

# PORTFOLIO OF **ADVANCED PROJECTS**

---

## Copper



Ministerio de Economía  
**Argentina**

Secretaría de Minería

# 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 COPPER PROJECTS



**CAPEX**  
21,979e M

**1**

## CONSTRUCTION

1 - JOSEMARIA

**1**

## FEASIBILITY (FS)

2 - EL PACHÓN



**IDENTIFIABLE RESOURCES**  
75.42 Mt Cu

**3**

## PREFEASIBILITY (PFS)

3 - FILO DEL SOL  
4 - PROYECTO MARA  
5 - SAN JORGE

**2**

## PEA (Preliminary Economic Assessments)

6 - LOS AZULES  
7 - TACA TACA



**POTENCIAL ADICIONAL PRODUCTION**  
Cu 1,219 kt/year  
Au 702 koz/year  
Ag 15 Moz/year  
Mo 18 kt/year

**13**

## ADVANCED EXPLORATION

8 - ALTAR  
9 - COIPITA  
10 - CORDON DE LAS PICHIREGUAS  
11 - INTERCEPTOR  
12 - LA ORTIGA  
13 - LAS FLECHAS  
14 - PROSPECTO RIO SALINAS  
15 - RINCONES DE ARAYA  
16 - RIO CENICERO  
17 - RIO GRANDE  
18 - SAN FRANCISCO  
19 - VALLE DE CHITA  
20 - PROYECTO PIUQUENES

Mt: millions of tons- Moz: million of ounces kt: thousands of tons- koz: thousand of ounces - M USD: Million of dollars - e: Estimated



Ministerio de Economía  
**Argentina**

Secretaría de Minería



Cu

JOSEMARIA

1



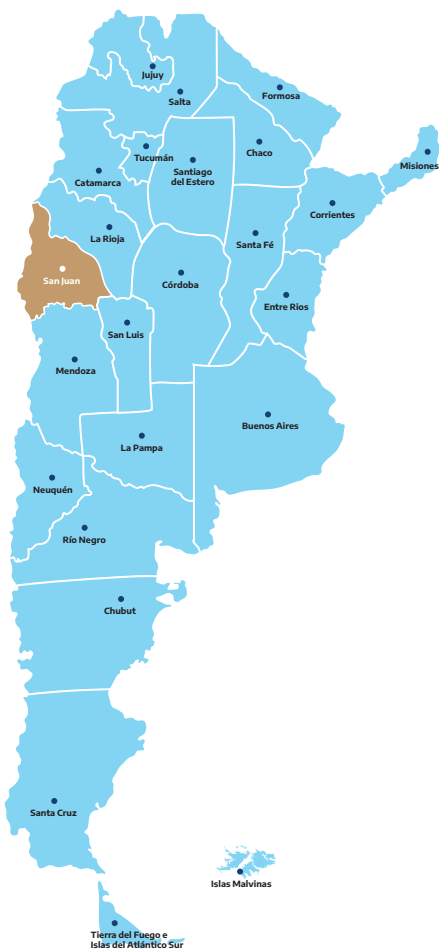
Ministerio de Economía  
**Argentina**

Secretaría de Minería



Cu

# JOSEMARIA



## LOCATION

(28° 27' 13" Lat S; 69° 35' 39" Long W.)

It is located near the limit of the Iglesia Department in the north of the province of San Juan, approximately 10 km from the border with Chile, in the middle of the Andes mountain range. It covers elevations from 4,000 to 4,900 meters above sea level. The closest city is Guandacol, in the province of La Rioja, located 200 km SE on a gravel road.



## MINERALIZATION TYPE

Copper, Gold and Silver Porphyry



## PROPERTY DATA OWNER / CONTROLLER

Lundin Mining Corp.



## OPERATOR

DEPROMINSA S.A.



## AREA

16,715 ha



Ministerio de Economía  
Argentina

Secretaría de Minería



# JOSEMARIA

---

## PROJECT GEOLOGY

Type of deposit - Copper, Gold and Silver Porphyry

### Regional Geology

The mining property is located within the Frontal Cordillera on the eastern flank of the Andes and its host rock is the Permian-Triassic batolithic rocks of the Choiyoi Formation. There are also volcanic rocks from the Tertiary period assigned to the Doña Ana Group. The latter are intruded by quartz-dioritic porphyry of estimated Miocene age.

It is a copper-gold porphyry type deposit. The geological characteristics, which include the tenor and the style of mineralization, the lithology of the host rock and the patterns of alteration and distribution of the mineralization, are similar to other Andean porphyry of the metallogenetic belt.

### Deposit Geology

At Josemaría, associated gold-copper mineralization occurs within altered intrusive dacitic rocks and hydrothermal breccias, accompanied by anhydrite, magnetite, pyrite, hematite, gypsum, quartz and sericite.

Most of the copper and gold mineralization is within the Miocene porphyry system, which forms an elongated body, with dimensions at least 900 m NS and 600-700 m EW and 600-700 m vertically. The deposit is open both to the south and to the north. In fact, in the 2012/13 season the company carried out a program of more than 7,000 meters of diamond with the intention of checking said extension. According to the results already published, it is very likely that the north-south size of the deposit will increase considerably.

### Project Status CONSTRUCTION

#### Company's Last Announcement

Dec. 2021: Lundin Mining announces the acquisition of 100% of the Josemaría project for an implied capital value of US\$485 million.



JOSEMARIA

**Contact**

Amanda Strong  
 Company information in Canada  
 Investor Relations Manager  
 Email: [info@josemariaresources.com](mailto:info@josemariaresources.com)  
 Tel: +1 604 689 7842

**Resources and Reserves**

Josemaria 2020 sulphide mineral resource @ 0.1% CuEq cutoff

RESOURCES	Tonnage (Mt)	Grade			Metal Content		
		Cu (%)	Au (g/t)	Ag (g/t)	Cu (t)	Au (MOz)	Ag (MOz)
Measured	197	0.43	0.34	1.3	861,825	2.2	8.5
Indicated	962	0.31	0.22	1.0	2,494,758	5.6	26.6
Inferred	704	0.24	0.15	0.8	1,315,417	2.3	18.6

Mineral reserve statement for the Josemaria Project, San Juan province, Argentina, September 2020

	Grade			Metal Content		
	Cu (%)	Au (g/t)	Ag (g/t)	Cu (Mlbs)	Au (MOz)	Ag (MOz)
Proven	0.43	0.34	1.33	1,844	2.14	8.43
Probable	0.27	0.19	0.85	4,861	4.87	22.29
<b>Total</b>	<b>0.30</b>	<b>0.22</b>	0.94	<b>6,705</b> (3,041,337 Tn)	<b>07.02</b>	<b>30.72</b>

**Technical and Economic Information****Estimated average annual production:** Copper: 131 kt | Gold: 224 kOz | Silver: 1,048 kt**Product to obtain:** Copper - Gold concentrate**CAPEX:** 4,061 M USD**Estimated annual employment in operation:** 1,650 jobs**Estimated employment in construction stage:** 4,300 jobs**Estimated LOM:** 19 years**Mining Method:** Open pit**Sources Consulted**<https://lundinmining.com/operations/josemaria-project/>[https://lundinmining.com/site/assets/files/8410/josemaria\\_resources\\_technical\\_report.pdf](https://lundinmining.com/site/assets/files/8410/josemaria_resources_technical_report.pdf)

Ministerio de Economía  
 Argentina

Secretaría de Minería



Cu

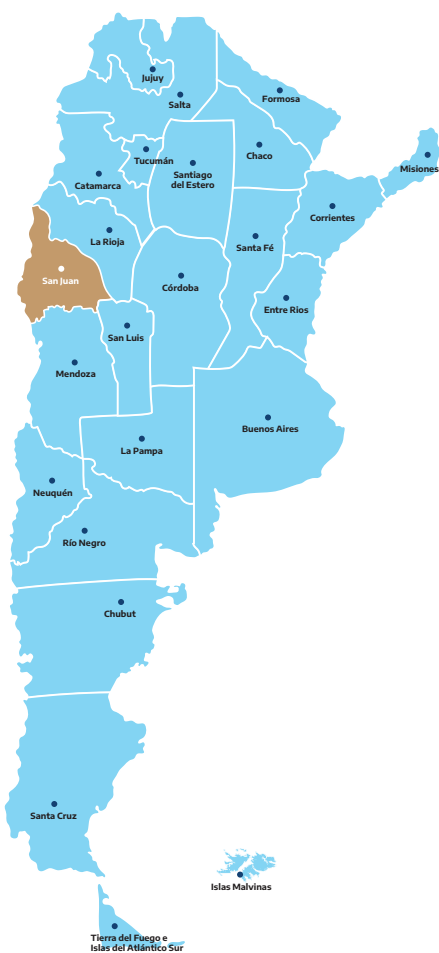
PACHÓN

2



Cu

# PACHÓN



## LOCATION

(31° 45' 39" Lat. S; 70° 43' 50" Long. W)

It is located in the province of San Juan, in the department of Calingasta; approximately 300 km west of the city of San Juan, Argentina, and 5 km from the border with Chile. At an altitude of 3,600 m.a.s.l. The community closest to the project area on the Argentine side is Barreal, which is approximately 150 km away.



## MINERALIZATION TYPE

Cu Porphyry



## PROPERTY DATA OWNER / CONTROLLER

Glencore Plc.



## OPERATOR

GLENCORE PACHON S.A



## AREA

1,004 ha



Ministerio de Economía  
Argentina

Secretaría de Minería



# PACHÓN

## PROJECT GEOLOGY

### Type of deposit - Cu Porphyry

#### Regional Geology

It is found in the post-accretionary metallogenetic belt of the magmatic arc during the neogen (Tertiary). Between 30° and 34° Lat. S, during the middle Miocene (18–15 Ma) a horizontalization of the Nazca plate began and its consequent cortical thickening. Magmatic activity reaches a great development in the provinces of San Juan and center of Mendoza. With the progressive horizontalization of the plate produces a migration of the arch towards the east. These particular conditions give rise to a magmatism that culminates with episodes of hydrothermal alteration and high sulfurization gold mineralization. Another important type of mineralization is the Copper-Molybdenum porphyry such as Pachón, Mercenario in San Juan; Paramillos, San Jorge and San Benicio in Mendoza; with locally associated vetiform polymetallic deposits.

#### Deposit Geology

The deposit is located in the Cordillera Principal, formed by a basement of granitoids and vulcanites (Gr. Choiyoi), above in discordance there are jurassic sedimentary units, on them - also in discordance - lie stratified and andesitic vulcanites and to a lesser extent rhyolitic and riodacitics (Fm. Pachón). The latter is locally intruded by mesosilicic bodies, granular to porphyric, with which mineralization is linked. The sequence of deposit formation was synthesized by Lencinas and Tonel (1994): 1-Intrusion of the Diorita Pachón stock. 2-Formation of the porphyric copper system. 3-Posthumous intrusion of dioritic porphyry in whose intrusive dome there is magmatic breccia with accumulation of hydrothermal fluids. 4-Hydrothermal brecciation, alteration and mineralization of the breccia. 5-Intrusion of the dacitic porphyry at the northern limit of the hydrothermal breccia. 6-Formation of poorly mineralized tourmaline breccias. 7-Leaching and supergenic enrichment.

The formation stage of the hydrothermal breccia is accompanied by a sinking of 50 to 70 m from the breccia body relative to the surrounding volcanoes.







PACHÓN

**Contact**

+54 264 430 9300  
contacto@elpachon.com

**Project Status** FEASIBILITY

Company's Last Announcement

**Resources and Reserves**

RESOURCES	Tonnage (Mt)	Grade				Metal Content			
		Cu (%)	Au (g/t)	Ag (g/t)	Mo (%)	Cu (Mt)	Au (Oz)	Ag (MOz)	Mo (Kt)
Measured	537	0.67	-	2.4	0.013	15.11	-	198	324
Indicated	1,055	0.49	-	2.0	0.011	8.7	-	109	185
Inferred	1,536	0.41	-	2.2	0.009	6.3	-	89	138

**Technical and Economic Information****Estimated average annual production:** Copper: 280 kt | Silver: 3 Moz**Product to obtain:** Copper concentrate**CAPEX:** 4,500 M USD**Estimated annual employment in operation:** 1,100 jobs**Estimated employment in construction stage:** 3,000 jobs**Estimated LOM:** 30 years**Mining Method:** Open pit**Sources Consulted**<https://www.elpachon.com.ar/es/Paginas/home.aspx> | Reporte de recursos y reservas 2015 Glencore.

Reporte de Sostenibilidad-El Pachon-2011, 2012, 2013

Ministry of Mining of San Juan (<http://mineria.sanjuan.gov.ar/>) | Records of the National Directorate of Mining Investments (MPyT).

Ministerio de Economía  
**Argentina**

Secretaría de Minería



Cu

# FILO DEL SOL

3

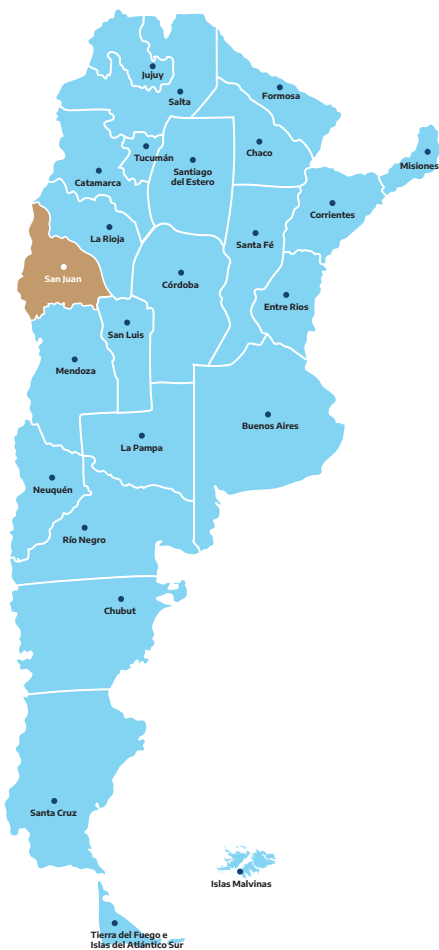


Ministerio de Economía  
**Argentina**

Secretaría de Minería

Cu

# FILO DEL SOL



## LOCATION

(28° 29' 30" Lat. S; 69° 39' 46" Long. W)

The Filo del Sol Project is located in the Atacama Region, in northern Chile and in the adjacent province of San Juan, Argentina, 140 kilometers southeast of the city of Copiapó, Chile, and extends to both sides of the border between Argentina and Chile. The center of the main deposit area is 28.49 ° S latitude and 69.66 ° W longitude. The average altitudes are from 4,000 to 4,900 m.a.s.l.



## MINERALIZATION TYPE

High Sulphidation Epithermal



## PROPERTY DATA

### OWNER / CONTROLLER

Filo Mining Corp.



## OPERATOR

Filo del Sol Exploración S.A.



## AREA

14,014 ha



Ministerio de Economía  
Argentina

Secretaría de Minería





## FILO DEL SOL

---

### PROJECT GEOLOGY

#### Type of deposit

High sulphidation epithermal copper-gold-silver deposit associated with a large copper-gold porphyry system.

#### Regional Geology

It is found in the post-accretionary metallogenetic belt of the magmatic arc during the neogen (Tertiary). Between 30° and 34° Lat. S, during the middle Miocene (18-15 Ma) a horizontalization of the Nazca plate begins with the consequent cortical thickening. The magmatic activity reaches a great development in the provinces of San Juan and the center of Mendoza. With the progressive horizontalization of the plate, the arch migrates eastward. These particular conditions generated a magmatism that culminated in episodes of hydrothermal alteration, high sulphidation gold mineralization, porphyry copper and molybdenum, and locally associated vetiform polymetallic deposits.

#### Deposit Geology

The Filo del Sol Project shows a complete transition between a high sulphidation epithermal environment and a porphyry system, and both types of deposits are represented. Weathering and supergenic processes have created high-grade copper and silver oxide zones. Mineralization, of potential economic interest, within the Filo del Sol deposit includes high grade leached oxide / mixed copper mineralization, structurally controlled gold and silver mineralization, sub-horizontal “mantle type” high grade silver mineralization and mineralization of scattered sulfides of copper, gold, silver and molybdenum.





# FILO DEL SOL

## Contact

Email: [Info@filo-mining.com](mailto:Info@filo-mining.com)

Phone: +1 604 689 7842

## Project Status PREFEASIBILITY

### Company's Last Announcement

August 2022. Drilling Campaign has shown continuity and extension of mineralization with the discovery of a new porphyry centre.

## Resources and Reserves

RESERVES	Tonnage (Mt)	Grade			Metal Content		
		Cu (%)	Au (g/t)	Ag (g/t)	Cu (t)	Au (Oz)	Ag (Oz)
Proven and probable	259.1	0.39	0.33	15.1	1,009,697	2,764,000	126,028,000

## Technical and Economic Information

### Estimated average annual production:

Copper: 67 kt | Gold: 159 koz | Silver: 8.65 koz

**Product to obtain:** Copper cathode + Doré

**CAPEX:** 1,266 M USD

**Estimated annual employment in operation:** 800 jobs

**Estimated employment in construction stage:** 1,800 jobs

**Estimated LOM:** 14 years

**Mining Method:** Open pit

### Sources Consulted

<https://filo-mining.com/assets/docs/reports/102429-RPT-FINAL-43-101-Filo-del-Sol-PFS.pdf>

<https://filo-mining.com/operations/overview>

<https://filo-mining.com/operations/resource-estimate>

<https://filo-mining.com/operations/photo-gallery>

Filo Mining Reports Q2 2022 Results, August 11, 2022 <https://filo-mining.com/news/filo-mining-reports-q2-2022-results-drilling-camp-122603/>



Ministerio de Economía  
Argentina

Secretaría de Minería

An aerial photograph of a rugged, mountainous landscape. The terrain is characterized by steep, eroded slopes with visible horizontal geological strata. A network of winding dirt roads traverses the hillsides. In the lower-left quadrant, a small cluster of buildings, likely a mining camp or village, is situated in a valley. The sky is filled with soft, white clouds, partially obscuring the upper peaks of the mountains. The overall color palette is dominated by earthy browns, tans, and greys, with some greenish-yellow patches of vegetation on the lower slopes.

Cu

# PROYECTO MARA

4



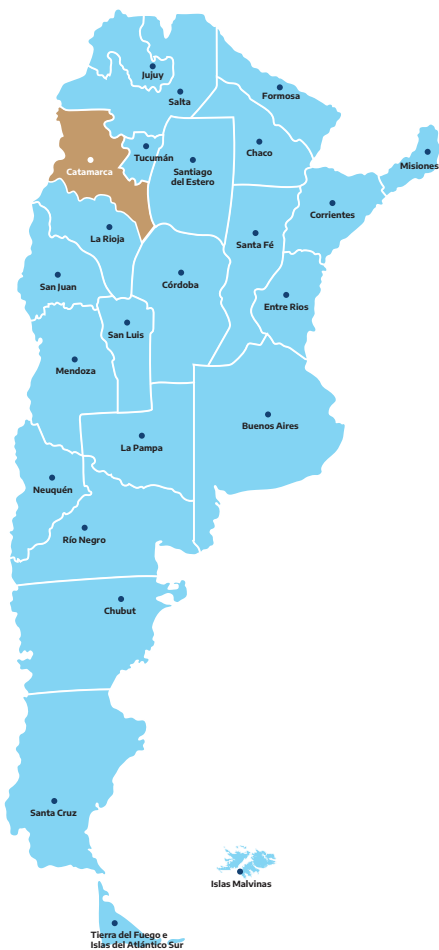
Ministerio de Economía  
**Argentina**

Secretaría de Minería



Cu

# PROYECTO MARA



## LOCATION

(27° 22' 41" Lat. S; 66° 16' 13" Long. W)

It is located in the province of Catamarca, department of Andalgalá, 35 km east of the Bajo de la Alumbreira deposit. It is an area of difficult access, with heights of up to 3,300 m.a.s.l. The closest city of influence is Andalgalá. It is accessed from Andalgalá, passing through the city of Piscoyuyo, along a dirt road suitable for double-traction vehicle.



## MINERALIZATION TYPE

Copper-Gold-Silver-Molybdenum porphyry system



## PROPERTY DATA

### OWNER / CONTROLLER

Gold Fields 56,3%,  
Glencore Plc. 25%  
Newmont Goldcorp 18,8%



## OPERATOR

MINERA AGUA RICA LLC  
(SUC ARGENTINA)



## AREA

15,485 ha



Ministerio de Economía  
Argentina

Secretaría de Minería



# PROYECTO MARA

---

## PROJECT GEOLOGY

TYPE OF DEPOSIT - Copper-Gold-Silver-Molybdenum porphyry system.

### Regional Geology

Corresponds to the Post-accretionary Metallogenic Belt associated with the Neogene Magmatic arc (Tertiary), linked to transtensional areas with NE-SW orientation. This belt in the transition zone (26°-30°) is characterized by a little evolved volcanism of the middle Miocene that widens to the east, linked to particular geotectonic conditions. It includes northwest corridors that control magmatic and hydrothermal activity, including Agua Rica and Bajo la Alumbrera. These corridors host polymetallic mineralizations in the north (Farallón Negro in Catamarca) and porphyries with subtypes linked to the characteristics of magmatism and the structural mechanisms with which they are associated.

### Deposit Geology

The property is prospective for both high grade gold-copper-silver veins and large tonnage copper-gold porphyry mineralization. Cerro Atajo is centered on an intrusive complex within the same host rock as the nearby Alumbrera mine. (Yamana MD&A June 30, 2016) The Agua Rica deposit is a Cu-Mo-Au porphyry deposit with a polymetallic epithermal overprint. Three major stages of alteration/mineralization are clearly recognized: early porphyry Cu-Mo-Au, later epithermal Cu-Au-Ag-As-Pb-Zn, and supergene Cu enrichment. Supergene leaching and enrichment has replaced pyrite, chalcopyrite and bornite with near surface high-grade chalcocite, covellite and digenite which grades down to a zone of covellite and digenite without chalcocite, and then into primary chalcopyrite-pyrite mineralization below the defined open pit. Almost all copper ore is covellite or chalcocite.

### Project Status PREFEASIBILITY

#### Company's Last Announcement

TORONTO, Dec. 18, 2020 ("Yamana") is pleased to announce the completion of the integration of the Agua Rica project with the Minera Alumbrera plant and infrastructure. Going forward, the integrated project will be known as the MARA Project.

The integration creates significant synergies by combining existing substantive infrastructure which was formerly used to process ore from the Alumbrera mine during its mine life, including processing facilities, a fully permitted tailings storage facility, pipeline, logistical installations, ancillary buildings, and other infrastructure, with the future open pit Agua Rica mine.





# PROYECTO MARA

**Contact**  
www.goldfields.com  
Investors@goldfields.com

## Resources and Reserves

Mineral resource statement, Mara Project, Yamana Gold December, 2021							Mineral reserve statement, Mara Project, Yamana Gold December 31, 2021						
	Measured Mineral Resources		Indicated Mineral Resources		Total Measured and Indicated			Proven Mineral Resources		Probable Mineral Resources		Total	
	Grade g/t	Contained oz (000's)	Grade g/t	Contained oz (000's)	Grade g/t	Contained oz (000's)		Grade g/t	Contained oz (000's)	Grade g/t	Contained oz (000's)	Grade g/t	Contained oz (000's)
Gold	0.26	786	0.12	459	0.18	1,245	Gold	0.25	2,655	0.16	1,498	0.21	4,152
Silver	1.6	1,502	1.9	6,940	1.8	8,442	Silver	3.0	32,070	2.6	24,618	2.8	56,689
	Grade g/t	Contained lbs (mm)	Grade g/t	Contained lbs (mm)	Grade g/t	Contained lbs (mm)		Grade g/t	Contained lbs (mm)	Grade g/t	Contained lbs (mm)	Grade g/t	Contained lbs (mm)
Copper	0.28	591	0.30	791	0.29	1,383 (627,318 Tn)	Copper	0.57	4,151	0.39	2,503	0.49	6,654 (3,018,203.6 Tn)
Molybdenum	0.014	30	0.029	78	0.022	107 (48,534 Tn)	Molybdenum	0.03	218	0.03	192	0.03	411 (186,426 Tn)

## Technical and Economic Information

### Estimated average annual production:

241,7 Kt ( 533 Million pounds) Contained copper equivalent production

**Product to obtain:** : Copper cathode + Doré

**CAPEX:** 2,386 M USD

**Estimated annual employment in operation:** 1,500 jobs

**Estimated employment in construction stage:** 3,500 jobs

**Estimated LOM:** 28 years

**Mining Method:** Open pit

### Sources Consulted

<https://www.yamana.com/English/portfolio/advancing-projects/MARA/default.aspx>

Summary of Mineral Reserve and Mineral Resource Estimates

Mineral Reserves (Proven and Probable) Yamana Gold Mineral Reserve Estimate as of December 31, 2021

<https://www.yamana.com/investors/news/news-details/2019/Yamana-Gold-Announces-a-Positive-Pre-Feasibility-Study-With-an-Impressive-and-Increased-NPV-of-19-Billion-and-an-Increased-After-Tax-IRR-of-197-for-the-Long-Life-Integrated-Agua-Rica-Copper-Gold-Project/default.aspx>



Ministerio de Economía  
Argentina

Secretaría de Minería





Cu

SAN  
JORGE

5



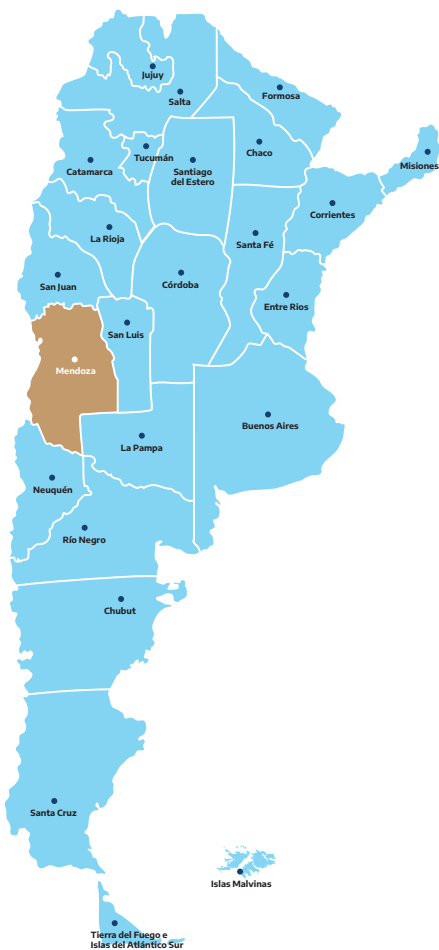
Ministerio de Economía  
**Argentina**

Secretaría de Minería



Cu

# SAN JORGE



## LOCATION

(32° 14' 41" Lat. S; 69° 26' 16" Long. W)

It is located in the department of Las Heras, province of Mendoza, 110 km. to the northwest of the city of Mendoza, by National Route No. 7, and whose access door is 37 km from the district of Uspallata, by National Route No. 149. The Project is located at 2.600 meters above sea level in the so-called Cordillera del Tigre.



## MINERALIZATION TYPE

Copper and gold porphyry



## PROPERTY DATA OWNER / CONTROLLER

Solway Investment Ltd.  
Aterra Capital



## OPERATOR

Minera San Jorge S.A.



## AREA

9,987 ha



Ministerio de Economía  
Argentina

Secretaría de Minería



## SAN JORGE

---

### PROJECT GEOLOGY

Type of deposit - COPPER AND GOLD PORPHYRY

#### Regional Geology

The property of San Jorge is located on the western periphery of the Graben de Uspallata-Calingasta-Iglesia. To the east of the graben is the Pre-Cordillera and to the west is the Cordillera Frontal.

#### Deposit Geology

In the project area, rocks of the Yalguaraz Formation emerge: sandstones, conglomerates, limolites and clays. Sedimentites are intruded by a porphyry granite, stocks and dykes of the Perm - Triassic. On the western edge of the granitic bodies there are small tourmaline (crackling) holes. The contacts are subvertical and irregular.

The San Jorge porphyry system shows a vertical zonation from hypogene mineralization at depth, passing upwards into a supergene enriched zone, which is overlain by a zone of oxide mineralization and finally by a poorly developed leached cap. Superimposed on this basic zonation are lateral variations in the distribution of the mineralization types that relate to the main north to south and north-northeast striking fault zones. The porphyry system is ovoid in shape and covers an area of 1.1 km north-northeast by 700 m north northwest.

**Project Status** PREFEASIBILITY





# SAN JORGE

## Contact

+41417400400  
bd@solwaygroup.com

## Resources and Reserves

RESOURCES	Tonnage (Mt)	Grade		Metal Content	
		Cu (%)	Au (g/t)	Cu (t)	Au (KOz)
Measured	79.5	0.57	0.22	452,247	584
Indicated	104.9	0.42	0.19	436,603	626
Inferred	11.2	0.38	0.16	43,172	59

RESERVES	Tonnage (Mt)	Grade		Metal Content	
		Cu (%)	Au (g/t)	Cu (t)	Au (Oz)
Probable	40.01	0.63	-	252,101	-
Proven	8.37	0.5	-	41,870	-

## Technical and Economic Information

**Estimated average annual production:** Copper: 40 kt | Silver: 40 koz

**Product to obtain:** Copper cathodes + Doré | **CAPEX:** 184.5 M USD

**Estimated annual employment in operation:** 350 jobs

**Estimated employment in construction stage:** 600 jobs

**Estimated LOM:** 16 years | **Mining Method:** Open pit

### Sources Consulted

<https://solwaygroup.com/our-business/san-jorge-project-mendoza-argentina/>

Records of the Undersecretary of Mining Development

Preliminary Feasibility Study; SAN JORGE 25kt/y COPPER LEACH PROJECT IN SAN JUAN PROVINCE, Argentina (NI 43-101, Technical Report) 1 March, 2012.

<http://www.solwaygroup.com/index.php/our-business/san-jorge-project-Mendoza-argentina>



Ministerio de Economía  
Argentina

Secretaría de Minería



Cu

# LOS AZULES

6



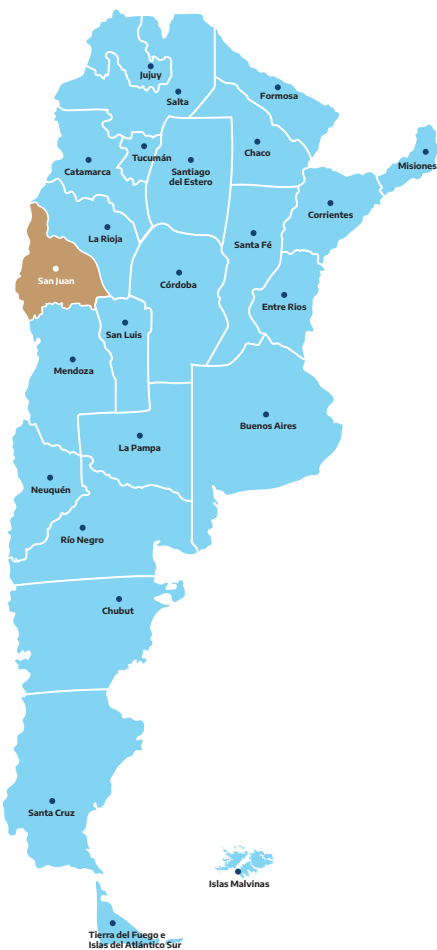
Ministerio de Economía  
**Argentina**

Secretaría de Minería



Cu

# LOS AZULES



## LOCATION

(31° 13' 30" Lat. S; 70° 13' Long. W)

Los Azules Project is located in the Central West of the Province of San Juan, Calingasta Department, 129 km from the homonymous town. The area is located in the Cordillera de Los Azules and at the northern end of the Cordillera de La Totorá. Approximately 250 km west of the city of San Juan and 3 km from the border with Chile.



## MINERALIZATION TYPE

Copper porphyry



## PROPERTY DATA OWNER / CONTROLLER

McEwen Mining



## OPERATOR

Minera Andes Inc.



## AREA

18,000 ha



Ministerio de Economía  
Argentina

Secretaría de Minería



# LOS AZULES

---

## PROJECT GEOLOGY

Type of deposit - COPPER PORPHYRY

### Regional Geology

The geological province in which it is located is the Cordillera Frontal, it comprises volcanic rocks of the Mesozoic with intrusion of Miocene diorite, intruded at the same time by a sub-parallel strip of diorite-dacite dikes along the main north fault northwest. The mineralization and hydrothermal alteration typical of porphyric copper is spatial, temporal and genetically related to the dikes. Copper mineralization (chalcocite + pyrite + chalcopyrite) is associated with intrusive bodies of dacitic composition to diorite of tertiary age.

### Deposit Geology

In the project area, geology is composed of volcanic rocks intruded by a dioritic stock, in turn, it is intruded by a system of sub-parallel dikes of dioritic to dacitic composition of faults of dominant NNW heading. The mineralization and alteration of the porphyry type system is temporary, spatial and genetically linked to the dikes.

The system has zoning:

- Leaching zone between 60 and 180 meters deep with jarosite, goethite and hematite.
- Supergenic enrichment zone between 60 and 300 meters with the presence of calcosine +/- covellite.
- Primary sulfide zone with chalcopyrite, bornite, pyrite +/- calcosine and primary covellite.

The Los Azules hydrothermal alteration system has a minimum length of 5 km and a minimum width of 4 km, and is extended in an NNW direction along an important structural corridor. The system disappears into a volcanic cover to the north, so its final extension is unknown. The altered area surrounding the Los Azules deposit is approximately 4 km long by 2.5 km wide. The limits of mineralization have not been fully defined by drilling.





# LOS AZULES

## Contact

email: [info@mcewenmining.com](mailto:info@mcewenmining.com)

tel: 647-258-0395

toll-free: 1-866-441-0690

## Project Status PRELIMINARY ECONOMIC ASSESSMENT (PEA) 2017

### Company's Last Announcement

August 2022. The company reported that the drill campaign resumes in October 2022 and that an updated PEA was expected to be released in Q1, 2023.

## Resources and Reserves

RESOURCES	Tonnage (Mt)	Grade				Metal Content			
		Cu (%)	Au (g/t)	Ag (g/t)	Mo (%)	Cu (t)	Au (Oz)	Ag (MOz)	Mo (t)
Measured	962	0.48	0.06	1.8	0.003	4,600,000	1,700,000	55.7	25,900
Inferred	2.666	0.33	0.04	1.6	0.003	8,750,000	3,800,000	135.4	88,000

## Technical and Economic Information

### Estimated average annual production:

Copper: 153 kt | Gold: 35 koz | Silver: 1.2 koz

**Product to obtain:** : Copper, gold and silver concentrates

**CAPEX:** 2,363 M USD

**Estimated annual employment in operation:** 800 jobs

**Estimated employment in construction stage:** 1,500 jobs

**Estimated LOM:** 36 years

**Mining Method:** Open pit

### Sources Consulted

<https://www.mcewenmining.com/media/galleries/los-azules/default.aspx>  
[https://s21.q4cdn.com/390685383/files/technical\\_reports/los\\_azules/LosAzulesPEA\\_Rev0\\_20171016.pdf](https://s21.q4cdn.com/390685383/files/technical_reports/los_azules/LosAzulesPEA_Rev0_20171016.pdf)  
<https://www.mcewenmining.com/operations/los-azules/default.aspx>  
 Ministry of Mining of San Juan (<http://mineria.sanjuan.gov.ar/>)  
 McEwen Copper: Los Azules Progress Report #4. Company Release - 08/04/2022



Ministerio de Economía  
Argentina

Secretaría de Minería

Cu

TACA  
TACA

7



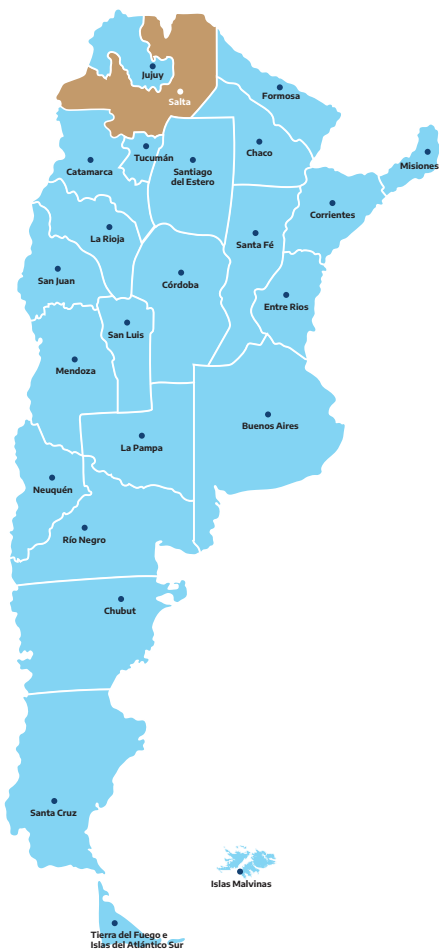
Ministerio de Economía  
**Argentina**

Secretaría de Minería





# TACA TACA



## LOCATION

(24° 41' 60" Lat. S; 68° 00' 00" Long. W)

It is located in the Puna de Salta, at the central-western end of the Salar de Arizaro, department of Los Andes, 240 km west of the city of Salta and 55 km east of the border with Chile, at 3,600 m.a.s.l. The nearest town is Tolar Grande, 34 km away. The access to the project is by the RN 51 to Cauchari and from there by the RN 27.



## MINERALIZATION TYPE

Copper porphyry



## PROPERTY DATA OWNER / CONTROLLER

First Quantum Minerals LTD



## OPERATOR

Corriente Argentina S.A.



## AREA

2,546 ha





TACA  
TACA

---

## PROJECT GEOLOGY

Type of deposit - COPPER - GOLD - MOLYBDENUM  
PORPHYRY SYSTEM OF THE ANDEAN TYPE

### Regional Geology

It is included in the copper porphyry-type paleogenous (Tertiary) mineralization belt, of recognized economic importance in Chile. This mineralization is associated with the advance of the paleogenic magmatic arc over the Argentine Puna. Oligocene riodacitic intrusions of the Santa Inés Formation are responsible for the mineralization and alteration of the copper porphyry in Taca Taca.

### Deposit Geology

In the project area, porphyry type mineralizations of Cu-Mo (Taca-Taca alto and Taca Taca bajo) and low sulphidation epithermal (Taca Taca sur) have been defined. The alterations are represented by early potassium type, in some sectors of the deposit with intercalation of propylitic, and a subsequent alteration of phyllic type of heterogeneous intensity. Locally advanced argillic alteration zones were defined with which the hydrothermal process would culminate.

There are three main mineralization styles associated with the Taca Taca copper-gold-molybdenum porphyry: a supergenic / hypogenic porphyry copper mineralization, another characterized by copper-gold remnant oxides in the leach cap, and a third copper-gold mineralization in veins of quartz and hematite.

Taca Taca was defined as “an Andean Cu-Au-Mo porphyry system”.





TACA  
TACA

## Contact

<https://www.first-quantum.com/>  
Tel. International: +1 416 361 6400

## Project Status PRELIMINARY ECONOMIC ASSESSMENT - (PEA) 2012

### Company's Last Announcement

In November 2020. The company announced an updated NI 43-101 with Maiden Mineral Reserve of Over 7.7 Million Tonnes of Contained Copper

## Resources and Reserves

RESOURCES	Tonnage (Mt)	Grade			Metal Content		
		Cu (%)	Au (g/t)	Mo (%)	Cu (t)	Au (kOz)	Mo (kt)
Measured & Indicated	2,203	0.43	0.08	0.012	9,450	6,052	264.5
Proven & Probable	1,789	0.44	0.09	0.012	7,735	5,087	213.5

## Technical and Economic Information

### Estimated average annual production:

Copper: 244 kt | Gold: 110 kOz | Molybdenum: 4 kt

**Product to obtain:** : Copper - Gold concentrate

**CAPEX:** 3,583 M USD

**Estimated annual employment in operation:** 1,630 jobs

**Estimated employment in construction stage:** 3,500 jobs

**Estimated LOM:** 28 years

**Mining Method:** Open pit

### Sources Consulted

[https://s24.q4cdn.com/821689673/files/doc\\_downloads/2021/NI-43-101/NI-43-101-Technical-Report-Taca-Taca.pdf](https://s24.q4cdn.com/821689673/files/doc_downloads/2021/NI-43-101/NI-43-101-Technical-Report-Taca-Taca.pdf)  
Lumina Copper Corp. Taca Taca Copper- Gold Molybdenum Project. Preliminary Economic Assessment Report. May 24-2013,  
First Quantum Minerals Ltd. Press release 11/30/2020  
Taca Taca Project Salta Province, Argentina Amended and Restated NI 43-101 Technical Report March 2021 (<https://www.first-quantum.com>)



Ministerio de Economía  
Argentina

Secretaría de Minería



# Thank you

---



Ministerio de Economía  
Argentina

Secretaría de Minería

