Catalogue of Advanced Copper Projects
This publication of the National Government aims to display information from third parties on the exploratory results of advanced projects and the mining geological potential of the country. The information is obtained through diverse sources, mainly from public access portals of the operator/controller companies and from technical reports published by them on various websites under international standards aimed at guaranteeing a greater degree of reliability. In some cases the data are estimates, when this is the case, it is pointed out and indicated in the footer.

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

The SECRETARY OF MINING is not responsible for the misuse of this information.
1- Taca Taca
2- Río Grande
3- Agua Rica
4- Filo del Sol
5- Josemaría
6- Valle de Chita
7- Los Azules
8- Altar
9- Pachón
10- San Jorge

Ident. Res. 66,5 Mt Cu
CAPEX 19.255e M USD

Pot. aditional production
Cu 1.219 kt/year
Au 702 koz/year
Ag 15 Moz/year
Mo 18 kt/year

Mt: millions of tons  Moz: million of ounces  kt: thousands of tons  koz: thousand of ounce  M USD: Million of dollars
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.

PROPERTY DATA

- OWNER / CONTROLLER: First Quantum Minerals LTD
- OPERATOR: CORRIENTE ARGENTINA S.A.
- AREA: 2,546 ha

PROJECT STATUS - PRELIMINARY ECONOMIC ASSESSMENT

- PROSPECTING
- INITIAL EXPLORATION
- ADVANCED EXPLORATION
- PREL. ECON. ASSES. (PEA) 2012
- FEASIBILITY
- CONSTRUCTION
- OPERATION

Environmental Impact Study for construction presented to the authority of Salta.

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.

PROPERTY DATA

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Environmental Impact Study for construction presented to the authority of Salta.

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 paleogenetic 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 philic 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

TECHNICAL / ECONOMIC INFORMATION OF THE PROJECT

AVERAGE ANNUAL PRODUCTION

<table>
<thead>
<tr>
<th>Metal</th>
<th>Grade</th>
<th>Metal Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>244 kt</td>
<td></td>
</tr>
<tr>
<td>Gold</td>
<td>110 koz</td>
<td></td>
</tr>
<tr>
<td>Molybdenum</td>
<td>4 kt</td>
<td></td>
</tr>
</tbody>
</table>

PRODUCT TO OBTAIN: Copper-gold concentrate

CAPEX: 3,005 MUSD

Estimated annual employment in operation: 1,630 jobs
Estimated annual employment in construction stage: 3,500 jobs

Estimated LOM: 28 years

Mining Method: OPEN PIT

RESOURCES AND RESERVES - ESTIMATION

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>Tonnage (Mt)</th>
<th>Grade</th>
<th>Metal Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cu (%)</td>
<td>Au (g/t)</td>
<td>Mo (%)</td>
</tr>
<tr>
<td>Indicated</td>
<td>2.165</td>
<td>0.44</td>
<td>0.08</td>
</tr>
<tr>
<td>Inferred</td>
<td>921</td>
<td>0.37</td>
<td>0.05</td>
</tr>
</tbody>
</table>

RESOURCES CONSULTED

- https://www.first-quantum.com/

CONTACT

https://www.first-quantum.com/Investors-Centre/Contact/default.aspx
info@fqml.com
Jorge Benavides (Gerente Asuntos Corporativos LATAM) - jorge.benavides@fqml.com
Corriente Argentina S.A. – Carlos Martín Ramos
AGUA RICA

Andalgalá
Catamarca

3300
m.a.s.l.

LOCATION

27° 22’ 41”
Latitude South
66° 16’ 13”
Longitude West

MINERALIZATION TYPE
Cu Porphyry

Minera
Agua Rica LLC

Yamana Gold Inc.
Glencore Plc

Escondida NEL Corp.

COMPANY

RESERVES

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>OUNCE (TROY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proven</td>
<td>3,347,040</td>
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<tr>
<td>Probable</td>
<td>2,225,680</td>
</tr>
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</table>

RESOURCES

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>OUNCE (TROY)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured</td>
<td>0.22</td>
</tr>
<tr>
<td>Indicated</td>
<td>0.3</td>
</tr>
<tr>
<td>Inferred</td>
<td>0.23</td>
</tr>
<tr>
<td></td>
<td>117,920</td>
</tr>
<tr>
<td></td>
<td>618,900</td>
</tr>
<tr>
<td></td>
<td>1,708,670</td>
</tr>
</tbody>
</table>

Note: The figures represent metal content in Troy Ounces (TROY).
AGUA RICA

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 Alumbrera 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 vehicles.

PROPERTY DATA

- OPERATOR: Minera Agua Rica LLC
- AREA: 60,000 ha.

PROJECT STATUS - PREFEASIBILITY

LAST PUBLIC TECHNICAL REPORT

COMPANY'S LAST ANNOUNCEMENT

Feasibility study in process.

PROJECT GEOLOGY

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

REGIONAL GEOLOGY
Corresponds to the Post-accretionary Metallogenetic Belt associated with the Neo 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 Agua Rica deposit is a copper-molybdenum-gold- porphyry system that partially overlapped a high sulfur epithermal mineralization event with a strong hydrothermal alteration of the associated advanced argillic type and a final supergenic enrichment episode that transformed chalcopyrite and covellite hypogenic in secondary calcsine and covellite.

A rapid survey and the consequent erosive environment are proposed as responsible for this telescopic sequence, related to the magmatism of the upper Tertiary.

Three main stages of alteration / mineralization were clearly recognized: early porphyry copper-molybdenum-gold, then copper-gold-silver-arsenic-lead and zinc product of hydrothermal events, and finally a supergenic enrichment in copper.
**TECHNICAL / ECONOMIC INFORMATION OF THE PROJECT**

**AVerAge AnNUAL PRODUCTION**

<table>
<thead>
<tr>
<th>Metals</th>
<th>Tonnage (Mt)</th>
<th>Cu (%)</th>
<th>Au (g/t)</th>
<th>Ag (g/t)</th>
<th>Mo (%)</th>
<th>Cu (t)</th>
<th>Au (Oz)</th>
<th>Ag (Oz)</th>
<th>Mo (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>53,6</td>
<td>0,22</td>
<td>0,13</td>
<td>1,55</td>
<td>0,02</td>
<td>117.920</td>
<td>224.000</td>
<td>2.671.000</td>
<td>10.720</td>
</tr>
<tr>
<td>Gold</td>
<td>206,3</td>
<td>0,30</td>
<td>0,11</td>
<td>1,8</td>
<td>0,03</td>
<td>618.900</td>
<td>730.000</td>
<td>12.337.000</td>
<td>61.890</td>
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<tr>
<td>Silver</td>
<td>742,9</td>
<td>0,23</td>
<td>0,09</td>
<td>1,62</td>
<td>0,03</td>
<td>1.708.670</td>
<td>2.150.000</td>
<td>38.693.000</td>
<td>222.870</td>
</tr>
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</table>

**RESOURCES**

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>Tonnage (Mt)</th>
<th>Cu (%)</th>
<th>Au (g/t)</th>
<th>Ag (g/t)</th>
<th>Mo (%)</th>
<th>Cu (t)</th>
<th>Au (Oz)</th>
<th>Ag (Oz)</th>
<th>Mo (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meas.</td>
<td>517,6</td>
<td>0,43</td>
<td>0,16</td>
<td>2,63</td>
<td>0,03</td>
<td>2.225.680</td>
<td>2.663.000</td>
<td>43.766.000</td>
<td>155.280</td>
</tr>
<tr>
<td>Prov.</td>
<td>587,2</td>
<td>0,57</td>
<td>0,25</td>
<td>3,02</td>
<td>0,03</td>
<td>3.347.040</td>
<td>4.720.000</td>
<td>57.014.000</td>
<td>176.160</td>
</tr>
</tbody>
</table>

**RESOURCES AND RESERVES - ESTIMATION**

**PRODUCT TO OBTAIN:** Copper-gold-silver concentrate + doré

**CAPEX:** 2,386 MUSD

Annual employment estimated in operation: 1,500 jobs (e)

Estimated annual employment in construction stage: 3,500 jobs (e)

Estimated LOM: 28 years

**MINING METHOD:** OPEN PIT

**SOURCES CONSULTED**


**CONTACT**

Nicolás Bareta - nbareta@yamana.com Mario Hernandez - m hernandez@yamana.com
Chacabuco 793 – Catamarca (4700) www.aguarica.com.ar/
JOSEMARÍA

Iglesia
San Juan

4900 m.a.s.l.

28° 27' 13"
69° 35' 39"

Latitude South
Longitude West

MINERALIZATION TYPE
Cu Porphyry

RESERVES
Proven 0.29 2,923,200
Probable - -

RESOURCES
Measured 0.31 3,304,190
Indicated 0.24 1,551,287
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 m.a.s.l. The nearest city is Guandacol, in the province of La Rioja, located 200 km SE along gravel road.

**PROPERTY DATA**
- **OWNER/CONTROLLER:** Josemaría Resources Inc.
- **OPERATOR:** Desarrollo de Prospectos Mineros S.A.
- **AREA:** 16.715ha.

**PROJECT STATUS - PREFERENCESABILITY**

**LAST PUBLIC TECHNICAL REPORT**
- **PROSPECTING**
- **INITIAL EXPLORATION**
- **ADVANCED EXPLORATION**
- **PREL. ECON. ASSES. (PEA)**
- **PREFEASIBILITY 2018**
- **FEASIBILITY**
- **CONSTRUCTION**
- **OPERATION**

**COMPANY’S LAST ANNOUNCEMENT**

**PROJECT GEOFALOGY**

**TYPE OF DEPOSIT:**
Copper-gold porphyry system.

**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 batholithic rocks of the Choioyoi 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 metallogenic belt.

**DEPOSIT GEOFALOGY**
In Josemaría, copper mineralization with associated gold occurs within altered intrusive dactitic rocks and hydrothermal gaps, accompanied by anhydrite, magnetite, pyrite, hematite, gypsum, quartz and sericite. Most of the copper and gold mineralization is within the Miocene porphyric system, which forms an elongated body, with dimensions of at least 900 m in the NS direction and 600-700 m in the EW direction and 600 to 700 m in the vertical direction. The deposit is open both to the south and north. It is very likely that the north-south extension of the deposit will increase considerably.
Copper 125 kt
Gold 230 koz
Silver 790 koz

TECHNICAL / ECONOMIC INFORMATION OF THE PROJECT

RESOURCES AND RESERVES - ESTIMATION

AVERAGE ANNUAL PRODUCTION

<table>
<thead>
<tr>
<th>Metal</th>
<th>Tonnage (Mt)</th>
<th>Cu (%)</th>
<th>Au (g/t)</th>
<th>Ag (g/t)</th>
<th>Cu (t)</th>
<th>Au (Oz)</th>
<th>Ag (Oz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>1.008</td>
<td>0,29</td>
<td>0,21</td>
<td>0,92</td>
<td>2.923.200</td>
<td>7.989.993</td>
<td>35.882.696</td>
</tr>
<tr>
<td>Gold</td>
<td>1.166</td>
<td>0,31</td>
<td>0,22</td>
<td>1,0</td>
<td>3.304.600</td>
<td>7.899.933</td>
<td>35.882.696</td>
</tr>
<tr>
<td>Silver</td>
<td>404</td>
<td>0,24</td>
<td>0,15</td>
<td>0,8</td>
<td>969.600</td>
<td>1.966.335</td>
<td>10.536.125</td>
</tr>
</tbody>
</table>

PRODUCT TO OBTAIN: Copper-gold concentrate

CAPEX: 2.761 MUSD

Estimated annual employment in operation: 1,000 jobs (e)
Estimated annual employment in construction stage: 2,500 jobs (e)

Estimated LOM: 20 years

Mining Method: OPEN PIT

MINERAL RESOURCES INCLUDE MINERAL RESERVES.

RESOURCES CONSULTED

https://www.josemariaresources.com/projects/technical-reports/
https://www.josemariaresources.com/projects/photos/
Reporte Técnico NGEX. Marzo 2016- Análisis Económico Preliminar (PEA).

CONTACT

Alfredo Vitaller Alfredo@Lundinargentina.com.ar -
https://www.josemariaresources.com/contact/contact-info/
Michelle Fyfe - Investor Relations Manager
E-mail: info@josemariaresources.com -
FILO DEL SOL

Iglesia San Juan

5000 m.a.s.l.

28° 29' 30" Latitude South
69° 39' 46" Longitude West

MINERALIZATION TYPE
High Sulphidation Epithermal

COMMODITY

Filo del Sol Exploración S.A.
Filo Mining Corp.

RESERVES
Proven
Probable

0.39
1,009,697

RESOURCES
Measured
Indicated
Inferred

0.33
0.27
1,409,700
478,900

LATIN AMERICAN MINING CORPORATION
LOCATION (28°29'24" Lat S, 69°39'36" Long W)

The bi-national 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.

PROPERTY DATA

- Owner / Controller: Filo Mining Corp.
- Filo del Sol Exploración S.A. (Argentina) + Frontera Chile Ltd (Chile)
- OPERATOR: Filo Mining Corp.
- AREA: 14.014 ha (Argentina+Chile)
- "Treaty between the Republic of Chile and the Argentine Republic on Mining Integration and Complementation"

PROJECT STATUS- PREFEASIBILITY

LAST PUBLIC TECHNICAL REPORT

- PROSPECTING
- INITIAL EXPLORATION
- ADVANCED EXPLORATION
- PREL. ECON. ASSES. (PEA)
- PREFEASIBILITY 2019
- FEASIBILITY
- CONSTRUCTION
- OPERATION

COMPANY'S LAST ANNOUNCEMENT

Feasibility study in process.

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.
**AVGEMCICAL INFORMATION OF THE PROJECT**

**AVERAGE ANNUAL PRODUCTION**

<table>
<thead>
<tr>
<th></th>
<th>Tonnage</th>
<th>Grade</th>
<th>Metal Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>67 kt</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gold</td>
<td>159 koz</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Silver</td>
<td>8,65 M koz</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**PRODUCT TO OBTAIN**: Copper cathode + Doré

**CAPEX**: 1.266 M USD

- Estimated annual employment in operation: 800 jobs (e)
- Estimated annual employment in construction stage: 1,800 jobs (e)
- Estimated LOM: 14 YEARS

**MINING METHOD**: OPEN PIT

**RESOURCES AND RESERVES - ESTIMATION**

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>Tonnage (Mt)</th>
<th>Grade</th>
<th>Metal Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cu (%)</td>
<td>Au (g/t)</td>
<td>Ag (g/t)</td>
</tr>
<tr>
<td>Indicated</td>
<td>425,1</td>
<td>0,33</td>
<td>0,32</td>
</tr>
<tr>
<td>Inferred</td>
<td>175,1</td>
<td>0,27</td>
<td>0,33</td>
</tr>
<tr>
<td>Probable</td>
<td>259,1</td>
<td>0,39</td>
<td>0,33</td>
</tr>
</tbody>
</table>

*Mineral resources include mineral reserves.*

---

**CONTACT**

Alfredo Vitaller [Alfredov@Lundinargentina.com.ar](mailto:Alfredov@Lundinargentina.com.ar)
Belen Pozzi [belenpozzi@deprominsa.com.ar](mailto:belenpozzi@deprominsa.com.ar)

[www.filo-mining.com](http://www.filo-mining.com)
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 Totora. Approximately 250 km west of the city of San Juan and 3 km from the border with Chile.

**PROPERTY DATA**

- **OWNER / CONTROLLER:** McEwen Mining
- **OPERATOR:** Minera Andes Inc.
- **AREA:** 18,000 ha

**PROJECT STATUS - PREVIOUS ECONOMIC ASSESSMENT**

**LAST PUBLIC TECHNICAL REPORT**
- PREL. ECON. ASSES. (PEA) 2017

**COMPANY’S LAST ANNOUNCEMENT**

**PROJECT GEOLOGY**

**TYPE OF DEPOSIT:**

Andean 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 (chalccotie + 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 NWW 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 NWW 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

TECHNICAL / ECONOMIC INFORMATION OF THE PROJECT

AVERAGE ANNUAL PRODUCTION

<table>
<thead>
<tr>
<th>Material</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>153 kt</td>
</tr>
<tr>
<td>Gold</td>
<td>35 koz</td>
</tr>
<tr>
<td>Silver</td>
<td>1,2 Moz</td>
</tr>
</tbody>
</table>

PRODUCT TO OBTAIN: Copper, gold and silver concentrate

CAPEX: 2.363 M USD

Estimated annual employment in operation: 800 jobs (e)
Estimated annual employment in construction stage: 1,500 jobs (e)
Estimated LOM: 36 years

Mining Method: OPEN PIT

RESOURCES AND RESERVES - ESTIMATION

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>Tonnage (Mt)</th>
<th>Cu (%)</th>
<th>Au (g/t)</th>
<th>Ag (g/t)</th>
<th>Mo (%)</th>
<th>Cu (t)</th>
<th>Au (Oz)</th>
<th>Ag (MOz)</th>
<th>Mo (t)</th>
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</thead>
<tbody>
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<td>1,8</td>
<td>0,003</td>
<td>4.600.000</td>
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<td>2.666</td>
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<td>8.750.000</td>
<td>3.800.000</td>
<td>135,4</td>
<td>88.000</td>
</tr>
</tbody>
</table>

SOURCES CONSULTED

- https://www.mcewenmining.com/media/galleries/los-azules/default.aspx
- Ministerio de Minería de San Juan (http://mineria.sanjuan.gov.ar/)

CONTACT

Carlos Liggesmeyer (Country Manager)
clliggesmeyer@mcewenmining.com
Borjas Toranzo 255 (S) – (5400) San Juan – Argentina
email: info@mcewenmining.com
www.mcewenmining.com
PACHÓN

LOCATION (31°45'39" Lat. S; 70°43'32" 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 3600 m.a.s.l. The community closest to the project area on the Argentine side is Barreal, which is approximately 150 km away.

PROPERTY DATA

- OWNER/CONTROLLER: Glencore plc
- OPERATOR: El Pachón S.A. Minera
- AREA: 1.004 ha

PROJECT STATUS - REINGEENIERING

LAST PUBLIC TECHNICAL REPORT

- PROSPECTING
- INITIAL EXPLORATION
- ADVANCED EXPLORATION
- EVAL. ECON. ASSES. (PEA)
- PREFEASIBILITY
- FEASIBILITY-Reengenering
- CONSTRUCTION
- OPERATION

Public report: Sustainability Report El Pachón 2013

Announcements: "Currently, working on the reevaluation of the project and realization of the exploitation IIA; [...]. The Project proposes to develop an open pit mine to extract copper ore and process it by flotation.

PROJECT GEOLOGY

TYPE OF DEPOSIT:
Copper and molybdenum porphyry.

REGIONAL GEOLOGY

It is found in the post-accretionary metallogenic belt of the magmatic arc during the Neogene (Tertiary). Between 30° and 34° Lat. S, during the middle Miocene (18–15 Ma) a horizontalization of the Nazca plate begins 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, Mercedario 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 doriotic 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.
As part of the re-engineering, the value could decrease to around 2.800 M USD.

Average Annual Production

<table>
<thead>
<tr>
<th></th>
<th>Copper</th>
<th>Silver</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tonnage</td>
<td>280 kt</td>
<td>3 M oz</td>
</tr>
</tbody>
</table>

Product to Obtain: Concentrado de cobre.

CAPEX: 4.100 M USD*

Estimated annual employment in operation: 1100 jobs (e)
Estimated annual employment in construction stage: 3,000 jobs (e)
Estimated LOM: 30 years

Mining Method: OPEN PIT

Sources Consulted

- Reporte de recursos y reservas 2015 Glencore.
- [Wood Mackenzie](https://www.woodmac.com/)
- Registros de Dirección Nacional de Inversiones Mineras (MPyT).
- [S&P Global Market Intelligence](https://www.spglobal.com/)

Resources and Reserves - Estimation

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>Tonnage (Mt)</th>
<th>Cu (%)</th>
<th>Ag (g/t)</th>
<th>Mo (%)</th>
<th>Cu (M t)</th>
<th>Ag (M Oz)</th>
<th>Mo (t)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measured</td>
<td>534</td>
<td>0,67</td>
<td>2,4</td>
<td>0,013</td>
<td>3,58</td>
<td>41,2</td>
<td>69,420</td>
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<td>Indicated</td>
<td>1,056</td>
<td>0,49</td>
<td>2,0</td>
<td>0,011</td>
<td>5,17</td>
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<tr>
<td>Inferred</td>
<td>1,528</td>
<td>0,41</td>
<td>1,8</td>
<td>0,01</td>
<td>6,4</td>
<td>90,7</td>
<td>137,520</td>
</tr>
</tbody>
</table>

Contact

Calle Güemes 333 Sur – Segundo Piso
San Juan Capital J5400 CPI
[contacto@elpachon.com](mailto:contacto@elpachon.com)
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 2600 meters above sea level in the so-called Cordillera del Tigre.

**PROPERTY DATA**

- **OWNER/CONTROLLER:** Solway Investment & Aterra Capital
- **OPERATOR:** Minera San Jorge S.A.
- **AREA:** 9.987 ha

**PROJECT STATUS – PREFEASIBILITY (INACTIVE)**

**LAST PUBLIC TECHNICAL REPORT**

**COMPANY’S LAST ANNOUNCEMENT**

- No new ads

**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 Yalgaraz 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.
SAN JORGE

TECHNICAL / ECONOMIC INFORMATION OF THE PROJECT

AVerage Annual Production

Copper 40 kt

Gold 40 koz

Product to Obtain: Copper cathodes + doré

CAPEX: 370 M USD

Estimated annual employment in operation: 350 jobs (e)
Estimated annual employment in construction stage: 600 jobs (e)

Estimated LOM: 16 YEARS

Mining Method: OPEN PIT

RESOURCES AND RESERVES - ESTIMATION

<table>
<thead>
<tr>
<th>RESOURCES</th>
<th>Tonnage (Mt)</th>
<th>Grade</th>
<th>Metal Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cu (%)</td>
<td>Au (g/t)</td>
<td>Cu (t)</td>
</tr>
<tr>
<td>Measured</td>
<td>79,5</td>
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</tr>
<tr>
<td>Indicated</td>
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<table>
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<th>Grade</th>
<th>Metal Content</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Cu (%)</td>
<td>Au (g/t)</td>
<td>Cu (t)</td>
</tr>
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<tr>
<td>Probable</td>
<td>8,37</td>
<td>0,5</td>
<td>-</td>
</tr>
</tbody>
</table>

https://solwaygroup.com/our-business/san-jorge-project-mendoza-argentina/
www.corominig.com
-Registros de la Subsecretaria de Desarrollo Minero

CONTACT

Jorge Ortiz-Director.
Cerro Montura, Manzana 44, Casa 4, Barrio Jardín Norte, Uspallata, Mendoza -
Cod. Postal: 5545—
http://www.corominig.com—
info@proyectosanjorge.com.ar
The project is located 10 km east of the border with Chile, and 180 km west of the city of San Juan, in the department of Calingasta, province of San Juan. Includes topographic heights between 3,100 and 4,000 m.a.s.l. The center of the deposit is approximately 3,400 m.a.s.l.

**PROPERTY DATA**
- **OWNER / CONTROLLER:** Aldebaran Resources Inc.
- **OPERATOR:** Minera Peregrine Argentina S.A
- **AREA:** 8.443 ha

**PROJECT STATUS – Advanced Exploration**

**LAST PUBLIC TECHNICAL REPORT**

**COMPANY’S LAST ANNOUNCEMENT**

- PROSPECTING
- INITIAL EXPLORATION
- ADVANCED EXPLORATION
- PREL. ECON. ASSES. (PEA)
- FEASIBILITY
- CONSTRUCTION
- OPERATION

In August 2018, Sibanye-Stillwater entered into a series of agreements with Regulus Resources and a newly formed Regulus subsidiary, “Aldebaran Resources”, to further explore and develop the Altar project.

**PROJECT GEOLOGY**

**TYPE OF DEPOSIT:**
Copper and gold porphyry.

**REGIONAL GEOLOGY**
The Altar Project is located in the Cordillera Principal. The rocks of the basement correspond to the Choiyoi Group with andesitic volcanoes at the base and rhyolitic at the top, of Perm Triassic age. The volcanic sequence is intruded by granites and covered in discordance by marine Jurassic sediments (sandstones and clays). In other sectors (project area) G. Choiyoi is covered by acidic ignimbrites and andesitic volcanoes from the Miocene (Pachón Formation).

The project is flanked by two regional faults of North - South heading, the Pelambres fault to the West and the Rio Teatinos fault to the East. The Pelambres limits the Pachón Formation, to the East of the pelambres (paleogen) formation to the West. The Rio Teatinos fault puts the Pachón Formation in contact with Paleozoic and Mesozoic metasedimentites and intrusives.

**DEPOSIT GEOLOGY**
The Altar Project is located 2 km southeast of a target with Au and Ag called Quebrada de la Mina that integrates the group of mining properties of the project. The Altar porphyry is associated with intermediate subvolcanic bodies from the late Miocene that intrude ignimbrites and andesites from the early Miocene of the Pachón Formation. Copper mineralization is associated with high levels of Gold, Silver and Molybdenum.

The Quebrada de la Mina deposit is housed in the same andesitic sequence and the mineralization is primarily from Gold and Silver hosted in the Andesita Pachón and in the dacitic porphyry.
TECHNICAL / ECONOMIC INFORMATION OF THE PROJECT

AVERAGE ANNUAL PRODUCTION

<table>
<thead>
<tr>
<th></th>
<th>Tonnage (Mt)</th>
<th>Copper (Cu) (%)</th>
<th>Gold (Au) (g/t)</th>
<th>Ag (g/t)</th>
<th>Cu (t)</th>
<th>Au (Oz)</th>
<th>Ag (Oz)</th>
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<tbody>
<tr>
<td>Measured</td>
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<td>0,092</td>
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<td>3.382.895</td>
<td>2.981.000</td>
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<td>1.049</td>
<td>0,31</td>
<td>0,067</td>
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<td>1.551.287</td>
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PRODUCT TO OBTAIN: Copper concentrate + dore

CAPEX: 3.000* M USD

Estimated annual employment in operation: 800 jobs (e)
Estimated annual employment in construction stage: 1,500 jobs (e)

Estimated LOM: 36 years

Mining Method: OPEN PIT

RESOURCES AND RESERVES - ESTIMATION

CONTACT

Santa Fe 117 – piso 4° A –Oeste (5400) – Provincia de San Juan
www.sibanyestillwater.com

SOURCES CONSULTED

https://www.aldebaranresources.com/projects/altar-copper-gold/overview/
NI-43-101- TECHNICAL REPORT ESTIMATED MINERAL RESOURCES ALTAR PROJECT SAN JUAN PROVINCE ARGENTINA - Effective Date: August 16, 2018
-ESTIMATED MINERAL RESOURCES ALTAR & QUEBRADA DE LA MINA DEPOSITS, SAN JUAN PROVINCE ARGENTINA Prepared for Stillwater Mining Company, January 31, 2014
It is located in the west of the province of San Juan in the Cordillera Frontal area. The elevation is approximately 3000 to 3700 meters above sea level. Access to the property, from the city of San Juan, is by national route 40 north to Talacasto, where provincial route 436 is taken to the city of Iglesia and then provincial route 412 to the city of Tocota.

PROPERTY DATA

- OWNER / CONTROLLER: Minsud Resources Corp.
- OPERATOR: Minera Sud Argentina S.A
- AREA: 17.423 ha

PROJECT STATUS – Advanced Exploration

LAST PUBLIC TECHNICAL REPORT

COMPANY’S LAST ANNOUNCEMENT

- PROSPECTING
- INITIAL EXPLORATION
- ADVANCED EXPLORATION
- PREL. ECON. ASSES. (PEA)
- PREFEASIBILITY
- FEASIBILITY
- CONSTRUCCIÓN
- OPERACIÓN

Minsud and South32 Sign an Earn-in Agreement to explore the Chita Valley Project. November 4, 2019

PROJECT GEOLOGY

TYPE OF DEPOSIT:
Copper-gold-molybdenum porphyry.

REGIONAL GEOLOGY
The Valle de Chita Project is located in the Andes Mountain Range. The oldest rocks (basement) correspond to the Agua Negra Formation of the Carboniferous - Permian (Quartzites and conglomerates). A Mesozoic to Tertiary age sequence covers the previous units and in turn is intruded by Mesozoic to Tertiary granitoids. The lithologies are intruded by andesitic to dacitic subvolcanic bodies of the tertiary. Pleistocene sediments and alluvial deposits of the Quaternary.

DEPOSIT GEOLOGY
The project is a spatially and temporarily divided hydrothermal system in areas that include an early porphyry style of Cu and Mo followed by high, intermediate and low sulphidation mineral components (quartz +/- Au-Ag). This deposit is located in the metallogenetic belt of the Cordillera Frontal, and in the homonymous geological province.

The lithology of the porphyry is of monzodioritic composition and is located in sedimentary rocks of carboniferous age that constitute the Agua Negra Formation.
TECHNICAL / ECONOMIC INFORMATION OF THE PROJECT

AVerage Annual Production

<table>
<thead>
<tr>
<th>Resource</th>
<th>Tonnage</th>
<th>Grade</th>
<th>Metal Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Mt)</td>
<td>Cu (%)</td>
<td>Au (g/t)</td>
</tr>
<tr>
<td>Indicated</td>
<td>33</td>
<td>0,43</td>
<td>0,07</td>
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<tr>
<td>Inferred</td>
<td>8,6</td>
<td>0,4</td>
<td>0,07</td>
</tr>
</tbody>
</table>

SOURCES CONSULTED

- NI 43-101 TECHNICAL REPORT AND UPDATED MINERAL RESOURCE ESTIMATE ON THE CHITA VALLEY PROJECT - SAN JUAN PROVINCE, ARGENTINA - 30° 36' S and 69° 30' W ARGENTINA, FOR MINSUD RESOURCES CORP. February 1, 2016
- Ministerio de Minería de San Juan (http://mineria.sanjuan.gov.ar/)
RÍO GRANDE

Los Andes
Salta
4500 m.a.s.l.

25° 01' 56"
67° 52' 00"

MINERALIZATION TYPE
Cu Porphyry

Minera Antares Argentina S.A.
Aldebaran Resources Inc.

RESERVES
Proven - -
Probable - -

RESOURCES
Measured Indicated Inferred
3 0.3 0.23
219,811 94,529
It is located in the Altiplano of northwest Argentina at elevations between 3,700 and 4,700 m, 250 km west of the capital of the province of Salta. The nearest city with services is Tolar Grande, located on Provincial Route 27, one and a half hours northeast of the project camp.

**PROPERTY DATA**
- OWNER / CONTROLLER: Aldebaran Resources Inc.
- OPERATOR: Minera Antares Argentina S.A.
- AREA: 26.925 ha

**PROJECT STATUS** – Advanced Exploration

**LAST PUBLIC TECHNICAL REPORT**

**COMPANY’S LAST ANNOUNCEMENT**

No new ads

**PROJECT GEOLOGY**

**TYPE OF DEPOSIT:** Copper and gold porphyry.

**REGIONAL GEOLGY**
The project is located in Puna, where the magmatic arc of the Andes is oriented in a north - south axis. The combination of the volcanic arc associated with transverse structures has concentrated magmatic activity and subsequent hydrothermal emanations generating large deposits of porphyry copper. Rio Grande is located in an extensional basin of 100 x 130 km that includes the Salar de Arizaro. The volcanic belt is characterized by eroded stratovolcanoes and dacitic to andesitic and pyroclastic and volcanogenic porphyritic bodies. These host many of the deposits of the mentioned hydrothermal systems.

**DEPOSIT GEOLOGY**
Rio Grande is a copper and gold porphyry with alterations associated with the IOCG style (iron oxide, copper and gold) located in the province of Salta, in northwestern Argentina. The copper and gold mineralization in Rio Grande occurs within the eroded central core of an intrusive center of the middle Miocene and is distinguished by a well-defined alteration of superficial copper and gold (2 km by 2 km) coinciding with polarization charge anomalies induced (IP). The trenching and drilling programs of Teck Corporation (2000-2001), Antares (2004-2008) and Regulus (2010-2012) have partially delineated the “Discovery and Sofia” copper and gold zones along the margins southeast of the system, and determined the extent of mineralization to the north and west margins of the system.
TECHNICAL / ECONOMIC INFORMATION OF THE PROJECT

AVERAGE ANNUAL PRODUCTION

<table>
<thead>
<tr>
<th>Metal</th>
<th>Tonnage</th>
<th>Grade</th>
<th>Metal Content</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Mt)</td>
<td>Cu (%)</td>
<td>Au (g/t)</td>
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<tr>
<td>Indicated</td>
<td>71</td>
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<tr>
<td>Inferred</td>
<td>41</td>
<td>0.23</td>
<td>0.28</td>
</tr>
</tbody>
</table>

PRODUCT TO OBTAIN: N/D

CAPEX: N/D

Annual employment estimated in operation: N/D
Estimated annual employment in construction stage: N/D

Estimated LOM: N/D

Mining Method: N/D

RESOURCES AND RESERVES - ESTIMATION

SOURCES CONSULTED

https://www.aldebaranresources.com/projects/rio-grande/
www.regulusresources.com/projects/rio-grande-argentina
-Registros de Dirección Nacional de Inversiones Mineras (MEM).
-Regulus Resources Inc. Río Grande Cu-Au-Ag Project, Northwest Argentina, January 19, 2012

CONTACT

Aldebaran Argentina SA
Mariano Benitez 649
A4408FEM, Salta, Argentina
www.aldebaranresources.com