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Presentations

- Improving capital and cost management to maximize value.
- Salobo I & II project.
- Salobo copper & gold operation.
Improving capital and cost management to maximize value

Luciano Siani, CFO
September 11, 2013
Agenda

- Capital and cost management
- About base metals
- The market for copper
Capital and cost management
Our strategy is focused on shareholder value creation through strong discipline in cost and capital management and preservation of our financial strength

Our strategic priorities

- Discipline in capital allocation.
- Reducing R&D expenditures.
- Cutting operating costs and corporate expenses.
- Maintaining a strong balance sheet.
Maximization of capital efficiency

- Intense internal competition for capital.
- Only world-class assets eligible for fund allocation.
- Divestiture of non-core assets.
- Minimization of working capital needs.
- De-risking of the project portfolio.
Steps taken to minimize risks of the project portfolio

Geological risk

- Cancellation of 70 projects in early stages of development due to inconsistency between geology and returns.

Geographic risk

- Simandou, Rio Colorado, termination of some mineral exploration activities in high-risk regions.

Execution risk

- Approval of projects only after conclusion of FEL3, detailed engineering project.
- Stronger focus on construction and contractor management.
Cost management: a lower cost structure on a permanent basis is critical for value generation through the cycles

Picking the low-hanging fruit

Examples

<table>
<thead>
<tr>
<th></th>
<th>1H12</th>
<th>1H13</th>
<th>Δ%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Travel expenses</td>
<td>40</td>
<td>13</td>
<td>-67.5%</td>
</tr>
<tr>
<td>Consultancy services</td>
<td>93</td>
<td>58</td>
<td>-37.6%</td>
</tr>
<tr>
<td>Discretionary expenses</td>
<td>93</td>
<td>45</td>
<td>-51.6%</td>
</tr>
</tbody>
</table>
Reduction of outsourced services through various initiatives

<table>
<thead>
<tr>
<th></th>
<th>1H12</th>
<th>1H13</th>
<th>Δ%</th>
</tr>
</thead>
<tbody>
<tr>
<td>outsourced services</td>
<td>US$ 2.381 billion</td>
<td>US$ 1.846 billion</td>
<td>-22.5%</td>
</tr>
<tr>
<td>outsourced labor¹</td>
<td>54,802</td>
<td>49,670</td>
<td>-10.3%</td>
</tr>
</tbody>
</table>

¹ end of period.
Productivity gains through a more rational use of capital

- Reduction of more than 11,000 m² of office space in Rio and Belo Horizonte, Brazil.
- Gains from building maintenance and cleaning services.
Optimization of procurement logistics


- Optimization in the use of multimodal options and importing process in Brazil.

Reduction of capital employed.

- Better planning to improve inventory management.
- Making more intense use of “in-company store”.
Optimization of maintenance will lead to lower future costs and capital expenditures

Some examples of initiatives underway.

- Identification of opportunities to lengthen the useful life of conveyor belts.
- Lessening the reliance on original equipment manufacturers for purchasing parts savings of 20-40%.
- Productivity gains: reduced need of contractors through increased use of our own employees.
- Renegotiation of contracts.
Reducing maintenance costs and boosting asset productivity

- Use of better techniques to predict failures.
- Training improvement.
- Improvement in maintenance processes.
- Replacement of old locos.

### Locomotives productivity

Mean kilometers between failures (MKBF)¹

<table>
<thead>
<tr>
<th>Year</th>
<th>Railway</th>
<th>Carajás</th>
<th>Vitória a Minas</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>166.6</td>
<td>175.3</td>
<td></td>
</tr>
<tr>
<td>2012</td>
<td>172.9</td>
<td>215.4</td>
<td></td>
</tr>
<tr>
<td>2013²</td>
<td>213.9</td>
<td>258.8</td>
<td></td>
</tr>
</tbody>
</table>

1. 1,000 km.
2. Last twelve-month period ended on June 30, 2013.
Sourcing of equipment, structures and services from suppliers in low-cost countries

Goal is to reduce sustaining and project execution capex

Example

- Long-term contracts with Chinese suppliers of metal structures at prices 22% below options available in local markets.
Intensive use of market intelligence in procurement of production inputs

- Specifications review to improve value in use.
- Leveraging of global synergies to take advantage of large scale.
- Development of new suppliers.
- Improving purchase plans in order to be able to choose the best time to buy.
Fostering stronger competition in markets for engineering services and equipment to lower capital expenditures in project execution

Examples

- US$ 400 million saving in a package for construction work related to S11D.
- US$312 million savings in a package for construction work and equipment for Moatize II/Nacala.
Dealing with uncertainties

- CFC case is close to a solution.
- Mining code.
- Caves.
About base metals
Revamping base metals operations

- Focus on “production at the right cost” and productivity increase.
  - Optimization of mine plans and shift/shutdown schedules.
  - Disciplined management of contracted services.
  - Rationalization of corporate and operational support activities.
  - CORe project to boost metal recovery.
- Extracting maximum value from existing operations.
- Ramp ups of Salobo, VNC and Onça Puma.
- Change in scale and scope of the clean AER to reconcile environmental protection with investment saving of almost CAD 1 billion.
Unlocking value hidden in our base metals operations: the gold streaming transaction

- 25% of the Salobo stream for life of mine and 70% of Sudbury for 20 years.
- US$ 1.9 billion upfront payment plus SLW warrants valued at US$ 100 million plus US$ 400 per oz upon gold delivery.
- Unlocks substantial value still hidden in our base metals operations.
- Salobo payable gold by-product valued at US$ 5.32 billion plus NPV of US$ 400 payment flows for each oz of gold delivered.
Salobo is in first quartile of the industry cost curve and ramping up successfully

Copper output¹
'000 metric tons

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Copper Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>4Q12</td>
<td>7.9</td>
</tr>
<tr>
<td>1Q13</td>
<td>11</td>
</tr>
<tr>
<td>2Q13</td>
<td>15</td>
</tr>
</tbody>
</table>

¹ Copper contained in concentrates.
Strategic positioning in copper

Strategy

- Maximize efficiency.
- Growth through hubs.

Challenges

- Develop growth options.
- Maintenance of current output level at Sossego and Canada.
- Ramp ups of Salobo II and Lubambe.
- Optimization of mineral exploration.
The market for copper
Similarly to other metals, China is the largest consumer and the main global driver of copper consumption.

China’s share in the global copper consumption %, last 12 months

Chinese refined copper consumption by end-use sector, 2012

Source: WBMS

Electrical power 47%

Air Conditioning 16%

Building and construction 9%

Transportation 10%

Electronics 7%

Others 11%

Source: Antaike
A large potential remains in China for growth in durable goods which use copper.

Ownership of durable goods

Source: Chinese Statistical yearbook 2003 and 2012
Global copper consumption is highly correlated with global industrial production…

Correlation between the rate of growth of global IP and copper consumption: 84.4%

Sources: Vale, WBMS and JP Morgan
... and is forecast to increase at 2.9% py over the next five years

### Average growth rates

<table>
<thead>
<tr>
<th></th>
<th>Global copper consumption</th>
<th>Global industrial production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Last 5 years</td>
<td>2.4</td>
<td>2.0</td>
</tr>
<tr>
<td>Last 10 years</td>
<td>3.0</td>
<td>2.9</td>
</tr>
<tr>
<td>Last 15 years</td>
<td>3.0</td>
<td>2.4</td>
</tr>
<tr>
<td>Next 5 years E</td>
<td>2.9</td>
<td>2.8</td>
</tr>
</tbody>
</table>

E = estimated
Sources: Vale, WBMS and JP Morgan.
Grades have been trending downward

Source: CRU
Similarly to iron ore, depletion requires significant investment to replace existing capacity.

**World mine production from existing operations, 2005-2035**

‘000t contained copper in concentrates and SXEW cathode

Source: CRU
The next five years: we expect copper prices to fluctuate between US$ 6,500 to US$ 7,500 per metric ton

- Market for concentrates is expected to remain balanced, although mine output is growing due to the several projects coming on stream.

- Industry marginal cost is estimated to be US$ 6,000 - 6,500 per metric ton, which sets a floor to prices.
Salobo I & II project

Rogerio Scatolini
Director of Base Metals, Fertilizer and Energy Projects
September 11, 2013
Salobo I & II (24 Mtpy) project

Timeline

- Implementation license Salobo 12 Mtpy (2006)
- Start-up Salobo 24 Mtpy (forecast) (2012 - 2014)
- Construction begins for Salobo 12 Mtpy (2010 - 2012)
- Start-up Salobo 12 Mtpy (2011 - 2012)
Salobo I & II (24 Mtpy) project

Location

Access road

Plant and mine

São Luis/MA terminal

Parauapebas/PA terminal
Salobo I & II (24 Mtpy) project

Main distances

Road distances (km)
- Salobo - Maraba (297)
- Salobo - Parauapebas (110)
- Salobo - Carajás urban center (83)

Railway distances (km)
- Carajás - Maraba (180)
- Maraba - São Luis (710)
**Salobo I & II (24 Mtpy) project**

**Safety records**

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Man hours without accidents</td>
<td>11,500,000</td>
</tr>
<tr>
<td>Number of days without LWC*</td>
<td>980**</td>
</tr>
<tr>
<td>Number of campaigns performed up to date</td>
<td>48</td>
</tr>
</tbody>
</table>

* Lost workday case (prevented from work)
** Zero accidentes since the beginning of the project
Salobo I & II (24 Mtpy) project
Safety campaigns

Communities

Healthy food

Vaccination

First aid

Sustainability workshop

Employees

Blocking and Signaling

Golden rules signing ceremony
Salobo I & II (24 Mtpy) project

Workforce camp

Main distance (aprox.) - Km
Salobo to workforce camp 45
Salobo I & II (24 Mtpy) project
Workforce camp
45% of Brazilian cities have less than 10,000 inhabitants

Source: IBGE, 2012
Salobo I & II (24 Mtpy) project

Workforce

Local workforce capacity programs

- Partnership with SENAI and SINE – federal bureau.
- 3,907 local professionals trained.
- Average of 78% local workforce.
Salobo I & II (24 Mtpy) project

Access road

Infrastructure

• Construction of the access road between Parauapebas and Salobo.

Length: 90 km
Salobo I & II (24 Mtpy) project
Access road safety

Zero major accidents with our workforce
Salobo I & II (24 Mtpy) project

Social and economic development

Health

- Refurbishment of 22 local health centers

Education

- Construction of 5 new schools
- Refurbishment of 6 old ones
Salobo I & II (24 Mtpy) project
Layouts
Salobo I & II (24 Mtpy) project

Facts

19,740
Engineering A1 equivalent

= 690,900
engineering man-hours
Salobo I & II (24 Mtpy) project

Facts

166,000 m³ of concrete

3 Stadiums (Mineirão)
Salobo I & II (24 Mtpy) project

Facts

18,000 tons
Steel structure and rebar

2
Eiffel Tower
Salobo I & II (24 Mtpy) project

Facts

59,938,501 m³ earthworks and pre stripping

7 English Channel
Salobo I & II (24 Mtpy) project

Facts

2,249,942 m electric cables

Distance from Belo Horizonte to Marabá

2.252 Km, 28 hours
Salobo I & II (24 Mtpy) project

Capex summary

<table>
<thead>
<tr>
<th>Project</th>
<th>CapEx</th>
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<tbody>
<tr>
<td>Salobo I</td>
<td>US$ 2.51 billion</td>
</tr>
<tr>
<td>Salobo II</td>
<td>US$ 1.71 billion</td>
</tr>
<tr>
<td>Total</td>
<td>US$ 4.22 billion</td>
</tr>
</tbody>
</table>
Salobo I & II (24 Mtpy) project

Synergy

Salobo 24Mtpy benefits from Salobo 12Mtpy infrastructure:

- Earthworks
- Permanent access road
- Power line
- Tailing dams
- Parauapebas and São Luis terminals
- Primary screening building
- Pre fabricated units of industrial support areas
- Long distance pipe conveyor (up graded power)
Salobo I & II (24 Mtpy) project

Physical progress curve

Planned physical progress : 85.1%
Real physical progress : 84.6%
Salobo I & II (24 Mtpy) project

Physical progress disciplines

- Consolidated project: Plan 85.1%, Actual 84.6%
- Engineering: Plan 100.0%, Actual 100.0%
- Procurement mechanical equipment: Plan 99.8%, Actual 99.8%
- Procurement materials: Plan 99.6%, Actual 99.8%
- Procurement electric and automation: Plan 89.5%, Actual 89.9%
- Civil works: Plan 85.6%, Actual 84.9%
- Electromechanical assembly: Plan 59.9%, Actual 58.9%
Salobo I & II (24 Mtpy) project

Scope synergy

- Equipment standardization to improve maintenance
- Spare parts optimization
- Pipe conveyor (upgraded power)
Salobo I & II (24 Mtpy) project

Scope division

1 – Fuel station and storage
2 – Primary crushing
3 – Secondary crushing
4 – HPGR and grinding
5 – Flotation and regrinding
6 – Maintenance central workshop
7 – Press filtering and warehouse
Salobo I & II (24 Mtpy) project
Progress

Open pit mine

2008

2013
Salobo I & II (24 Mtpy) project
Progress

Primary crushing

2008

2013
Salobo I & II (24 Mtpy) project
Progress

Processing plant
Salobo I & II (24 Mtpy) project

Progress

Administrative and industrial areas

2008

2013
Salobo I & II (24 Mtpy) project

Progress

Tailing dams

2008

2013
Salobo I & II (24 Mtpy) project

Progress

Main entrance

2008

2013
Salobo I & II (24 Mtpy) project

Progress

Parauapebas terminal

2007

2013
Salobo I & II (24 Mtpy) project

Progress

São Luis terminal

2008

2012
Salobo copper & gold operation

Paulo Silva Araujo
Director of Base Metals, South Atlantic
September 11, 2013
Location

PDM terminal

TUCURUI HYDROPOWER

CARAJÁS RAILROAD

MARANHÃO

SALOBO

N4 (Fe)

SERRA DOS CARAJAS

SOSSEGO
Infrastructure available

Power supply comes from two Eletronorte substations, Serra Norte and Integradora, both 230 kV. The source of power is Tucuruí hydropower plant.

**Copper concentrate warehouse - Parauapebas.**
2 warehouses with 16,000 metric tons (t) each one, 1 for Sossego and 1 for Salobo.

**Carajás Railroad**
Extension: 892 km
Linking Carajás to Ponta da Madeira maritime terminal.

**Copper concentrate warehouse - São Luis.**
2 warehouses with 60,000 t each, 1 for Sossego and 1 for Salobo.

Sea port terminal Pier 2, operated by Vale.

**Ship loading**
1 ship loading system shared by Salobo and Sossego – 1,350 t/h
Ship loading time - 1.5 to 3 days (according to ship capacity)
Copper in Carajás

Vale has two copper operations in Carajás: Sossego and Salobo.
Sossego operation

110 Ktpy of contained copper in concentrate
Southern Hub – concept

OPTION FOR EXTENDING SOSSEGO’S LIFE

Southern Hub consists of extending Sossego’s life of mine after current open pits exhaustion, through the beneficiation of ores from Sossego underground and satellite ore bodies.

In this concept, Cristalino, located 45 km to the east, would come into operation in the future, feeding Sossego’s processing plant and disposing of tailings inside Sossego and Sequeirinho final pits.
Salobo plant view
Salobo project timeline

- 70’s    Deposit discovery.
- 1993 -2004  Testworks, engineering, downstream integration to cathode concept.
- 2005    Commercial contracts to customer smelters.
- 2006    Construction license granted.
- 2007    Project approval by the Board.
- 2008    Start of construction.
- 2012    Start up of Phase I.
- 2014    Expected start up of Phase II.
Salobo project summary

- Life of mine: ± 50 years.
- Drilling: 150,000 meters
- Ore types: magnetite-chalcopyrite-bornite and magnetite bornite-chalcocite.
- Total production capacity of 200 kt of copper in concentrate (Salobo I + II).
- Total capex: US$ 4.2 billion (Salobo I + II).

<table>
<thead>
<tr>
<th>Reserves</th>
<th>Mt</th>
<th>Cu %</th>
<th>Au (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proven and probable</td>
<td>1,122.6</td>
<td>0.72</td>
<td>0.38</td>
</tr>
</tbody>
</table>
Salobo process flowsheet
Salobo I + II master plan
### Fleet - Salobo 24 Mtpy

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drill rig - 12 1/4 in</td>
<td>16</td>
</tr>
<tr>
<td>Drill rig - 9 7/8 in</td>
<td>5</td>
</tr>
<tr>
<td>Shovel - 70 jd³</td>
<td>5</td>
</tr>
<tr>
<td>Hydraulic shovel - 33 jd³</td>
<td>3</td>
</tr>
<tr>
<td>Front end loader - 40 jd³</td>
<td>2</td>
</tr>
<tr>
<td>Truck - 240 t</td>
<td>29</td>
</tr>
<tr>
<td>Truck - 360 t</td>
<td>18</td>
</tr>
<tr>
<td>Grader</td>
<td>8</td>
</tr>
<tr>
<td>Dozer</td>
<td>16</td>
</tr>
<tr>
<td>Wheel dozer</td>
<td>10</td>
</tr>
<tr>
<td>Water truck - 90 m³</td>
<td>3</td>
</tr>
</tbody>
</table>
Salobo primary crushing

<table>
<thead>
<tr>
<th>Salobo I</th>
<th>Salobo II</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Gyratory crusher – 60” x 89”</td>
<td>1 Gyratory crusher – 60” x 89”</td>
</tr>
</tbody>
</table>
Salobo secondary crushing

<table>
<thead>
<tr>
<th>Salobo I</th>
<th>Salobo II</th>
</tr>
</thead>
<tbody>
<tr>
<td>2¹ Cone crusher</td>
<td>1 Cone crusher</td>
</tr>
<tr>
<td>2¹ Vibrating screen 12 x 24 ft</td>
<td>1 Vibrating screen 12 x 24 ft</td>
</tr>
</tbody>
</table>

¹ 1 cone crusher and 1 vibrating screen are common for both Salobo I and II
Salobo long distance conveyor belt

Salobo I and II

1 Overland pipe conveyor (78.7”)
6,000 hp
1,700 m length
4,600 t/h capacity
### Salobo HPGR

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Salobo I</strong></td>
<td>2 High pressure grinding rolls</td>
<td>Ø 2.0 x 1.5 m</td>
</tr>
<tr>
<td><strong>Salobo II</strong></td>
<td>2 High pressure grinding rolls</td>
<td>Ø 2.0 x 1.5 m</td>
</tr>
</tbody>
</table>
Salobo ball mill

<table>
<thead>
<tr>
<th></th>
<th>Salobo I</th>
<th>Salobo II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2 Ball mills – Ø 26 ft x 40 ft</td>
<td>2 Ball mills – Ø 26 ft x 40 ft</td>
</tr>
</tbody>
</table>
# Salobo flotation and filtering

<table>
<thead>
<tr>
<th>Salobo I</th>
<th>Salobo II</th>
</tr>
</thead>
<tbody>
<tr>
<td>24 Flotation tank cells – 200 m$^3$</td>
<td>24 Flotation tank cells – 200 m$^3$</td>
</tr>
<tr>
<td>14 Flotation columns – 14 m</td>
<td>14 Flotation columns – 14 m</td>
</tr>
<tr>
<td>4 Vertimills – 1500 hp</td>
<td>4 Vertimills – 1500 hp</td>
</tr>
<tr>
<td>1 Concentrate thickener – Ø 15 m</td>
<td>1 Concentrate thickener – Ø 15 m</td>
</tr>
<tr>
<td>2 Pressure filters 1500 x 1500 / 50 chambers</td>
<td>2 Pressure filters 1500 x 1500 / 50 chambers</td>
</tr>
</tbody>
</table>
Salobo tailings dam

Initial height: 35 m
Final height: 100 m
Salobo 36 Mtpy

Salobo III - A growth option

Salobo III would consist of the construction of a third concentration plant in Salobo, with 12 Mtpy capacity, using the existing tailings dam, access road, pre-stripping, workshops, transmission line, all the mine infrastructure and administrative facilities.

This expansion is possible given the large amount of reserves at Salobo.

The processing plant would have the same design than the existing now at Salobo I.

The timing of this expansion will depend on the copper market evolution and the business cash flow generation.
Salobo 36 Mtpy

Third concentration plant location
Salobo ramp up

- Nameplate capacity is 12 Mtpy of ROM per phase.
- Phase I ore processing started up in April 2012.
- In August 2013 plant feed reached 72% of nameplate capacity.

<table>
<thead>
<tr>
<th>Salobo I</th>
<th>August 2013</th>
<th>Nameplate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plant feed</td>
<td>723 kt</td>
<td>1 000 kt</td>
</tr>
<tr>
<td>Copper in conc</td>
<td>6 440 t</td>
<td>8 333 t</td>
</tr>
<tr>
<td>Gold in conc</td>
<td>11 641 oz</td>
<td>10 706 oz</td>
</tr>
<tr>
<td>Copper recovery</td>
<td>84.1%</td>
<td>87.6%</td>
</tr>
<tr>
<td>Gold recovery</td>
<td>67.9%</td>
<td>60%</td>
</tr>
</tbody>
</table>

- First concentrate shipment was in September, 29th, 2012.
- 10 shipments since September 2012 up to August 2013.
- 111 kt of concentrate (38.4 kt of copper) already dispatched overseas.
- Phase II will double production and is forecasted to start up in 2014.
Salobo ramp up

Total material mined
Mt (wet basis)
Salobo ramp up

Plant throughput
kt (wet basis)

1,000 kt ore to plant
Salobo ramp up

Copper in concentrate

8,333 t
Salobo ramp up

Gold in concentrate

<table>
<thead>
<tr>
<th>Month</th>
<th>OZ</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jun-12</td>
<td>735</td>
</tr>
<tr>
<td>Jul-12</td>
<td>1,515</td>
</tr>
<tr>
<td>Aug-12</td>
<td>2,284</td>
</tr>
<tr>
<td>Sep-12</td>
<td>3,177</td>
</tr>
<tr>
<td>Oct-12</td>
<td>4,804</td>
</tr>
<tr>
<td>Nov-12</td>
<td>4,603</td>
</tr>
<tr>
<td>Dec-12</td>
<td>4,045</td>
</tr>
<tr>
<td>Jan-13</td>
<td>4,929</td>
</tr>
<tr>
<td>Feb-13</td>
<td>5,767</td>
</tr>
<tr>
<td>Mar-13</td>
<td>8,014</td>
</tr>
<tr>
<td>Apr-13</td>
<td>7,745</td>
</tr>
<tr>
<td>May-13</td>
<td>7,027</td>
</tr>
<tr>
<td>Jun-13</td>
<td>10,597</td>
</tr>
<tr>
<td>Jul-13</td>
<td>9,377</td>
</tr>
<tr>
<td>Aug-13</td>
<td>11,641</td>
</tr>
</tbody>
</table>

Total: 10,706 oz
Salobo ramp up

Copper recovery

% 87.6%
Salobo ramp up

Gold recovery

%
Copper and gold: five-year production plan

Copper in concentrate

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>t</td>
<td>125,000</td>
<td>204,007</td>
<td>212,582</td>
<td>223,391</td>
<td>223,730</td>
</tr>
</tbody>
</table>

Gold

<table>
<thead>
<tr>
<th>Year</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>2018</th>
</tr>
</thead>
<tbody>
<tr>
<td>OZ</td>
<td>178,604</td>
<td>283,810</td>
<td>327,660</td>
<td>318,574</td>
<td>302,787</td>
</tr>
</tbody>
</table>
Salobo cash cost ($C_1$)

Salobo cash cost positions the operation in the first quartile of the industry cost curve.

Salobo $C_1$: 5-year average (2015 / 2019).
Cost curve: projected $C_1$ in 2017.
Alemão Project

- An additional growth option for the future could be Alemão Project, that consists of a 5.45 Mtpa ROM underground mine and beneficiation plant.

<table>
<thead>
<tr>
<th>Reserves</th>
<th>105 Mt @ 1.51 % Cu and 1.05 g/t Au</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life of mine</td>
<td>21 years</td>
</tr>
<tr>
<td>Copper annual production</td>
<td>64 ktpa Cu</td>
</tr>
<tr>
<td>Gold in concentrate (average)</td>
<td>19 g/t</td>
</tr>
<tr>
<td>Gold annual production</td>
<td>119,000 oz Au</td>
</tr>
</tbody>
</table>

- The Alemão ore body is located beneath the Igarape Bahia gold mine final pit and because of that has high gold content (1.05 g / t compared to 0.38 g / t at Salobo).
Creating long-term value