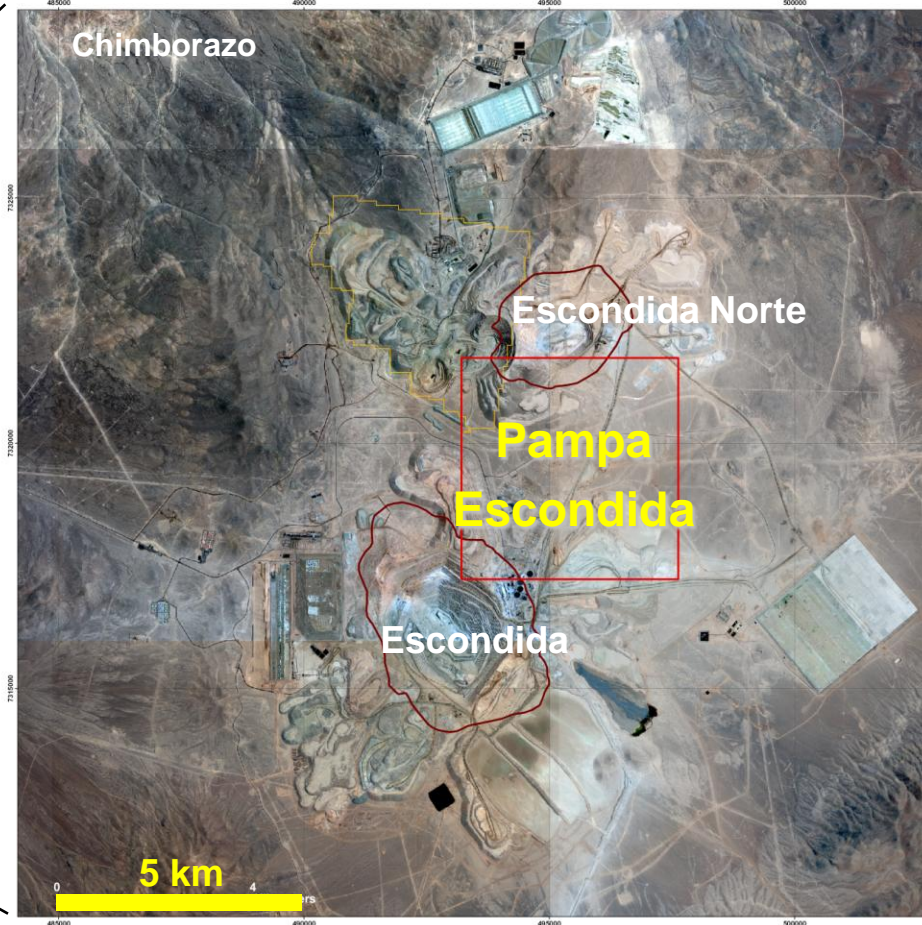


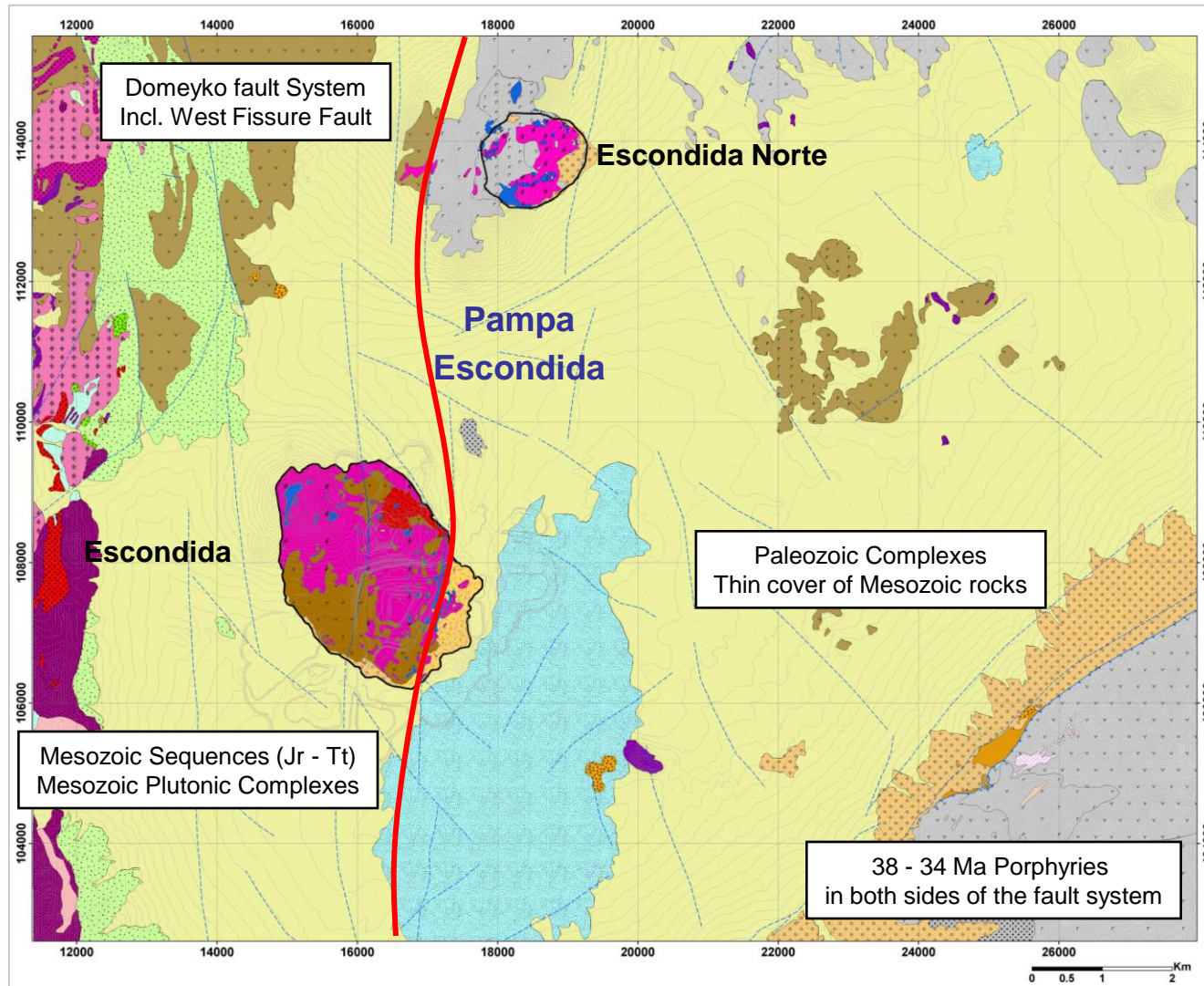
Discovery and Geology of the Pampa Escondida Porphyry, Escondida, Chile

May 2010

Location



Schematic Geological Map



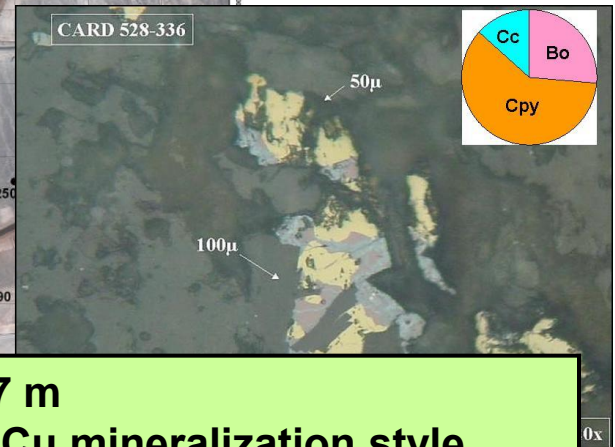
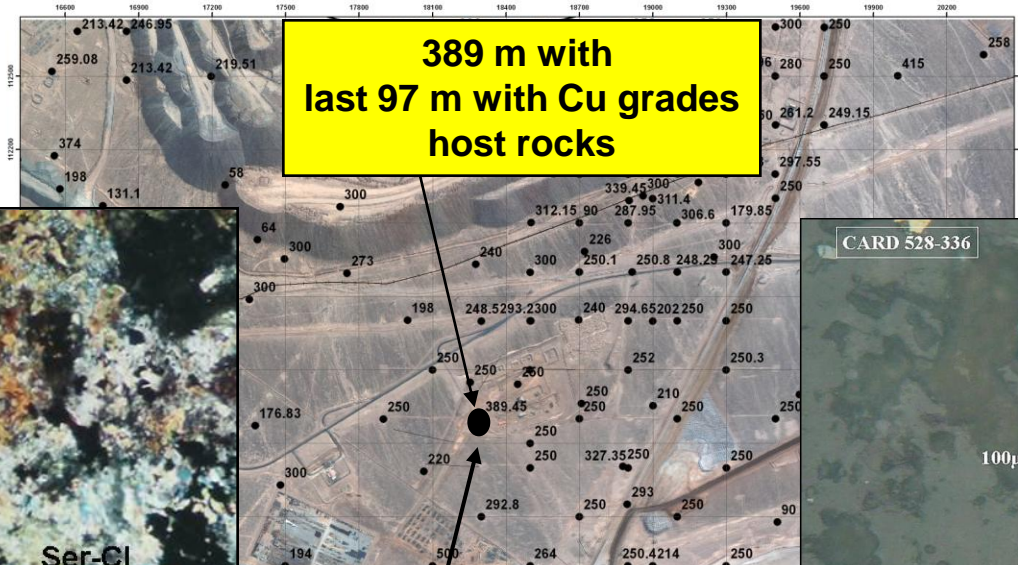
Minera Escondida Limitada (MEL)

- ✓ Belongs to BHP Billiton 57.5%; 30.0% to Rio Tinto Plc; 10.0% to JECO Corp. and 2.5% to IFC. BHPBilliton is the Operator.
- ✓ In 2009 produced 1,102,976 metric tons of fine copper (70% in concentrates and 30% in cathodes), representing the ~ 8% of world production.
- ✓ Produces sulphide concentrate by flotation (Laguna Seca and Los Colorados plants) and cathodes through leaching of oxides ore and bioleaching of low grades sulphides ore (SX-EW plant).
- ✓ The mines (Escondida and Escondida Norte) move together annually, more than 360 million metric tons of rock.
- ✓ Copper concentrate is carried by two pipelines from the mine to Puerto Coloso (near Antofagasta).
- ✓ A seawater desalination plant is located in Coloso, to provide part of the requirements of the operations.

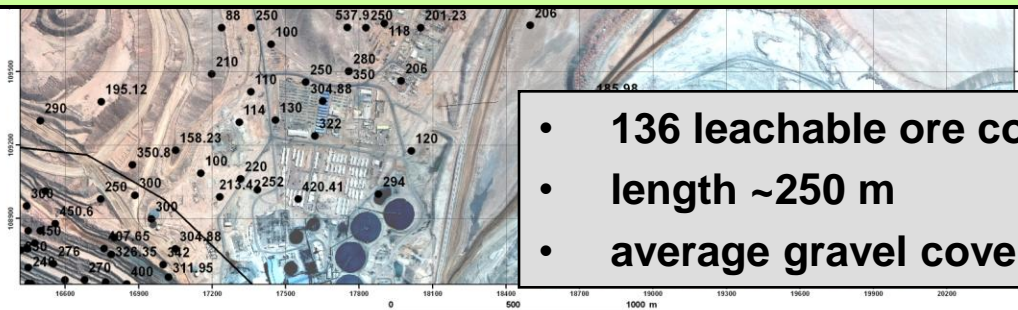
www.escondida.cl

Discovery

Historical Drillholes

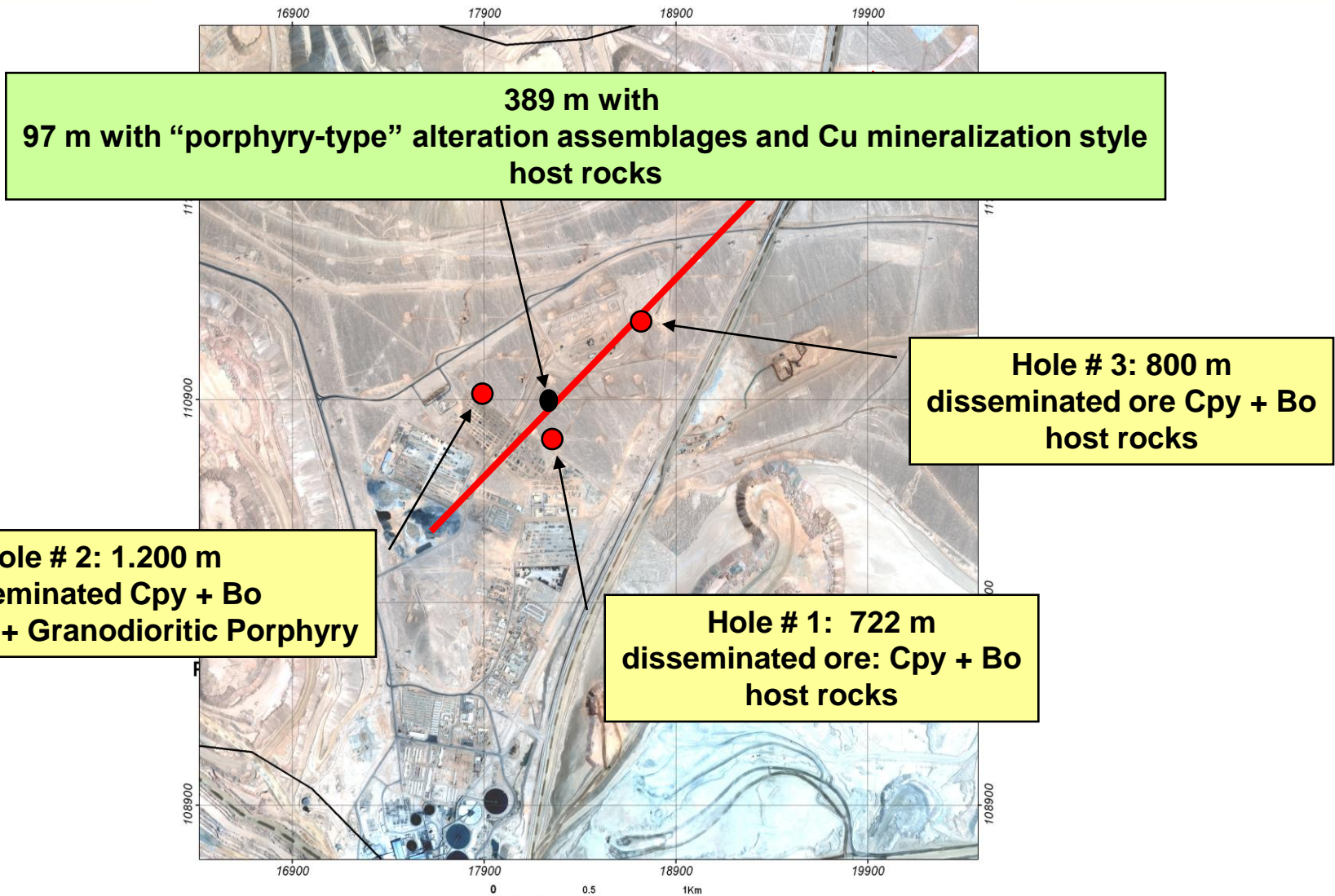


389 m long, having the last 97 m with “porphyry-type” alteration assemblages and Cu mineralization style. host rocks

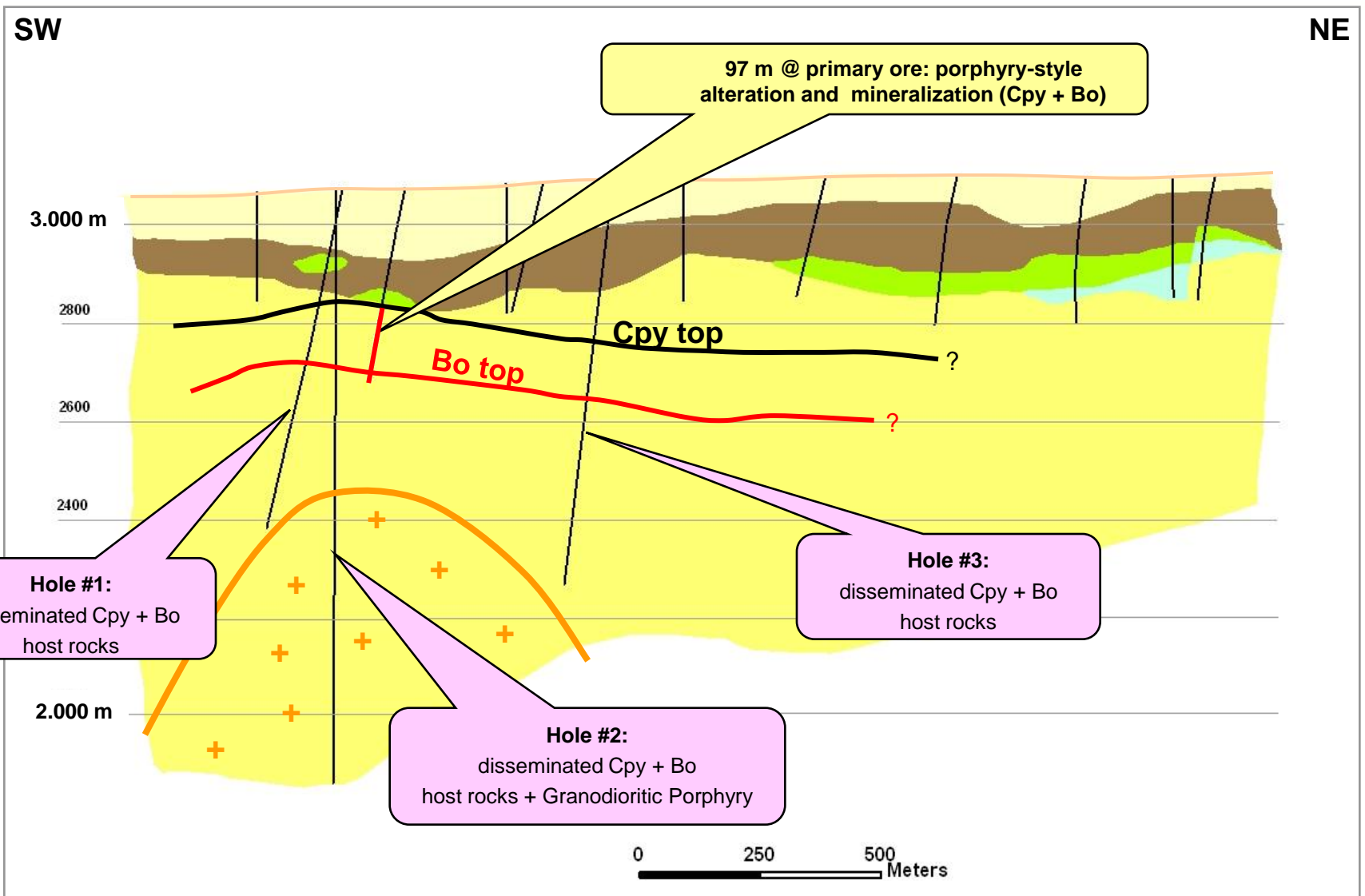


- 136 leachable ore condemnation holes
- length ~250 m
- average gravel cover depth 60 m

First New Drillholes

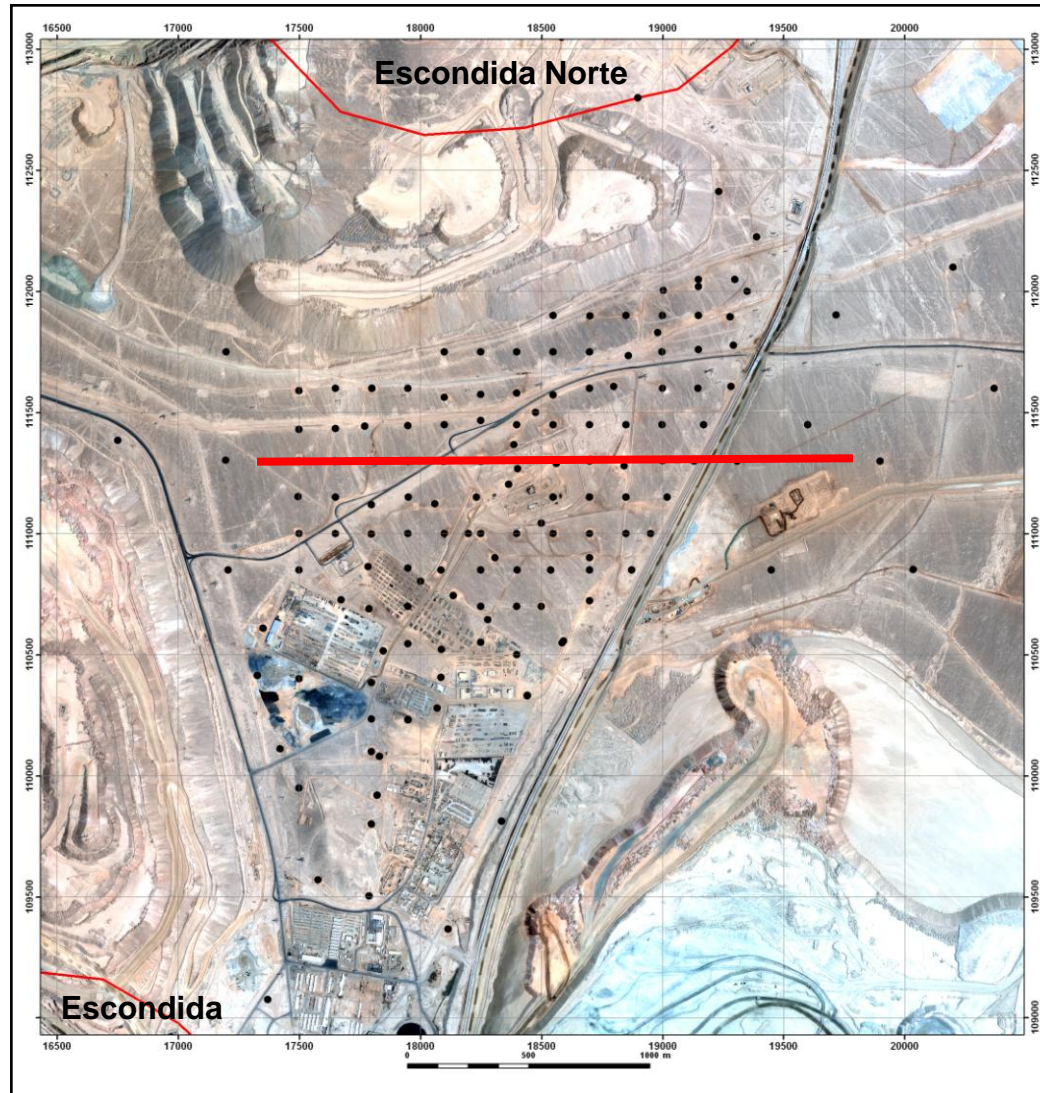


Early Mineralization Model 2007

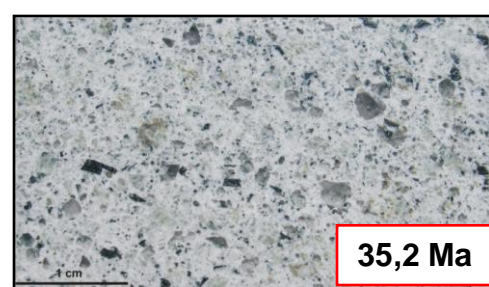


Geology

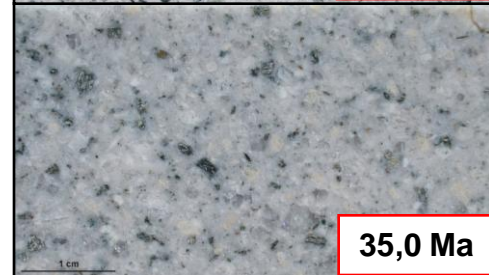
Pampa Escondida: deep drillholes collars



Porphyries – Host rocks



35,2 Ma



35,0 Ma



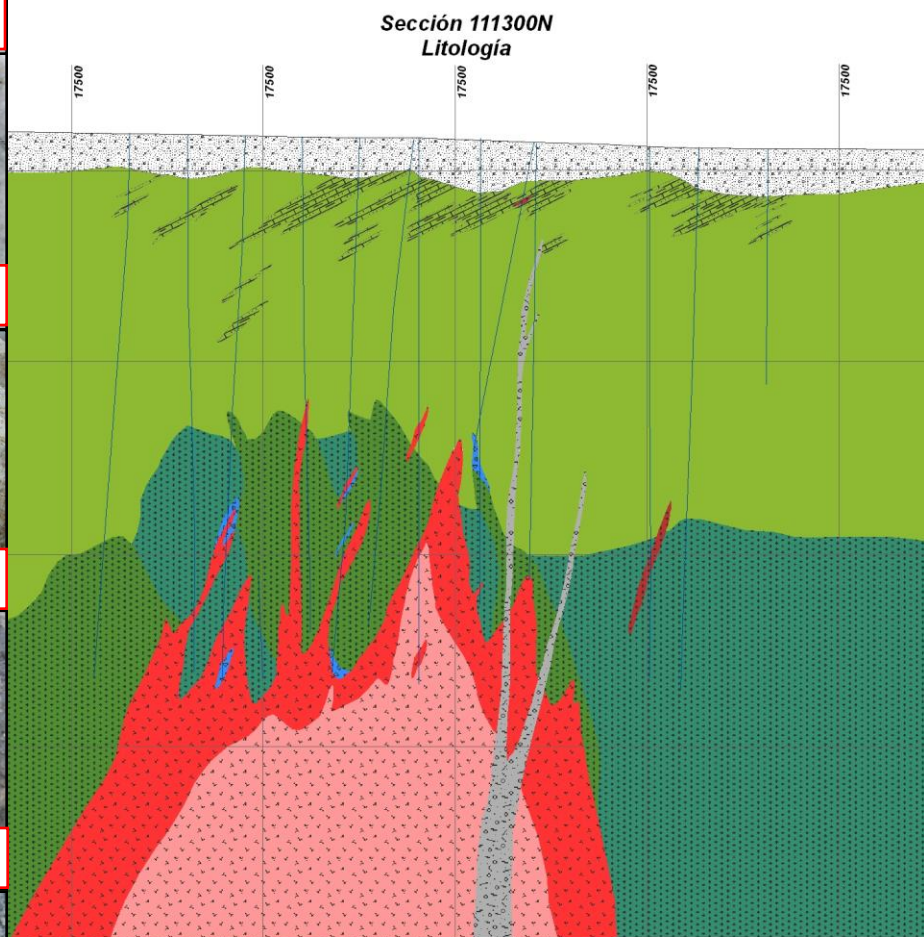
36,1 Ma



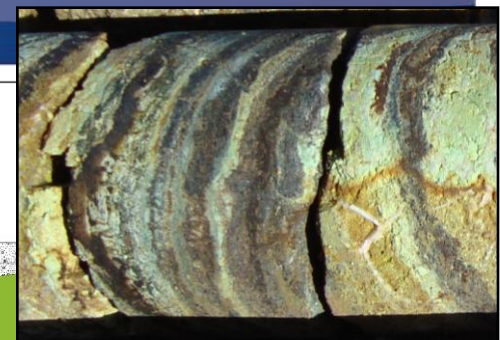
36,1 Ma



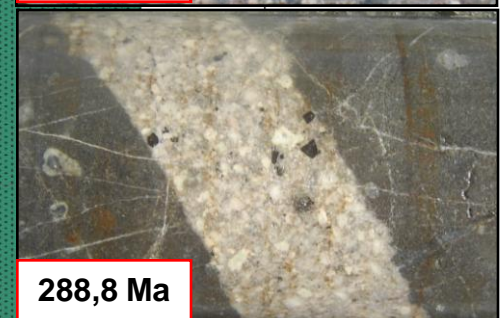
37,6 Ma



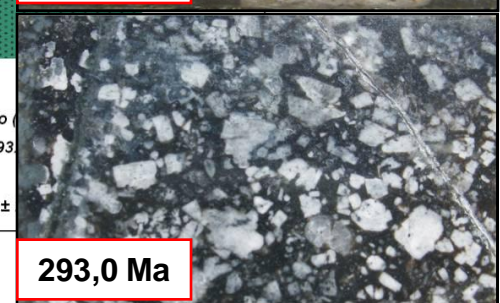
- | | | | | | | |
|--|--------------------|------------------------------------|--|----------------------------------|--|---------------------|
| | Brecha Freática | Complejo Intrusivo Pampa Escondida | | Porfido Dacítico (35.2 ± 0.8 Ma) | | Pórfido Temprano |
| | Brecha Hidrotermal | | | Porfido Tardío (35.0 ± 0.8 Ma) | | Porfido Negro (293) |
| | Brecha Ígnea | | | Porfido PE (36.1 ± 0.7 Ma) | | UVS |
| | | | | Dioritas (37.6 ± 0.5 Ma) | | Andesitas (288.8 ±) |



287,6 Ma



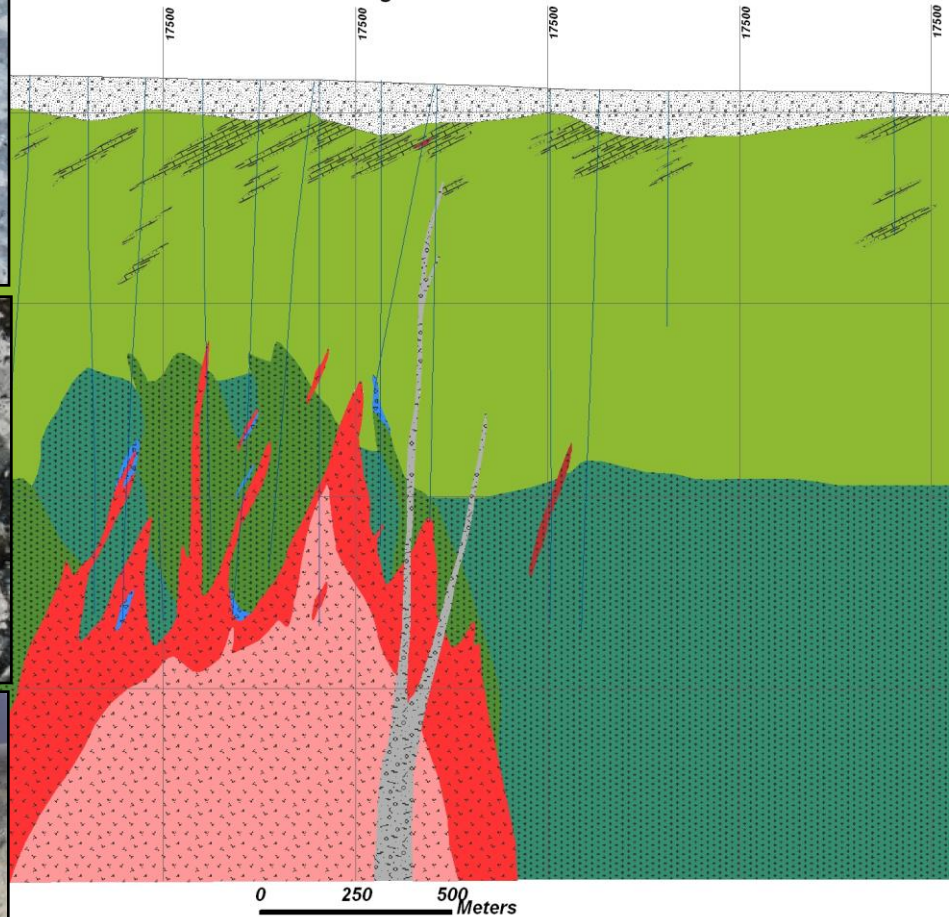
288,8 Ma



293,0 Ma

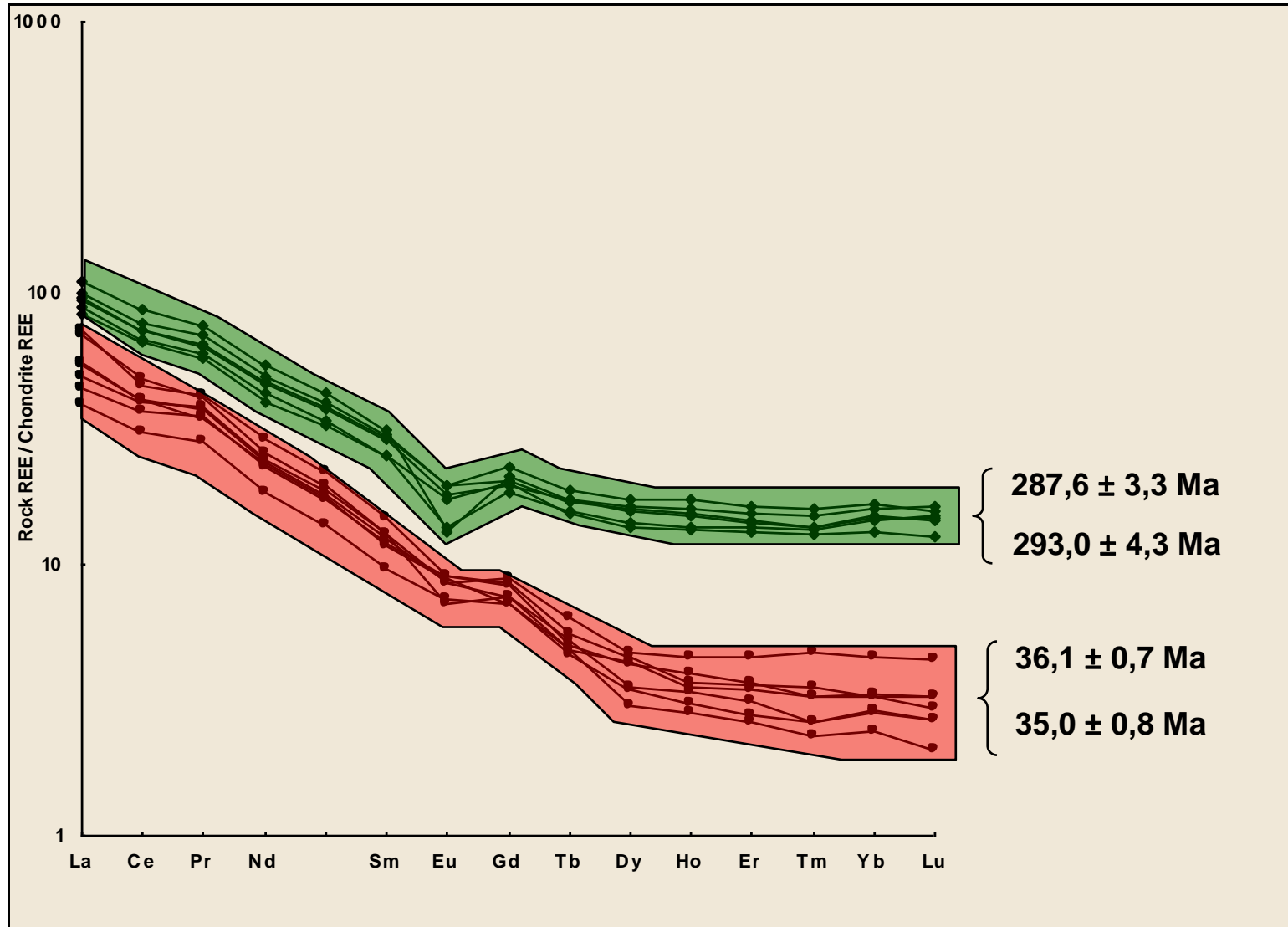
Lithology: Breccias

Sección 111300N
Litología

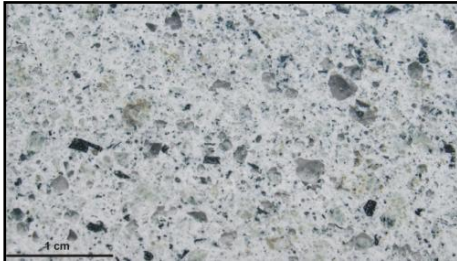


- | | | | |
|-----------------|---------------------------------------|---------------------------------------|--|
| cha Freática | Complejo Intrusivo
Pampa Escondida | Porfido Dacítico (35.2 ± 0.8 Ma) | Porfido Temprano (287.6 ± 3.3 Ma) |
| cha Hidrotermal | | Porfido Tardío (35.0 ± 0.8 Ma) | Porfido Negro (293.0 ± 4.3 Ma) |
| cha Ígnea | | Porfido PE (36.1 ± 0.7 Ma) | UVS |
| | | Dioritas (37.6 ± 0.5 Ma) | Andesitas (288.8 ± 2.4 Ma) |
| | | | |

REE Patterns: Paleozoic - Tertiary



Pampa Escondida Porphyries



Dacitic Post-Mineralization

- Qz-Ser-Chl alteration
- D veinlets
- Py >> Cpy



Late Intramineralization

- Chl-Ser overprinted in K alteration
- Qz veinlets < 1% volume
- Py > Cpy



Intramineralization

- Chl-Ser overprinted in K alteration
- Qz veinlets ~ 3 - 4% volume
- Cpy - Py - (Bo)



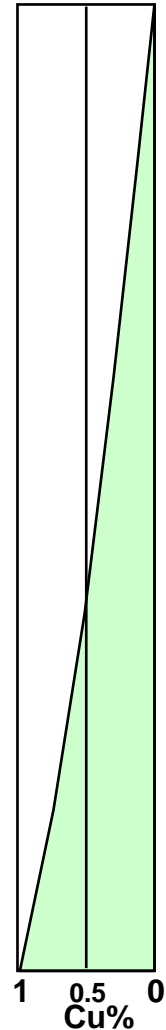
Pampa Escondida Porphyry

- Strong potassic FK >> Bt
- Qz veinlets > 10% volume
- Cpy - Bo - (Cv - Dg)

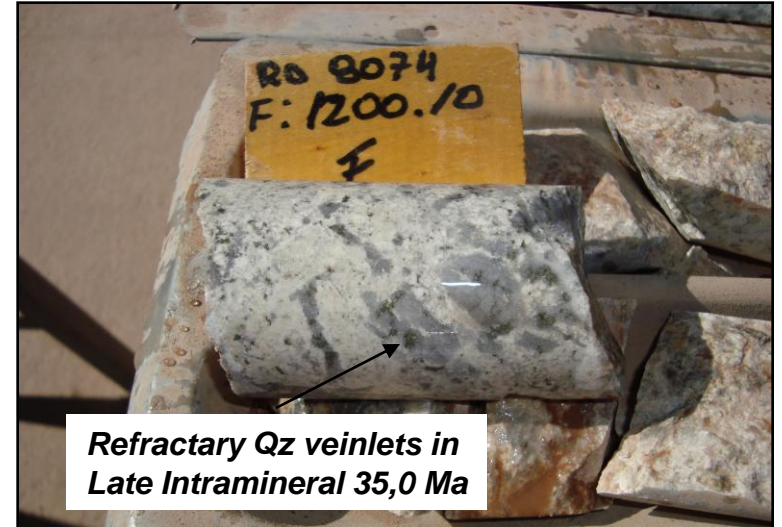
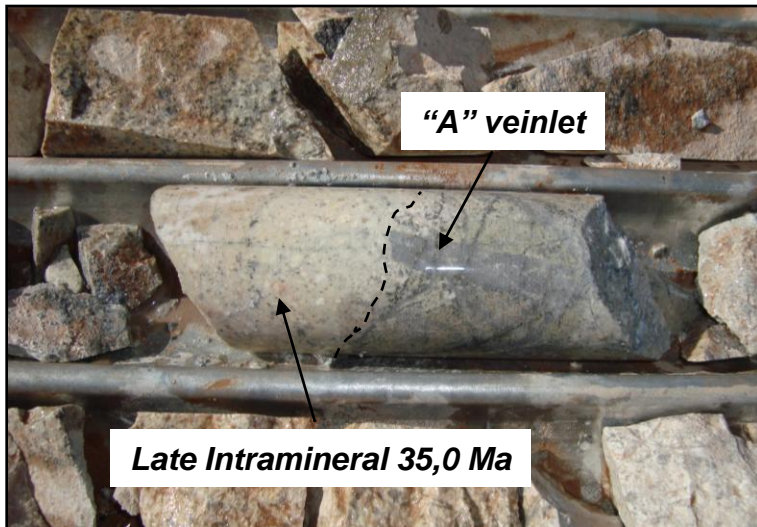
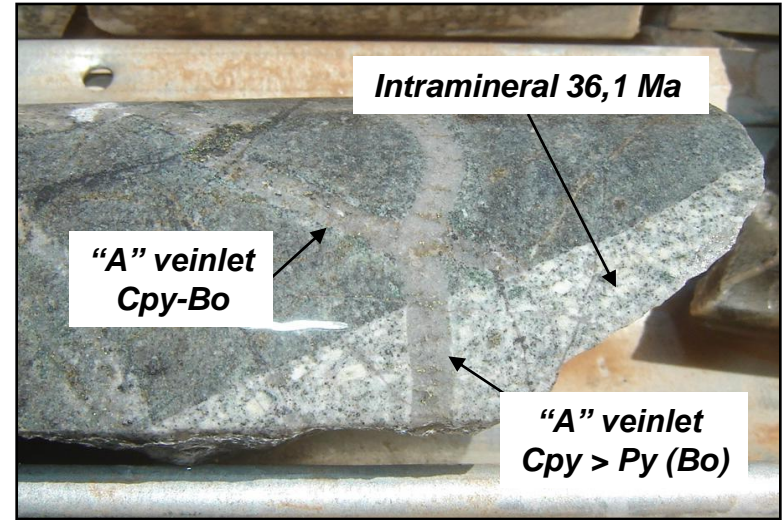
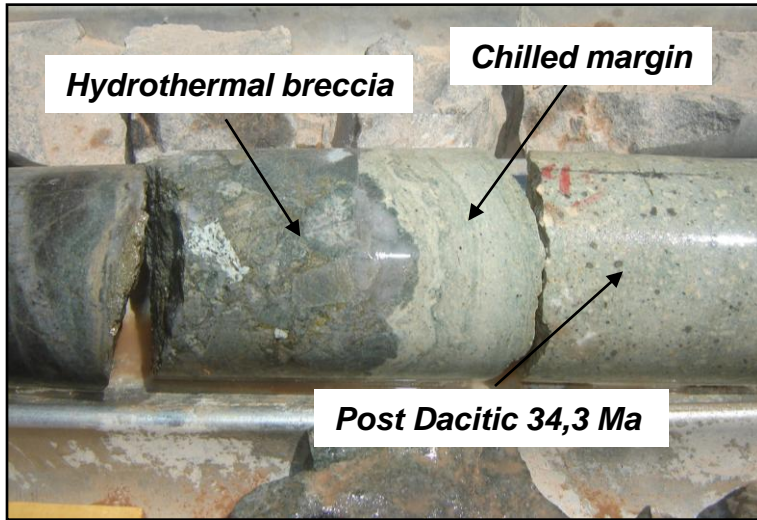
34 Ma



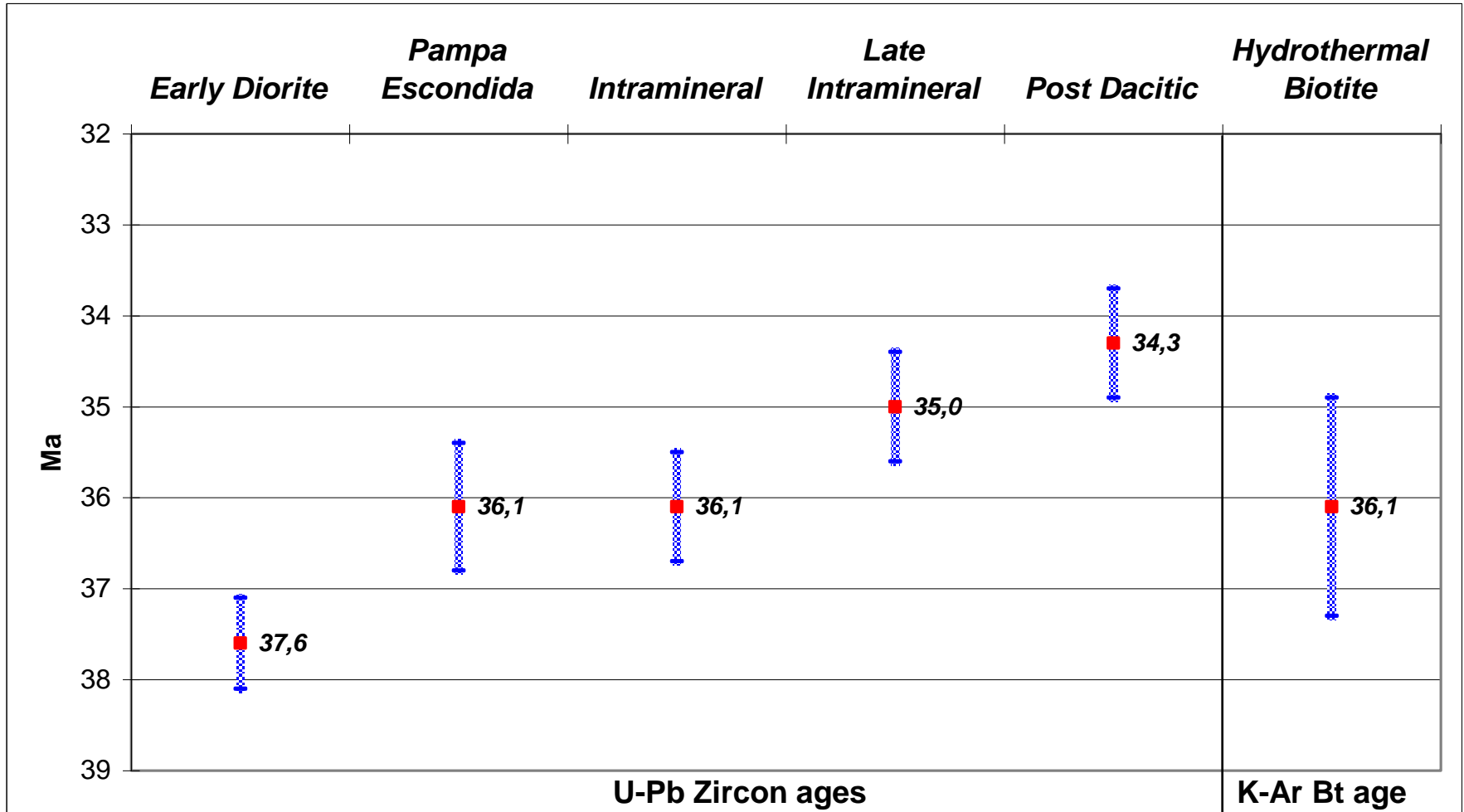
37 Ma



Contacts relationships porphyries - veinlets

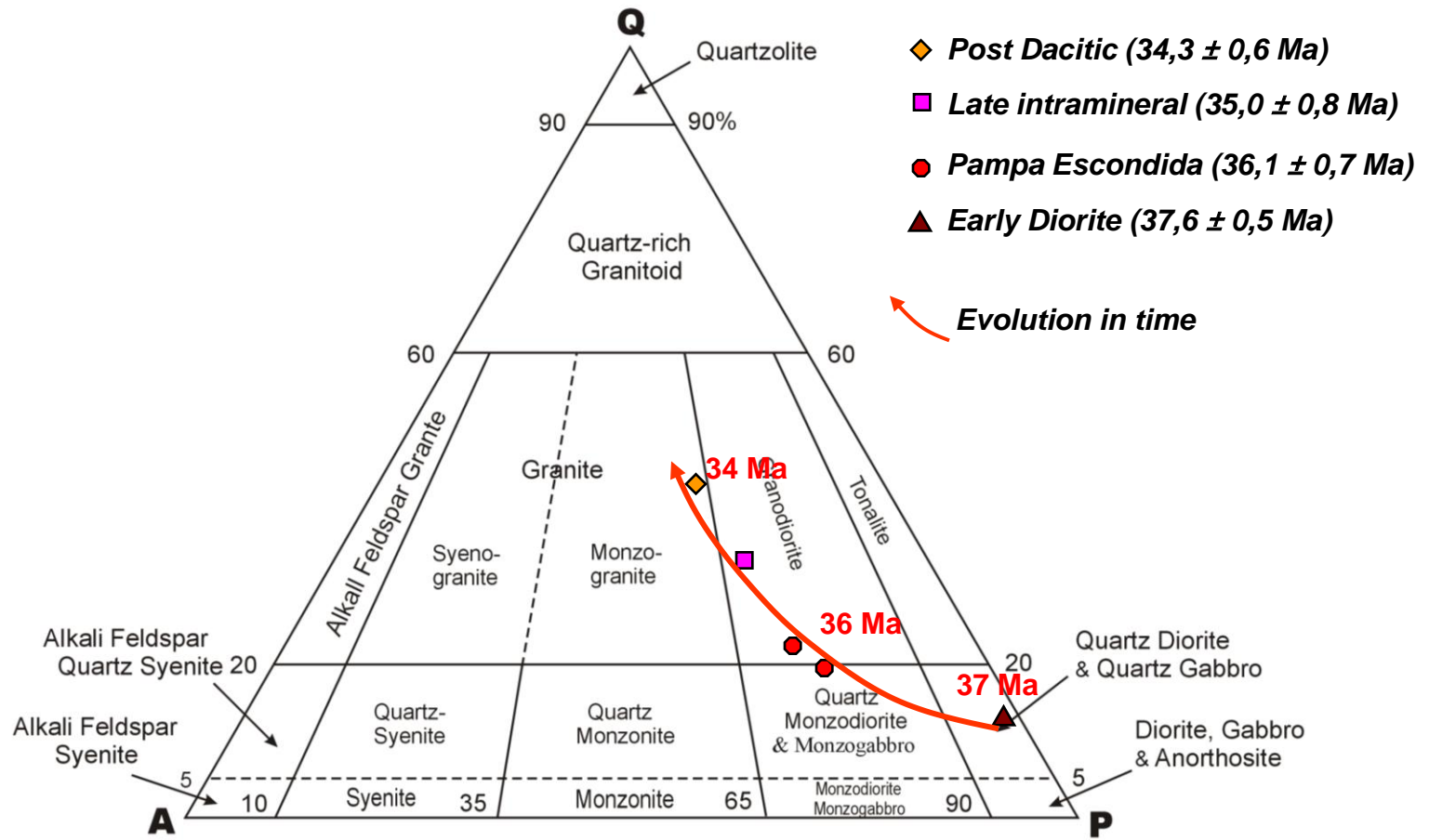


Radiometric dating Pampa Escondida Porphyries

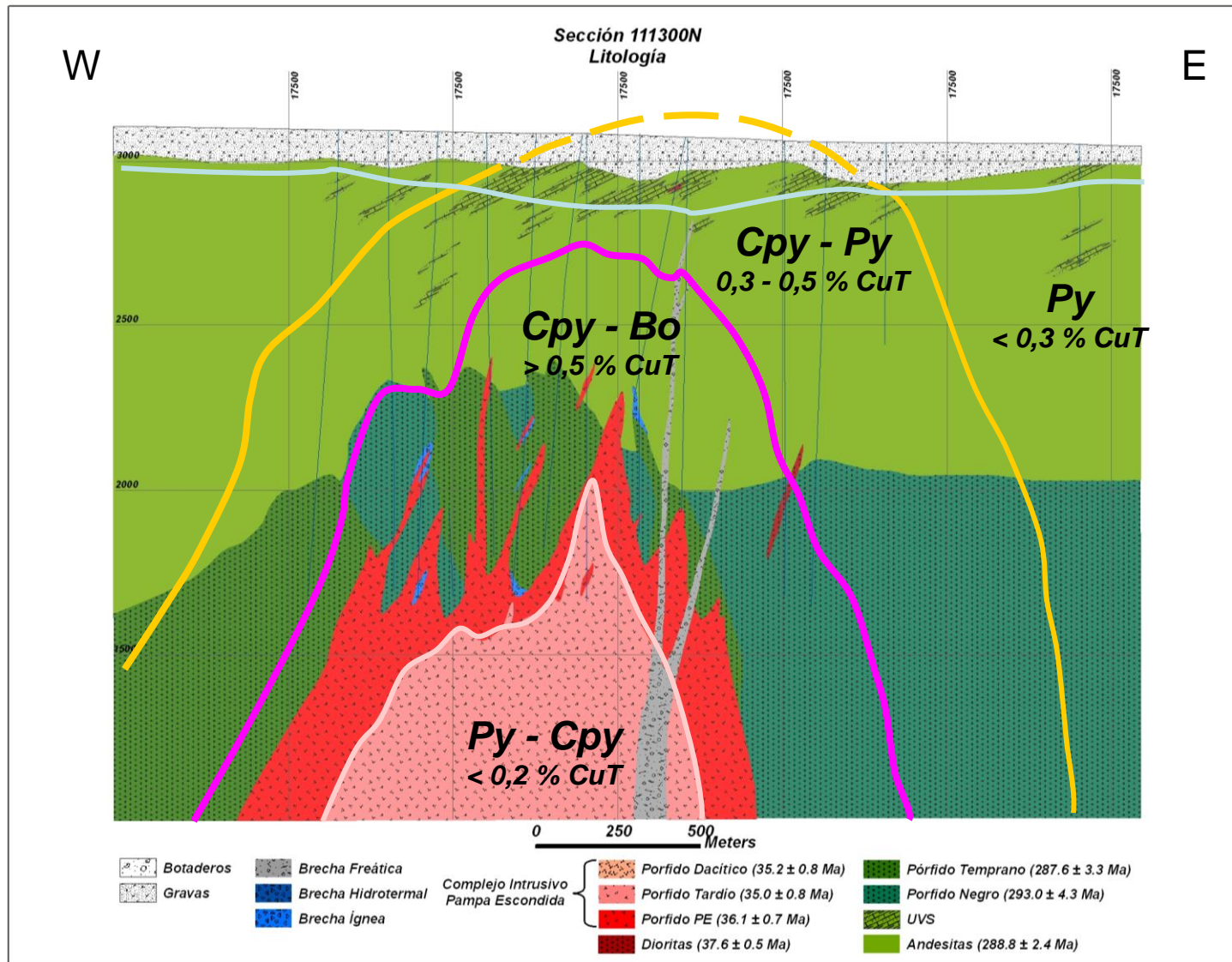


Modal Evolution of Pampa Escondida Porphyries

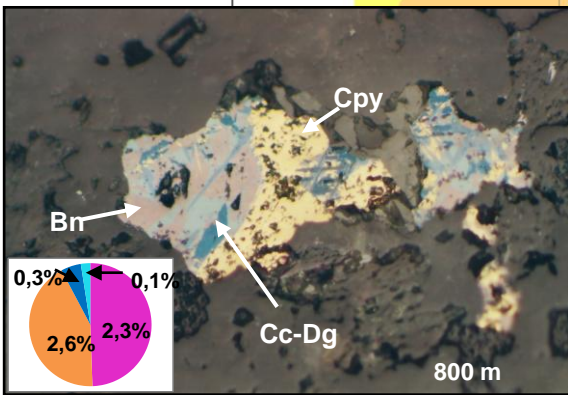
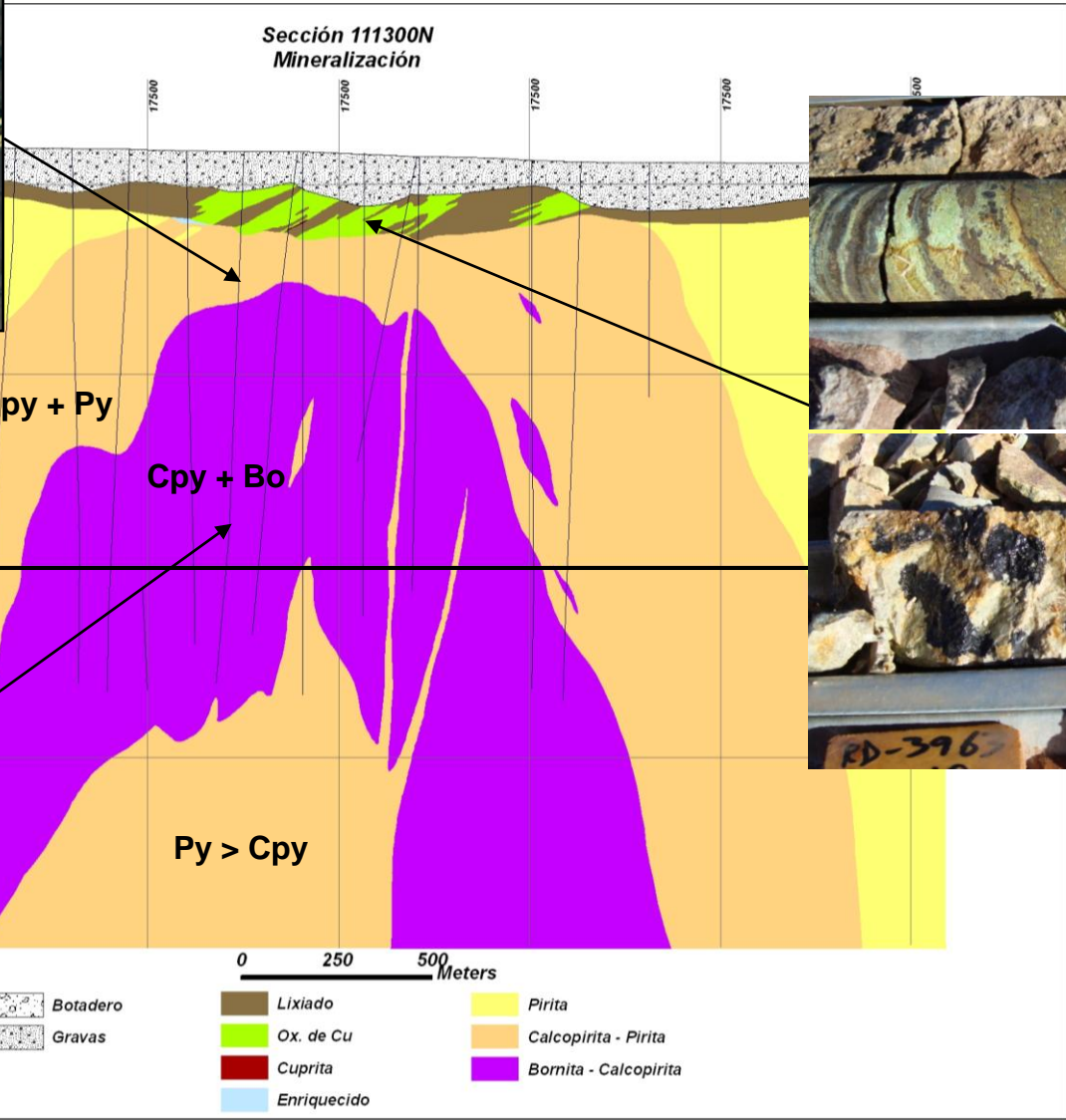
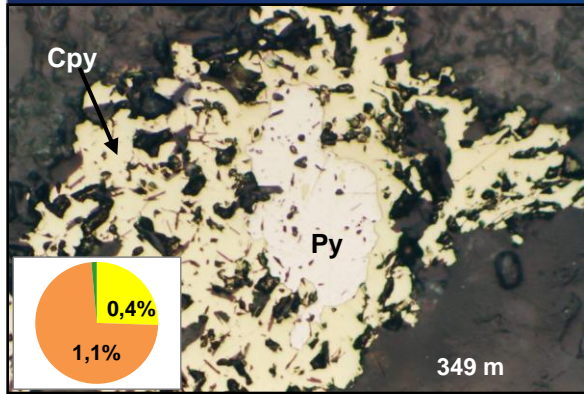
Pampa Escondida Porphyry Complex



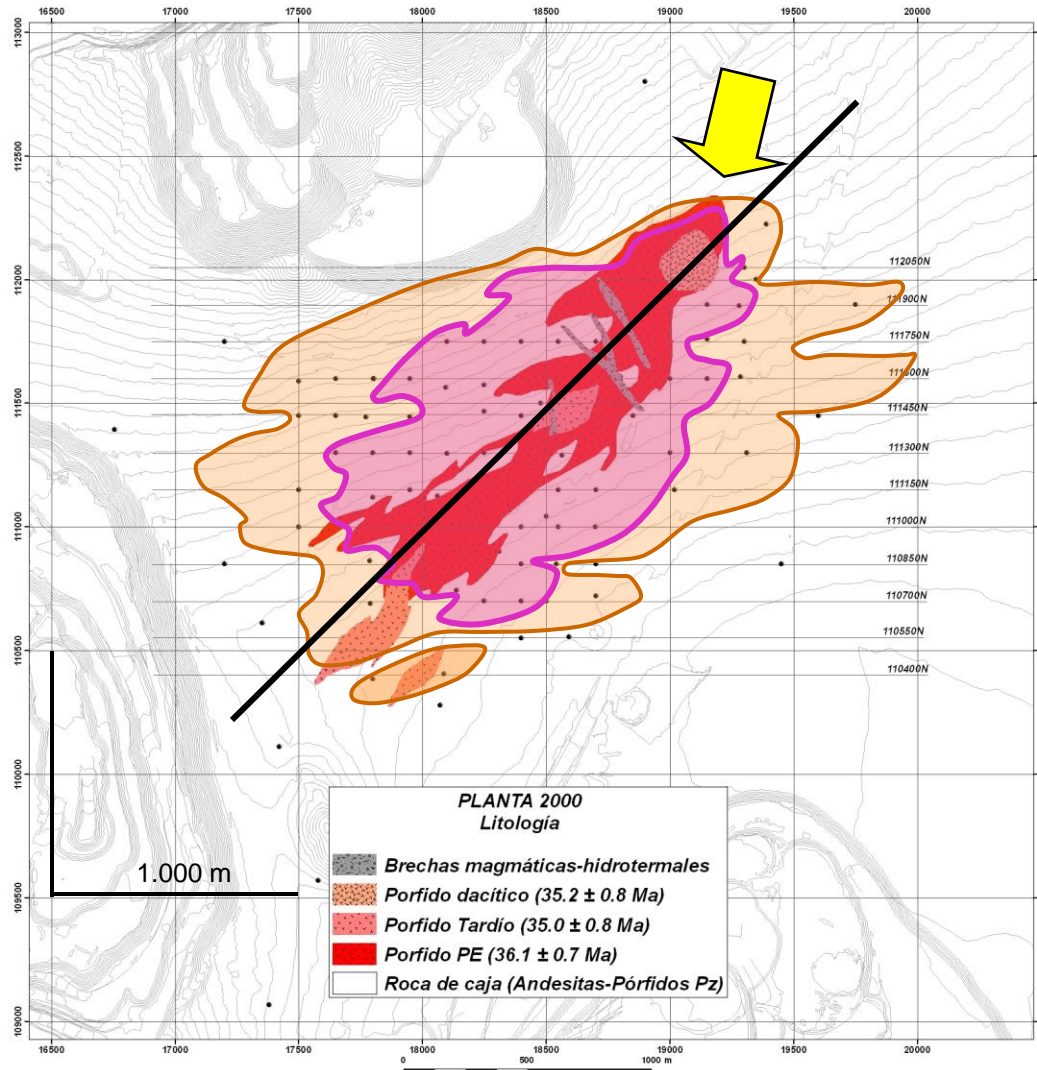
E - W Section - Lithology + Primary Ore



Ore Zonation



Plan View 2.000 m - Porphyries/Minzone projection

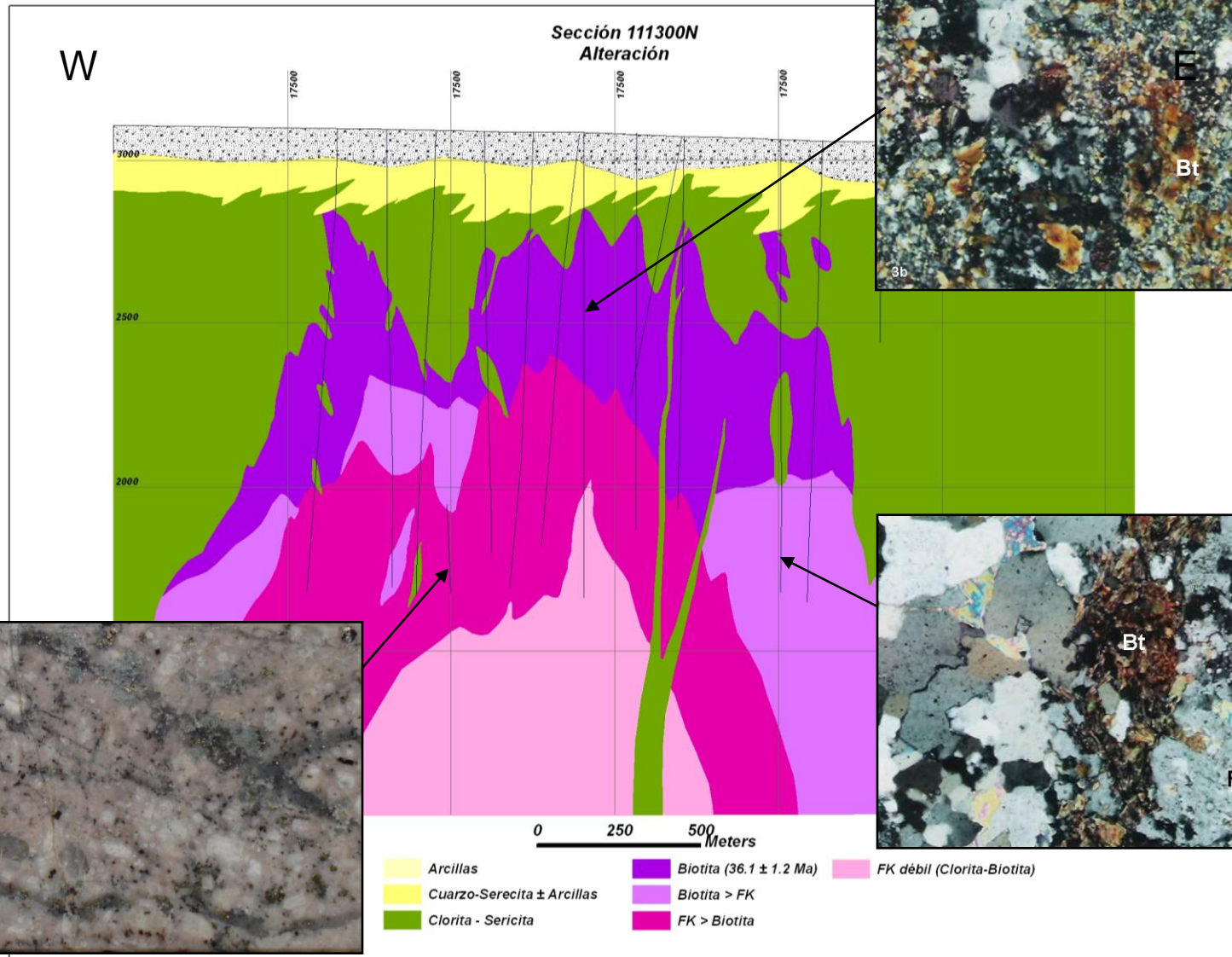


 **Pampa
Escondida
Porphyries**

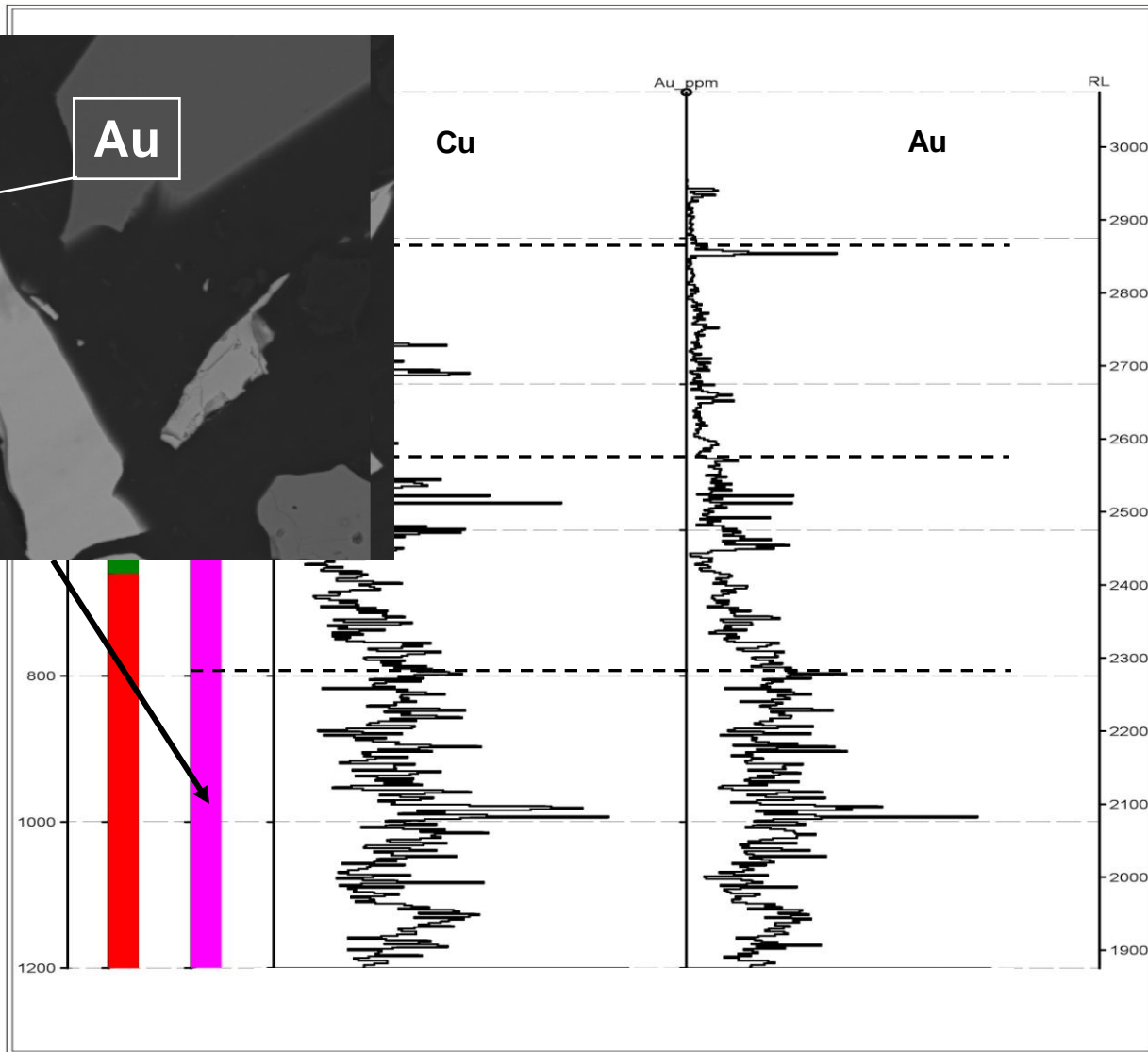
 **Bo - Cpy
Minzone
Envelope**

 **Cpy - Py
Minzone
Envelope**

Hydrothermal Alteration

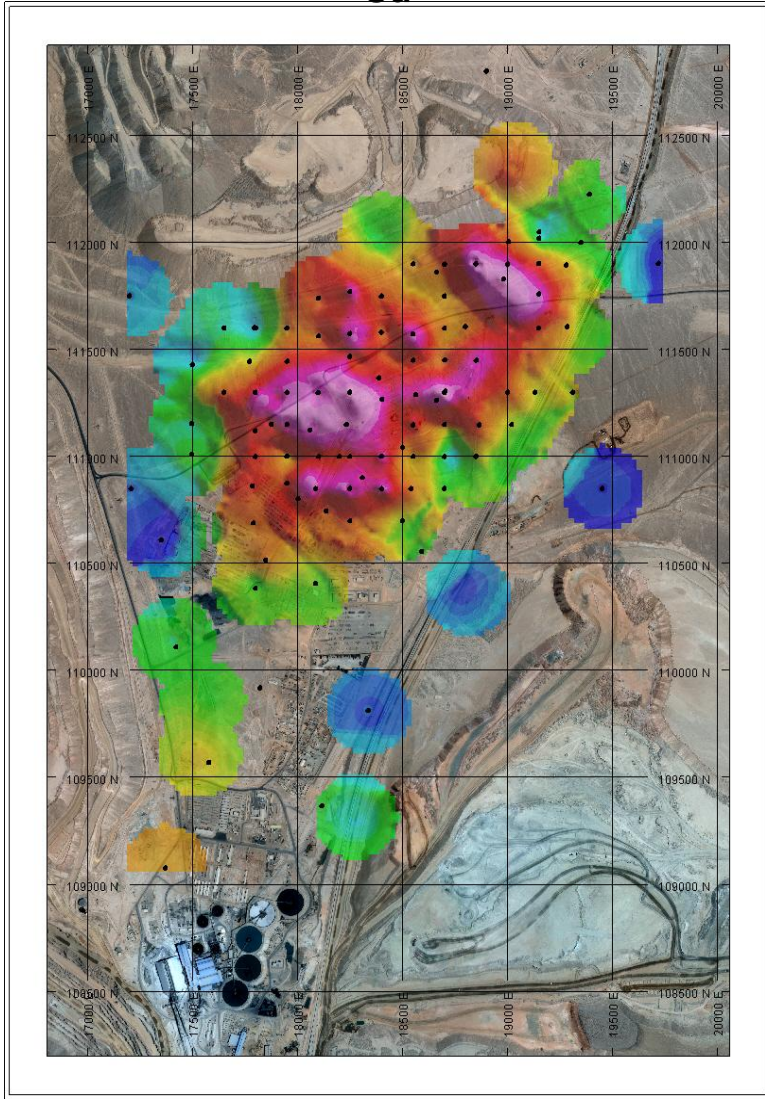


Cu - Au Correlation

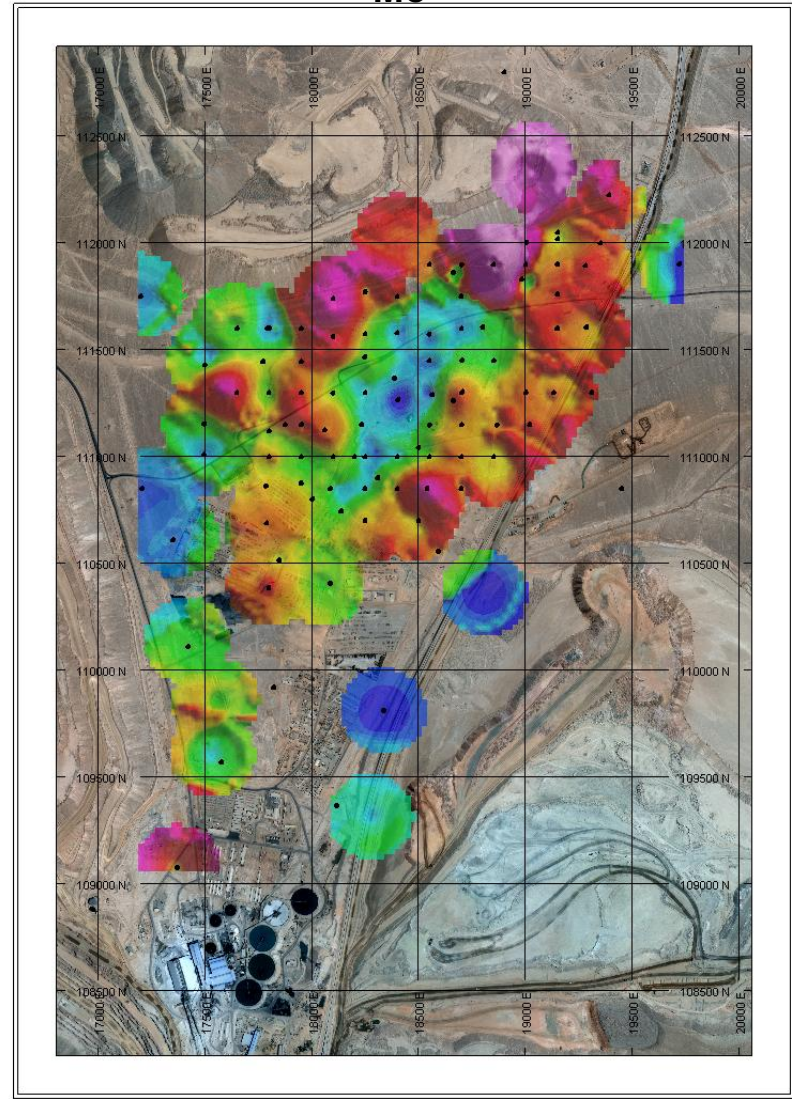


Cu - Mo Correlation. Plan view 2.000 m

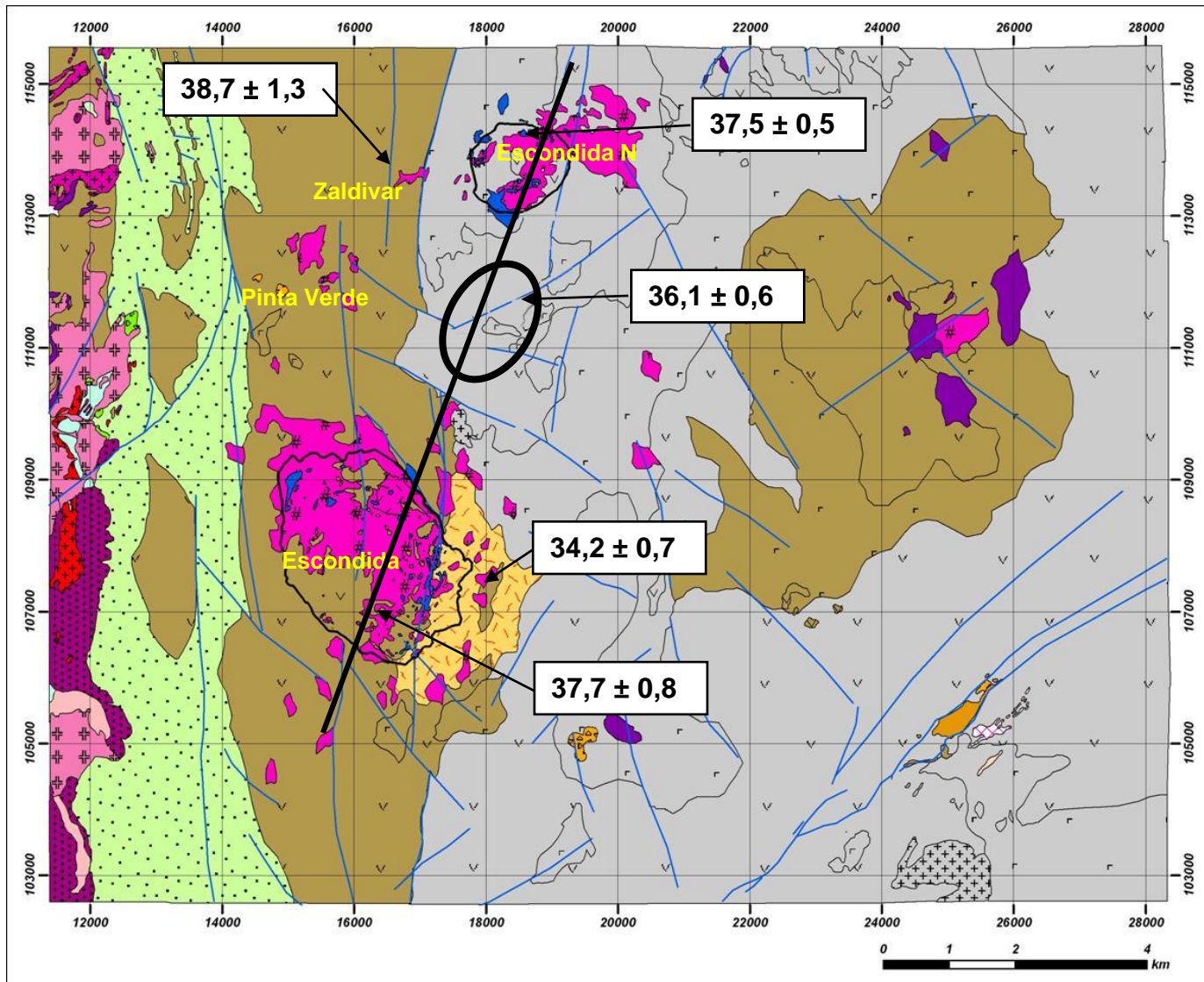
Cu



Mo



Pampa Escondida System projection



Schematic N-S Section

N

Primary mineralization event: 36 - 38 Ma (Primary ore: Sulphides)

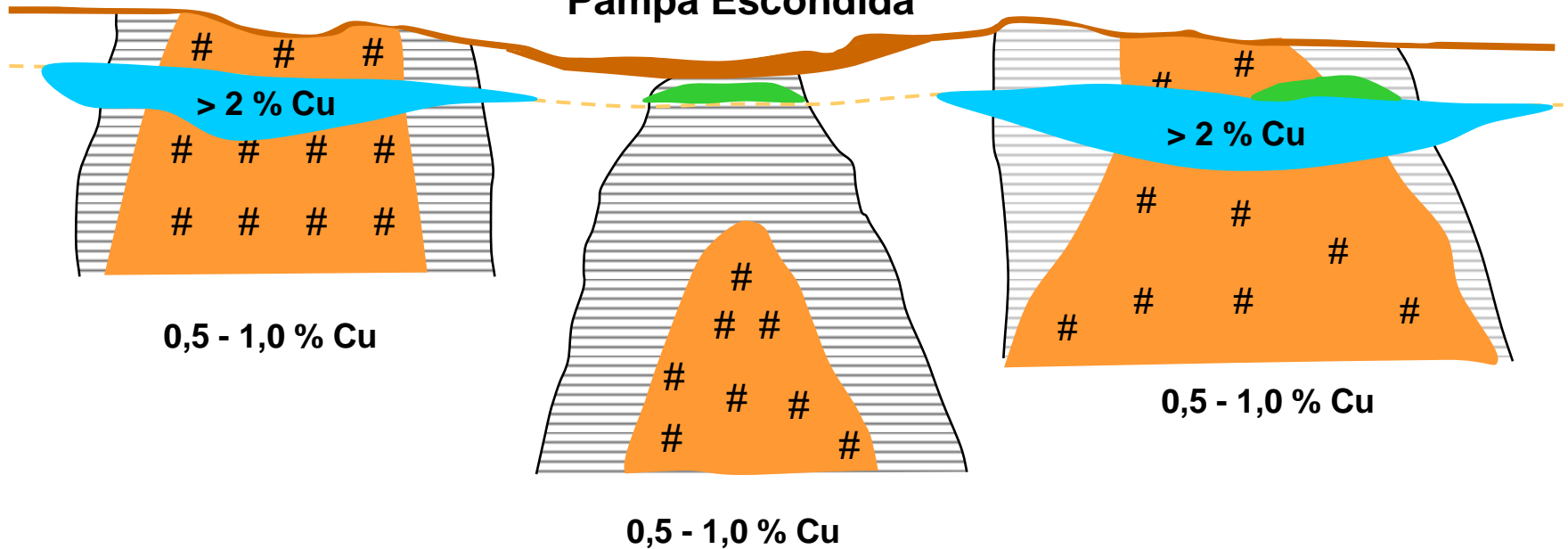
Secondary mineralización event: ~15 Ma (Secondary ore: Sulphides-Oxides)

S

Escondida Norte

Escondida

Pampa Escondida



~2 km

The End