

**U.S. Geological Survey (USGS)
Office of International Programs (OIP) and National Minerals Information
Center (NMIC)**

Argentina Lithium Map—Data Sources and Explanatory Notes

In support of special request from the U.S. Department of the Interior’s International Technical Assistance Program Office, in conjunction with the U.S. Department of State

Administrative Report

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I. Overview

The contents of this administrative report show the range of data sources and research required to create the “Argentina_Lithium_Map” geospatial PDF. Explanatory notes to accompany the GeoPDF map are included throughout, where necessary for further understanding of individual map layers. Please also refer to the GeoPDF instruction document sent along with this administrative report for an overview on navigating the different data layers shown in the map, as well as instructions on using a free downloadable toolbar to query additional data attributes within the GeoPDF.

The Lithium Triangle is an area of South America that “constitutes one of the world’s major continental evaporate complexes that contain significant portions of the known resources of lithium and boron. At least 100 salars and saline lakes ranging in area from a few square kilometers to about 9,000 km² are found in individual closed basins within a 4,000-km² area of internal drainage in northwestern Argentina, western Bolivia, northern Chile, and southern Peru.”¹ Demand for lithium is expected to triple by 2025.²

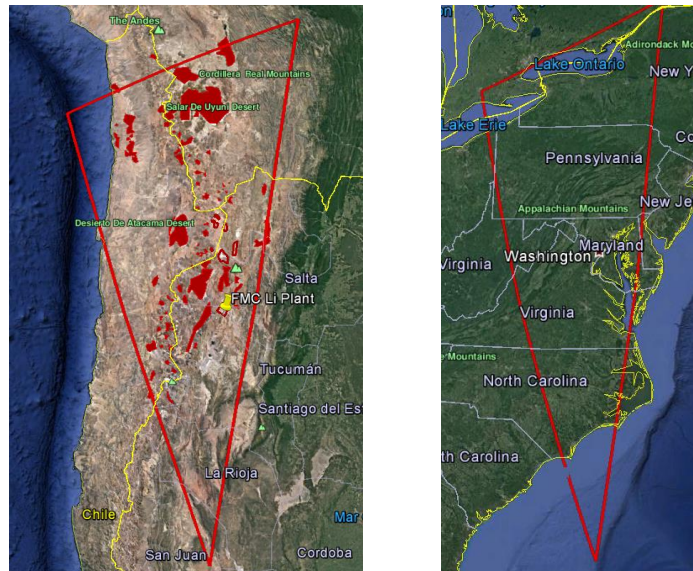


Figure 1.—Lithium Triangle in South America and same triangle with Washington, D.C. as the approximate center point (note: triangles are the same shape and at the same scale; distortions in the shape have to do with North America’s greater distance from the equator than with this portion of South America; total distortion is only approximately 10 kilometers but the North American version looks more curved).

¹ “Geology and resources of Salars in the Central Andes,” by George E. Ericksen (U.S. Geological Survey, United States) and Raul Salas O. (Servicio Nacional de Geología y Minería, Chile). Published as Chapter 10 of Ericksen, G.E., Cañas Pinochet, M.T., and Reinemund, J.A., editors, 1989, *Geology of the Andes and its relation to hydrocarbon and mineral resources*: Houston, Texas, Circum-Pacific Council for Energy and Mineral Resources Earth Science Series, v. 11, available at http://archives.datapages.com/data/circ_pac/0012/0151_f.pdf, date accessed November 5, 2017.

² Economist, The, 2017, Three South American countries hold over half the world’s lithium: The Economist Data Team, June 19, available at <https://www.economist.com/blogs/graphicdetail/2017/06/daily-chart-12>, accessed November 5, 2017.

In 2011, it was estimated that the three largest deposits in Bolivia, Chile, and Argentina accounted for approximately 45% of the known in-situ global lithium resources: 1) Salar de Uyuni in Bolivia at 10.2 million metric tons of lithium content, 2) Salar de Atacama in Chile at 6.3 million metric tons, and 3) Salar de Rincón in Argentina at 1.118 million metric tons³.

Since then, and especially since 2016, exploration projects have grown in size and scope throughout the Lithium Triangle, most notably within Argentina. Companies in at least 15 different salars in northwestern Argentina have current production of lithium resources, have facilities under construction, are in feasibility testing or undergoing preliminary economic analysis, or have advanced exploration activity in place for lithium, as well as boron and potassium. Total estimates of identified resources within Argentina have grown with the increase in exploration activity (see next section for the current figures for lithium reserves and identified resources).

Jujuy and Salta Provinces host the majority of the lithium-bearing salars. Three Provincially-owned public companies are involved in the management of lithium resources, energy resources, and land holdings:

- 1) Catamarca Minera y Energética Sociedad del Estado (CAMYEN)
 - a. No agency website available
- 2) Jujuy Energía y Minería Sociedad del Estado S.E. (JEMSE)
 - a. No agency website available
 - b. Jujuy Provincial government website: <http://jujuy.gob.ar/home/>
- 3) Recursos Energéticos y Mineros de Salta S.A. (REMSA)
 - a. REMSA website: <http://www.remsa.gob.ar/>

Most notably, REMSA has significant land holdings, or areas of investigation (AOI), throughout the Salar de Arizaro, Salar de Incahuasi, Salar de Tolillar, and Salar de Pastos Grandes. AOIs are mining properties granted to REMSA for geological research and economic development.⁴ For example, Salar de

³ Gruber, P. W., Medina, P. A., Keoleian, G. A., Kesler, S. E., Everson, M. P. and Wallington, T. J. (2011), Global Lithium Availability. *Journal of Industrial Ecology*, 15: 760–775. doi: 10.1111/j.1530-9290.2011.00359.x, date accessed November 5, 2017.

⁴ REMSA S.A., PDCA presentation, 2017, <http://www.remsa.gob.ar/files/PDAC-2017.pdf>, page 2, date accessed November 5, 2017.

Incahuasi is entirely covered under a REMSA AOI; Advantage Lithium Corp. has exploration work underway in only the northern portion of the salar.⁵ REMSA's AOIs do not supercede privately-held mineral rights for exploration or development and Advantage Lithium Corp.'s project is separately held although the entire salar has been designated an AOI. Advantage Lithium Corp. has stated that they have held "preliminary discussions with REMSA to assess the possible future consolidation of the salar," to further asses total lithium potential. "Very preliminary sampling indicated a low lithium but high potash salar target."⁶ Third-party mining companies without prior legal claims must publicly bid for exploration or development rights within an AOI.⁷

In 2016, The Fraser Institute's *Annual Survey of Mining Companies* report ranked Salta Province 43d out of 104 mining jurisdictions around the world in terms of attractiveness for mining investment, a very significant increase from 71st out of 109 mining jurisdictions in 2015.⁸ Jujuy Province ranked last among the 104 jurisdictions in 2016; Catamarca Province ranked 77th.

Based on Internet research, it does not seem as this time that cadastres showing all mineral and mining claims and geological resources are available via the Internet as interactive browsers, via individual GIS shapefiles, or as Web Mapping Services (WMS) or Web Feature Services (WFS). This seems to be true for both the federal Argentinian agencies as well as the provincial governments.

⁵ Ibid.

⁶ Advantage Lithium Corp., 2017, Advantage Lithium—Incahuasi: Advantage Lithium Corp. website, available at <http://www.advantagelithium.com/projects/argentina/incahuasi/>, accessed November 5, 2017.

⁷ REMSA S.A., PDCA presentation, 2017, <http://www.remsa.gob.ar/files/PDAC-2017.pdf>, page 6, date accessed November 5, 2017.

⁸ Ibid, page 4, date accessed November 5, 2017.

A. Current Argentinian producers of lithium (including pilot plants and plants under construction)

1. *Currently operating producers*

Argentina has two major producers currently operating within the Lithium Triangle: 1) Sales de Jujuy S.A. and 2) FMC Lithium Corp.

I. **Sales de Jujuy S.A.⁹ (also known as / sometimes known as Olaroz Lithium)**

- Company history:
 - Formed in 2010. Operates at the southern edge of Salar de Olaroz. Commercial production began in December 2014.
- Company operations in Argentina:
 - Approximately 50 linear kilometers (31 linear miles) from the Chile-Argentina border crossing at Paso de Jama [the border crossing includes the Salta-Antofagasta railroad (also known as the Huaytiquina railroad) and very close (~5 kilometers) from the Argentinian Ruta nacional (national road) Route 52].
 - See next pages for satellites images from Google Earth.
- Company annual production capacity:
 - Total annual plant production capacity is 17,500 metric tons of battery-grade lithium carbonate
- Company structure:
 - Joint venture between Orocobre Ltd., Toyota Tsusho Corp. (TTC), and the mining company of the Jujuy provincial government: Jujuy Energia y Minería Sociedad del Estado (JEMSE)

⁹ All information from the section, with the exception of the geographic description, is from Sales de Jujuy S.A.'s company website, <http://salesdejujuy.com/>, date accessed November 5, 2017. Geographic description derived from Google Earth and other datasets.

- Project company: Sales de Jujuy S.A. (SDJ S.A., based in Jujuy, Argentina)

- Owners of the project company:
 - JEMSE (Jujuy, Argentina) [8.5% Class B Share of SDJ S.A.]
 - Holding Company: Sales de Jujuy Pte. Ltd. (SDJPL) Singapore [91.5% Common Share of SDJ S.A.]

 - Owners of the holding company:
 - Orocobre Ltd. (Australia) [72.68% of SDJPL]
 - In total, owns 66.5% of Sales de Jujuy S.A. project company

 - Toyota Tsusho Corp. (TTC; Japan)
 - TTC is the 100% owner of SPC – Toyotsu Lithium Pte. Ltd.

 - SPC - Toyotsu Lithium Pte. Ltd. [27.32% of SDJPL]
 - In total, owns 25.0% of Sales de Jujuy S.A. project company

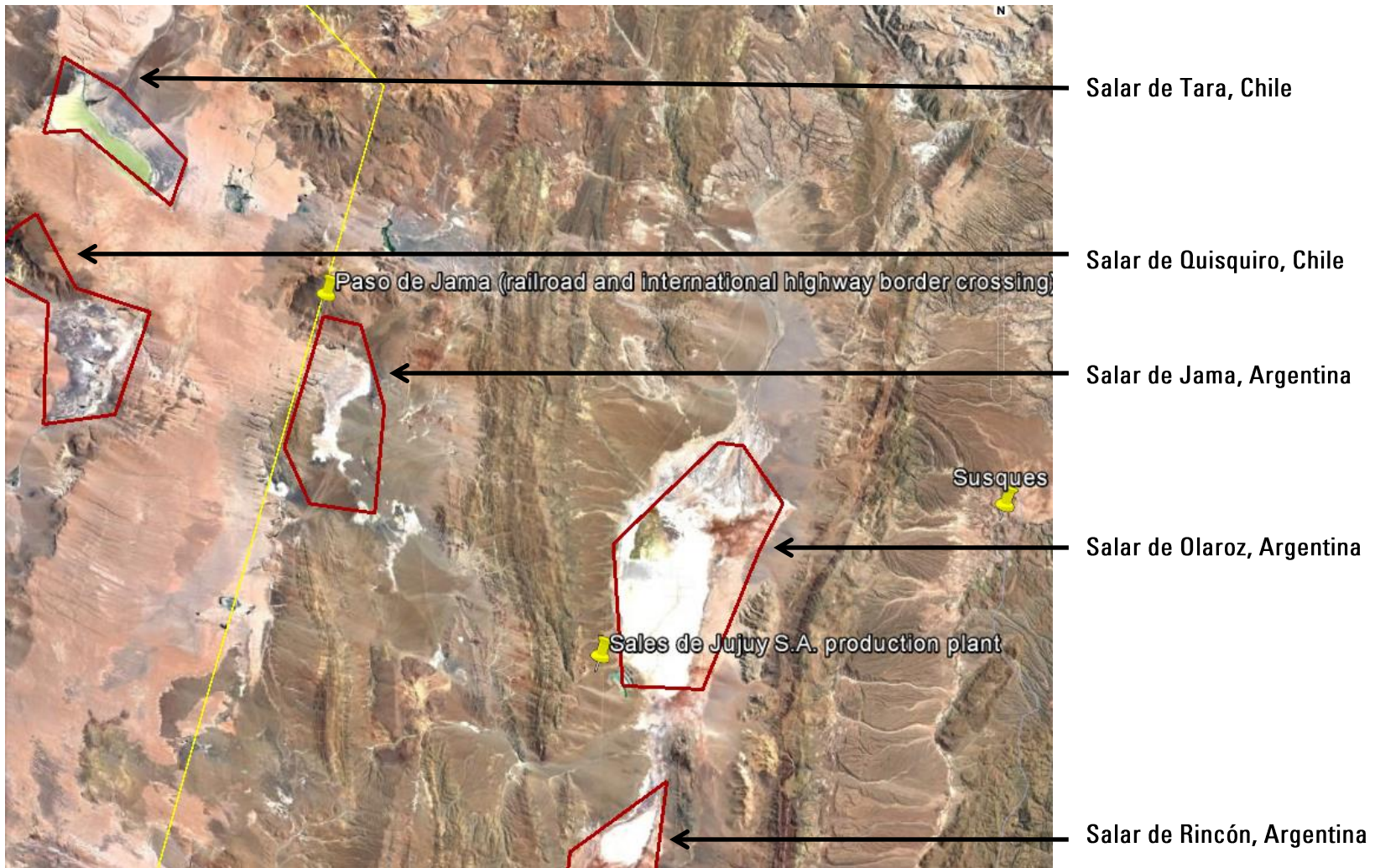


Figure 2.—Overview of the area surrounding the Sales de Jujuy S.A. production plant at Salar de Olaroz, Argentina (satellite imagery from Google Earth).

Red line shown is 37 kilometers
or ~23 miles.

Sales de Jujuy S.A. production
plant and facilities

Intersection of access road and
Ruta nacional (national road) 52
(distance from plant to road
approximately 5.5 km (~3 miles).



Figure 3.—Salar de Olaroz, Argentina, showing the Sales de Jujuy S.A. production plant located in the southwest corner of the salar, near Ruta nacional (National road) 52 (satellite imagery from Google Earth).

Lifetime of Project¹⁰:

- In its 2011 JORC- (Australia) and NI 43–101 (Canada)-compliant Definitive Feasibility Study (DFS), Sales de Jujuy S.A. estimated a 40+ year production lifetime
- Measured and indicated resource from the 2011 DFS:
 - 6.4 million metric tons of lithium carbonate¹¹
 - 19.3 million metric tons of potassium chloride¹²

¹⁰ Sales de Jujuy S.A., 2017, Projects Overview: Sales de Jujuy S.A. website, available at <http://salesdejujuy.com/projects>, date accessed November 5, 2017.

¹¹ Based on 1 metric ton of lithium being equivalent to 5.32 metric tons of lithium carbonate.

¹² Based on 1 metric ton of potassium being equivalent to 1.91 metric tons of potash.

II. FMC Lithium Corp.

- Company history¹³
 - 1995: Acquisition of the Salar del Hombre Muerto
 - This salar is smaller than many in areal extent, but contains lithium brines at much greater depths.
 - The company estimates that lithium reserves are sufficient for 75+ years.
 - Only mine-to-metal producer in the world¹⁴
 - Proprietary purification process results in lithium carbonate extraction at 95% purity

- Company operations in Argentina
 - Argentine subsidiary: Minera del Altiplano S.A.
 - 1997 --- Production of lithium carbonate began¹⁵
 - 2011 --- Company expanded production facility at Salar del Hombre Muerto by 30%
 - See next pages for satellite image from Google Earth

- Company annual production capacity
 - Total annual plant production capacity for lithium carbonate is 23,000 metric tons per year¹⁶
 - Total production output in 2015 was:¹⁷
 - 5,848 metric tons lithium chloride
 - 12,411 metric tons lithium hydroxide
 - By yearend 2019, company is looking to increase lithium hydroxide capacity to 30,000 metric tons per year.¹⁸

¹³ FMC Lithium Corp., 2017, Lithium History: FMC Lithium Corp. website, available at <http://www.fmclithium.com/Home/LiHistory.aspx>, accessed on November 5, 2017.

¹⁴ FMC Lithium Corp., 2012, Lithium Market Review: FMC Lithium Corp. presentation, available at <http://www.fmclithium.com/Portals/FMCLithiumEnergy/Content/Docs/Jefferies%20Conference%20Feb%202012%20FINAL.pdf>, accessed on November 5, 2017.

¹⁵ Galaxy Resources Ltd., 2017, Sal de Vida: Galaxy Resources Ltd. website, available at <http://www.galaxyresources.com.au/projects/sal-de-vida>, accessed on November 5, 2017.

¹⁶ Jaskula, B.W., Lithium, *in* Metals and minerals: U.S. Geological Survey Minerals Yearbook 2014, v. 1, p. 44.1-44.12, accessed November 5, 2017, at <https://minerals.usgs.gov/minerals/pubs/commodity/lithium/myb1-2014-lithi.pdf>.

¹⁷ Industrial Minerals, 2015, World Lithium 2015: Industrial Minerals map, available at http://www.indmin.com/downloads/IM_World_Lithium_Map_2015.pdf, accessed November 5, 2017.



Red line shown is 37
kilometers or
approximately 23 miles.

Figure 4.—Salar del Hombre Muerto, Argentina, showing the FMC Lithium Corp. production plant located in the center of the bottom of the image (satellite imagery from Google Earth). Purple line is the border between Salta Province (to the north) and Catamarca Province (to the south).

¹⁸ NetworkNewsWire, 2017, The Global Scramble for Lithium: PR NewsWire, October 5, accessed on November 5, 2017, available at <https://www.prnewswire.com/news-releases/the-global-scramble-for-lithium-649568853.html>.

2. Pilot plants and plants under construction

I. Plants listed as under construction by the Ministerio de Energia y Minería

A. Caucharí-Olaroz project

- a. **Company:** Lithium Americas Corp., JEMSE, and SQM (Chile)
 - i. Corporate structure is actually a 50/50 JV between Lithium Americas Corp. and SQM.
 - ii. JEMSE, as the provincial government partner, has a right to an 8.5% interest in the joint venture.¹⁹
 - iii. The 50/50 JV itself does business as Minera Exar S.A.²⁰
- b. **Location:** Salar de Caucharí, southwestern Jujuy Province
- c. **Other information:**
 - i. Lithium Americas Corp.'s website indicates that construction is well underway at yearend of 2017. 2017 saw site preparation, camp construction, pond construction, and wellfield installation.
 - ii. Plant construction is slated for 2018.
 - iii. Commissioning and first production of lithium carbonate is expected in 2019.

B. Pozuelos project --- Clarification on entry in Ministerio de Energia y Minería's March 2017 report

- a. **Company: LSC Lithium Corp. (former companies involved included South Korean steelmaker POSCO and LitheA Inc.)**

¹⁹ "In March 2016, Lithium Americas Corp. entered a strategic 50/50 joint venture with SQM S.A. (Chile) to develop and operate the Caucharí-Olaroz project." The name of the operating company is Minera Exar S.A. JEMSE has a right to an 8.5% interest in the joint venture. Lithium Americas Corp., 2017, Investor Presentation: Lithium Americas Corp. presentation, Vancouver, Canada, available at <http://lithiumamericas.com/wp-content/uploads/2017/09/LAC-Investor-Presentation-September-2017-FINAL-1.pdf>, accessed on November 5, 2017.

²⁰ Lithium Americas Corp., 2017, Minera Exar S.A.—Cauchari-Olaroz Project: Lithium Americas Corp. website, available at <http://lithiumamericas.com/companies/cauchari-olaroz/>, accessed November 5, 2017.

b. **Location:** Salar de Pozuelos, northern Jujuy Province

c. **Other information:**

- i. This is relatively new information after the original March 2017 publication of the Ministerio de Energia y Minería's report listing the major lithium projects in the country.
- ii. The original version of this report from the Ministerio de Energia y Minería indicated that a pilot plant was under construction.
- iii. As stated in the NI 43–101 technical report filed by LSC Lithium Corp. in June 2017 (after the report's publication), POSCO terminated the agreement with LineA Inc., prior to the acquisition of LineA Inc.'s assets by LSC Lithium Corp. LSC Lithium Corp. acquired LitheA Inc. in June 2017.
- iv. The status has been changed from "Under construction --- pilot plant" to "Advanced exploration." The NI 43–101 report explaining this was not published until the very end of June 2017.
- v. The NI 43–101 report states that the last stage of development was "exploration programs [... including] surface sampling, geophysics, diamond core drilling, and well drilling / pumping tests."
- vi. Reference: LSC Lithium Corp., 2017, Technical report on the Salar de Pozuelos project, Salta Province, Argentina: Hains Engineering Company Ltd., prepared for LSC Lithium, Corp., p. 12, available at https://s21.q4cdn.com/429708605/files/doc_downloads/technical_reports/Pozuelos-NI-43-101-June-29-2017.pdf, accessed November 6, 2017.
- vii. On an related note, it should be noted that South Korean steelmaker POSCO has built a successful demonstration plant for lithium carbonate at its Gwangyang Works in South Korea.

II. Facilities in feasibility analysis / testing and preliminary economic analysis

A. Sal de Vida project²¹

- a. Status: Feasibility study
- b. **Company:** Galaxy Resources Ltd.
- c. **Location:** Salar del Hombre Muerto, eastern side of the salar, Salta and Catamarca Provinces
- d. **Other information:**
 - i. 2012: Company published a Mineral Resource Estimate
 - ii. April 2013: Company published a Definitive Feasibility Study (DFS)
 - iii. Company estimated 1.1 million metric tons of lithium carbonate equivalent and 4.2 million metric tons of potassium chloride
 - iv. Anticipated lifetime for production could be 40(+) years

B. Sal de Los Angeles project

- a. Status: preliminary economic analysis
- b. **Company:** Lithium-X Energy Corp. (80%), Aberdeen International Inc. (20%)
- c. **Location:** Salar de Diablillos, eastern edge of the Lithium Triangle, central Salta Province
- d. **Other information:**
 - i. Indicated resource: 1.04 million metric tons lithium carbonate equivalent
 - ii. Inferred resource: 1.01 million metric tons lithium carbonate equivalent

• ²¹ Galaxy Resources Ltd., 2017, Sal de Vida: Galaxy Resources Ltd. website, available at <http://www.galaxyresources.com.au/projects/sal-de-vida>, date accessed November 6, 2015.

B. Companies with significant land holdings and exploration work underway

The physical nature of the salars and saline lakes / lagunas of this portion of the Central Andes means that companies maintain significant land holdings for their exploration work. These tables provide some context into the total land area under mining tenements (also known as mining leasing or concession areas) (see last section for a table derived from the Argentinian Ministerio de Energia y Minería for a comprehensive list of all companies working in the area):

Table 1—Total hectares of land under mining tenement agreements, concessions, or leasing areas within the Argentinian portion of the Lithium Triangle, 2017.

ID	Salar Name	Total hectares under mining tenement agreements granted to different companies
1	Salar de Olaroz	63,000
2	Salar del Hombre Muerto	30,000
3	Salar de Cauchari 1	70,000
4	Salar de Pozuelos	30,000
5	Salar de Cauchari 2	27,771
6	Salar de Antofalla	13,654
7	Laguna de Guayatayoc	21,276
8	Salar de Salinas Grandes	33,610
9	Salar de Arizaro	26,355
10	Salar de Incahuasi	9,843
11	Salar del Rincon	2,346
12	Salar de Salinas Grandes / Laguna de Guayatayoc	93,000
13	Laguna de Tres Quebradas	35,000
14	Salar de Pular	26,355
15	Salar del Hombre Muerto	1,804
16	In Catamarca Province in between Tres Quebradas and Salar de Antofalla	3,900
17	Laguna Vilama	2,500
18	Guayatayoc I	2,500
19	Guayatayoc III	2,725
20	Kachi, near Salar de Antofalla	50,000
21	Laguna Caro and Salar de Antofalla	128,367
22-27	5-6 separate salars or lagunas licensed to one company ²²	200,000
TOTAL		876,000 hectares

²² This figure is based on LSC Lithium Corp.'s table of tenements and areas attributable to LSC based on granted leases. Not all have been granted tenure but the company has used a total of 300,000 hectares in other press releases and informational presentations. There may be some overlap with a few other properties, thus, the company's conservative estimate of 200,000 hectares is being used.

II. Table and explanatory notes: Global and South American Lithium Reserves and Identified Resources, 2017

Included here for reference is a table showing the global and South American-specific lithium reserves and identified resources for the years 2015–17. This table shows the relative percent share of total global reserves and identified resources for each year. These figures are from the Mineral Commodity Summaries chapter for lithium, an annual report that is the earliest Government publication to furnish estimates covering nonfuel mineral industry data (available online via the National Minerals Information Center website at <https://minerals.usgs.gov/minerals/pubs/mcs/> and <https://minerals.usgs.gov/minerals/pubs/commodity/lithium/>).

Table 3—Global and South American lithium reserves and identified resources, 2017.

<u>Global Lithium Reserves - metric tons of lithium content</u>		Lithium Triangle of South America countries in yellow				
Country	2015 Reserves	2015 identified resources	2016 Reserves	2016 identified resources	2017 Reserves	2017 identified resources
Argentina	850,000	6,500,000	2,000,000	6,500,000	2,000,000	9,000,000
Australia	1,500,000	1,700,000	1,500,000	1,700,000	1,600,000	2,000,000
<i>Austria (resources only)</i>				130,000		100,000
<i>Bolivia (estimated resources only)</i>		9,000,000		9,000,000		9,000,000
Brazil	48,000	180,000	48,000	180,000	48,000	200,000
<i>Canada (resources only)</i>		1,000,000		1,000,000		2,000,000
Chile	7,500,000	7,500,000	7,500,000	7,500,000	7,500,000	7,500,000
China	3,500,000	5,400,000	3,200,000	5,100,000	3,200,000	7,000,000
<i>DRC (resources only)</i>		1,000,000		1,000,000		1,000,000
<i>Mexico (resources only)</i>				180,000		200,000

Global Lithium Reserves - metric tons of lithium content

Lithium Triangle of South America countries in yellow

Country	2015 Reserves	2015 identified resources	2016 Reserves	2016 identified resources	2017 Reserves	2017 identified resources
Portugal	60,000		60,000		60,000	
<i>Russia (resources only)</i>		1,000,000		1,000,000		1,000,000
<i>Serbia (resources only)</i>		1,000,000		1,000,000		1,000,000
United States	38,000	5,500,000	38,000	6,700,000	38,000	6,900,000
Zimbabwe	23,000		23,000		23,000	100,000
World Total	13,519,000	39,780,000	14,369,000	40,990,000	14,469,000	47,000,000
Argentina's Percent Share of World Total	6.3%	16.3%	13.9%	15.9%	13.8%	19.1%
Bolivia's Percent Share of World Total		22.6%		22.0%		19.1%
Chile's Percent Share of World Total	55.5%	18.9%	52.2%	18.3%	51.8%	16.0%
Entire Lithium Triangle	61.8%	57.8%	66.1%	56.2%	65.6%	54.2%

Clarification notes on the terms “reserves” and “identified resources:”

As discussed in “Appendix C—Reserves and Resources” of the Mineral Commodity Summaries, the terms “reserves” and “identified resources” have specific, technical meanings. Sometimes in the news media, these terms are used interchangeably but improper usage can lead to misunderstandings of the data.

At the top-most level, the term “**resource**” is used to define any “concentration of naturally occurring solid, liquid, or gaseous material in or on the Earth’s crust in such form and amount that economic extraction of a commodity from the concentration is currently or potentially feasible.”

Below this, the term “**identified resource**” is used to define any “resource whose location, grade, quality, and quantity are known or estimated from specific geologic evidence. Identified resources include economic, marginally economic, and subeconomic components. To reflect varying degrees of geologic certainty, these economic divisions can be subdivided into measured, indicated, and inferred.”

A subset of identified resources is the “**reserve base**.” The “reserve base” is all identified resources “that meet specific minimum physical and chemical criteria related to current mining and production practices, including those for grade, quality, thickness, and depth. The reserve base is the in-place demonstrated (measured and indicated) resource from which reserves are estimated. It may encompass those parts of the resources that have a reasonable potential for becoming economically available within planning horizons, beyond those that assume proven technology and current economics.”

The reserve base includes those resources that are:

- Currently economic (reserves)
- Marginally economic (marginal reserves)
- And some of those that are currently subeconomic (subeconomic resources)

[Note: the term “geologic reserve” is sometimes used or implied. It is not part of this classification system.]

As mentioned above, the term “**reserves**” has a specific meaning. It is “that part of the reserve base which could be economically extracted or produced at the time of determination. The term reserves need not signify that extraction facilities are in place and operative. Reserves include only recoverable materials; thus, terms such as “extractable reserves” and “recoverable reserves” are redundant and are not a part of this classification system.”

In June 2017, The Economist phrased this well as “[the Lithium Triangle of South America] holds 54% of the world’s ‘lithium resources,’ an initial indication of potential supply before assessing proven reserves.”²⁴ All identified resources are potential sources of supply; reserves are those that could be extracted economically at current market conditions.

²⁴ Economist, The, 2017, Three South American countries hold over half the world’s lithium: The Economist Data Team, June 19, available at <https://www.economist.com/blogs/graphicdetail/2017/06/daily-chart-12>, accessed November 5, 2017.

III. Geospatial Data Layers included in the GeoPDF map

As per the email requests, the following features are included in the “Argentina_Lithium_Map.PDF:”

1. Railroads:

- Layer name: “Railroads”
- The General Manuel Belgrano Railway (Spanish: Ferrocarril General Manuel Belgrano (FCGMB)) is the main railroad throughout northwestern Argentina and shown on the map.
- Data obtained from Instituto Geográfico Nacional de la República Argentina
- Via a Web Mapping Service: <http://wms.ign.gob.ar/geoserver/wfs>
- Date accessed November 4, 2017

2. National Road Network (Rutas nacionales):

- Layer name: “National Road Network (Rutas nacionales)”
- Data obtained from Dirección de Observatorio Nacional de Transporte / Ministerio de Transporte online geospatial data catalog
- Published July 21, 2017; date accessed November 4, 2017
- Available at <https://datos.transporte.gob.ar/dataset/rutas-nacionales>

3. High-voltage power lines

- Layer name: “High-voltage power lines”
- Data obtained from Mapa del Ministerio de Energía y Minería
 - Name in Spanish: Líneas de alta tensión
 - Available via a Web Mapping Service: <http://sig.se.gob.ar/wmsenergia?>

- Date accessed: November 4, 2017

4. Cities and towns of Northwest Argentina

- Layer name: “Cities and towns”
- Digitized from Google Earth. Very few towns in the higher elevations, but most confirmed based on company literature.

5. Lithium Triangle outline

- Layer name: “Lithium Triangle outline”
- Approximated based on location of salars and salt lakes throughout Bolivia, Chile, and Argentina.
- Note: various online maps may present the shape of the triangle in different ways depending on which areas of the three countries that they include and (or) if they are only including the major salars.
- For example, some include the main boundaries as consisting of Salar de Uyuni in Bolivia, Salar de Atacama in Chile, and either Salar del Hombre Muerto or Salar de Rincón in Argentina.
- However, there are other salars in the mountains of all 3 countries or coastal salt flats in Chile in the vicinity that do not fall within exact boundaries drawn by these 3 salars.
- For example, some maps exclude those salars in the northern portion of the Atacama Province of Chile or salars in Argentina such as Salar de Antofalla or Laguna de Tres Quebradas in northwestern or southwestern Catamarca Province, respectively.

6. Province boundaries

- Layer name: “Argentina Provinces”
- Data obtained from Instituto Geográfico Nacional de la República Argentina
- Via a Web Mapping Service: <http://wms.ign.gob.ar/geoserver/wfs>
- Date accessed November 4, 2017

7. Atacama natural gas pipeline

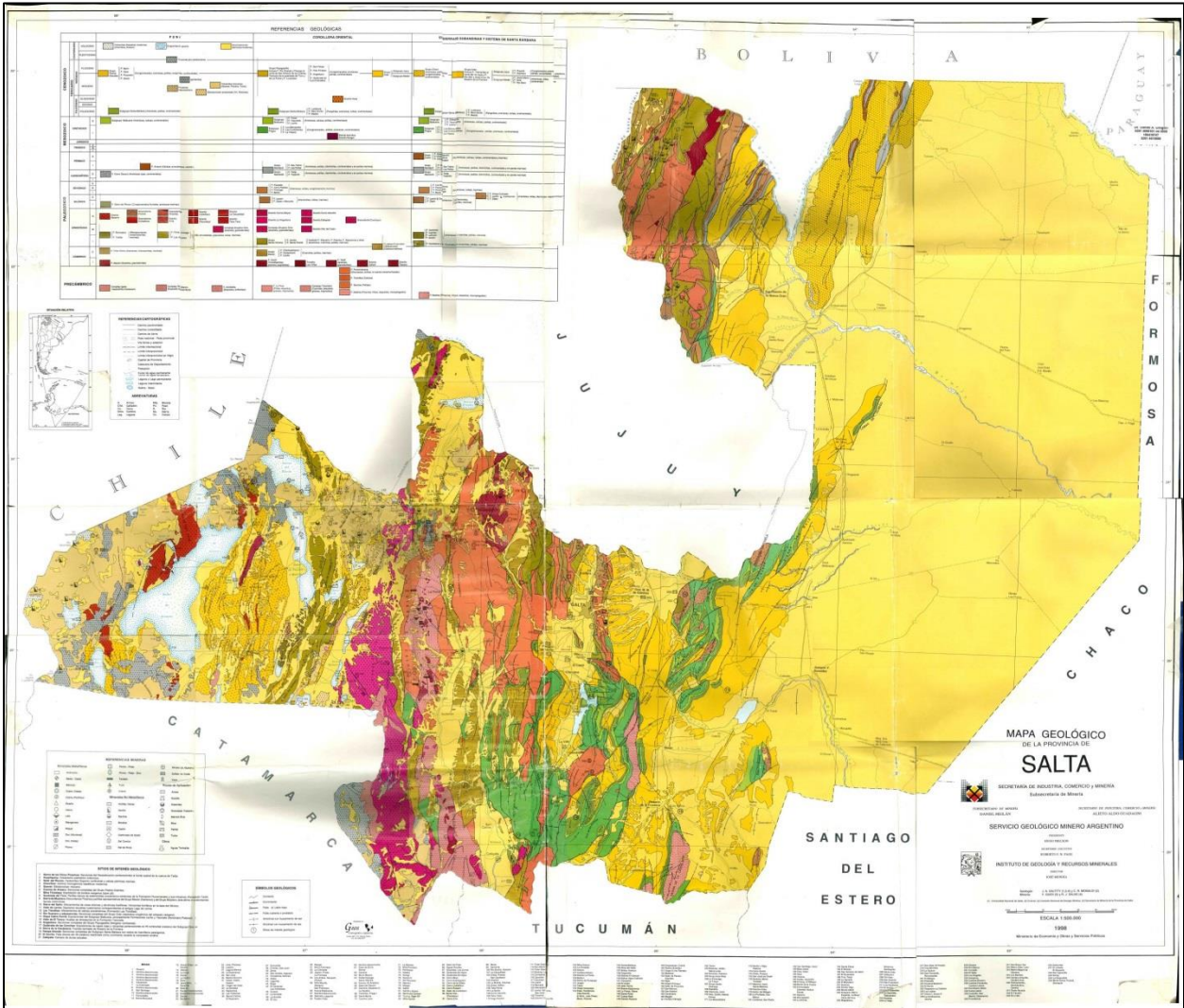
- Layer name: “Gas pipelines”
- Data sources:
 - Chilean portion:
 - Ministerio de Energía, Infraestructura de Datos Especiales [Chile], 2017, Infraestructura Asociada a Combustible (Gasoductos y oleoductos), Centrales Generación Eléctrica (Eólicas, hidroeléctrica, solares, termoeléctricas), Sistema de Transmisión Eléctrica (Linea de Transmisión SING, Linea de Transmisión SIC, Linea de Transmisión Aysen): Ministerio de Energía, Infraestructura de Datos Especiales interactive map, accessed November 4, 2017, at <http://sig.minenergia.cl/sig-minen/moduloCartografico/composer/>.
 - Argentinian portion – main trunk lines:
 - Ministerio de Energía y Minería [Argentina], 2017, Transporte hidrocarburos—Ductos troncales—Gasoductos: Ministerio de Energía y Minería web page, accessed November 4, 2017, at <http://datos.minem.gob.ar/transporte-hidrocarburos-ductos-troncales-gasoductos>.
- Identification proof:
 - Required as no label was provided in original data source. Combination of Fluor Corp.’s website and Enel Generacion Chile S.A.’s website provide proof of name and ownership based on location.
 - “It enters Chile at Paso de Jama and traverses the Atacama desert. The pipeline ends at an electrical power plant near the Pacific port of Mejillones in northern Chile.”
 - Fluor Corp. (construction consultant) website, 2017
 - <http://www.fluor.com/projects/onshore-natural-gas-pipeline-epcm>
 - Date accessed: November 4, 2017
 - Paso de Jama is immediately north of the Salar de Jama, site of LSC Lithium Corp.’s prospecting activity.

- Owner of pipeline: Gas Atacama, Enel Generación Chile S.A., 2016
 - <http://www.enelgeneracion.cl/en/conocenos/SociedadesEnelGeneracion/Pages/GasAtacama.aspx>
 - Date accessed: November 4, 2017

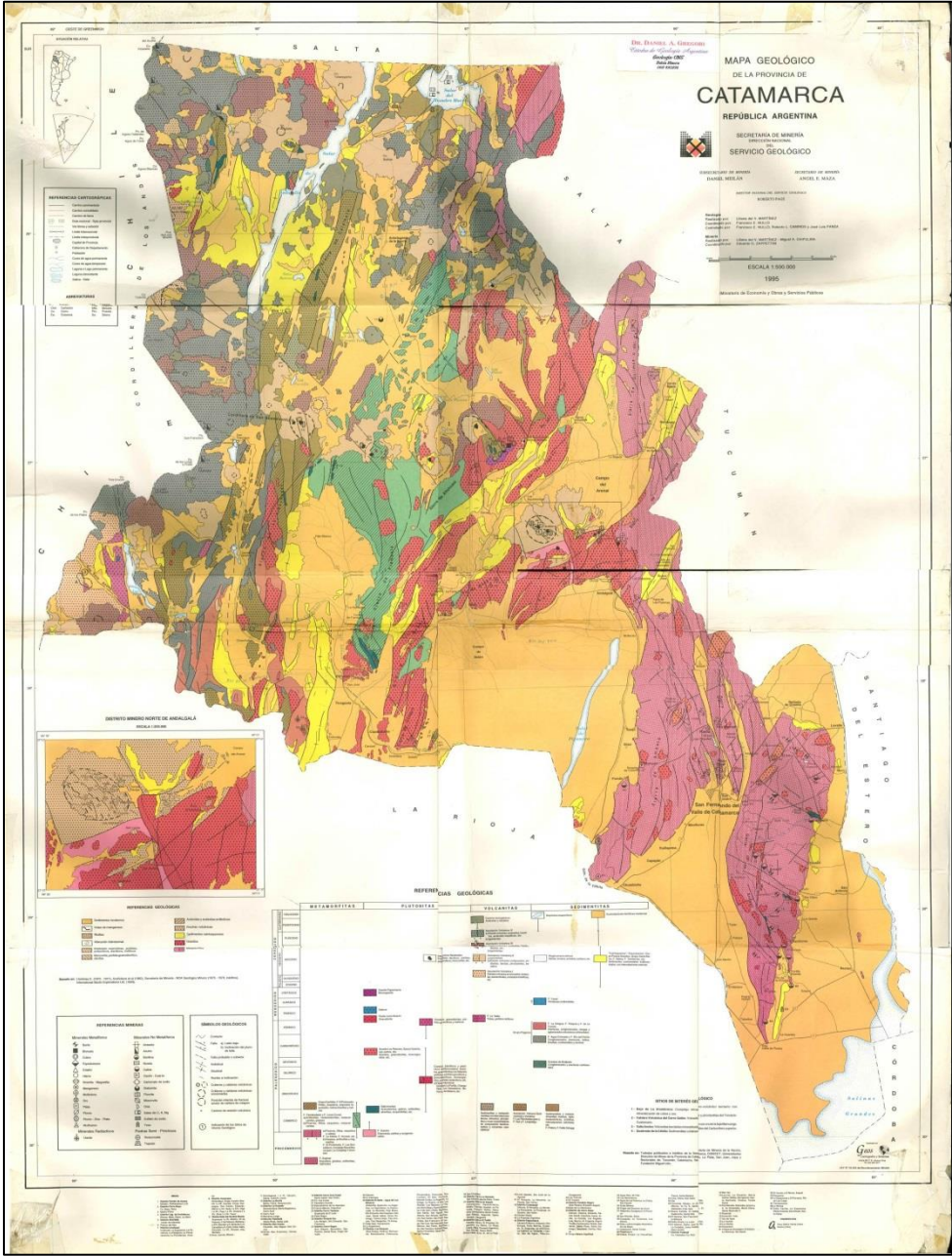
8. Geological basemap:

- Data obtained from the Sistema de Información Geográfica del Servicio Geológico Minero Argentino.
- Original map is called the Mapa Geológico de la República Argentina, scale 1 : 2,500,000, from 1998.
- Via a Web Mapping Service: <http://sig.segemar.gob.ar/wms?>
- Date accessed: November 4, 2017
- Higher-definition geologic maps of individual provinces are available from the Centro Científico Tecnológico Bahía Blanca at <http://www.criba.edu.ar/geolarg/topograficas.html>.
- These can be used as an Explanation for map terms not shown in the GeoPDF. See full-sized versions on the website for clearer text.
- Maps are shown on the following pages. **Salars are the white areas on each map (except for the lake in southern Tucumán Province).**

- Salta
 - <http://www.criba.edu.ar/geolarg/SALTA.JPG>



- Catamarca and Tucumán Provinces
 - Catamarca
 - <http://www.criba.edu.ar/geolarg/CATAMARCA.JPG>



9. Salars

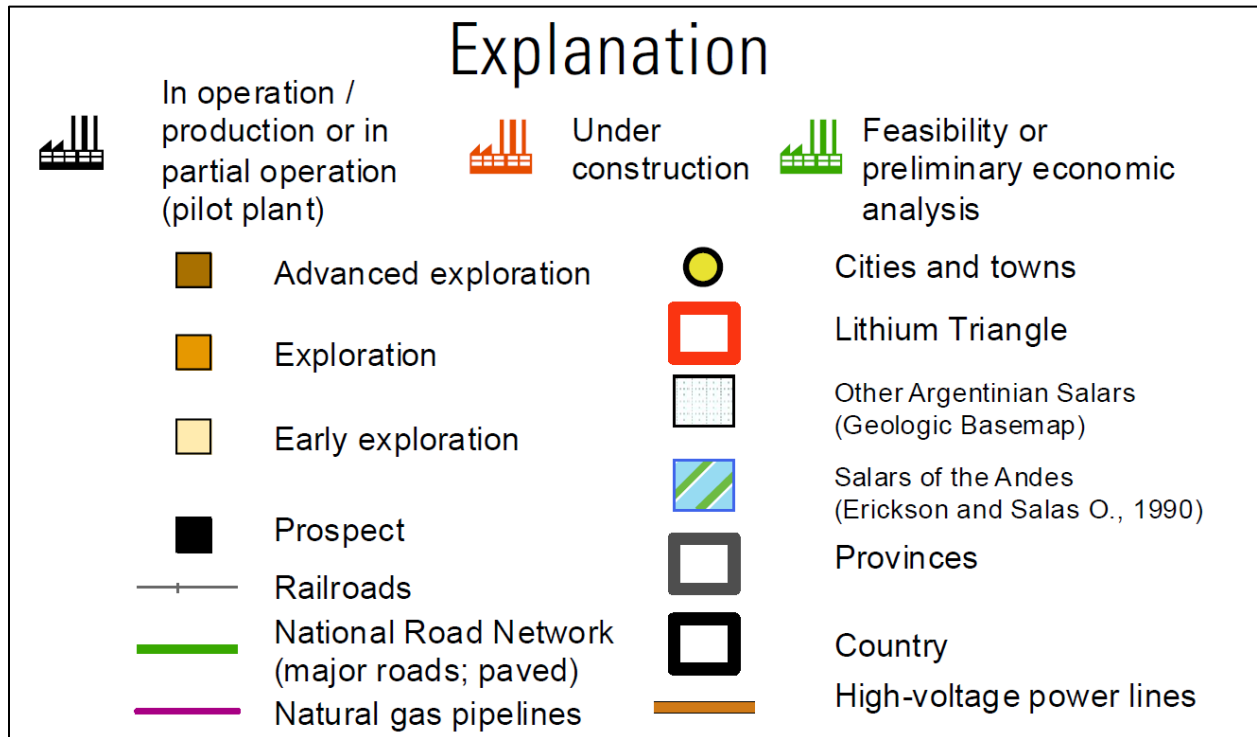
- All salars of the Central Andes in Bolivia, Chile, and Argentina were digitized from “Geology and resources of Salars in the Central Andes,” by George E. Ericksen (U.S. Geological Survey, United States) and Raul Salas O. (Servicio Nacional de Geología y Minería, Chile)
- Published as Chapter 10 of Ericksen, G.E., Cañas Pinochet, M.T., and Reinemund, J.A., editors, 1989, Geology of the Andes and its relation to hydrocarbon and mineral resources: Houston, Texas, Circum-Pacific Council for Energy and Mineral Resources Earth Science Series, v. 11.
- http://archives.datapages.com/data/circ_pac/0012/0151_f.pdf

10. Combined production areas between Argentina and either Chile or Bolivia:

- **None**, as per written communication from subject matter expert USGS NMIC Country Specialist for Argentina, Jesse Inestroza
- Of note: there is one location with prospecting work being performed in the Salar de Pular, which crosses the border with Chile. However it does not seem as if any activity work crosses the border. Company involved is PepinNini Minerals Ltd. [<http://www.pepinnini.com.au/projects/south-american-projects/argentina/>].

11. Different colors for different stages of development:

- As shown in the map Explanation:



12. Map icons showing yield size

Not included.

Only two mines are currently in production (see the first section for detailed descriptions of these facilities).

Annual production capacities are shown in the text descriptions.

IV. Table and explanatory notes: Mining and exploration companies within the Argentinian portion of the Lithium Triangle, including notes on delineated mining license or concession areas²⁵

Table 4—Projects listed by the Argentinian Ministerio de Energia y Minería, 2017. Columns with blue headers indicate new information added by U.S. Geological Survey.

Note: Several entries information under the columns with blue headers may be marked as “NA; further research required.” These properties or projects require further research to determine mineral license information and total land areas. A future version of this report may be published with as much complete information as possible.

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses or brackets)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
1	A - Operation / Production / Advance Exploration (salars)	In operation / production	Jujuy	Lithium, potassium	<u>Sales de Jujuy S.A.</u> [Orocobre S.A., Toyota Tsusho Corp., and JEMSE]	Salar de Olaroz [also known as Olaroz Lithium]	Salar de Olaroz	Yes - In technical report	63,000 ha. / ~156,000 acres / 630 km ² / 243 miles ²	NI 43-101; dated 01/31/12 on Orocobre Ltd.'s website ²⁶
2		In operation / production	Catamarca	Lithium	FMC Lithium Corp.	Mina Fénix (Phoenix Mine)	Salar del Hombre Muerto	None available	30,000 ha. / ~74,000 acres / 300 km ² / 116 miles ² Info obtained from website ²⁷	Not available

²⁵ Majority of table references are derived from: Ministerio de Energia y Minería [Argentina], 2017, Situación actual y perspectivas—Mercado de litio: Ministerio de Energia y Minería informe especial, March, available at <http://scripts.minem.gob.ar/octopus/archivos.php?file=7252m>, accessed November 5, 2017. Some projects have been updated to reflect changes since March 2017, including the exchange or purchasing of property mineral rights by some companies, denoted by other reference footnotes.

²⁶ Houston, John, and Gunn, Mike, 2011, Technical Report on the Salar de Olaroz Lithium-Potash Project—Jujuy Province, Argentina: National Instrument (NI) 43-101 report, effective date May 31, available at <http://www.orocobre.com/investor-centre/technical-reports/>, accessed November 5, 2017.

²⁷ FMC Lithium Corp., 2011, Lithium Market Review: FMC Lithium Corp. presentation, available at <http://www.fmcilithium.com/Portals/FMCLithiumEnergy/Content/Docs/Jefferies%20Conference%20Feb%202012%20FINAL.pdf>, accessed November 5, 2017.

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses or brackets)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
3	A - Operation / Production / Advance Exploration (salars)	In operation / production --- pilot plant.	Salta	Lithium, potassium	ENIRGI Group Corp.	DXP plant, Salar del Rincón	Salar del Rincón	NA; further research required.		
4		Under construction: 2017: site preparation, camp construction, pond construction, wellfield installation; 2018: plant construction; 2019: commissioning and first production ²⁸	Jujuy	Lithium, potassium	<u>Lithium Americas Corp.</u> (operating as <u>Minera Exar</u>), JEMSE, SQM ²⁹	Cauchari-Olaroz	Salar de Cauchari	Yes – on website	70,000 ha. 173,000 acres / 700 km ² / 270 miles ²	NI 43–101; dated 7/11/2012 on Lithium America’s website ³⁰
5		Advanced exploration	Salta	Lithium	LSC Lithium Corp. (formerly <u>LitheA Inc.</u>) ³¹	Salar de Pozuelos ³²	Salar de Pozuelos	TBD – competing claims in area or	30,000 ha. (99% of the salar) /	NI 43–101; 12/31/16

²⁸ Lithium Americas Corp., 2017, Minera Exar S.A.—Cauchari-Olaroz Project: Lithium Americas Corp. website, available at <http://lithiumamericas.com/companies/cauchari-olaroz/>, accessed November 5, 2017.

²⁹ Note: LSC Lithium Corp. acquired LitheA Inc. in June 2017, after publication of the “Mercado de litio” report in March 2017. LSC Lithium Corp., 2017, LSC Lithium acquires LitheA Inc. and its Salar de Pozuelos tenements in northern Argentina: LSC Lithium Corp. press release, June 30, available at <https://www.lslithium.com/investor-centre/news-releases/press-release-details/2017/LSC-Lithium-Acquires-LitheA-Inc-and-its-Salar-De-Pozuelos-Tenements-in-Northern-Argetina/default.aspx>, accessed November 5, 2017.

³⁰ Lithium Americas Corp., 2012, Technical report and feasibility study reserve estimation and lithium carbonate and potash production at the Cauchari-Olaroz salars, Jujuy Province, Argentina: Lithium Americas Corp. NI 43–101 technical report, available at http://www.westernlithium.com/wp-content/uploads/2015/10/NI43101_FS_Cauchari.pdf, accessed November 5, 2017.

³¹ Lithium Americas Corp., 2017, Minera Exar S.A.—Cauchari-Olaroz Project: Lithium Americas Corp. website, available at <http://lithiumamericas.com/companies/cauchari-olaroz/>, accessed November 5, 2017.

³² The original version of this report from the Ministerio de Energia y Minería indicated that a pilot plant was under construction. As stated in the NI 43–101 technical report filed by LSC Lithium Corp. in June 2017 (after the report’s publication), POSCO terminated the agreement with LineA Inc., prior to the acquisition of LineA Inc.’s assets by LSC Lithium Corp. The status has been changed from “Under construction --- pilot plant” to “Advanced exploration.” The NI 43–101 report states that the last stage of development was “exploration

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses or brackets)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
	A - Operation / Production / Advance Exploration (salars)							unclear purchase of leasing properties	~75,000 acres / 300 km ² / 116 miles ²	
6		Feasibility study	Catamarca	Lithium, potassium	Galaxy Resources Ltd.	Sal de Vida	Salar del Hombre Muerto	NA; further research required.		
7		Preliminary economic analysis	Salta	Lithium, potassium	<u>Lithium-X Energy Corp.</u> (80%), Aberdeen International Inc. (20%)	Sal de Los Angeles	Salar de Diablillos	NA; further research required.		
8		Advanced exploration	Jujuy	Lithium, potassium	<u>Advantage Lithium Corp.</u> (50-75%) and Orocobre Ltd. ³³	Cauchari	Salar de Cauchari	Yes - In technical report from Orocobre Ltd. and on Advantage Lithium Corp.'s website ³⁴	27,771 ha. / ~68,623 acres / 278 km ² / 107 miles ²	NI 43-101; dated 22/09/17 on Orocobre Ltd.'s website ³⁵
9		Advanced exploration	Salta	Lithium	Eramet	Salar de Centenario-Ratones	Salar de Ratones	NA; further research required.		
10		Advanced exploration	Salta	Lithium	International Lithium joint venture with Jiangxi Ganfeng Lithium Co. Ltd.	Mariana I, II, and III	Salar de Llullaillaco	NA; further research required.		
11	Advanced	Salta	Lithium,	Lithium Power	Centenario	Salar de	NA; further research required.			

programs [... including] surface sampling, geophysics, diamond core drilling, and well drilling / pumping tests.” LSC Lithium Corp., 2017, Technical report on the Salar de Pozuelos project, Salta Province, Argentina: Hains Engineering Company Ltd., prepared for LSC Lithium, Corp., p. 12, available at https://s21.q4cdn.com/429708605/files/doc_downloads/technical_reports/Pozuelos-NI-43-101-June-29-2017.pdf, accessed November 6, 2017.

³³ “In March 2016, Lithium Americas Corp. entered a strategic 50/50 joint venture with SQM S.A. (Chile) to develop and operate the Cauchari-Olaroz project.” The name of the operating company is Minera Exar S.A. JEMSE has a right to an 8.5% interest in the joint venture. Lithium Americas Corp., 2017, Investor Presentation: Lithium Americas Corp. presentation, Vancouver, Canada, available at <http://lithiumamericas.com/wp-content/uploads/2017/09/LAC-Investor-Presentation-September-2017-FINAL-1.pdf>, accessed on November 5, 2017.

³⁴ Advantage Lithium Corp., 2017, Cauchari—The Flagship Asset: Advantage Lithium Corp. website, available at <http://www.advantagelithium.com/projects/argentina/cauchari/>, accessed on November 5, 2017.

³⁵ Brooker, Murray, and Ehren, Peter, 2016, Technical Report on the Cauchari Lithium Project—Jujuy Province, Argentina: National Instrument (NI) 43-101 report, effective December 5, amended December 22, 2016, available at <http://www.orocobre.com/investor-centre/technical-reports/>, accessed November 5, 2017.

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses or brackets)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
		exploration		potassium	<u>International</u>		Centenario			
12	B – Exploration / early exploration / prospecting (salars)	Advanced exploration	Salta	Lithium	<u>Everlight Resources</u>	Gallego Project	Salar de Hombre Muerto	NA; further research required.		
13		Advanced exploration	Salta and Catamarca	Lithium, potassium	<u>Advantage Lithium Corp.</u> , Albemarle Corp., and Bolland International	Antofalla	Salar de Antofalla	Yes – via website ³⁶	13,654 ha. ~33,740 acres / 137 km ² / 52 miles ²	NA
14		Exploration	Jujuy	Lithium, potassium, boron	<u>Advantage Lithium Corp.</u>	Guayatayoc	Laguna de Guayatayoc	Yes, via website. ³⁷	21,276 ha. ~52,574 acres / 213 km ² / 82 miles ²	NA
15		Exploration	Salta	Lithium	<u>Advantage Lithium Corp.</u>	[post-Stella Marys transaction with LSC Lithium Corp.]	Salar de Salinas Grandes	Area encompasses existing claims under royalty agreements	33,610 ha. ~83,052 acres / 336 km ² / 130 miles ²	NA
16		Exploration	Salta	Lithium	<u>Cascadero Copper Corp.</u>	Guadelquivir	Salar de Rio Grande	NA; further research required.		
17		Exploration	Salta	Lithium	<u>Grosso Group</u>	Salar de Arizaro	Salar de Arizaro	NA; further research required.		
18		Exploration	Salta	Lithium	<u>Lithium X Energy Corp.</u>	Salar de Arizaro 2	Salar de Arizaro	NA; further research required.		
19	Exploration	Salta	Lithium, potassium	<u>Orocobre (85%)</u>	Salinas Grandes	Salar de Salinas Grandes	NA; further research required.			

³⁶ Advantage Lithium Corp., 2017, Investors Presentation: Advantage Lithium Corp. presentation, November, available at <http://www.advantagelithium.com/resources/presentations/AAL-Presentation.pdf>, accessed November 5, 2017.

³⁷ Ibid.

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses or brackets)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
20	B – Exploration / early exploration / prospecting (salars)	Exploration	Salta	Lithium	PepinNini Minerals Ltd.	Proyecto Arizaro	Salar de Arizaro	Yes, via website ³⁸	12 mining leases with continuous tenure. ³⁹ 26,355 ha. ~65,125 acres / 264 km ² / 102 miles ²	None found
21		Early exploration	Salta	Lithium, potassium	Advantage Lithium Corp.	Salar de Incahuasi	Salar de Incahuasi	Yes, via website. ⁴⁰	9,843 ha. 24,320 acres / 98 km ² / 38 miles ²	NA
22		Early exploration	Salta	Lithium	Argosy Mineral Ltd. ⁴¹	Salar del Rincón	Salar del Rincón	Yes, via website. ⁴²	2,346 ha. 5,800 acres / 24 km ² / 9 miles ²	No feasibility work yet performed.
23		Early exploration	Salta	Lithium, potassium	Lithium Americas Corp. and SQM	Arizaro	Salar de Arizaro	NA; further research required.		
24		Early exploration	Salta	Lithium, potassium	Lithium Americas Corp. and SQM	Pocitos	Salar de Pocitos	NA; further research required.		
25		Early exploration	Jujuy	Lithium, potassium	Orocobre Ltd. joint venture with Toyota	Cangrejillos	Salar de Salinas	NA; further research required.		

³⁸ PepinNini Minerals Ltd., 2017, Argentina—Salta Lithium Projects: PepinNini Minerals Ltd. website, available at <http://www.pepinnini.com.au/projects/south-american-projects/argentina/>, accessed November 6, 2017.

³⁹ These figures are a total for all PepinNini Minerals Ltd. projects throughout the country. They include other projects, such as entry number 37 in this table, exploration work at Salar de Pular.

⁴⁰ Ibid.

⁴¹ In September 2017, Argosy Minerals Ltd. announced in a press release that it was not going to exercise a purchase for the Eeko option for its Mina Teresa and its Salar de Pocitos projects (Mina Teresa (a portion of the Salinas Grandes) was included in this table from March 2017; the Salar de Pocitos project was not included in this table). The company instead was going to focus solely on its Rincón property, which has been added to this table as a new entry (because it was not included in the original from the Ministerio de Energía y Minería). Argosy Minerals Ltd., 2017, Lapse of Eeko option: Argosy Minerals Ltd. press release, September 1, available at <http://www.asx.com.au/asxpdf/20170901/pdf/43m0k83j0ct2g2.pdf>, accessed November 5, 2017.

⁴² Argosy Minerals Ltd., 2017, Rincón Lithium Project—Argentina: Argosy Minerals Ltd. website, available at <http://www.argosyminerals.com.au/rincon-lithium-project-argentina>, accessed November 5, 2017.

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses or brackets)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
					Tsusho Corp.		Grandes			
26	B – Exploration / early exploration / prospecting (salars)	Prospecting	Jujuy	Lithium, potassium, boron	Dajin Resources Corp. / Delta Mutual Inc. ⁴³	Navidad	Salar de Salinas Grandes (part of Laguna de Guayatayoc)	Available on their website ⁴⁴	25 concessions, including the Navidad and San José projects. Total land holdings are significantly greater than the two projects listed by the Ministerio in the report.	NA
27		Prospecting	Jujuy	Lithium, potassium, boron	Dajin Resources Corp. / Delta Mutual Inc. ⁴⁵	San José	Salar de Salinas Grandes (part of Laguna de Guayatayoc)		93,000 ha. / ~230,000 acres / 930 km ² / 360 miles ²	
28		Prospecting	Salta	Lithium, potassium	Lithium Exploration Group Inc.	Rio Grande	Salar de Rio Grande	NA; further research required.		
29		Prospecting	Jujuy	Lithium, potassium	LSC Lithium Corp.	Jama	Salar de Jama	NA; further research required.		
30		Prospecting	Salta	Lithium, potassium	LSC Lithium Corp.	Pastos Grandes	Salar de Pastos Grandes	NA; further research required.		
31		Prospecting	Salta	Lithium, potassium	LSC Lithium Corp.	Rio Grande	Salar de Rio Grande	NA; further research required.		
32		Prospecting	Salta and Jujuy	Lithium, potassium	LSC Lithium Corp. and Dajin Resources Corp.	Salinas Grandes	Salar de Salinas Grandes	NA; further research required.		

⁴³ In August 2016, “Dajin’s wholly-owned Argentinian subsidiary, Dajin Resources S.A., signed a Memorandum of Understanding (MOU) with Lithium S Corp. (“LSC”) whereby LSC will be granted an option to earn a 51% interest in Dajin’s lithium properties in Argentina. Dajin Resources Corp., 2016, About Dajin—Company profile: Dajin Resources Corp. website, available at <http://dajin.ca/en/about-dajin>, accessed November 5, 2017.

⁴⁴ Dajin Resources Corp., 2017, Salinas Grandes—Argentina: Dajin Resources Corp. website, 2016, available at <http://dajin.ca/en/salinas-grandes>, accessed on November 5, 2017.

⁴⁵ Same as footnote 26.

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses or brackets)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
33	B – Exploration / early exploration / prospecting (salars)	Prospecting	Salta	Lithium, potassium	Millennial Lithium	Pastos Grandes	Salar de Pastos Grandes ⁰	NA; further research required.		
34		Prospecting	Salta	Lithium	Minera Pastos Grandes S.A. and Southern Lithium	Cruz	Salar de Pocitos	NA; further research required.		
35		Prospecting	Catamarca	Lithium, potassium	Neo Lithium Corp. (formerly PowerOne Capital Markets Ltd (POCML) 3 Inc.) ⁴⁶	Tres Quebradas (3Q)	Laguna de Tres Quebradas	Yes – technical report available via website. ⁴⁷	35,000 ha. / ~86,500 acres / 350 km ² / 135 miles ²	NI 43–101 report available via company website. ⁴⁸
36		Prospecting	Catamarca	Lithium, potassium	NRG Metals Inc.	Carachi-Pampa	Salar Carachi-Pampa	NA; further research required.		
37		Prospecting	Salta	Lithium, potassium	PepinNini Minerals Ltd.	Salar de Pular	Salar de Pular	Yes, via website ⁴⁹	12 mining leases with continuous tenure. ⁵⁰ 26,355 ha. ~65,125 acres /	None found

⁴⁶ SEDAR (the Canadian System for Electronic Document Analysis and Retrieval, similar to the SEC’s EDGAR system) lists POCML 3 Inc. as a former name of Neo Lithium Corp. SEDAR, 2017, available at <http://www.sedar.com/DisplayProfile.do?lang=EN&issuerType=03&issuerNo=00036348>, date accessed November 5, 2017. However, company documents and press releases indicate that PowerOne Capital Markets Ltd. 3 Inc. is a separate venture capital entity; see CEO.CA, 2016, Exclusive—Significant new lithium discovery in Argentina: CEO.CA news brief, available at <https://ceo.ca/@JrMining/exclusive-significant-new-lithium-discovery-in-argentina>, date accessed November 6, 2017.

⁴⁷ Neo Lithium Corp., 2016, Technical report on the Tres Quebradas lithium project, Catamarca Province, Argentina: Neo Lithium Corp. technical report, available at <https://static1.squarespace.com/static/577d5082579fb3c18e5fa7c5/t/5786b88abe65944b87328604/1468446876340/Tres+Quebradas+Technical+Report+%2843-101%29.pdf>, date accessed November 5, 2017.

⁴⁸ Neo Lithium Corp., 2017, Mineral resource estimate technical report on the Tres Quebradas lithium project, Catamarca Province, Argentina: Neo Lithium Corp. technical report, available at <https://static1.squarespace.com/static/577d5082579fb3c18e5fa7c5/t/59b0487a3e00be820cf4ed80/1504725128595/TRES+QUEBRADAS+MINERAL+RESOURCE+ESTIMATE-compressed.pdf>, date accessed November 5, 2017.

⁴⁹ PepinNini Minerals Ltd., 2017, Argentina—Salta Lithium Projects: PepinNini Minerals Ltd. website, available at <http://www.pepinnini.com.au/projects/south-american-projects/argentina/>, accessed November 6, 2017.

⁵⁰ These figures are a total for all PepinNini Minerals Ltd. projects throughout the country. They include other projects, such as entry number 37 in this table, exploration work at Salar de Pular.

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses or brackets)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
									264 km ² / 102 miles ²	
38		Prospecting	Salta	Lithium	Pure Energy Minerals Ltd.	Terra Cotta / Salar de Pocitos	Salar de Pocitos	NA; further research required.		
39		Prospecting	La Rioja	Lithium	TransPacific Minerals Corp.	La Mula	Laguna de Mulas Muertas	NA; further research required.		
40		Prospecting	Salta	Lithium, potassium	Trendix Mining SRL	Tolillar	Salar de Tolillar	NA; further research required.		
41		Prospecting	Salta	Lithium	Ultra Lithium Inc. and Jinshan Minera Argentina S.A.	Salar de Arizaro (brine)	Salar de Arizaro	NA; further research required.		
42		Prospecting	Salta	Lithium	Centenera Mining Corp.	El Quemado	Distrito Pegmatitico El Quemado	NA; further research required.		
43	C – Prospecting (pegmatites)	Prospecting	San Luis	Lithium	Dark Horse Resources	Mina Las Cuevas	Distrito Pegmatitico Conlara	NA; further research required.		
44		Prospecting	Cordoba	Lithium	Dark Horse Resources	Mina Las Tapias	Distrito Pegmatitico Altautina	NA; further research required.		
45		Prospecting	San Luis	Lithium	Latin Resources Ltd. and Lepidico Ltd.	La Estanzuela - Conlara	Distritos Pegmatiticos La Estanzuela y Conlara	NA; further research required.		
46		Prospecting	Catamarca	Lithium	Latin Resources Ltd. and Lepidico Ltd.	Vilisman - Ancasti	Distrito Pegmatitico Ancasti	NA; further research required.		

Table 5—Other Argentinian projects, 2017. These projects were not in the Ministerio de Energia y Minería’s report from March 2017.

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
1	Acquisition	Prospecting	Catamarca	Lithium	Portofino Resources Inc.	Del Condor / Pucara ⁵¹	Salar de Hombre Muerto	No	1,804 ha. 4,460 acres / 18 km ² / 7 miles ²	N/A
2	Acquisition	Prospecting	Catamarca	Lithium	Portofino Resources Inc.	“Project II” ⁵²	Between Neo Lithium Corp.’s 3Q project at Tres Quebradas and Salar de Antofalla	No	3,900 ha. 9,640 acres / 39 km ² / 15 miles ²	N/A
3	Exploration	Exploration	Jujuy	Lithium, potassium, boron	A.I.S. Resources Ltd. (Guayatayoc)	Laguna Vilama	Laguna Vilama	Yes. From technical report. ⁵³	2,500 ha. 6,177 acres / 25 km ² / ~10 miles ²	Combined NI 43–101 report for Laguna Vilama, Guayatayoc, and Guayatayoc III
4	Exploration	Exploration	Jujuy	Lithium, potassium, boron	A.I.S. Resources Ltd. (Guayatayoc)	Guayatayoc and Guayatayoc III	Laguna de Guyatayoc / Salar de Salinas Grandes; in between Dajin Resources Corp. / Lithium S		2 concessions a) 2,500 ha. 6,177 acres / 25 km ² / ~10 miles ² and b) 2,725 ha. 6,733 acres / 27 km ² /	

⁵¹ Portofino Resources Inc., 2017, Catamarca, Argentina Lithium: Portofino Resources Inc. website, available at <https://www.portofinoreources.com/projects/catamarca-argentina-lithium/>, accessed November 5, 2017.

⁵² Ibid.

⁵³ A.I.S. Resources Ltd., 2017, NI 43–101 Technical Report on the Laguna de Guayatayoc and Laguna Vilama lithium, potassium, boron projects: A.I.S. Resources Ltd. technical report, effective date March 31, available at <http://aisresources.com/wp-content/uploads/2017/06/AIS-NI-43-101-Report-Lithium-Project-Argentina.pdf>, accessed November 5, 2017.

ID	Category	Stage of Development	Province	Mineral Commodity	Operating Company (primary operator / owner underlined; other owners in parentheses)	Project Name	Salar Name	Mineral License Areas available through company website	Total land area (hectares (ha.); acres; km ² ; miles ²)	Technical Report available and date
							Corp.'s concessions		11 miles ²	
5	Exploration	Exploration	Catamarca	Lithium	Lake Resources N.L. (LKE) , operating through its Argentinian subsidiary Morena del Valle Minerals S.A. ⁵⁴	Kachi Lithium brine project	Near Salar de Antofalla	No	50,000 ha. 123,500 acres / 500 km ² / 193 miles ²	No
6	Exploration	Exploration	Catamarca	Lithium	Lithium Energi Exploration Inc. ⁵⁵ (formerly Portola Resources Inc.) --- the company has three subsidiaries operating in Argentina. 1. Lithium Eneri Argentina S.A. 2. Antofalla North S.A. 3. Antofalla South S.A.	Lithium Energi Argentina S.A. = Laguna Caro Project Antofalla North S.A. = Antofalla North Project Antofalla South S.A. = Antofalla South Project	Laguna Caro and Salar de Antofalla, both to the southwest of FMC Lithium Corp.'s production plant at Salar del Hombre Muerto. The Antofalla North and South projects surround Albemarle Corp.'s central claim in the salar.	No	128,367 ha. for all 3 areas ⁵⁶ 317,202 acres / 1,284 km ² / ~500 miles ²	No

⁵⁴ Evans, Meagan, 2017, Lake Resources Argentinian lithium project secures government support: FinFeed Financial News news briefing, available at <https://finfeed.com/mining/lke/lake-resources-argentinian-lithium-project-secures-government-support/20170911/>, accessed November 6, 2017.

⁵⁵ Lithium Energi Resources Inc., 2017, Portola Resources Inc. closes acquisition of 128,000ha of Argentina lithium assets and announces name change to Lithium Energi Exploration, Inc.: Lithium Energi Resources Inc. press release as published on MarketWired, March 22, available at <http://www.marketwired.com/press-release/portola-resources-inc-closes-acquisition-128000ha-argentina-lithium-assets-announces-2204812.htm>, accessed November 6, 2017.

⁵⁶ As listed in the press release from March 22, 2017, the individual projects consist of the following: 1) Laguna Caro Project comprises 8 concessions across 17,759 hectares; 2) Antofalla North Project comprises 13 concessions across 41,496 hectares; and, 3) Antofalla South Project comprises 18 concessions representing 69,112 hectares. See link in reference number 46.