



# Hannanmetals



**COPPER | SILVER | GOLD**  
**PERU**

*DEFINING LARGE MINERALIZING SYSTEMS  
IN PERU'S NEW FRONTIER AREAS*

**CORPORATE PRESENTATION APRIL 2022**



Hannanmetals

TSXV : **HAN** |

OTC: **HANNF**

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Qualified Person: The qualified person for Hannan's projects, Michael Hudson, CEO for Hannan, and a Fellow of the Australasian Institute of Mining and Metallurgy, has reviewed and verified the contents of this presentation.



# Overview

- 1. Hannan is a first mover in the highly prospective sub-Andean region of Peru**
- 2. Secured dominant land positions in:**
  - Huallaga Basin - San Martin Project for sediment hosted copper-silver, and
  - Pachitea Basin - Valiente Project for porphyry copper-gold
- 3. Top 10 tenure holder in Peru**
- 4. US\$35M joint venture agreement with JOGMEC on one third of ground position at San Martin**

# SOCIAL MANAGEMENT ESG

- Mission Critical



# Peru Top 10 Tenure Holder



***"Some of the world's largest mining companies share our belief that big grassroots discoveries are best made within big land positions"***

Rank	Owner	sq km	Market Cap US\$M
1	FRESNILLO PERU S.A.C.	6816	5 800
2	SOCIEDAD MINERA VICUS EXPLORACIONES S.A.C. (AURANIA RESOURCES LTD)	4319	125
3	COMPANIA MINERA ARES S.A.C. (HOCHSCHILD MINING PLC)	4080	1 060
7	NEXA RESOURCES PERU S.A.A (incl COMPANIA MINERAL MILPO S.A.A)	3819	1 002
4	VALE EXPLORATION PERU S.A.C.	3776	110 340
5	COMPANIA DE MINAS BUENAVENTURA S.A.A.	3047	1 816
6	BHP BILLITON WORLD EXPLORATION INC. SUCURSAL DEL PERU	2968	194 164
8	NEWMONT PERU S.R.L.	2185	46 629
<b>9</b>	<b>HANNAN METALS LTD</b>	<b>2154</b>	<b>27</b>
10	MINERA BARRICK MISQUICHILCA S.A.	2151	35 674
11	RIO TINTO MINING AND EXPLORATION S.A.C.	1874	128 167

The top ten Peruvian tenure holders average US\$50B market capitalization and combined hold 18.0% of the tenure held in Peru

Top ranked Peruvian tenure holders at the end of April 2021, considering granted mining concession and application. The table highlights ranked area under tenure and market capitalization. Source: <https://geocatmin.ingemmet.gob.pe/geocatmin/>

# Capital Structure



**INSIDERS:**

**SHARES ON ISSUE:**

**FULLY DILUTED:**

**RECENT PRICE:**

**MARKET CAP:**

**CASH:**

**ENTERPRISE VALUE:**

HAN

HANNF

16%

92.8 M

99.6 M

C\$0.27 (04 Apr 22)

C\$25.4 M

C\$2.5 M

C\$22.9 M



Stock Options	Price	No. of Securities
Expiring January 23, 2023	\$0.25	3,295,000
Exp ring May 28, 2023	\$0.28	100,000
Expiring July 21, 2023	\$0.44	250,000
Expiring August 11, 2023	\$0.455	250,000
Expiring September 4, 2023	\$0.13	250,000
Expiring October 8, 2023	\$0.365	100,000
Expiring December 2, 2023	\$0.435	100,000
Expiring June 14, 2024	\$0.285	275,000
Expiring October 4, 2024	\$0.285	30,000
Expiring December 3, 2024	\$0.235	120,000
<b>Warrants</b>		
Expiring July 13, 2022	\$0.35	2,000,000

# Directors & Officers



**Michael Hudson (Chairman & CEO):** *B.Sc. (Hons), GDipAppFin, FAusIMM, MAIG*



**Lars Dahlenborg (President):** *MSc. MAIG*



**David Henstridge (Director):** *B.Sc. (Hons), FAusIMM, MAIG, MGSAust*



**Georgina Carnegie (Director):** *B.Com, AM Harvard*



**Ciara Talbot (Director):** *B.Sc. (Honours)*



**Nick DeMare (Director):** *CPA, CA*



**Mariana Bermudez (Corporate Secretary)**

Hannan is managed by a group with careers built in the exploration industry.

In recent years, the group has raised more than US\$100M for European and Peruvian exploration and development.

Hannan management is highly experienced with a long history of working in Peru.

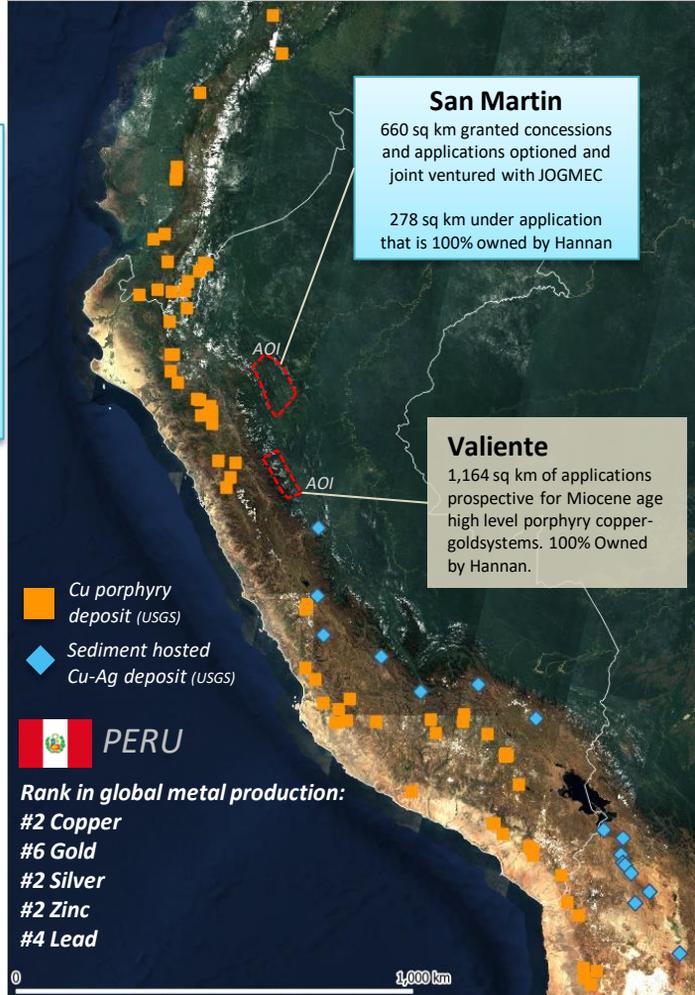
# Hannan in Peru

## SAN MARTIN

- JV with the option to earn up to a **75% beneficial interest in the San Martin Project by spending up to US\$35,000,000** to deliver to the joint venture a feasibility study on 660 sq km

## VALIENTE

- At **Valiente**, 1,164 square kilometres of mining concession applications prospective for back-arc Miocene age porphyry copper-gold systems in central Peru

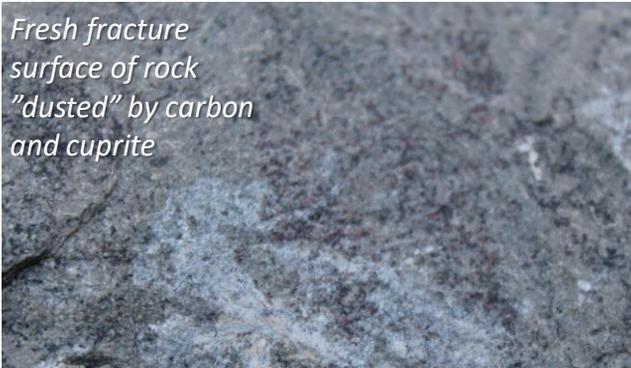




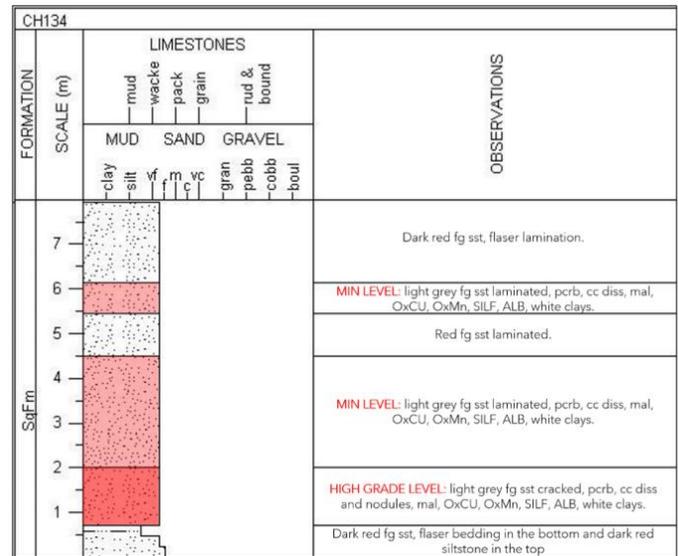
## WHY SED- HOSTED COPPER IN THE ANDES?

- **Multiple failed rift basins** formed during the breakup Pangea.
- Overlain by **intramountain and foreland basins** of Tertiary age. Now exposed due to Andean inversion.
- **Cu-Ag mineralization** focus at the J-C boundary, a basin redox boundary and unconformity.
- The mineralized **window is ~500m wide**
- **Target styles** include all sub-classes of SSC deposits
- **At San Martin Project** the mineralization has been basin wide.
- Historically very little exploration.

# Style of mineralization



- Characterized by "sulfur poor" copper minerals such as chalcocite and cuprite.
- The oxidizing Cu-Ag bearing fluids have precipitated within reduced organic rich shale facies with minor diagenetic pyrite. Strong evidence of a basin wide mineralizing process with high grades seen in the same stratigraphic package over 100km.
- The host rock is of the upper part of the Jurassic age Sarayaquillo Fm.
- The Cu-Ag shale is controlled by a facies change where the typical red Sarayaquillo sandstone transitions to a finely laminated organic rich shale facies within a fine-grained altered/bleached (Fe<sup>3+</sup>→Fe<sup>2+</sup>) rock package. Grades can be impressive, with the thickness of the higher-grade mineralized shale >3-4% Cu varying between 0.2-2m. The entire copper anomalous/bleached package is up to 5m thick.



# Context with Kupferschiefer

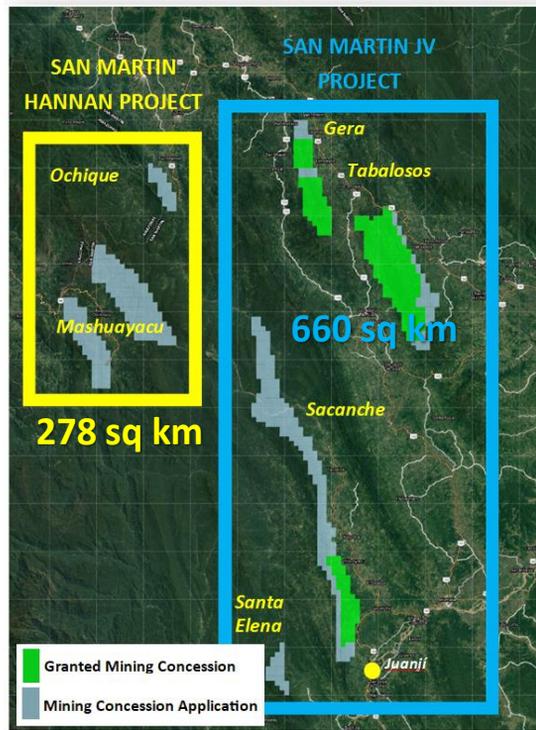


- ✓ Sediment-hosted stratiform copper-silver deposits are among the two most important copper sources in the world, the other being copper porphyries. They are also a major producer of silver. KGHM Polska Miedz's ("KGHM") three copper-silver sediment-hosted mines in Poland (the "Kupferschiefer") were the leading silver producer in the world and seventh largest global copper miner in 2020. Quoted resources in 2019 for KGHM were 1,518 Mt @ 1.86% copper and 55 g/t silver from a mineralized zone that averages 0.4 metres to 5.5 metres thickness.
  
- ✓ Widths and grade (**0.9 metre @ 1.9 % copper and 27 g/t silver**) from 105 Hannan channel surface samples from San Martin (lower cut 0.5% copper), within an area about 8 kilometre long and 1 kilometre wide, compare with those found during the initial modern-day drill discovery of the Kupferschiefer copper-silver deposits.
  - ✓ In 1957 the discovery drillhole (Sieroszowice IG 1) intersected 2.0 metres @ 1.5% copper at the depth of 657 metres.
  - ✓ In 1959 the Lubin-Sieroszowice deposit, based on the results from 24 drillholes contained 1,365 Mt @ 1.4% copper and 26 g/t silver in indicated resources, with a thickness ranging between 0.2–13.1 metres in an area about 28 kilometres long and 6 kilometres wide between 400 to 1000 metres depth.
  
- ✓ Hannan's sampling, to date, has been confined to surface channel sampling.

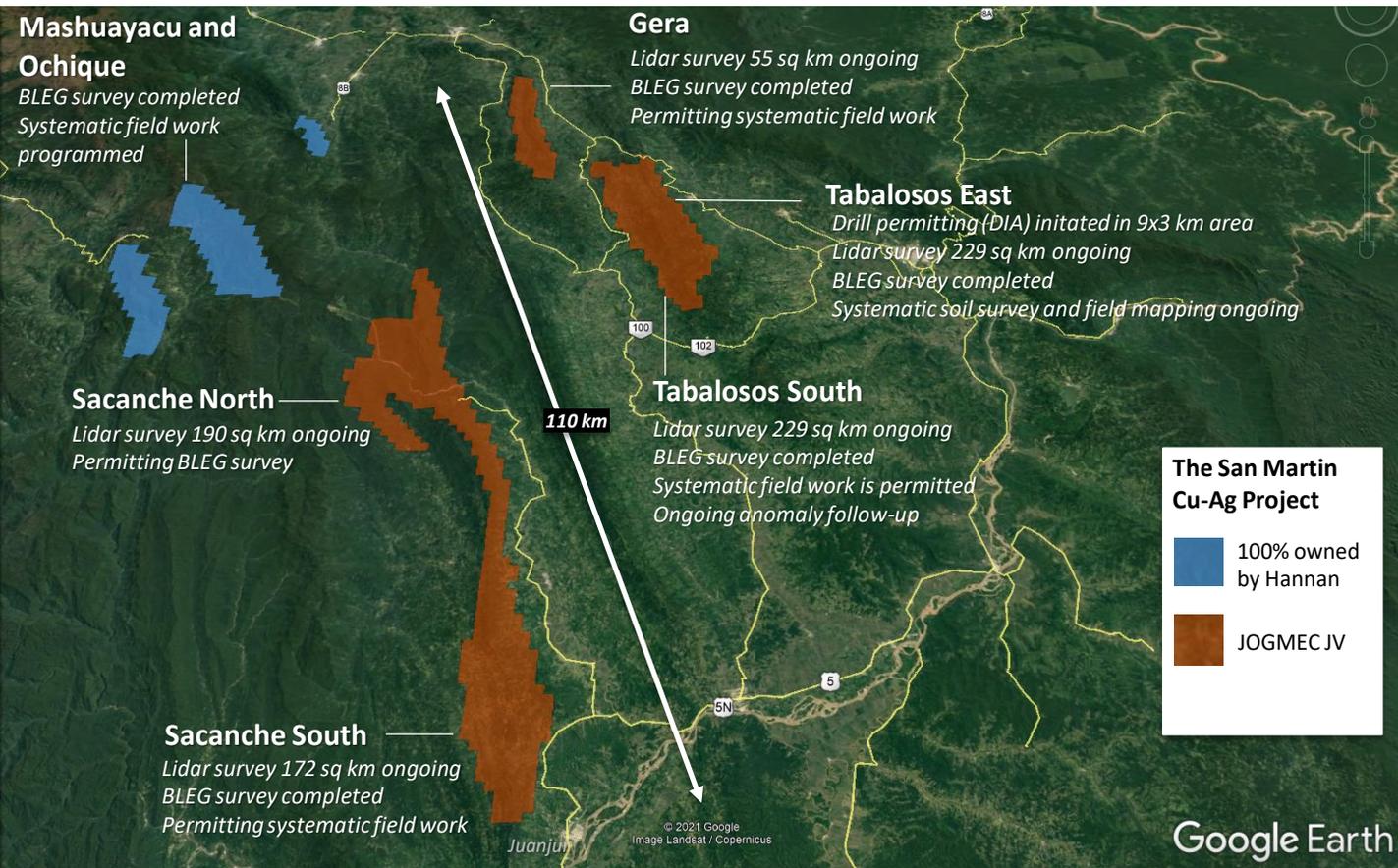
# San Martin Sediment Hosted Copper-Silver



- ✓ Well defined search space
- ✓ Basin wide mineralizing process
- ✓ High grade Cu-Ag mineralization in 500m wide stratigraphic window



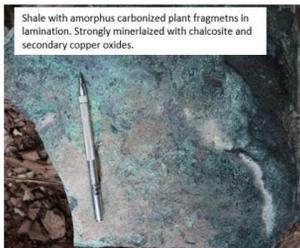
# Overview of ongoing exploration 2021



# San Martin Sediment Hosted Copper-Silver



Reduced facies with basin wide continuity



Shale with amorphous carbonized plant fragments in lamination. Strongly mineralized with chalcocite and secondary copper oxides.



Rip-up clast breccia. Grey siltstone fragments in matrix of rounded quartz grains and secondary copper oxides.



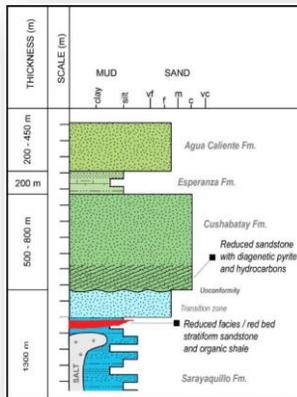
Strongly mineralized laminated sandstone with fine silt sized carbon fragments in lamination.



Sandstone with thin levels of carbon fragments in lamination. With secondary copper oxides and chalcocite.



Sandstone with large carbon fragments and secondary copper oxides, strongly leached.



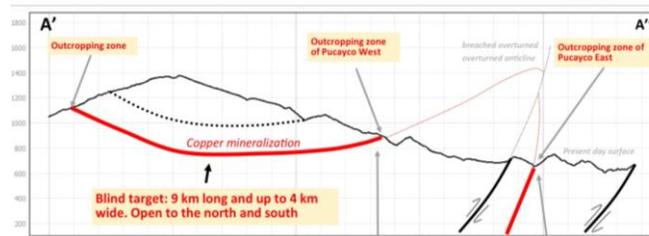
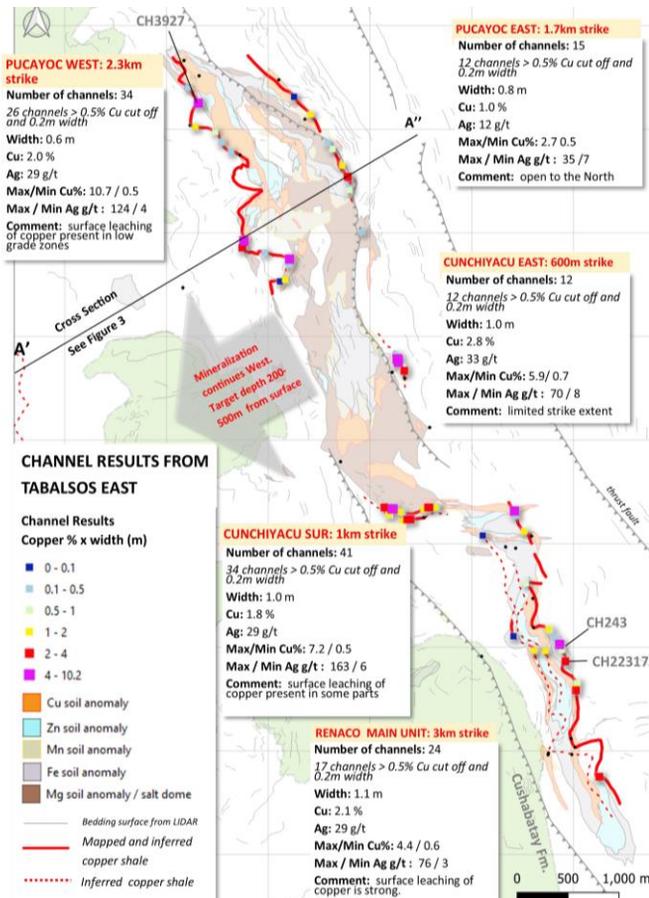
# Tabalosos Soil Sampling



*Soil survey:  
2.5x6km area  
~2500 sample points  
125 to 250 m line spacing  
10-20 m sample spacing*

- ✓ Systematic soil survey tracking the Cu-Ag shale under the thin overburden. Less than <1% of the bedrock is estimated to outcrop.
- ✓ Rapidly and advancing the project with the best mobile analytical technology available at lower cost compared to commercial laboratories.
- ✓ In-house QAQC programs and multiple analyzer units have doubled the sample rate without compromising data integrity.

# SSC TARGETING CONCEPT– TABALOSOS EXAMPLE



**PUCAYOC WEST: 2.3km strike**  
 Number of channels: 34  
 26 channels > 0.5% Cu cut off and 0.2m width  
 Width: 0.6 m  
 Cu: 2.0 %  
 Ag: 29 g/t  
 Max/Min Cu#: 10.7 / 0.5  
 Max / Min Ag g/t : 124 / 4  
 Comment: surface leaching of copper present in low grade zones

**PUCAYOC EAST: 1.7km strike**  
 Number of channels: 15  
 12 channels > 0.5% Cu cut off and 0.2m width  
 Width: 0.8 m  
 Cu: 1.0 %  
 Ag: 12 g/t  
 Max/Min Cu#: 2.7 / 0.5  
 Max / Min Ag g/t : 35 / 7  
 Comment: open to the North

Targeting high grade shallow dipping mineralization to build large tonnage mineable zones.



## Tabalosos Drill Planning - DIA

Hannan has approval from two local hamlets at Tabalosos to submit an Environmental Impact Statement (Declaración de Impacto Ambiental, or "DIA") study.

The DIA is the primary environmental certification required to allow low impact mineral exploration programs, that include diamond drilling, to proceed in Peru;

The area for the DIA allows for 40 drill platforms and covers an area approximately 9 kilometres long and 3 kilometres wide (2,700 hectares);

Final DIA and other approvals are anticipated during Q3 2022.

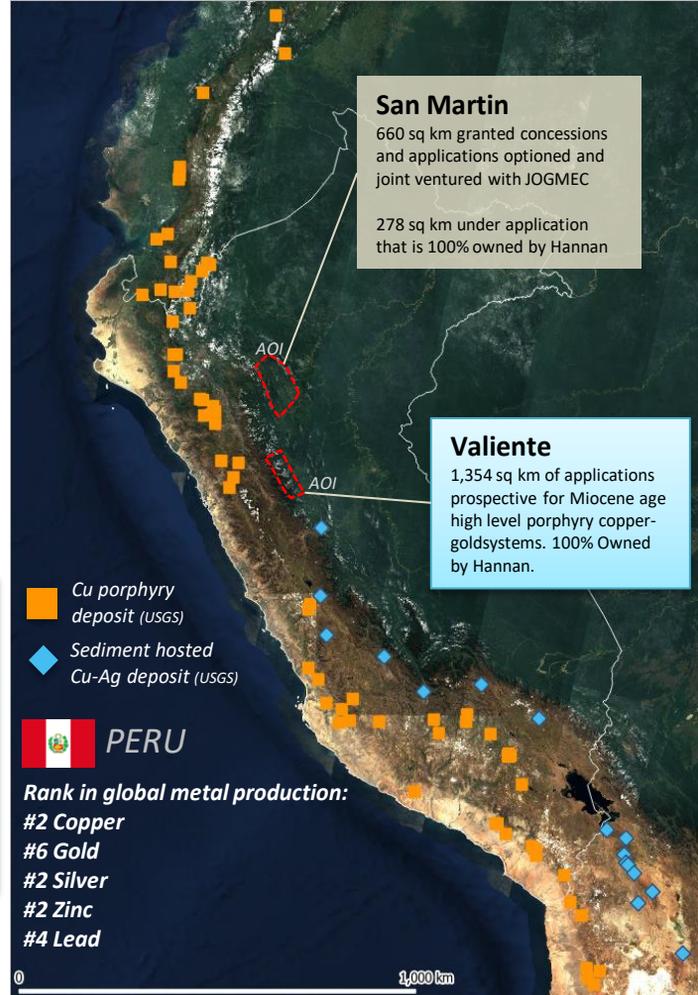
# Hannan in Peru

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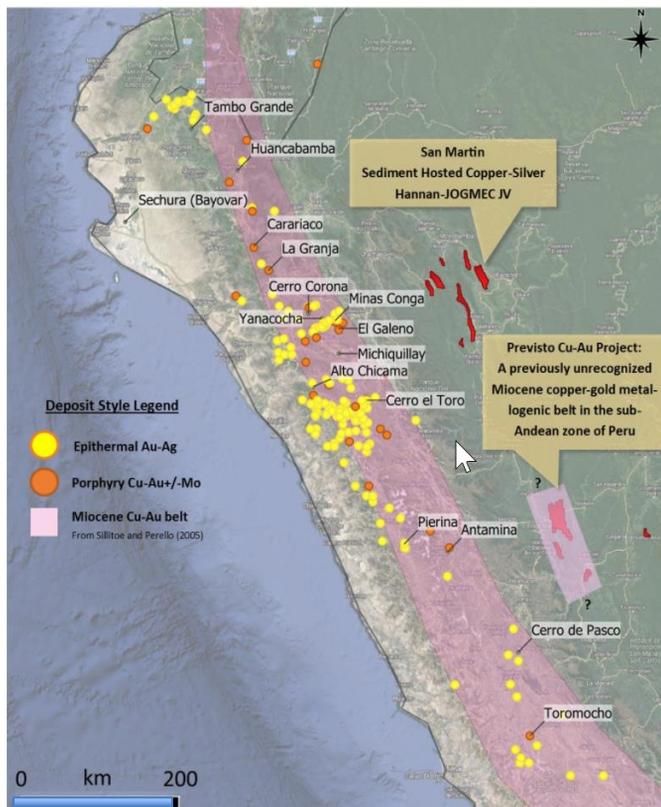
## VALIENTE

- At **Valiente**, 1,354 square kilometres of mining concession applications prospective for back-arc Miocene age porphyry copper-gold systems in central Peru



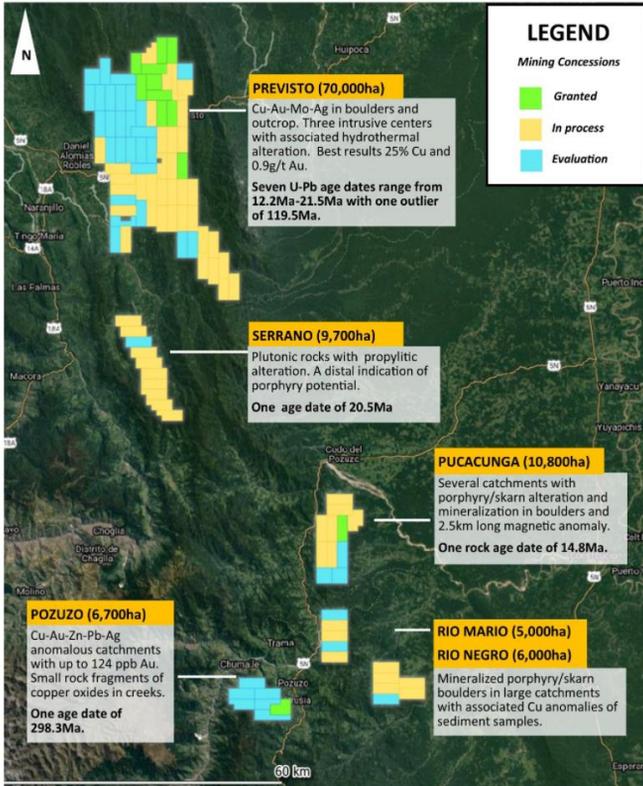
# WHY BACK-ARC MIOCENE AGE COPPER GOLD?

- ✓ Back-arc settings are often overlooked in porphyry exploration due to distance from magmatic arc
- ✓ Long-lived crustal scale structures may “funnel” magmas hundreds of kilometers and porphyry deposits develop far inboard of the “conventional” settings.
- ✓ These are often high energy systems that can form big deposits such as Bajo de Alumbra copper-gold porphyry in Argentina.
- ✓ The back-arc contains abundant reactive sedimentary rocks such as limestones, shales and evaporites.
- ✓ In Central Peru the largest porphyry deposits formed in the late Middle to early Late Miocene, in response to the change of subduction.
- ✓ Historically very little exploration.



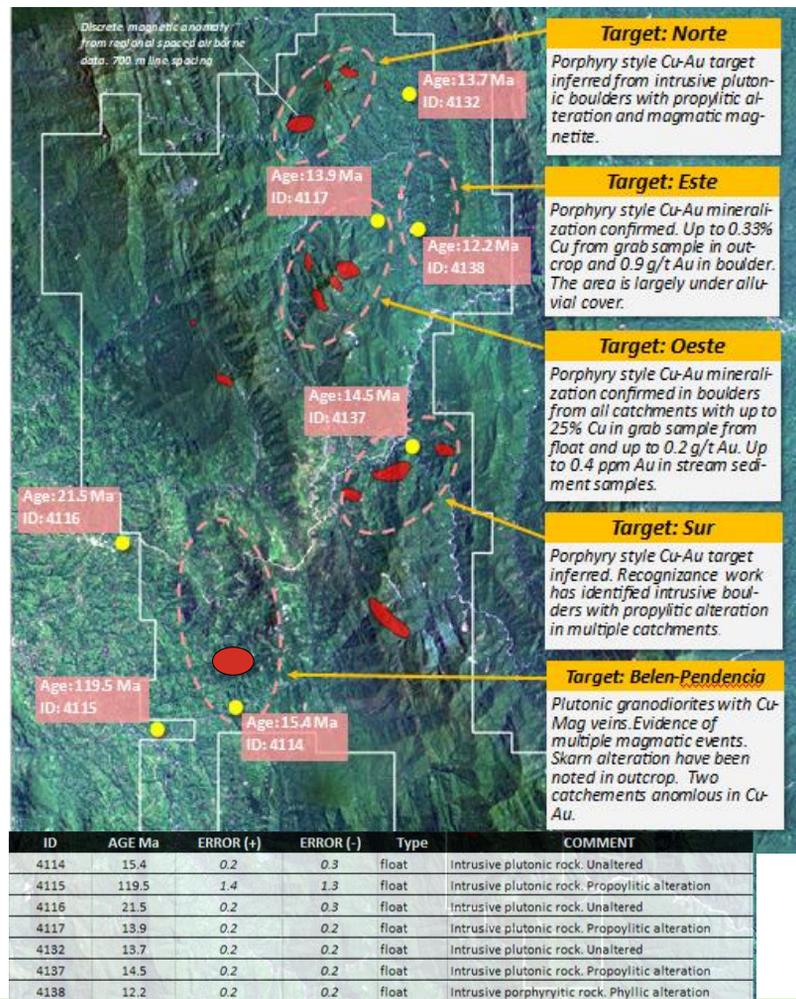
# Valiente Radiometric Dating

- ✓ Radiometric dating work by Hannan has identified a previously unrecognized Miocene copper-gold metallogenic belt in the sub-Andean zone of central Peru, with eight porphyry samples within an area of 140 by 50 kilometres yielding ages ranging from 21.5 Ma to 12.2 million years (“Ma”; early to mid-Miocene).
- ✓ This new district overlaps in age with the Miocene magmatic arc in the Western Cordillera of Peru, where some of Peru’s largest porphyry copper+/-gold and epithermal gold deposits were formed at the same time. This work ‘re-draws’ the map of where such deposits can be found and verifies Hannan’s assumptions that Valiente represents a new search space in a country thought to be mature in its exploration potential.
- ✓ The case for “young” porphyry deposits located in a back-arc setting, that is to say, far inboard of their volcanic arc contemporaries is best exemplified by the case of Bajo de la Alumbrera (pre-mining measured resource 695 Mt @ 0.51% Cu, 0.66 g/t Au) in Argentina, which lies some 150 kilometres east of contemporaneous porphyry deposits in the Chilean Andes.



# Summary of Radiometric ages at Valiente

- ✓ Mid to early Miocene ages confirmed 2021



# Hannan is a first mover and the opportunity is:

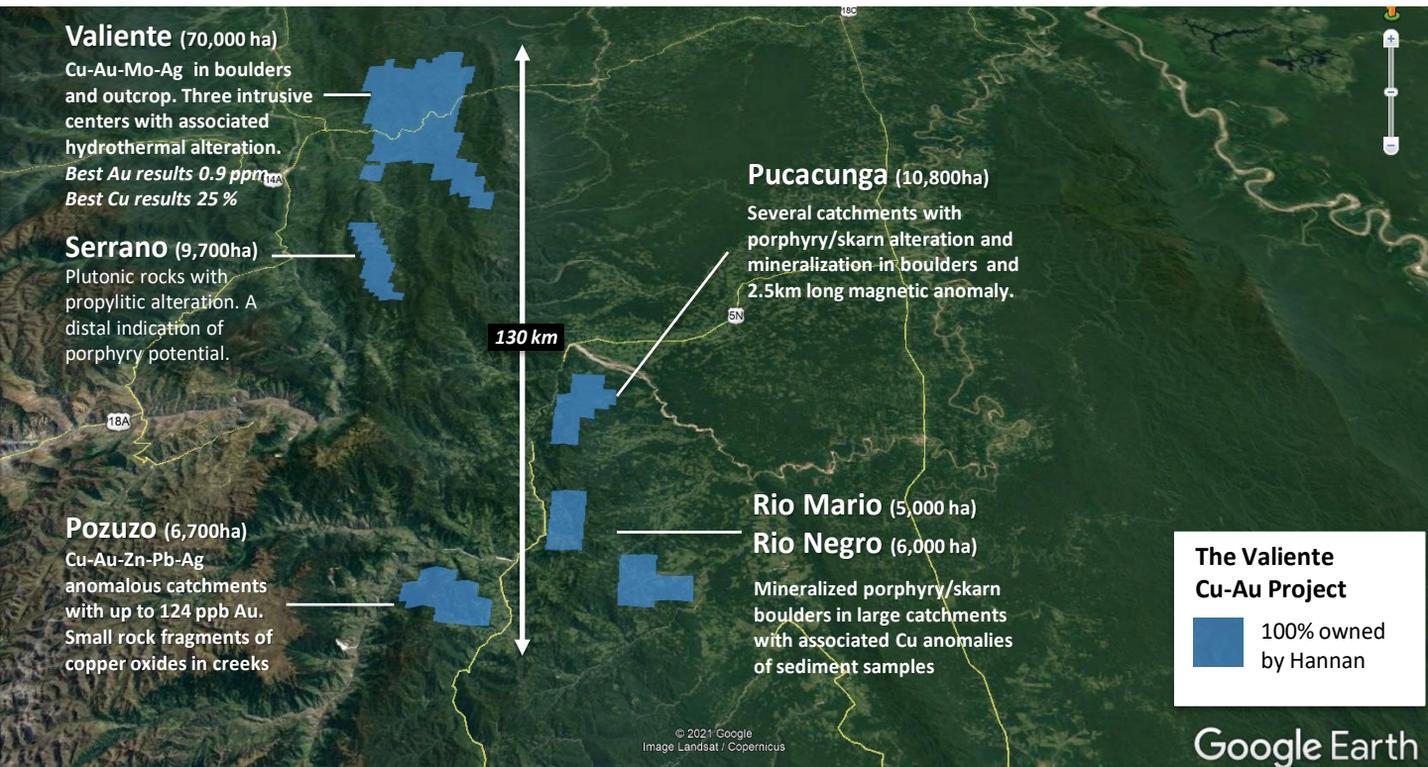
- ✓ First systematic stream sediment survey in a new metallogenic province of Peru covering 140x50 km;
- ✓ Rapid identification of "low hanging fruit" e.g. mineralizing systems which are exposed on surface and with good access;
- ✓ Avoiding areas with protection overlays such as environmental or indigenous title;
- ✓ Currently building up a portfolio of 5-7 porphyry-skarn targets 100% owned by Hannan;
- ✓ No historic drilling or detailed geophysics known



# Overview of the Valiente Cu-Au Project



*All targets are early stage, applications are pending and observations are dominated by boulders with support in regional geophysics and stream sediments.*

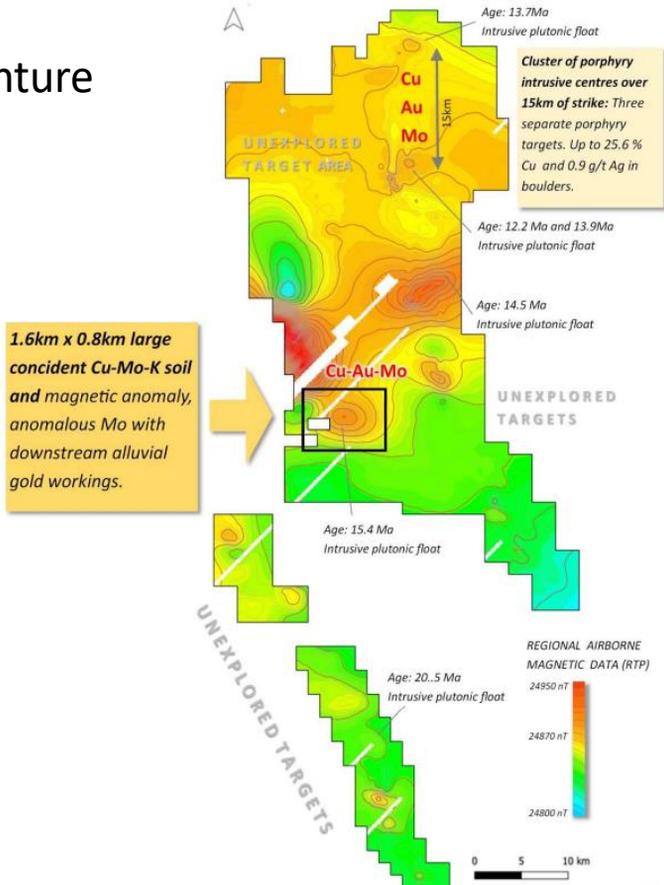


# Valiente and Serrano Regional RTP Magnetics

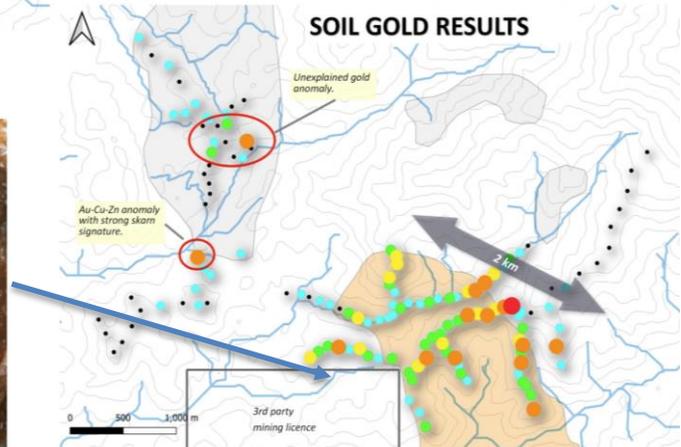
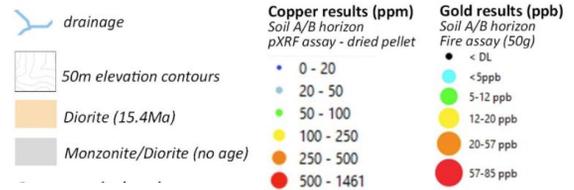
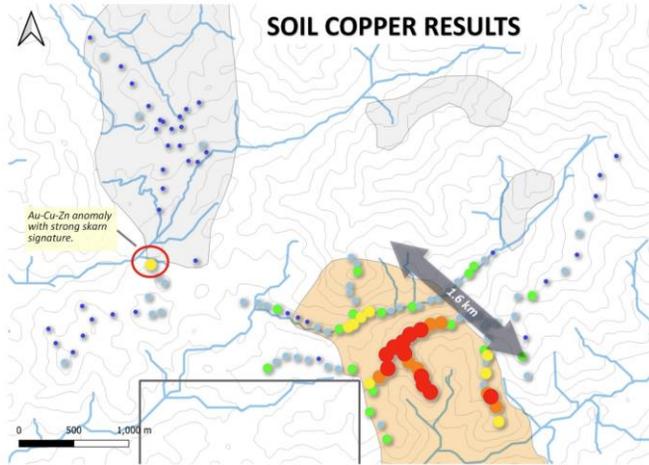
Five intrusive targets with Cu-Au signature and counting. Not all magnetic.

## Belen Cu-Au 2022 discovery:

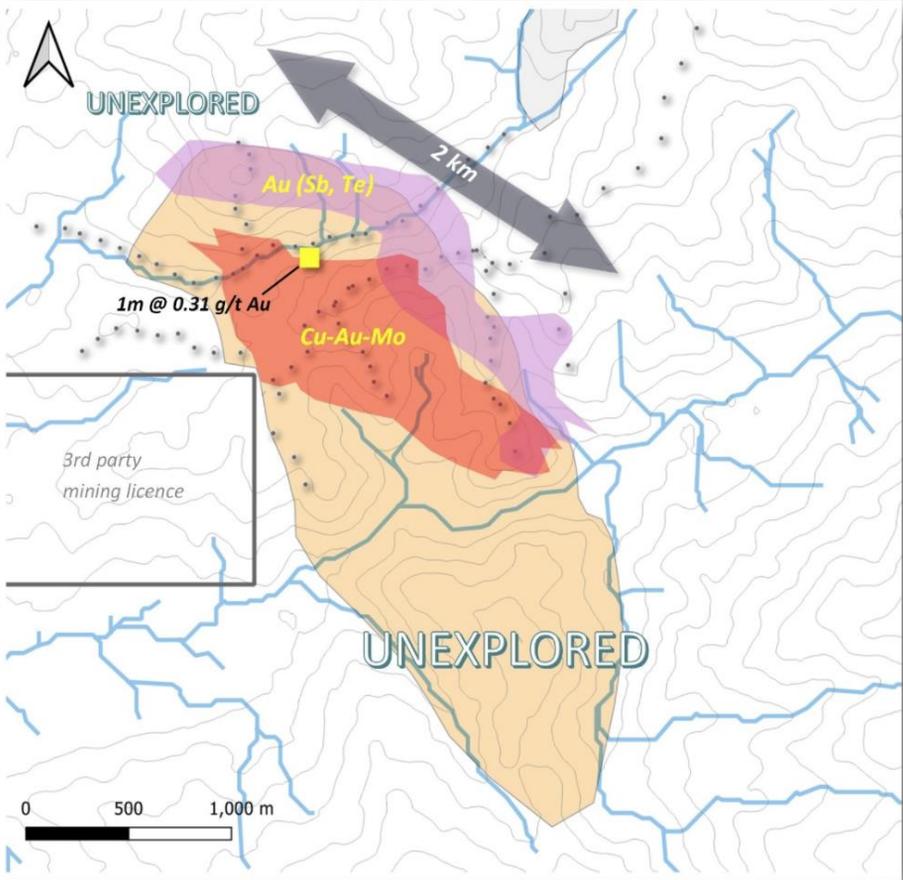
- Strongly leached and weathered sub-cropping porphyry with secondary copper oxides
- Alluvial gold extracted by artisanal miners located 700 metres down-stream
- A coincident 5 km by 5 km prominent magnetic high anomaly from regional airborne surveys
- Although laboratory results (including gold) are pending a strong multi-element association including molybdenum and potassium are evident in the soil data
- Laboratory data suggest strong Vanadium correlation with Cu-Mo (roscoelite?)



# Belen Cu-Au Target



# Belen: Cu-Au-Mo and Au – Sb-Te Targets

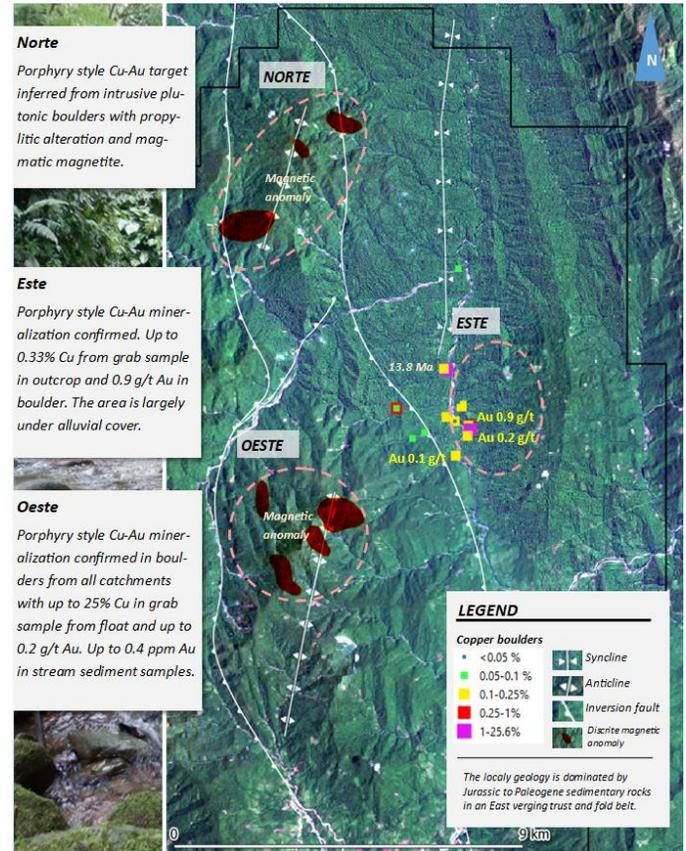
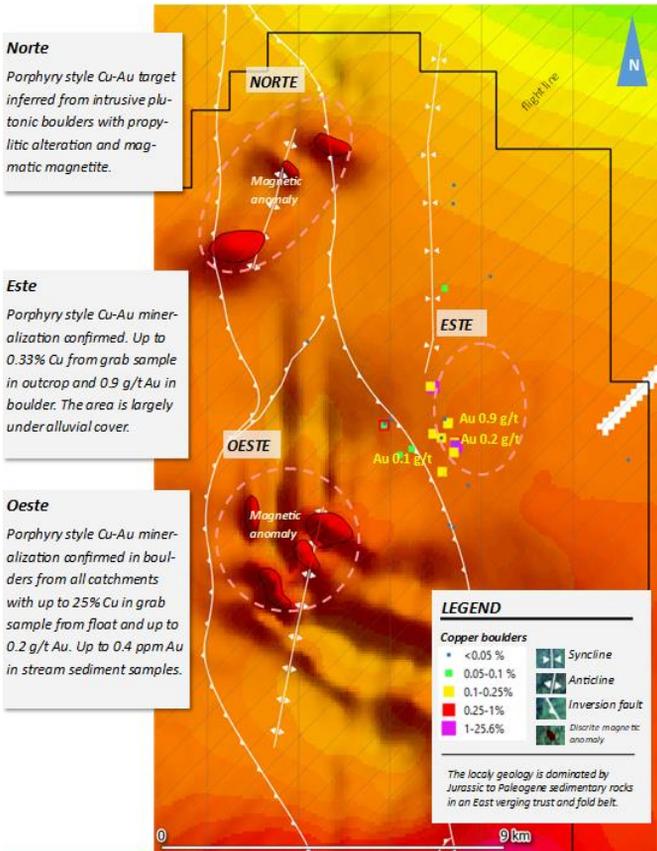


## BELEN

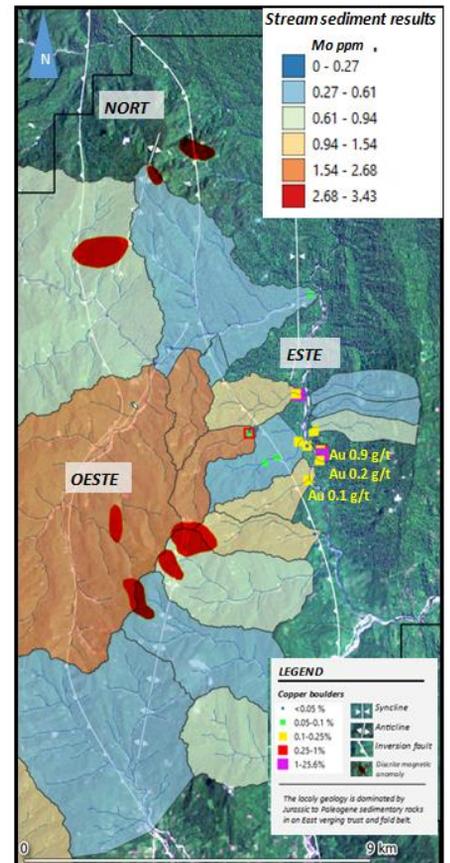
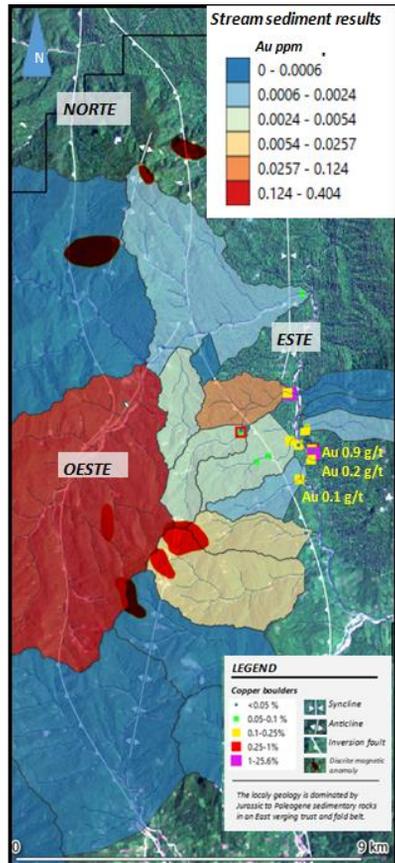
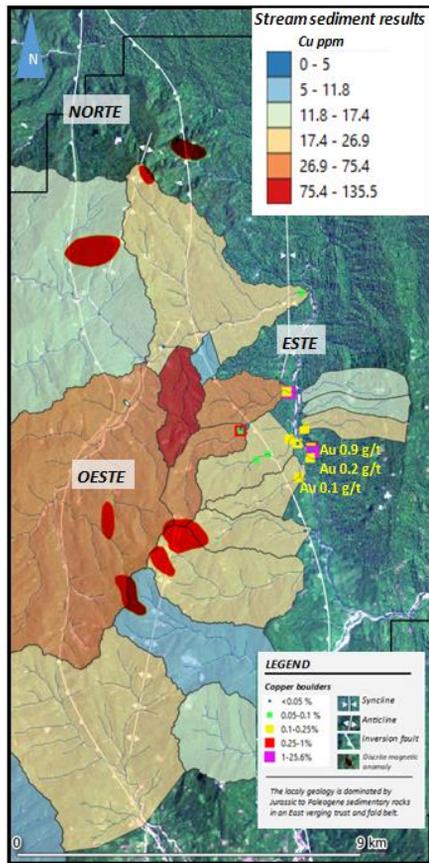
Interpretation of soil results

- Location of soil sample
- Soil Au (Sb, Te) anomaly
- Soil Cu-Au-Mo anomaly
- drainage
- 50m elevation contours
- Diorite (15.4Ma)
- Monzonite/Diorite (no age)

# Results Northern Valiente Cu-Au Project

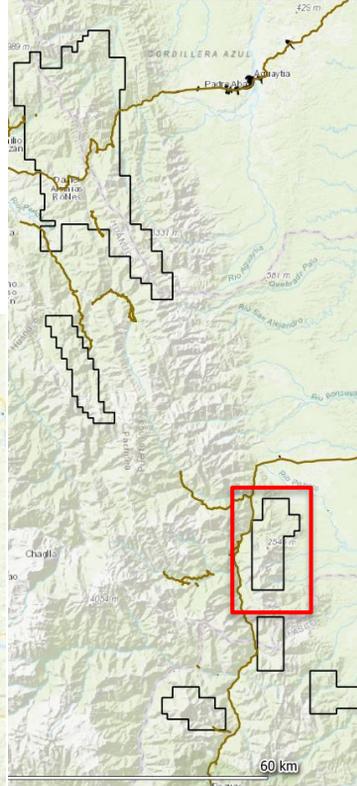
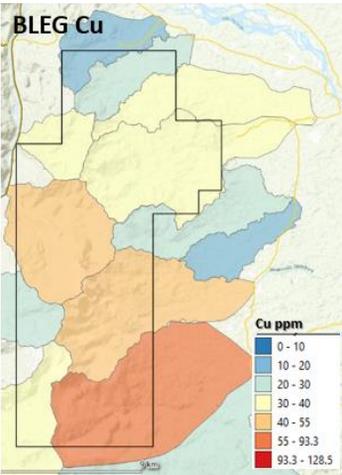
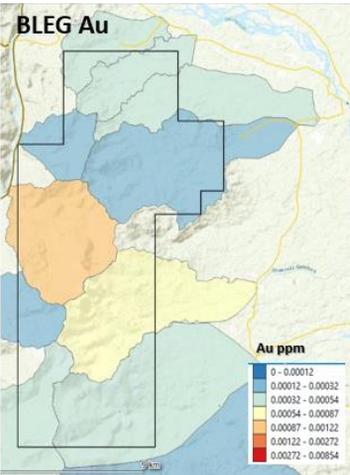
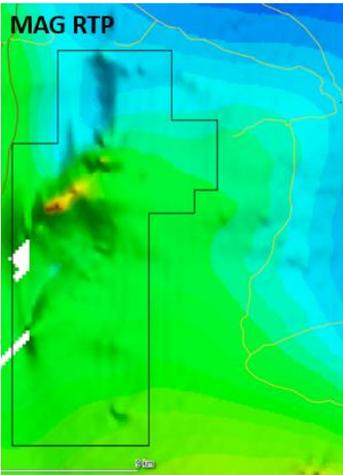


# Results Northern Valiente Cu-Au Project



# PUCACUNGA Cu-Au Target

- ✓ 70 km south of Belen
- ✓ 15x6km large licence
- ✓ 14.8Ma U-Pb Zircon age
- ✓ Combined Cu-Au anomalies in BLEG catchments + intrusive boulders.
- ✓ Peak magnetic anomaly is 2.5km long

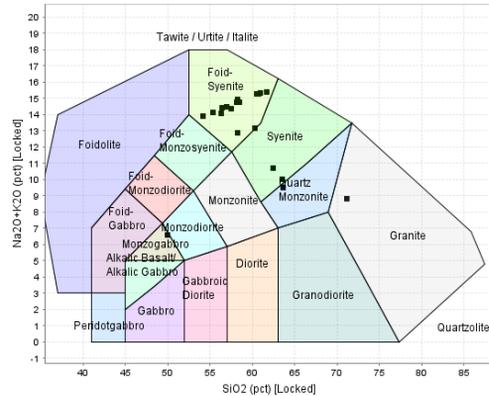


# Lithochemical review



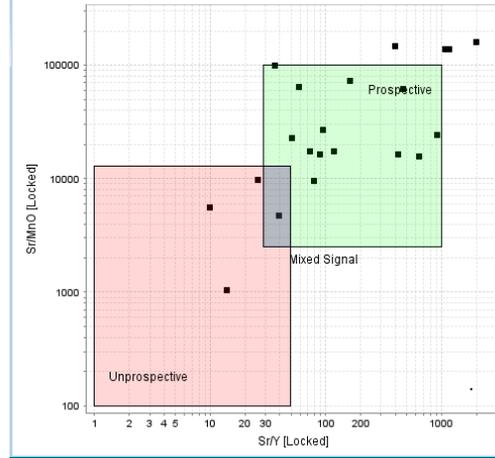
## Only data from Valiente Norte Area

TAS Plutonic (Middlemost 1994)



- Foid syenite to foidites compositon
- Strong prospectivity ratio in all conventional "prospectivity diagrams"

Porphyry Prospectivity Diagram (Sr/MnO vs Sr/Y)



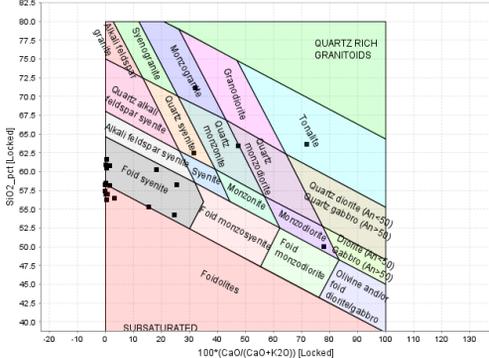
Porphyry Prospectivity Diagram (Ahmed et al., 2019)

Porphyry Prospectivity Diagram (Sr/MnO vs Sr/Y)

- (Automatic Unit conversion will occur)
- Prospectivity diagram for porphyry Cu, skarn or epithermal mineralisation constructed using Sr/MnO and Sr/Y ratios.
- Three prospectivity fields for prospective, unprospective and mixed signals (overlap between prospective and unprospective fields).

≈ Ahmed et al., 2019 Assessing copper fertility of intrusive rocks using field portable X-ray fluorescence (pXRF) data. *Geochemistry: Exploration, Environment, Analysis*. Vol. 20, pp. 81-97.

Plutonic Rock Classification (Enrique and Esteve, 2019)



# Budget and Timelines



## 2022 Programs underway

### SAN MARTIN – JOGMEC JV

#### US\$2M

- 2022 Aim: Continue to build basin scale project, determine continuity at varying scales
- Drill Tabalosos East Q3 2022 to test continuity of mineralization at various scales

### Valiente – 100 % HANNAN

#### US \$2M CAD

- Active field program of 4-6 geologist
- Prospecting, mapping and soil sampling
- Social permitting and stakeholder management
- Aeromagnetics
- First DIA commences Q2

## A 100% PERUVIAN TEAM DEDICATED TO DISCOVERY



# Contact Us



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