### Portfolio of

# ADVANCED PROJECTS

# Lithium



### **AUTORIDADES**

**Presidencia de la Nación** Lic. Javier Gerardo Milei

**Ministerio de Economía** Lic. Luis Andrés Caputo

**Secretaría de Minería** Dr. Luis Enrique Lucero

Dirección Nacional de Promoción y Economía Minera Lic. Jorge Matías González

### **DISCLAIMER**

The purpose of this Argentine Government publication is to disseminate third-party information on the exploratory results of advanced projects and the country's geological mining potential.

The information was obtained through different sources, mainly from public access websites of the operating/controlling companies and from technical reports published by them in different web pages under international standards in order to guarantee a higher degree of reliability.

In some cases, the data are estimated. The SECRETARIAT OF MINING is not responsible for their accuracy or reliability.

For further information on the legal, social and/or environmental status of the projects, interested parties should consult the corresponding provincial authorities, since mines are property of the Nation or of the Provinces, depending on the territory in which they are located (according to Articles 124 and 75 paragraph 12 of the NATIONAL CONSTITUTION, and Article 7 and concordant articles of the NATIONAL MINING CODE, approved by Law No. 1919).

The SECRETARIAT OF MINING is not responsible for the improper use of this information.



# ADVANCED LITHIUM PROJECTS



### **CAPEX** 8,125 M USD\*



### **RESOURCES**

117,1 Mt



### POTENCIAL PRODUCTION

464,420 tn/year. LCE

6

#### CONSTRUCTION

- 1 MARIANA
- 2 RINCÓN
- 3 SAL DE LOS ÁNGELES
- 4- SAL DE ORO
- 5 SAL DE VIDA
- 6- TRES QUEBRADAS

3

#### **PREFEASIBILITY**

- 12- ARIZARO
- 13- CAUCHARI
- 14- CAUCHARI JV



### PEA (Preliminary Economic Assessments)

- 15- CANDELAS
- 16- HOMBRE MUERTO NORTE
- 17- SALAR TOLILLAR

4

#### **INITIAL EXPLORATION**

37- ANTOFALLA NORTE

- 38- LAGUNA VERDE
- 39- LOS SAPITOS
- 40-SAN JORGE

5

#### **FEASIBILITY**

- 7- HOMBRE MUERTO OESTE
- 8- KACHI
- 9- PASTOS GRANDES
- 10-POZUELOS (PPG)
- 11- SALAR DEL RINCÓN

19

#### **ADVANCED EXPLORATION**

- 18- ALBA X
- 19- ALCALINA
- 20- ARIZARO NORTE
- 21- ARIZARO SUR
- 22- CANGREJILLOS
- 23- CENTENARIO 24- DONCELLAS
- 25- INCAHUASI
- **26- INCAHUASI MONCHO**
- 27- MINA SISIFO MINA PATILLA
- 28- REINA SOFIA IV
- 29- RÍO GRANDE
- 30- SAL DE LA PUNA
- 31- SALAR DE ARIZARO
- 32- SALARI
- 33- SALARI 22
- 34- SINCERA
- 35- TACA SAL IV
- 36- VEGA DE ARIZARO

<sup>\*</sup> This CAPEX estimated number includes projects in different stages of progress that are not described in this portfolio.



<sup>\*</sup> Mt: millions of tons - m3: cubic meters - Mm3: million cubic meters - Moz: million of ounces kt: thousands of tons- koz: thousand of ounces M USD: Million of dollars - e: Estimated

# Regional Geology

The report describes all the advanced lithium projects that are located in the Geological Province of La Puna in Argentine, and whose deposits are hosted in salt flats, being of the brine type.

The Geological Province of La Puna (Turner, 1972) is the southern extension of the Altiplano - Puna high plateau that represents approximately 2,000 km long by 300 km wide with an average elevation of 3,700 m, controlling the geomorphology of the central Andes. Is bounded to the West by the Cordillera Occidental and to the East by the Cordillera Oriental.

The uplift of the plateau is the combined result of late Tertiary crustal shortening and magmatic addition (Isacks, 1988).

A volcanic arc forms the western margin of the Geological Province of La Puna. At the East of the volcanic arc, local volcanic edifices are present within the plateau. The volcanic arc and eastern volcanic centers have been active from Miocene times to the present day (Jordan and Gardeweg, 1989) and are the origin of mineralized fluids.

The salt flats are the result of a long paleoenvironmental evolution, which began with the formation of freshwater lakes during the Pleistocene, which were salinized early until their desiccation in the Holocene. The congenital development with the volcanism led to a massive transfer of ions to the basins, whose result was expressed in important volumes of diverse salts, with a predominance of sodium chlorides. The volumetric share of salts in the total fill defines two major types of salt flats: 1) crystalline and 2) earthy. In general terms, the crystalline surfaces admit a concentric zonation of facies (Alonso, 1992). The crystalline salars are impregnated with interstitial brine of diversified ionic content. Almost all the brines are carriers of chemical elements of economic importance, especially boron and lithium.

# Mariana





### **LOCATION**

(24° 48' 36" Lat. S; 68° 18' 00' Long. W)

The Mariana I, II and III project is located in the west of the Province of Salta in the Salar de Llullaillaco. In a straight line it is located 280 km west of the capital city of Salta.



### **MINERALIZATION TYPE**

Brine



### PROPERTY DATA OWNER / CONTROLLER

Ganfeng Lithium Co., Ltd.



### **OPERATOR**

Litio Minera Argentina



### ÁREA

16,000 ha.



### Mariana

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

Drilling and hydrogeological information indicate that the Mariana Project in the Llullaillaco Salt Flat is a sedimentary filling complex of a basin, carrying unconfined and interconnected aquifers. They are brine carriers and are found at depths of 328 meters or more. Preliminary geological observation of the boreholes made it possible to recognize 8 lithological types in the well cores carried out in the western, eastern and southern sectors of the basin. The volume of the aquifer is still open in depth since only in two of the boreholes were the volcanic lithologies attributed to the Mesozoic basement intercepted.

**Project Status CONSTRUCTION** 

### **Technical and Economic Information**

Estimated average annual production: 20,000 t/yr LiCl

**Product to obtain:** Lithium Chloride (LiCl)

CAPEX: 243 M USD Estimated LOM: 25 years

Mining Method: Pumping - Evaporation

### **Company's Announcement**

January 2023. The Company announced the filling of the first brine pool.



# Mariana

Contact Tel: 1 (416) 357 4681 samuel.pigott@ganfenglithium.com Bank of Canada Building, 250 University Ave #200, Toronto, ON M5H 3E5, Canada

### **Resources and Reserves** (2019)

RESOURCES	Li Grade (mg/l)	Brine (Mm³)	Lithium Metal (t)	LCE (t)
Measured	314	1,6831	528,000	2,810,000
Indicated	316	960	303,000	1,600,000
Inferred	328	470	154,000	786,000

#### **Sources Consulted**

ht tp://www.ganfenglithium.com https://www.ganfenglithium.com/aboutz\_en/id/3.html

https://ganfenglithium-latam.com/proyecto-mariana/ Preliminary Economic Assessment of the Mariana Lithium Brine Project Salar de Llullaillaco, Salta Province, Argentina NI 43-101 Technical Report 15-Nov-2018



# Sal de Oro





### **LOCATION**

(25° 13' 12" Lat. S; 67° 04' 12" Long. W)

The Sal de Oro project is located about 1,400 km northwest of Buenos Aires, Argentina, at an altitude of 4,025 m.a.s.l. It is located east of Salar de Hombre Muerto, in the provinces of Catamarca (Antofagasta Dept.) and Salta.



### **MINERALIZATION TYPE**

Brine



PROPERTY DATA
OWNER / CONTROLLER

**POSCO** 



**OPERATOR** 

POSCO ARGENTINA S.A.



ÁREA

25,000 ha.



### Sal de Oro

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

The local geology of the Hombre Muerto Salar includes a basement of intrusive, sedimentary and metamorphic rocks from the Precambrian and early Paleozoic, thick sequences of Ordovician marine sedimentary rocks with a roof of continental Mesozoic sedimentary units. These are superimposed by the Miocene to Pliocene volcanic deposits, which are common characteristics of the salt flats in the sedimentary basins of the region.

### **Project Status CONSTRUCTION**

#### **Technical and Economic Information**

Estimated average annual production: 25,000 t/yr. LCE Product to obtain: Lithium Hydroxide - Lithium Carbonate

CAPEX: 830 M USD Estimated LOM: 30 years

Mining Method: Pumping - Evaporation

### **Company's Announcement**

December 2023. The Company confirmed the continuity of its investments in Argentina June 2023. The Company announced the beginning of construction of the second phase of the project Sal de Oro.



# Sal de Oro

Contact

(+54) 0387 4367500 Posco Argentina www.poscoargentina.com

### **Resources and Reserves** (2022)

RESERVES	Lithium Metal (t)	Production period
Proved	160,100	1 to 6
Probable	367,800	7 to 20
Total	527,900	20

Sources Consulted http://www.poscoargentina.com/ Informe de Impacto Ambiental Proyecto Sal de Oro. M&A 2022.



### Sal de Vida





### **LOCATION**

(25° 19' 48" Lat. S; 66° 52' 48" Long. W)

The project is located in the northern part of the Hombre Muerto Salar, in the border area of the provinces of Catamarca and Salta, 170 km southeast of the city of Salta. The project is strategically located in the Hombre Muerto Salar, an active lithium production area of Livent Corp. (former FMC) in the Fenix lithium mine, about 12 miles south of the project area.



### **MINERALIZATION TYPE**

Brine



### PROPERTY DATA OWNER / CONTROLLER

**Allkem Limited** 



### **OPERATOR**

**Galaxy Lithium** 



### ÁREA

4,391 ha



### Sal de Vida

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

The local geology of the Hombre Muerto Salar includes a basement of intrusive, sedimentary and metamorphic rocks from the Precambrian and early Paleozoic, thick sequences of Ordovician marine sedimentary rocks with a roof of continental Mesozoic sedimentary units. These are superimposed by the Miocene to Pliocene volcanic deposits, which are common characteristics of the salt flats in the sedimentary basins of the region.

### **Project Status CONSTRUCTION**

### **Technical and Economic Information**

Estimated average annual production: Stage 1: 15,000 t/yr. LCE, Stage 2: 45,000 t/yr. LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>), Potassium Chloride (KCI)

CAPEX: Stage 1: 374 M USD, Stage 2: 665 M USD

Estimated LOM: 37 years

Mining Method: Pumping - Evaporation

### **Company's Announcement**

December 2023. The company announced a million-dollar investment, financed by the World Bank through the International Finance Corporation (IFC).



# Sal de Vida

Contact info@allkem.co Cell: +617 3064 3600

### **Resources and Reserves** (2023)

Sal de Vida Resource Estimate					
Category	Li Grade (mg/l)	In situ Li (t)	LCE (t)		
Measured	752	660,000	3,520,000		
Indicated	742	560,000	3,000,000		
Measured and indicated	775	1,220,000	6,520,000		
Inferred	556	120,000	650,000		

#### Sal de Vida Reserve Estimate

Category	Li Grade (mg/l)	LCE (t)
Proven	84,000	445,000
Probable	383,000	2,041,000
TOTAL	467,000	2,486,000

#### **Sources Consulted**

https://www.allkem.co/projects/sal-de-vida https://www.saldevida.com.ar/

Sal de Vida Project NI 43-101 Technical Report 27 October 2023. link:

https://www.datocms-assets.com/53992/1698636681-sal-de-vida-lithium-brine-project-ni-43-101-technical-report-feasibility-study\_final.pdf https://www.allkem.co/investors/asx-announcements



# Tres Quebradas





### **LOCATION**

(27° 27' 00" Lat. S; 68° 39' 36" Long. W)

It is located Salar de Laguna Verde, in the Municipality of Fiambalá, 30 km from the border with Chile, 200 km from the Caldera port (Chile). 90 km north of the place Cortaderas, about 4,100 m.a.s.l.



### **MINERALIZATION TYPE**

Brine



PROPERTY DATA
OWNER / CONTROLLER

Zijin Mining Company



**OPERATOR** 

LIEX S.A.



ÁREA

16,000 ha



# Tres Quebradas

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

The project includes the "Tres Quebradas" lagoon, which is not freshwater, but a reservoir of super-saturated brine in sodium, calcium and chlorine. The density of the brine is 1.22 (25% heavier than fresh water). It is black in color due to its content of manganese and other metals. There are two large salars within the area, they are formed by a very rough surface, which suggests that it is a mature salt formed mostly by a sodium chloride core. The contribution of fresh water to the salt is limited to the extreme south where the Valle Ancho River and the Piscis River enter. All the rivers at the northern end of the complex provide thermal waters laden with metals. The waters that enter the salt flats are, on the one hand, alkaline and carbonated, and acidic with a high metallic content. There are more than a dozen thermal contributions and some have lithium contents of up to 1,000 mg / l, which is a worldwide record. These contributions go directly to the salt flat and the "Tres Quebradas" lagoon where they are concentrated by evaporation.

### **Project Status CONSTRUCTION**

### **Technical and Economic Information**

Estimated average annual production: 20,000 t/yr. LCE

**Product to obtain:** Lithium Carbonate (Li<sub>2</sub>CO<sub>2</sub>)

CAPEX: 380 M USD Estimated LOM: 50 years

Mining Method: Pumping - Evaporation

### Company's Announcement

March 2022 - Zijin Mining's Tres Quebradas Lithium Brine Project Starts Construction December 2022 - The company announced that the project commences brine evaporation. June 2023 - Zijin Mining's Tres Quebradas Lithium Brine Project Starts Construction



# Tres Quebradas

Contact Investor Advisory Tel: +86-592-2933058 Email: IR@zijinmining.com

### **Resources and Reserves** (2021)

#### Summary of the Mineral Resource Estimate Tres Quebradas Project Cutt of value off 400 mg/L

	Measured	Indicated	Measured and indicated	Inferred
Li Grade (mg/l)	792	576	637	561
LCE (t)	1,897,000	3,472,000	5,369,000	2,261,000

Summary of the lithium Reserve Estimate Tres Quebradas Project					
Year	Li Grade (mg/L)	Proven LCE (t)	Probable LCE (t)	Resource recovered (%)	
Total 50 Years Reserve estimate	786	1,084,300	587,600	31	

### Sources Consulted

https://www.neolithium.ca/pdf/Feasibility-Study-3Q-Project-Nov-25-2021.pdf ht tps://www.zijinmining.com/news/https://www.zijinmining.com/news/news-detail-119577.htm https://www.zijinmining.com/global/program-detail-71747.htm https://minedocs.com/21/Tres-Quebradas-FS-11252021.pdf



### **Pastos Grandes**





### **LOCATION**

(24° 34' 48" Lat. S; 66° 40' 48" Long. W)

The property is located in the Los Andes Department, in the central portion of the Puna block of the Province of Salta, in the extreme northwest of Argentina. It extends over the basin called Salar de Pastos Grandes, 13 km southeast of the town of Santa Rosa de Pastos Grandes, 56 km southwest of the town of San Antonio de los Cobres and 154 km west-northwest of the city of Salta, capital of the province. The altitude is 3785 meters above sea level.



### **MINERALIZATION TYPE**

Brine



### PROPERTY DATA OWNER / CONTROLLER

**Lithium Americas** 



### **OPERATOR**

Proyecto Pastos Grandes S.A.



### ÁREA

12,619 ha



### **Pastos Grandes**

# PROJECT GEOLOGY Type of deposit -Brine

### **Deposit Geology**

The salar is the current expression of a larger sedimentary basin, known as Sijes developed since the Miocene. The Sijes Formation is composed by sandstones, clays, tuffs and evaporites (Halite and Gypsum) and travertine. This unit is a potential aquifer and can store brines rich in Lithium. The Salar Pastos Grandes is filled with seamless clastics (clay and silt), organic material and fine-grained sediments. The evaporites are represented by Halite, gypsum and ulexite. The age of these sediments is late Quaternary to recent and 30 m thick. The stratification is horizontal and covers the pre-existing formations and the geological characteristics indicate erosion and dissolution of older rocks and subsidence in the central part of the salt flat. The sediments harbor brines rich in Lithium which has been demonstrated by exploration work.

### **Project Status FEASIBILITY**

### **Technical and Economic Information**

Estimated average annual production: 24,000 t/yr. LCE

**Product to obtain:** Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>)

CAPEX: 448 M USD Estimated LOM: 40 years

Mining Method: Pumping - Evaporation

### Company's Announcement

July 2023 - The company announced reports third quarter 2023 results.



# **Pastos Grandes**

Contact Canadá 778-656-5820 info@lithiumamericas.com

### **Resources and Reserves** (2019)

Pastos Grandes Mineral Reserve Estimate					
Category	Li Grade (mg/L)	Li Metal (t)	LCE (t)	Time period (years)	
Proven	470	34,000	179,000	1-8 (8 years total)	
Probable	431	143,000	764,000	9-40 (32 years total)	
TOTAL	439	177,000	943,000	40 years total	

### Sources Consulted

"Feasibility Study of the Pastos Grandes Project, Salta Province, Argentina" July 29, 2019
http://minedocs.com/21/PASTOS-GRANDES-FS-07292019.pdf
Lithium Argentina Reports Third Quarter 2023 Results
https://lithium-argentina.com/investor-relations/investor-news/news-details/2023/Lithium-Argentina-Reports-Third-Quarter-2023-Results



### Salar del Rincón





### **LOCATION**

(24° 04' 12" Lat. S; 67° 06' 00" Long. W)

The Salar de Rincón is a saline body located in the Los Andes Department, in Salta, at 3,760 m.a.s.l. It is located about 280 km northwest of the city of Salta and is accessed by National Route 51; it is near the town of Olacapato Chico and 40 km from the international border with Chile.



### **MINERALIZATION TYPE**

Brine



### PROPERTY DATA OWNER / CONTROLLER

Rio Tinto Group.



### **OPERATOR**

Rio Tinto Mining and Exploration Limited



### ÁREA

83,000 ha



### Salar del Rincón

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

The geological framework is given by a southern volcanic range (Tul Tul - Del Medio and Pocitos volcanoes) and the Guayaos mountain range (Ordovicico) in the north, while the rest is comprised by alluvial fields. It shows an almost continuous layer of salt on the surface that reaches variable thicknesses. Borate is 20-30 cm below a layer of halite that makes up the escape. Borates are ulexite and tincal. Ulexite is up to 50 cm thick and is both solid and nodular. It shows strong contamination with chlorides and sulphates. Tincal occurs at the NE edge of the salt flats and was mined in the old Carolina mine. It occurs in various morphologies, some of which are known to miners as greaves or corn grains. It occurs mainly with a reddish lime-clay ganga.

### **Project Status FEASIBILITY**

### **Technical and Economic Information**

Estimated average annual production: 25,000 t/yr. LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>)

CAPEX: 769,6 M USD Estimated LOM: 25 years

Mining Method: Pumping - Direct Lithium Extraction (DLE)

### Company's Announcement

September 2022 - The company has started demonstration plant for lithium concentration, with the production of spodumene concentrate.

#### Sources Consulted

https://www.riotinto.com/en/news/releases/2022/rio-tinto-starts-demonstration-plant-for-lithium-concentration-in-quebec https://www.riotinto.com/en/operations/projects/rincon



# Sal de los Ángeles





### **LOCATION**

(25° 14'40" Lat. S; 66° 44' 53" Long. W)

The Sal de Los Ángeles project is located in the Salar Diablillos, a saline body located in the Los Andes Department, in Salta, at 3,760 m.a.s.l. It is located about 230 km of the city of Salta and is accessed by National Route 51 and Provincial Route 27. It located 80 km from the international border with Chile, near the town of



### **MINERALIZATION TYPE**

Brine



### PROPERTY DATA OWNER / CONTROLLER

**Revotech Asia Limited** 



### **OPERATOR**

Potasio y Litio Argentina S.A.



### ÁREA

11,650 ha



# Sal de los Ángeles

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

The deposit type is a brine aquifer within a salar basin. Salar de Diablillos is a detrital salar, located in the northwest portion of the Diablillos hydrographic basin. The hydrographical basin is an enclosed intermountain plane with a length of approximately 40 km in the north-south direction and a width of approximately 15 km in the east-west. The Salar surface covers approximately 33 km2.

The hydrothermal fluids that are inferred to be the source of boron to the basins have been associated with correlative levels of lithium and potassium (Viramonte, Alonso, Gutierrez & Argañaz, 1984). It is possible to classify the salars of the region based on this association between lithium and borates in two groups: lithium-borate rich and lithium-borate deficient.

**Project Status: CONSTRUCTION** 

### **Technical and Economic Information**

Estimated average annual production: 25,000 t/yr. LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>2</sub>)

CAPEX: 700 M USD Estimated LOM: 20 years

Mining Method: Pumping - Evaporation

**Company's Announcement** 



# Sal de los Ángeles

Contact
Lithium X Energy Corp.
Jane Huang
+86-021-66284905
huanghua@lithium-x.com

### **Resources and Reserves**

### Summary of the Mineral Resource Estimate Sal de Los Ángeles Project

Category	Li Grade (mg/L)	Lithium Metal (t)	LCE (t)	K Grade (mg/l)	K (t)
Indicated	501	307,535	1,640.000	5,512	3,393,647
Inferred	356	77,464	410,000	3,739	811,472

### Sources Consulted

http://s1.q4cdn.com/369274472/files/Sal-de-Los-Angeles-Technical-Report.pdf
https://lithium-x.com/sal-de-los-angeles/#overview
https://miningpress.com/nota/308693/lithium-x-se-queda-con-sal-de-los-angeles-ex-diablillos-planes-en-jujuy-tarde-para-invertir



# Pozuelo (PPG)





### **LOCATION**

(24° 34' 48" Lat. S; 66° 42' 36" Long. W)

The PPG Project is constituted by the union of the Pastos Grandes and Pozuelos projects. They are located in the Department of Los Andes, in the central portion of the Puna block of the Province of Salta. They extend over the Salar de Pastos Grandes and Salar de Pozuelos basins, 13 km to the south and southwest of the town of Santa Rosa de Pastos Grandes, 56 km southwest of the town of San Antonio de los Cobres and 154 km west-northwest of the city of Salta, capital of the province. The altitude is 3,785 m.a.s.l.



#### **MINERALIZATION TYPE**

Brine



### PROPERTY DATA OWNER / CONTROLLER

**Ganfeng Lithium** 



### **OPERATOR**

Lithea Inc.



### ÁREA

21,324 ha



# Pozuelo (PPG)

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

The salt flats of Pozuelos and Pastos Grandes share the same local stratigraphy. The basins are separated in the northeast of Pozuelos by the Pozuelos and Geste formations. Quaternary rocks are observed in the form of accumulations of evaporites such as halite and borates, carbonates and sulphates that occupy the intermontane depression. The Pastos Grandes salt flats are the current expression of a larger sedimentary basin, known as Sijes developed since the Miocene. The Sijes Formation is made up of sandstones, clays, tuff and evaporites (Halite and Gypsum) and travertine. This unit is a potential aquifer and can store lithium-rich brines. The Lilac White Formation represents a larger ancient salt flat than the current one and is a potential aquifer that can store lithium-rich brines. The Salar de Pastos Grandes is filled with unconsolidated classics (clays and silts), organic material and fine-grained sediments. The age of these sediments is late to recent Quaternary and 30 m thick. The sediments contain lithium-rich brines, which has been demonstrated by exploration work.

### **Project Status FEASIBILITY**

#### **Technical and Economic Information**

Estimated average annual production: 20,000 t/yr LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>2</sub>)

CAPEX: 338 M USD Estimated LOM: 20 years

Mining Method: Pumping - Evaporation

### **Company's Announcement**

July 2022 - Ganfeng Lithium recibió de manos de la empresa Lítica Resources el traspaso del proyecto Pozuelos-Pastos Grandes, operado por la subsidiaria Lithea Inc.



# Pozuelo (PPG)

Contact

www.ganfenglithium.com/ Investor Relations (International) E-mail: samuel.pigott@ganfenglithium.com

### **Resources and Reserves** (2019)

### **Pastos Grandes**

RESOURCES	Li Grade (mg/l)	K Grade (mg/l)	LCE (t)	Available Brine (Mm³)
Measured and Indicated	464	4,479	939,080	355
Inferred	467	4,775	307,500	121

Pozuelos					
RESOURCES	Li Grade (mg/l)	K Grade (mg/l)	LCE (t)	Available Brine (Mm³)	
Measured and Indicated	505	3,487	1,677, 500	645	
Inferred	518	2,240	631,000	229	

#### **Sources Consulted**

Preliminary Economic Assessment (PEA) - Pozuelos - Pastos Grandes Project NI 43-101 Technical Report Salta, Argentina January 2019 - <a href="https://www.miningnewsfeed.com/reports/PozuelosPastosGrandes\_PEA\_01172019.pdf">https://www.miningnewsfeed.com/reports/PozuelosPastosGrandes\_PEA\_01172019.pdf</a> https://ganfenglithium-latam.com/en/2022/11/01/traspaso-de-pozuelos-pastos-grandes/



Email: hello@lakeresources.com.au

# Caucharí





### **LOCATION**

(23° 43' 30.9" Lat. S; 66° 48' 39.9" Long. W)

The Cauchari project is located in Jujuy, Province in north-west Argentina. The Project is situated in the Salar de Caucharí. It is located at a distance of 1,600 km from Buenos Aires and 250 km from Jujuy Capital.



### **MINERALIZATION TYPE**

Brine



### PROPERTY DATA OWNER / CONTROLLER

Lake Resources NL



### **OPERATOR**

Minerales Australes SA.



### ÁREA

3,980 ha



### Caucharí

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

Salar de Cauchari is a mixed style salar, with a halite nucleus in the center of the Salar overlain with up to 50 m of fine grained (clay) sediments. The halite core is interbedded with clayey to silty and sandy layers. The Salar is surrounded by relative coarse grained alluvial and fluvial sediments. These fans demark the perimeter of the actual Salar visible in satellite images and at depth extend towards the center of the Salar where they form the distal facies with an increase in sand and silt. At depth (between 300 m. and 500 m) a deep sand unit has been intercepted in several core holes in the SE Sector of the Project area.

### **Project Status PREFEASIBILITY**

### **Technical and Economic Information**

Estimated average annual production: 40,000 t/yr. LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>2</sub>)

CAPEX: S/D\*

Estimated LOM: 30 years

Mining Method: Pumping - Direct Lithium Extraction (DLE)

### Company's Announcement

August 2019 - Lake announced final results from drilling confirming a significant high-grade lithium discovery at Cauchari, with the higher grades averaging 493 mg/L lithium over 343m, with the highest results of 540 mg/L lithium.

\*Sin dato



# Caucharí

### **Resources and Reserves** (2023)

RESOURCES	Li Grade (mg/L)	LCE (t)	KCI (t)
Measured	493	6,300,000	19,600

#### **Sources Consulted**

https://lakeresources.com.au/ https://lakeresources.com.au/lake-resources-project-overview/cauchari/



# Kachi





### **LOCATION**

(26° 31' 12" Lat. S; 67° 25' 48" Long. W)

The Kachi Project is located in the Salar of Carachi Pampa - Catamarca Province, approximately 100 km south of the Livent's Hombre Muerto Salar Operation (former FMC).



### **MINERALIZATION TYPE**

Brine



### PROPERTY DATA OWNER / CONTROLLER

**Lake Resources** 



### **OPERATOR**

Morena del Valle Minerals S.A.



### ÁREA

74,000 ha



### Kachi

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

The drills show that the filling of the Kachi basin is predominantly sand dominated by silt and intercalated clays. The surface halite is variable. This leads to a classification of Kachi as an immature salar system. There are ignimbrites inside the sediment of the basin, but of limited distribution and thickness. A conglomerate would form the basis of the sedimentary sequence of the basin that contains brine.

Several depositional geomorphological units can be recognized, including: salar Carachi Pampa; Laguna Carachi Pampa which is a body of salt water fed by volcanic springs on the northeast margin of the salt flat; Vega Carachi Pampa, an ephemeral wetland plain north of the lagoon; and Barreal Carachi Pampa, a clay depression located on the western and northern margins of the salar. These units are partially covered by even more recent alluvial and colluvial sediments and wind sand dunes.

### **Project Status FEASIBILITY**

#### **Technical and Economic Information**

Estimated average annual production: 50,000 t/yr. LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>)

CAPEX: 1380 M USD Estimated LOM: 25 years

Mining Method: Pumping - Direct Lithium Extraction

### Company's Announcement

January 2023 - The company announced that In the Kachi project M&I resource doubled to 2.2 million tonnes LCE.

December 2023 - Lake Resources announced the results of its Definitive Feasibility Study for Phase One of the globally significant Kachi lithium brine project in Argentina.





**Contact** Email: hello@lakeresources.com.au

### **Resources and Reserves** (2023)

RESOURCES	Li Grade (mg/L)	LCE (t)	Brine Volume (Mm³)
Measured	212	1,610,000	1,418
Indicated	177	580,000	613
Inferred	198	3,095,000	2,958

#### **Sources Consulted**

https://lakeresources.com.au/wp-content/uploads/2023/01/lke\_kachi-resource\_11-ian-23.pdf
https://lakeresources.com.au/wp-content/uploads/2023/01/operational-update-final-3-011123.pdf
https://lakeresources.com.au/wp-content/uploads/2022/01/lke\_kachi-output-increased\_19-jan-22.pdf
https://lakeresources.com.au/wp-content/uploads/2019/09/02052872.pdf
https://lakeresources.com.au/wp-content/uploads/2020/04/lke\_compelling-pfs-for-kachi-project\_30-apr-20.pdf
https://lakeresources.com.au/lake-resources-project-overview/kachi-dfs/



### Salar del Caucharí





### **LOCATION**

(23° 45' 26.6" S; 66° 47' 26.4" W)

The Cauchari JV is located in the Salar de Cauchari, 230 km west of the city of San Salvador de Jujuy in Jujuy Province of northern Argentina. The Project is at an altitude of 3,900 masl and sits just to the south of paved Hwy. 52 that connects with the international border with Chile (80 km to the west).



### MINERALIZATION TYPE

Brine



### PROPERTY DATA OWNER / CONTROLLER

Arcadium Lithium plc.



### **OPERATOR**

**South American Salars** 



### ÁREA

27,772 ha



### Salar del Caucharí

# PROJECT GEOLOGY Type of deposit - Brine

### **Deposit Geology**

The brine body defined extends ~12.5 km in the N-S direction and extends over 132 m vertically. Brine within the salar is formed by solar concentration, with brine hosted within the different sedimentary units. (Orocobre PR Jan 19, 2018) The Cauchari salar has characteristics of both an immature salar, dominated by clastic sediment, and a mature salar, dominated by halite. Modelling of a gravity and AMT geophysical survey line across the salar suggests the salar is 400 m plus deep, with drilling in adjacent properties to 450 m not intersecting the basement sediments interpreted to form the basement rock beneath the salar.

### **Project Status PREFEASIBILITY**

#### **Technical and Economic Information**

Estimated average annual production: 25,000 t LCE Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>2</sub>)

CAPEX: 446 M USD Estimated LOM: 30 years

Mining Method: Pumping - Evaporation

### **Company's Announcement**

April 2020 - 100% of Advantage Lithium Corp. (Advantage) was acquired to provide new growth and development options beyond the projected expansion of the Olaroz Lithium Facility.



# Salar del Caucharí

Contact

info@allkem.co Cell: +61 7 3064 3600 Fax: +61 7 3064 3699

#### **Resources and Reserves** (2019)

RESOURCES	Li Grade (mg/l)	LCE (t)	Brine Volume (Mm³)
Measured	527	1,850,000	600
Indicated	452	2,600,000	1200
Inferred	473	1,500,000	600

#### **Sources Consulted**

 $https://www.datocms-assets.com/53992/1635466306-190424 techreportorocobreni-43-101 cauchari-project.pdf \\ https://www.allkem.co/projects/cauchari-projects$ 

https://www.datocms-assets.com/53992/1649845451-cauchari-pfs-final\_nov-2019.pdf



# Candelas





#### **LOCATION**

(25° 47' 59" Lat. S; 67° 14' 36" Long. W)

The Project is located to the East and South of the Salar del Hombre Muerto. Candelas lies approximately 40km ESE of the Hombre Muerto West project. It is around 1,400 km northwest of the capital of Buenos Aires and 170 km west-southwest of the city of Salta (in a straight line).



#### **MINERALIZATION TYPE**

Brine



## PROPERTY DATA OWNER / CONTROLLER

Galan Lithium Limited



#### **OPERATOR**

Galan Exploraciones S.A.



#### ÁREA

24,072 ha



## Candelas

# PROJECT GEOLOGY Type of deposit - Brine

#### **Deposit Geology**

The local geology of the Hombre Muerto Salar includes a basement of intrusive, sedimentary and metamorphic rocks from the Precambrian and early Paleozoic, thick sequences of Ordovician marine sedimentary rocks with a roof of continental Mesozoic sedimentary units. These are superimposed by the Miocene to Pliocene volcanic deposits, which are common characteristics of the salt flats in the sedimentary basins of the region.

**Project Status** PRELIMINARY ECONOMIC ASSESSMENT

#### **Technical and Economic Information**

Estimated average annual production: 14,000 t/yr Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>)

CAPEX: 408 M USD Estimated LOM: 25 years

Mining Method: Pumping - Evaporation

#### Company's Announcement

November 2021 - Excellent Preliminary Economic Assessment Results for Candelas Project in Catamarca, Argentina



# Candelas

#### Contact

(08) 9214 2150 within Australia +61 8 9214 4150 from overseas Email: admin@galanlithium.com.au

#### **Resources and Reserves** (2022)

RESOURCES	Li Grade	LCE	K Grade	KCI Equiv.
	(mg/l)	(t)	(mg/l)	(kt)
Indicated	672	685,000	5,193	3,307,000

Sources Consulted www.galanlithium.com.au/projects/candelas/ https://galanlithium.com.au/resources/ https://minedocs.com/21/Candelas-PEA-11302021.pdf



## **Hombre Muerto Norte**





#### **LOCATION**

(25° 13' 12" Lat. S; 67° 04' 12" Long. W)

The project is located in Antofagasta de La Sierra Department, Catamarca Province and Los Andes Department, Salta Province. The Project comprises a total area of 3,237 ha, situated in the northern part of Salar de Hombre Muerto. Three additional properties are located six km N of the SHM in Salta Province, and comprise a total area of 2,365 ha. They were acquired as a prospective freshwater source for the HMN Project, and as a location for anticipated future plant and processing facilities.



#### **MINERALIZATION TYPE**

Brine



## PROPERTY DATA OWNER / CONTROLLER

Lithium South Development Corp.



#### **OPERATOR**

NRG Metals Argentina S.A



#### ÁREA

5,687 ha.



### **Hombre Muerto Norte**

# PROJECT GEOLOGY Type of deposit - Brine

#### **Deposit Geology**

The local geology of the Hombre Muerto Salar includes a basement of intrusive, sedimentary and metamorphic rocks from the Precambrian and early Paleozoic, thick sequences of Ordovician marine sedimentary rocks with a roof of continental Mesozoic sedimentary units. These are superimposed by the Miocene to Pliocene volcanic deposits, which are common characteristics of the salt flats in the sedimentary basins of the region.

**Project Status** PRELIMINARY ECONOMIC ASSESSMENT (PEA)

#### **Technical and Economic Information**

Estimated average annual production: 5,000 t/yr LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>2</sub>)

CAPEX: 93 M USD

Estimated LOM: 30 years

Mining Method: Pumping - Evaporation

#### **Company's Announcement**

February 2023 - The company announced high-Grade Results at Hole AS02.



# **Hombre Muerto Norte**

#### **Resources and Reserves** (2023)

Summary of the Mineral Resource Estimate (Grade cut-off of 500 mg/L lithium)				
RESOURCES	Li Grade (mg/l)	K Grade (mg/l)	LCE (t)	K (t)
Alba Sabrina*	696	7,118	807,400	1,550,800
Natalia Maria*	1130	9,991	75,800	129,100
Tramo*	769	7,080	579,800	1,002,300
All Sites**	736	7,205	1,583,100	2,911,200

<sup>\*</sup>Measured values / \*\* Total values

Contact **INVESTOR RELATIONS:** Toll Free from North America 1-855-415-8100 info@lithiumsouth.com

https://www.lithiumsouth.com/news/ https://www.lithiumsouth.com/wp-content/uploads/2023-technical-report-NI43-101.pdf



## **Hombre Muerto Oeste**





#### **LOCATION**

(25° 13' Lat. S; 67° 04' Long. W)

The project is in the geological province of Puna, 90 km north of the town of Antofagasta de la Sierra, province of Catamarca. The HMW Project is located to the West and South of the Salar del Hombre Muerto. The HMW Project is in close proximity to other world class lithium projects owned by Galaxy Resources, Posco and Livent. It is around 1,400 km northwest of the capital of Buenos Aires and 170 km west-southwest of the city of Salta (in a straight line).



#### **MINERALIZATION TYPE**

Brine



### PROPERTY DATA OWNER / CONTROLLER

Galan Lithium Limited



#### **OPERATOR**

Galan Exploraciones S.A



#### ÁREA

9,493 ha



## **Hombre Muerto Oeste**

# PROJECT GEOLOGY Type of deposit - Brine

#### **Deposit Geology**

The local geology of the Hombre Muerto Salar includes a basement of intrusive, sedimentary and metamorphic rocks from the Precambrian and early Paleozoic, thick sequences of Ordovician marine sedimentary rocks with a roof of continental Mesozoic sedimentary units. These are superimposed by the Miocene to Pliocene volcanic deposits, which are common characteristics of the salt flats in the sedimentary basins of the region.

#### **Project Status FEASIBILITY**

#### **Technical and Economic Information**

Estimated average annual production: 20,000 Tn/yr LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>)

CAPEX: 439 M USD Estimated LOM: 40 years

Mining Method: Pumping - Evaporation

#### Company's Announcement

January 2023 - The company announced the Quarterly Activities Report.



# **Hombre Muerto Oeste**

#### **Resources and Reserves** (2023)

RESOURCES	Li Grade (mg/l)	K Grade (mg/l)	LCE (t)	KCI (t)
Measured	873	7,638	4,737,000	7,782,000
Indicated	904	1,585	986,000	1,585,000
Inferred	887	1,391	859,000	1,391,000

Brine volume (Mm³)
1,258

#### Contact

Sources Consulted
https://galanlithium.com.au/
https://galanlithium.com.au/resources/
https://galanlithium.com.au/announcements
Technical report -https://minedocs.com/21/Hombre-Muerto-West-(HMW)-PEA-12212020.pdf

(08) 9214 2150 within Australia +61 8 9214 4150 from overseas Email: admin@galanlithium.com.au



# Rincón





#### LOCATION

(24° 07' 12" Lat. S; 66° 58' 48" Long. W)

The Salar de Rincón is a saline body located in the Los Andes Department, in Salta, at 3,760 m.a.s.l. It is located about 280 km northwest of the city of Salta and is accessed by National Route 51; it is near the town of Olacapato Chico and 40 km from the international border with Chile.



#### **MINERALIZATION TYPE**

Brine



## PROPERTY DATA OWNER / CONTROLLER

**Argosy Minerals** 



#### **OPERATOR**

Puna Mining Lithium



#### ÁREA

2,794 ha



## Rincón

# PROJECT GEOLOGY Type of deposit - Brine

#### **Deposit Geology**

The geological framework is given by a southern volcanic range (Tul Tul - Del Medio and Pocitos volcanoes) and the Guayaos mountain range (Ordovícico) in the north, while the rest is comprised by alluvial fields. It shows an almost continuous layer of salt on the surface that reaches variable thicknesses. Borate is 20-30 cm below a layer of halite that makes up the escape. Borates are Ulexite and tincal. Ulexite is up to 50 cm thick and is both solid and nodular. It shows strong contamination with chlorides and sulphates. Tincal occurs at the NE edge of the salt flats and was mined in the old Carolina mine. It occurs in various morphologies, some of which are known to miners as greaves or corn grains. It occurs mainly with a reddish lime-clay ganga.

#### **Project Status CONSTRUCTION**

#### **Technical and Economic Information**

Estimated average annual production: 10,000 t/yr LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>)

CAPEX: 141 M USD

Estimated LOM: 16.5 years

Mining Method: Pumping - Evaporation

#### **Company's Announcement**

January 2023 - The company announced 98% of total development works complete in the 2,000tpa lithium carbonate process plant .

December 2023 - Argosy Minerals Limited continued development works at the Rincon Lithium Project ("Rincon") in Argentina





Contact Argosy Minerals Cell: +61 8 6188 8181

#### **Resources and Reserves** (2021)

RESOURCES	Brine Volume (Mm³)	Li Grade (mg/l)	LCE (t)
Indicated	144	325	245,120

#### **Sources Consulted**

ht tps://www.argosyminerals.com.au/rincon-lithium-project-argentina ht tps://www.argosyminerals.com.au/sites/default/files/presentation\_file/agy-asx-20181130-pea-nov2018.pdf https://www.argosyminerals.com.au/sites/default/files/financial\_report\_file/quarterly-activities-report-december-2022-20230201.pdf https://www.asx.com.au/asxpdf/20181113/pdf/44075h205314lb.pdf

https://www.argosyminerals.com.au/announcements



# Arizaro





#### **LOCATION**

(24° 46' 12" Lat. S; 67° 42' 34"Long. W)

The Salar de Arizaro, is a saline body located in the Los Andes Department, in Salta, at 3,760 m.a.s.l. It is located about 230 km of the city of Salta and is accessed by National Route 51 and Provincial Route 27. It located 80 km from the international border with Chile.



#### **MINERALIZATION TYPE**

Brine



PROPERTY DATA OWNER / CONTROLLER

Lithium Chile Inc.



**OPERATOR** 

Lithium Chile Inc.



ÁREA

22,000 ha

### Arizaro

# PROJECT GEOLOGY Type of deposit - Brine

#### **Deposit Geology**

The deposit consists of a lithium-rich brine aquifer located in a salar basin. Based on the available information, Salar de Arizaro is a mature salar, and one of the larger salars in the Argentinean altiplano. A thick halite core exists in the basin. Basin margins are interpreted to be fault controlled. The principal source of water entering the Project area is from surface water coming into the basin from the basin margins.

The mineralization for the project consists of a lithium-enriched brine that is continued within the pore spaces of the sedimentary strata in the salar basin. Also, with this brine boron and potassium enrichment are considered as economic extraction for this type of project in this Salar of Arizaro.

**Project Status: PREFEASIBILITY** 

#### **Technical and Economic Information**

Estimated average annual production: 25,000 t/yr LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>)

CAPEX: 823 M USD Estimated LOM: 19 years

Mining Method: Pumping - Direct Lithium Extraction (DLE)

#### **Company's Announcement**

January 2024 - Lithium Chile's subsidary, Argentum Lithium, awarded 8,445 hectares on the Salar de Arizaro by REMSa.





Contact

Steve Cochrane - President & CEO Tel: +1-587-393-5801 Email: steve@LITHIUMCHILE.CA

#### **Resources and Reserves** (2022)

#### Summary of the Mineral Resource Estimate Arizaro Project In situ Li **Brine Volume** Li Grade (mg/L) Category LCE (t) (t) (Mm<sup>3</sup>)**Indicated** 326,000 1,530,000 1,170 278 Inferred 825 297,000 1,793,000 360

#### **Sources Consulted**

https://lithiumchile.ca/salar-de-arizaro/https://lithiumchile.ca/wp-content/uploads/2024/01/JANUARY-8-2024-LITHIUM-CHILES-SUBSIDARY-ARGENTUM-LITHIUM-AWARDED-8445-HEC TARES-ON-THE-SALAR-DE-ARIZARO-BY-REMSa.pdf



## Salar Tolillar





#### **LOCATION**

(25° 2'12" Lat. S; 66° 7' 26" Long. W)

The Salar de Tolillar project is located in the heart of the Puna region in Salta, near the border with the province of Catamarca and in close to the Hombre Muerto Salt Flat. The distance from the city of Salta, the capital of the province, is approximately 400 km. The elevation above sea level is around 3,800 meters.



#### **MINERALIZATION TYPE**

Brine



## PROPERTY DATA OWNER / CONTROLLER

**Alpha Lithium Corporation** 



#### **OPERATOR**

S/D



#### ÁREA

8,800 ha

## Salar Tolillar

# PROJECT GEOLOGY Type of deposit - Brine

#### **Deposit Geology**

Salar de Tolillar appears to be a relatively immature salar and the floor of the Salar consists of two distinct deposit types. The northern part of the Salar consists of an earthier crust weakly cemented with salt. To the south, the salt crust varies in thickness from several centimeters to 20 - 30 centimeters. The thicker saline crust allows for better road access than the earthy crust that tends to be softer, especially after precipitation.

There are four sub-basins in the Tolillar basin within the concessions: a northeastern basin that is mostly separated from the south by shallow metamorphic rocks, also containing abundant freshwater in the far north part of the sub-basin; a south sub-basin appearing to become more clastic to the south, with abundant halite occurring in the north part of the sub-basin; a west sub-basin containing abundant halite and an east sub-basin mostly devoid of halite, consisting predominantly of clastic basin-fill sediments.

**Project Status: PRELIMINARY ECONOMIC ASSESSMENT (PEA)** 

#### **Technical and Economic Information**

Estimated average annual production: 50,000 t/vr LCE

Product to obtain: Lithium Carbonate (Li<sub>2</sub>CO<sub>3</sub>) and Lithium Hydroxide (LiOH)

CAPEX: 770 M USD Estimated LOM: S/D

Mining Method: Pumping - Direct Lithium Extraction (DLE)

#### Company's Announcement

July 2023. The company announced the Preliminary Economic Assessment (PEA) of the Tolillar Project. July 2023. The company announced a 70% increase in indicated resources and 30% inferred resources increase.



# Salar Tolillar

Contact Tel. +1 844 592 6337 relations@alphalithium.com

#### **Resources and Reserves** (2023)

#### Summary of the Mineral Resource Estimate Salar de Tolillar Project

Category	In situ Li (tonnes)	LCE (tonnes)	Brine Volume (m³)	Avg. Li (mg/L)
Indicated	681,000	3,626,000	2,940,766,000	232
Inferred	262,000	1,393,000	1,453,640,300	180

#### Sources Consulted

 $\frac{\text{https://alphalithium.com/wp-content/uploads/2023/06/Tolillar-Project-NI-43-101-Technical-Report-Update-on-PEA1.pdf}{\text{https://panorama-minero.com/news/salar-tolillar-alpha-lithium-produce-hidroxido-de-litio-v-carbonato-de-litio-https://alphalithium.com/wp-content/uploads/2023/06/Salar-de-Tolillar_Updated-Resource-Estimate_FINAL-2023-August.pdf}$ 



