRC11 03
- observation and production wells SVWM12\_14, SVWP12\_14 through SVWP12\_17, and
- fresh water wells SVWF12\_19 and SVWF12\_20.

The remaining exploration wells and fresh water well SVWF12\_18 were surveyed using hand-held portable GPS equipment.

# 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.

Borehole and well spacing is in general about 4 kilometers in most areas, and is consistent with guidelines determined by Houston et al., 2011) for evaluation of brine-based lithium resources in salar-type systems. The drilling density was sufficient to demonstrate a high degree of confidence in the understanding of the location and nature of the aquifer, and brine grade both horizontally and vertically.

# Orientation of data in relation to geological

Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which

The Sal de Vida area has been drilled and logged with vertical exploration boreholes and wells. Because salar sediments are effectively deposited



structure	<ul> <li>this is known, considering the deposit type.</li> <li>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.</li> </ul>	horizontally, angled boreholes were determined to be of little value.  No sampling bias has been identified based on drilling orientation.
Sample security	The measures taken to ensure sample security.	Core samples for porosity evaluation were not subjected to any preparation prior to shipment to the participating laboratories. The samples were sealed on site and stored in a cool location, then shipped in sealed coolers to the laboratory for analysis.
		All brine samples were labeled with permanent marker, sealed with tape and stored at a secure site until transported to the laboratory for analysis. Samples were packed into secured boxes with chain of custody forms and shipped to laboratories in Mendoza, Argentina.
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	An internal peer review of the existing Mineral Resource Estimates was conducted by Montgomery & Associates to verify the calculated values. In addition, a 3 <sup>rd</sup> party review was conducted by a Qualified Person experienced in lithium brine resources in Argentina.

### Section 2 Reporting of Exploration Results

Criteria	receding section also apply to this section.)  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 licence to operate in the area.</li> </ul>	Galaxy has obtained mineral rights ownership of a total 38,159.04 hectares at Salar del Hombre Muerto. This area is 100% owned by Galaxy, including a new cateo on the north end of the property group. The total area considers the overlapping zone between Salta and Catamarca. Of the total, 8,517.30 hectares, remains in original owner's possession, pending final payment of US\$4M by August 2014.  The majority of the land controlled for the Sal de Vida project was secured under agreement with pre-existing owners and claimants. The first such agreement involved securing mining licenses (minas) covering an area of some 13,560 hectares. The minas were secured under a purchase option from a local ulexite miner focused on the exploration for, exploitation and marketing of ulexite, a sodium-calcium borate mineral mainly used for the production of boric acid. Ulexite is produced from shallow surface mining, not by extraction of bines. The mineral rights to the brine on the miner's claims are transferred 100 percent to Galaxy under this agreement; there is no retained royalty. Most of the agreements follow the same model. Only one of the properties has an associated royalty.  Seven of the twenty agreements include usufructs or terms for rights to continue surface ulexite mining by the original owners/operators. The Company has retained the option to buy out any of these usufructs should it be necessary.  An additional 9,496 hectares have been secured by acquiring or staking new exploration cateos. One such group of cateos in Catamarca province was acquired by outright purchase from the holder, three others in Salta province were secured by application directly by Galaxy's predecessor, Lithium One. Cateo Vittone was converted to Mina Montserrat in May 21, 2012.  There is no habitation on the Resource area.  Galaxy is not aware of the extent of wilderness, historical sites, national parks or environmental settings over the areas.
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	All known exploration for lithium at Sal de Vida properties was conducted by Galaxy or by Galaxy's predecessor Lithium One.



Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	The average elevation of the Puna is 3,700 masl (meters above sea level) and covers parts of the Argentinean provinces of Jujuy, Salta, Catamarca, La Rioja y Tucuman. The Altiplano-Puna Volcanic Complex (APVC) is located between the Altiplano and Puna, and is associated with numerous stratovolcanoes and calderas. Recent studies have shown that the APVC is underlain by an extensive magma chamber at 4-8 km depth (de Silva et al., 2006). It is likely that this could be the ultimate source of the anomalously high values of lithium in the area.
		Northern Argentina has experienced a semi-arid to arid climate since at least 150 Ma as a result of its stable location relative to the Hadley circulation (Hartley et al., 2005), but as a result of Andean uplift almost all flow of moisture from Amazonia to the northeast has been blocked, leading to increased aridity since at least 10-15 Ma. Consequently, given the zonally high radiation and evaporation levels, the reduction in precipitation has lead to the development of increased aridity in the Puna. The combination of internal drainage and arid climate led to the deposition of evaporite precipitates in many of the Puna basins. The physiography of the region is characterized by basins separated by ranges, with marginal canyons cutting through the Western and Eastern Cordilleras and numerous volcanic centers, particularly in the Western Cordillera. Abundant dry salt lakes (salares) fill many basins, and these basins contain subsurface brines.  Brine prospects differ from solid phase industrial mineral prospects by virtue of their fluid nature. Therefore, the term 'mineralization' is not strictly relevant to a brine prospect. Because of the mobility of the brine, the flow regime and other factors such as the hydraulic properties of the aquifer material are considered to be just as important as the chemical constituents
		of the brine. The clastic, basin fill sediments in Salar de Hombre Muerto are the target units for brine retrieval.
Drill hole Information	<ul> <li>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:         <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above</li> </ul> </li> </ul>	Drilling and sampling occurred in several phases, including corehole drilling and sampling, and well construction and testing. Drilling and sampling include:  • 23 diamond drill holes ranging in depth from 95 to 284 m, cased with 2-inch PVC
	sea level in metres) of the drill hole collar o dip and azimuth of the hole o down hole length and interception depth	· 309 diamond core samples analyzed for drainable porosity
	<ul><li>hole length.</li><li>If the exclusion of this information is justified on the basis</li></ul>	$\cdot352$ depth specific brine samples collected from diamond coreholes using
	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	drivepoint sampling; 17 of the cased diamond drillholes were also pumped and sampled using a shallow set small diameter submersible electric pump.
	case.	· Downhole electrical conductivity and temperature surveys were conducted at 17 of the cased diamond drill holes
		$\cdot$ 13 brine exploration wells were constructed, ranging in depth from 60 to 163 m, cased with 6-inch and 8-inch PVC
		$\cdot2$ reverse circulation boreholes with brine samples collected by airlift during drilling
		· Pumping equipment was installed in the brine exploration wells, and 12 short-term pumping tests were conducted to determine aquifer transmissivity and to obtain composite aquifer brine samples
		Four additional monitor wells and two production wells were completed and tested in proposed wellfield locations; and long-term pumping tests were conducted in proposed wellfield areas.
		All drillholes and wells are vertical. Collar elevations are not tabulated as all wells and coreholes were constructed on a salar surface of low relief.



Criteria	JORC Code explanation	Commentary
		Depths for all down-hole samples have been recorded.
Data aggregation methods	<ul> <li>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.</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 should be stated and some typical examples of such aggregations should be shown in detail.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	No new exploration results are reported in this release.  Calculations for in-situ drainable porosity and brine chemistry were made using averages of discrete drainable porosity and depth-specific brine samples collected by drivepoint from coreholes at multiple depths during construction. Brine chemistry was confirmed by centrifuge brine extraction from selected core samples, low-flow pumping of coreholes, and construction and testing of wells, including long-term (30-day) tests.  No metal equivalents have been reported.
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation 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 (eg 'down hole length, true width not known').</li> </ul>	The Mineral Resource and Mineral Reserves reported for Sal de Vida project occur as brine. As stated previously, brine prospects differ from solid phase industrial mineral prospects by virtue of their fluid nature. The relationship between mineralization width and intercept length has no meaning in this context.
Diagrams	<ul> <li>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.</li> </ul>	No new exploration results are reported in this release.
Balanced reporting	Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.	No new exploration results are reported in this release.
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	Brine sampling from trenches, and gravity and vertical electrical sounding (VES) surveys have been conducted at the Sal de Vida project.  A total of 249 brine samples from trenches were collected.  Gravity surveys were conducted in two phases, in 2009 (53.6 km) and 2010 (42.7 km), by Quantec Ltda. A total of 50 vertical electric soundings (SEV) were conducted in August 2010, by Geophysical Exploration and Consulting S.A., (GEC), Mendoza, Argentina (GEC, 2010).  No new geophysical surveys are reported in this release.  Along with lithium and potassium, the pumped brine is projected to contain significant quantities of magnesium, calcium, sulfate, and to a lesser degree, boron. These constituents must be removed from the brine to enable effective retrieval of the lithium and potassium.
Further work	<ul> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale stepout 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>	There are no diagrams or detailed plans to release at present.

#### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria

JORC Code explanation

Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.

All data produced in the Sal de Vida project were transferred into a central data repository managed by Galaxy lithium and located in Denver, Colorado. Data for the Sal de Vida project was then synchronized with a data repository in the Galaxy office in Salta, Argentina, and a separate data



Criteria	JORC Code explanation	Commentary
	Data validation procedures used.	repository at Montgomery & Associates in Tucson, Arizona. Raw data from the project were transferred into a customized Access Database, and used to generate diverse types of reports as needed.  The data generated in the field were transferred by the field personnel into customized data entry templates. Field data were verified before being loaded into the Access database. The data contained in the templates is loaded by use of an import tool, which eliminates reformatting of the data. Data were reviewed after entry into the database.  Laboratory assay certificates were loaded directly into the Access database, by use of an import tool. Quality Control reports were generated automatically for every imported assay certificate and reviewed by the Competent Persons to ensure compliance acceptable quality control standards. Failures were reported to the laboratory for correction.
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	Regular site visits were undertaken by Mr. Michael Rosko and Dr. Jeff Jaacks over the duration of the project. Mike Rosko visited the property four times during the course of the program. April 5 to 10, 2010, August 11 to 16, 2010, January 16 to 26, 2011 and June 22 to 28, 2011 and again during August 15 - 20, 2011 to oversee aspects of all drilling techniques, logging, sampling and other technical procedures. Jeff Jaacks visited the property on October 11-19, 2009 and again on January 18-22, 2011 to review sampling procedures, quality assurance programs and sample storage protocols.
Geological interpretation	<ul> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	Considerable efforts have gone into the development of the conceptual geological and hydrogeological model for the basin. Stratigraphic correlation of units was considered sufficient to establish a high degree of confidence in the conceptualization.  Geological interpretation of cross sections was prepared by Montgomery & Associates using available drilling results. Geologic information then imported into a block model to create a three dimensional geological model of the lithologies and hydrogeologic units which was ultimately used to assist in construction of the numerical groundwater flow model.
		The current geological interpretation is believed to be robust and it is not considered that an alternative interpretation would have a significant impact on the outcome of the Resource.  Geologic factors do not affect grade, but do affect the Resource estimation as the Resource estimation is partially controlled by the hydraulic conductivity of hydrgeologic units. Lithology of hydrogeologic units affects both volume of brine in storage and the ability to remove brine via pumping.
Dimensions	The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	Because the Resource is a mobile brine, the dimensions are effectively the identified aquifer located in the eastern half of the Salar de Hombre Muerto basin. Galaxy has mineral rights ownership of a total 38,159.04 hectares in the east half of Salar del Hombre Muerto. The Resource calculation was restricted to only brine located within the mineral rights ownership area. Hard rock areas on the basin edges were considered no-flow boundaries. Maximum depth drilled was 195.5 meters; however, the Resource was computed for polygons only to the maximum depth drilled at that location, even though additional aquifer may occur at a greater depth.
Estimation and modelling techniques	The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.  The availability of check estimates, previous estimates and/or mine production records and whether the	The resource was estimated using the polygon method and a spreadsheet. To estimate the total amount of lithium and potassium the brine was first sectioned the basin into polygons based on location of exploration drilling. Polygon sizes were variable. Each polygon block contained one diamond drill exploration hole that was analyzed for both depth specific brine chemistry and drainable porosity. Boundaries between polygon blocks are generally equidistant from diamond drill holes. For some polygon blocks, outer boundaries are the same as basin boundaries, as discussed above.
	Mineral Resource estimate takes appropriate account of such data.  The assumptions made regarding recovery of byproducts.  Estimation of deleterious elements or other non-grade	Within each polygon shown on the surface, the subsurface lithologic column was separated into hydrogeologic units. Each unit was assigned a specific thickness based on core descriptions, and was given a value for drainable porosity and average lithium and potassium content based on laboratory analyses of samples collected during exploration drilling. Correlation



Criteria	JORC Code explanation	Commentary
	<ul> <li>variables of economic significance (eg sulphur for acid mine drainage characterisation).</li> <li>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</li> <li>Any assumptions behind modelling of selective mining units.</li> <li>Any assumptions about correlation between variables.</li> <li>Description of how the geological interpretation was used to control the resource estimates.</li> <li>Discussion of basis for using or not using grade cutting or capping.</li> <li>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</li> </ul>	between depth and lithium and potassium concentration in the brine was observed and lent increased confidence in the method. 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.  A cutoff grade of 500 mg/L of lithium was used. Hydrogeologic units within each polygon with lithium content less than cutoff grade were not included in the lithium and potassium resource calculations. The resource computed for each polygon is independent of adjacent polygons, but adjacent borehole geology was used to confirm stratigraphic continuity of the units surrounding each borehole.
Moisture	<ul> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	Resource values are computed based on total amount of lithium and potassium in the extractable brine volume.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	A conservatively high cut-off grade of 500 mg/L in the brine was selected based on the projection that brine with 500 mg/L or large would be available for a 40-year period. A cut-off for potassium was not directly used, but for areas where the brine was 500 mg/L or less, the potassium values was not included in the Resource.
Mining factors or assumptions	Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	Mining methodology ultimately would be via well pumping in areas identified as favourable for brine extraction.
Metallurgical factors or assumptions	The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	An on-site pilot plant demonstrated the ability to extract the lithium and potassium from the brine.
Environmental factors or assumptions	Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	An industrial process has been designed for the removal of magnesium, calcium sulfate and boron.
Bulk density	Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.  The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences	Density for the brine containing over 500 mg/L ranged from 1.14 to 1.21 Kg/L. Concentration of lithium and potassium is linearly correlated total dissolved solids, and with brine density.



Criteria	JORC Code explanation	Commentary
	<ul> <li>between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	Relevant factors include the spatial positioning of lithium and potassium brine concentrations, spatial understanding of hydrogeologic units, measured values for specific yield (drainable porosity), location of boundaries, and location of fresh and brackish water with low lithium concentration. Because several measurement techniques were used to obtain samples and evaluate the key parameters a high level of confidence in the values used to estimate the Resource, particularly the spatial location for the target brine has been achieved. In addition, statistical evaluation of the measurements has been done to provide additional support for the methods used.  In the opinion of the competent person responsible for the production of the Mineral Resource Estimates, the results appropriately reflect the view of the deposit.
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	An internal peer review of the existing Mineral Resource Estimates was conducted by Montgomery & Associates to verify the calculated values. In addition, a 3 <sup>rd</sup> party review was conducted by a Qualified Person experienced in lithium brine resources in Argentina.
Discussion of relative accuracy/ confidence	Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.  The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.  These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The relative accuracy of the Mineral Resource estimate is reflected in the reporting of the Mineral Resource as per the guidelines of the 2012 JORC Code. In general, where key evaluation parameters were sparse or lacking, standard values (such as specific capacity) used in hydrogeological analyses were used. However, in all cases, the values selected were considered to be conservatively low, as to not artificially increase the Resource.

### Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<ul> <li>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	As brines are fluids and mobile in the subsurface, the Reserve values have been determined using the groundwater numerical flow model for the Sal De Vida project covering the areas included in the Mineral Resource estimate.  The Reserve values provided are included in the Resource estimates; they are not "in addition to" the Resource values.
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	Regular site visits were undertaken by Mr. Michael Rosko and Dr. Jeff Jaacks over the duration of the project.
Study status	<ul> <li>The type and level of study undertaken to enable Mineral Resources to be converted to Ore</li> <li>Reserves.</li> <li>The Code requires that a study to at least Pre- Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will</li> </ul>	In addition to the understanding of the aquifer during the exploration phases of the project as detailed above, 12 short-term aquifer tests and 2 30-day aquifer tests were conducted in the basin and in the proposed west and east wellfields. Results from these tests provide important technical support and input parameters that allowed transient calibration of the numerical



Criteria	JORC Code explanation	Commentary
	have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.	groundwater flow model, and ultimately development of the Reserve.
Cut-off parameters	<ul> <li>The basis of the cut-off grade(s) or quality parameters applied.</li> </ul>	A conservatively high cut-off grade of 500 mg/L in the brine was selected based on the projection that brine with 500 mg/L or large would be available for a 40-year period. Numerical model simulations show that lithium grade for brine pumped from each wellfield during the simulated life of the mine does not fall below the cut-off grade of 500 mg/L.
Mining factors or assumptions	<ul> <li>The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).</li> <li>The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.</li> <li>The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.</li> <li>The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).</li> <li>The mining dilution factors used.</li> <li>The mining recovery factors used.</li> <li>Any minimum mining widths used.</li> <li>The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.</li> <li>The infrastructure requirements of the selected mining methods.</li> </ul>	In comparison to the methodology used to develop the estimated resource values, the methodology used to calculate the reserve is different, but consistent with the NI 43-101 guidelines for lithium brines developed by the Corporate Finance Branch of the Ontario Securities Commission (OSC, 2011).  Where the previous methods were used to estimate the total amount of brine, and therefore lithium and potassium in storage that could be theoretically drained in the entire mining concession, the method used for reserve calculation is completely different and focuses on the potential for retrieval of lithium and potassium via well field pumping in selected areas where pumping at relatively large rates has been demonstrated. Because the brine is a mobile fluid, it is necessary to utilize a calibrated numerical groundwater flow model, respective of fluid density, to project future well field production and projected future brine grade. It is believed that this is the most appropriate approach to estimating the lithium and potassium reserve in the Salar de Hombre Muerto basin.  A density-dependent groundwater flow and transport model was developed to evaluate the feasibility of production level pumping and projected TDS concentration from two planned well fields, separately located in the east and southwest area of the Salar del Hombre Muerto basin. The wellfields were evaluated for a combined 40-year pumping production period; layouts of the well fields were refined as part of the modeling analysis. The model was constructed using the finite-difference code MODFLOW-SURFACT Version 4.0, utilizing the transport and density modules to simulate the density-dependent flow and transport of the high TDS, dense brine water conditions in the aquifer. Groundwater conditions, aquifer characteristics, basin geometry, and TDS/density distribution simulated in the model are based on exploration and testing data developed from recent site investigations, and on the conceptual site model.  Modeling provides estimates of wellfield drawdow
		Aquifer boundaries, which function as no-flow areas, were considered in development of the numerical model and the Reserve.
Metallurgical factors or assumptions	<ul> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> </ul>	Reserve calculations only assume extraction via two modeled wellfields, each of which is located in areas where pumping at relatively large rates has already been demonstrated. Numbers and designs of production wells in each wellfield were determined based on aquifer conditions, anticipated groundwater level drawdown, maximum potential brine yield per well, and lithium grade. A concept of cyclical pumping between the southwest and east well fields was adopted for modeling. The simulation assumes pumping the southwest well field at an average combined rate of 22,800 m³/d from a



Criteria	JORC Code explanation	Commentary
	<ul> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	total of 20 wells; pumping at the east wellfield would be from 30 wells. Each well in the southwest well field is projected to pump at a rate of 1,500 m³/d. After 6 years of pumping the southwest well field, pumping would cycle to the east well field for 4 years, allowing the brine levels in the dormant well field to recover. Each well in the east wellfield is projected to pump at a rate of 1,000 m³/d.
		The model projects that the well fields will sustain operable pumping for 40 years; as a result 34 years of pumping has been catagorised as a Probable reserve. These values represent about 11.4% of the total resource amount computed for Li <sub>2</sub> CO <sub>3</sub> equivalent and about 12% of the total resource amount for KCl equivalent.
		The model projections indicate that each of the proposed well fields should be able to produce a reliable quantity of brine at an average annual rate of 30,000m³/d). The average grade at start-up is expected to be about 810 mg/L of lithium and 9,100 mg/L of potassium; average final grade after 40 years of pumping is projected to be 590 mg/L of lithium and 6,700 mg/L of potassium.
		During the evaporation and concentration process of the brines, there will be anticipated losses of both lithium and potassium. With reference to the pilot plant testing work, which adopted the same lithium carbonate and potassium chloride processing flowsheet, the estimated amount of recoverable lithium in the brine feed is calculated to be about 68.7% of the total brine supplied to the ponds; the estimated amount of recoverable potassium is calculated to be about 65% of the total provided to the ponds.
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	The objectives of the Environmental Impact Study of the Sal de Vida Project were in accordance with Nacional Law N° 24,585, consisting of the following: a) to prepare the Environmental and Social Impact Study for the "Implementation of Sal de Vida Project", Galaxy Lithum (Sal de Vida) S.A. b) to comply with National Law N°24,585- Mining Code- Environmental Protection for Mining Activities, c) to conduct a comprehenive survey of the environmental components existing in the project area for future monitoring work.
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	Infrastructure has been considered and evaluated in two distinct categories; on-site and off-site. On-site infrastructure includes the accommodation camp, workshops, power station, utilities, site roads, water supply, water treatment plant and sewage treatment. Off-site infrastructure includes access roads, natural gas pipeline from Pocitos, airstrip, lime kiln at Los Tilianes and communication systems that support the site.
		The labour policy is to recruit from Salta and Catamaca, in accordance to requests from the provincial governments for contracting local labour. In general, recruitment will follow the principals of competitive selection against specified job performance criteria (ie "best person for the job"). Selection processes will be non–discriminatory: gender, culture and religious orientation neutral. Both provinces (Salta and Catamaca) have universities which may provide technical training in areas relevant to the company's needs, including technical and administrative degrees
Costs	<ul> <li>The derivation of, or assumptions made, regarding projected capital costs in the study.</li> <li>The methodology used to estimate operating costs.</li> <li>Allowances made for the content of deleterious elements.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal minerals and coproducts.</li> <li>The source of exchange rates used in the study.</li> <li>Derivation of transportation charges.</li> <li>The basis for forecasting or source of treatment and</li> </ul>	With reference to the original financial costings included in the DFS of 2013, updated capital and operating cost estimates have been reviewed by Techint Engineering & Construction and Resource Engineering, taking into account current market conditions, inflation, currency devaluation and generally, supporting information sourced from equipment and material suppliers, and service providers.



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	refining charges, penalties for failure to meet specification, etc.  The allowances made for royalties payable, both Government and private.	
Revenue factors	<ul> <li>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</li> <li>he derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	Production revenues have been revised using several lithium carbonate price scenarios and production schedules as prepared by Global Lithium LLC.
Market assessment	<ul> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	The market for Lithium is well established and the price is increasing as the demand for Lithium batteries increases. Lithium is not sold on the open market and as such there is no public information available regarding the price. The actual product price achieved depends on negotiated contracts.
Economic	<ul> <li>The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.</li> <li>NPV ranges and sensitivity to variations in the significant assumptions and inputs.</li> </ul>	The economic analysis included revenue inputs from assumed pricing scenarios for lithium carbonate and potash, major cost inputs included those for reagents, transportation costs, energy, manpower, as well as general and administrative costs – the source of these estimates were based on supporting information from equipment and material suppliers, and other service providers. NPV analysis was reviewed for sensitivity assuming varying discount rates, tax and pricing scenarios. A review on these NPV calculations was conducted by ACSI Engineering.
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	Not applicable.
Other	<ul> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</li> </ul>	No material naturally occurring risks have been identified.  No material legal or marketing agreements have been entered into. Mining leases over the tenements containing the Ore Reserves have been approved.  The project has been under development since October 2009 with all necessary approvals.
Classification	<ul> <li>The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	Although the numerical model was constructed to be reasonably conservative when data are scarce or assumed, there is always a level of uncertainty associated with projections of long-term outcomes. Therefore, it is believed that it is appropriate to categorize the pumping from the first, 6-year pumping cycle as a Proven Reserve. Although projections of long-term pumping past the first 6-year cycle from the well fields are less certain, as a reasonable understanding of the hydrogeologic system has been obtained, it is believed that over the long-term the projected pumped brine resource can be categorised as a Probable reserve for the remaining 34 years of pumping.  The estimated Reserves are, in the opinion of the Competent Persons, appropriate for this deposit.



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Audits or reviews	<ul> <li>The results of any audits or reviews of Ore Reserve estimates.</li> </ul>	An internal peer review of the existing Mineral Reserve Estimate was conducted by Montgomery & Associates to verify the calculated values
Discussion of relative accuracy/ confidence	<ul> <li>Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.</li> <li>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</li> <li>Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.</li> <li>It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</li> </ul>	JORC has not provided guidance for evaluation of brine prospects. Therefore, the methodology used to calculate the Mineral Reserve is consistent with the NI 43-101 guidelines for lithium brines developed by the Corporate Finance Branch of the Ontario Securities Commission (OSC, 2011). Their document provides guidelines for calculation of brine resource and reserves and follows NI 43-101 standards. The document states that key variables, "hydraulic conductivity, recovery, brine behaviour and grade variation over time, etc. and fluid flow simulation models" be considered when computing the reserve estimate and determining economic extraction. Because of the nature of brine, the same guidelines regarding well spacing and grade cannot be applied as if the deposit was a stationary orebody. The guidelines regarding lithium brine deposits as suggested by the OSC (2011) have been adopted. The reserve values provided in this section are included in the resource estimates; they are not "in addition to" the resource values provided in earlier reports.  Similar methodology for evaluation of brine prospects has been recommended in peer-reviewed journals. See Houston, J., Butcher, A., Ehren, P., Evans, K., and Godfrey, L., 2011, The Evaluation of Brine Prospects. Economic Geology.