



## Chile Focused Copper and Gold Exploration

# Exploration Update

LSE:GSCU  
May 2023

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# Highlights

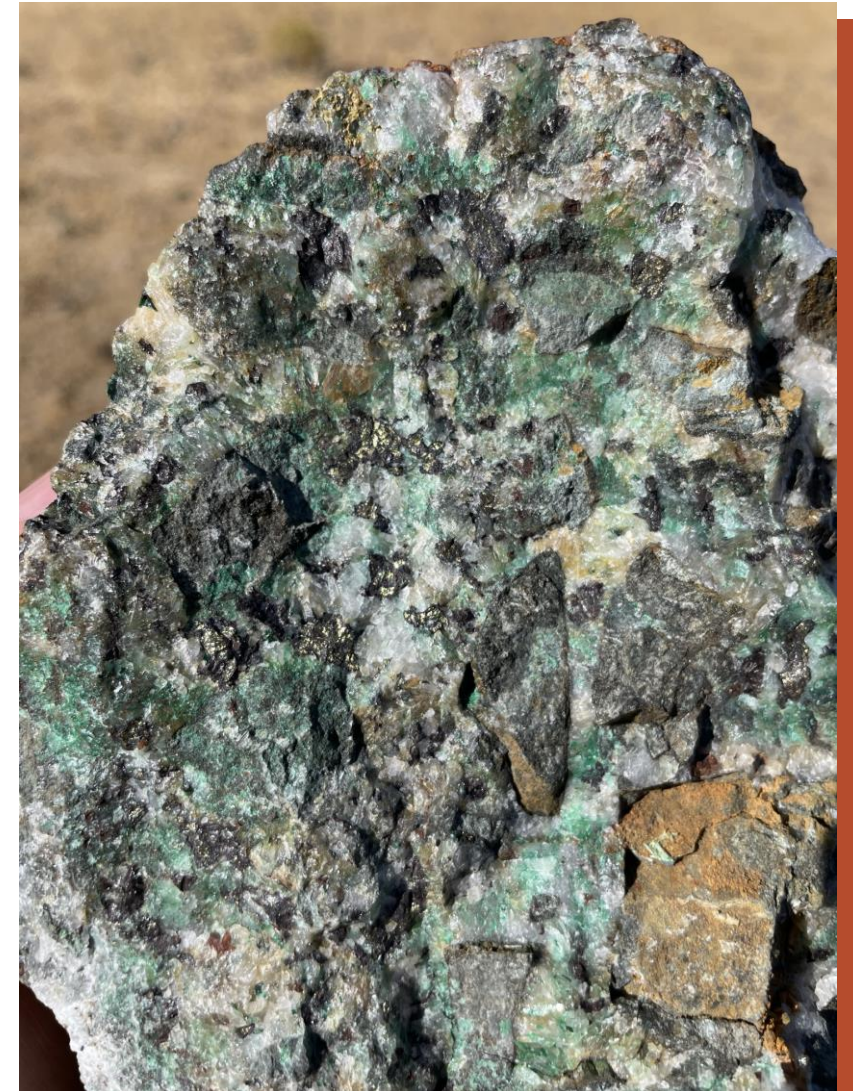
**Multiple high-grade Cu-Au targets drill-ready**

**Large prospective claim block 100% held by GSC**

**Discovery of large-scale intrusive-related Cu-Au system**

**Emerging Cu-Au trend in Tier 1 copper jurisdiction**

**Experienced management with strong discovery record**



*High-grade Cu-Au vein-breccia, Victoria prospect, Chile*

# Key achievements



**Excellent progress since listing in December 2021 (raised c£3.5 million):**

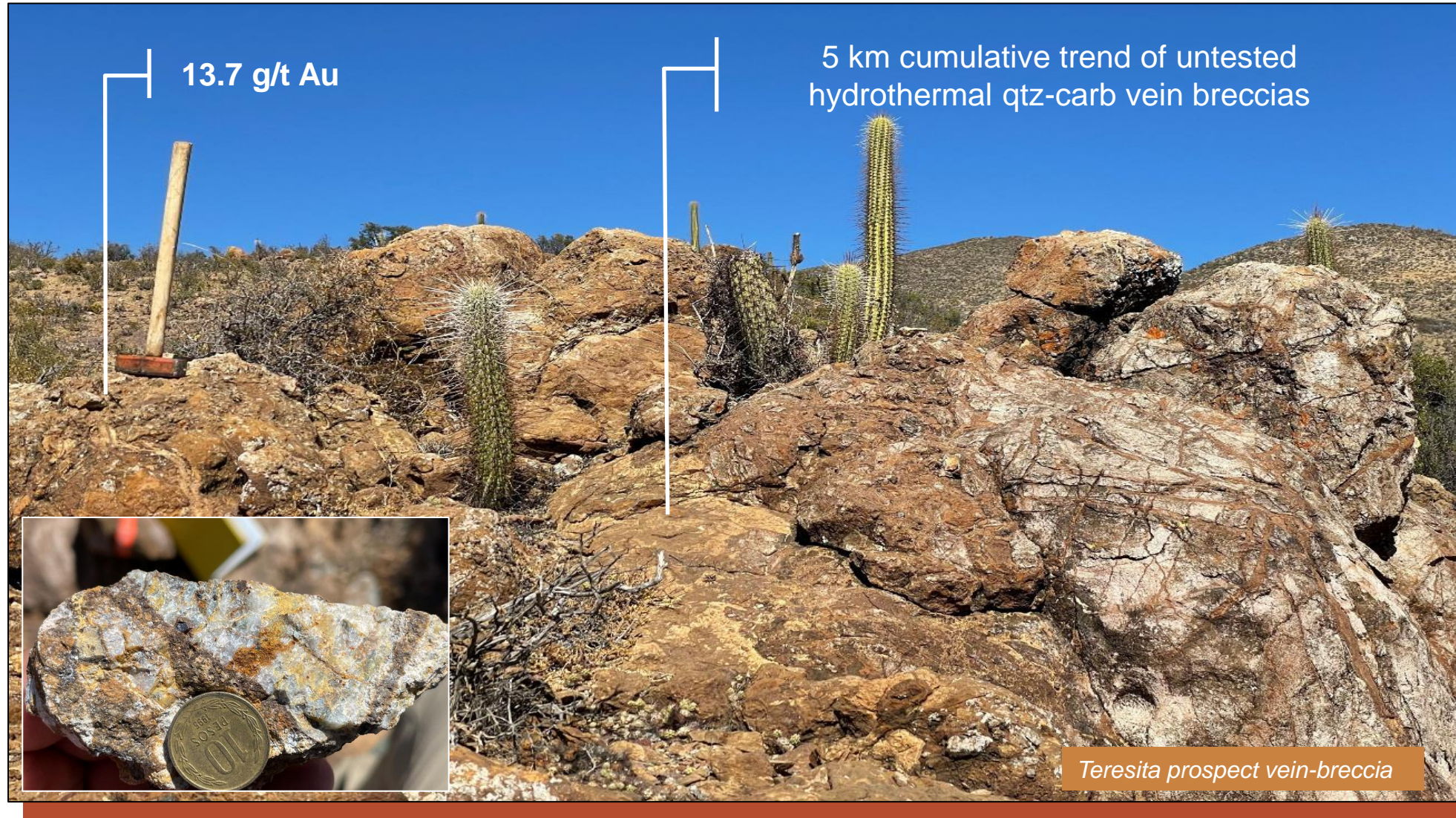
## **Especularita Project**

- Commenced exploration campaign at Especularita
- Results demonstrate discovery potential for multiple high-grade Cu-Au deposits
- Building pipeline of drill targets
- Regional exploration commenced targeted large-scale porphyry Cu potential

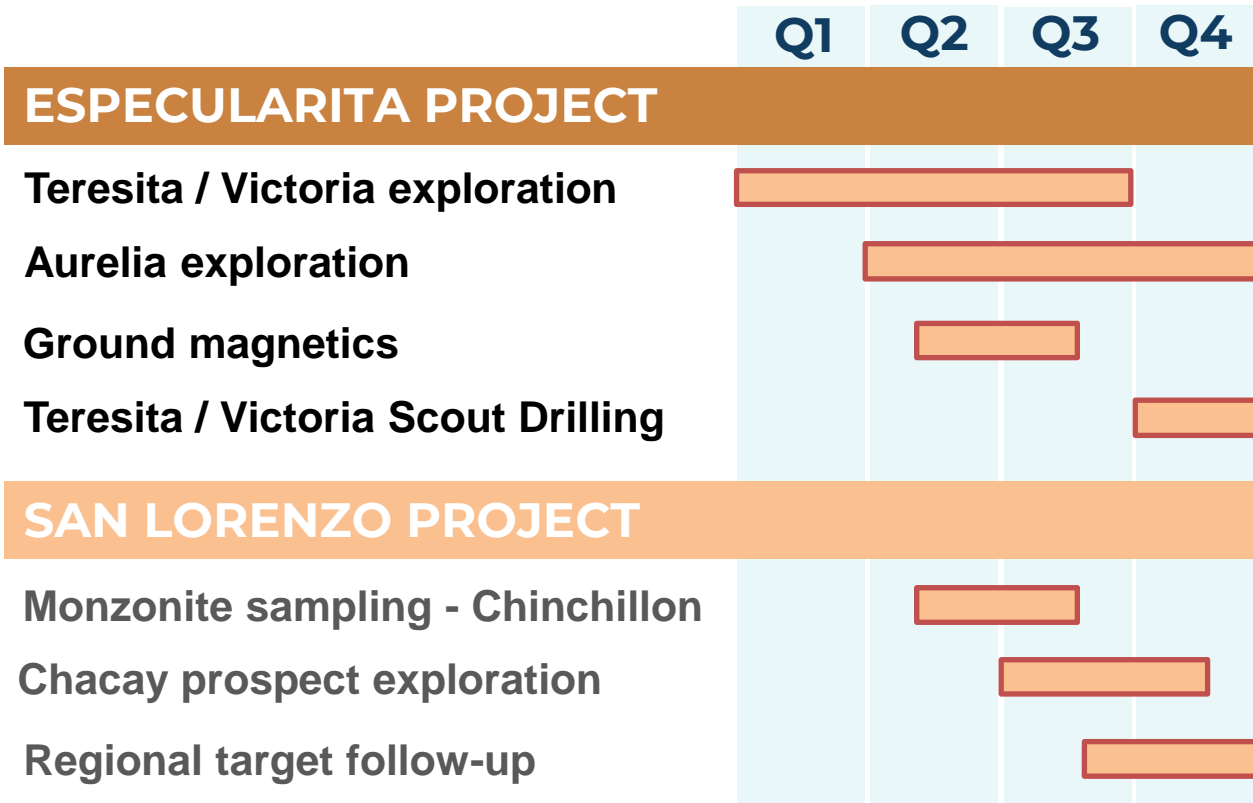
## **San Lorenzo Project**

- 341.6 line km of ground magnetics, 2.6 km of trench sampling
- 3,000m scout diamond drilling programme completed across 4 prospects
- Discovery of significant Intrusive-Related Cu-Au system
- Concession foot-print increased to include porphyry Cu targets

# Drill-ready targets sticking out of the ground



# 2023 Exploration Programme



## Especularita

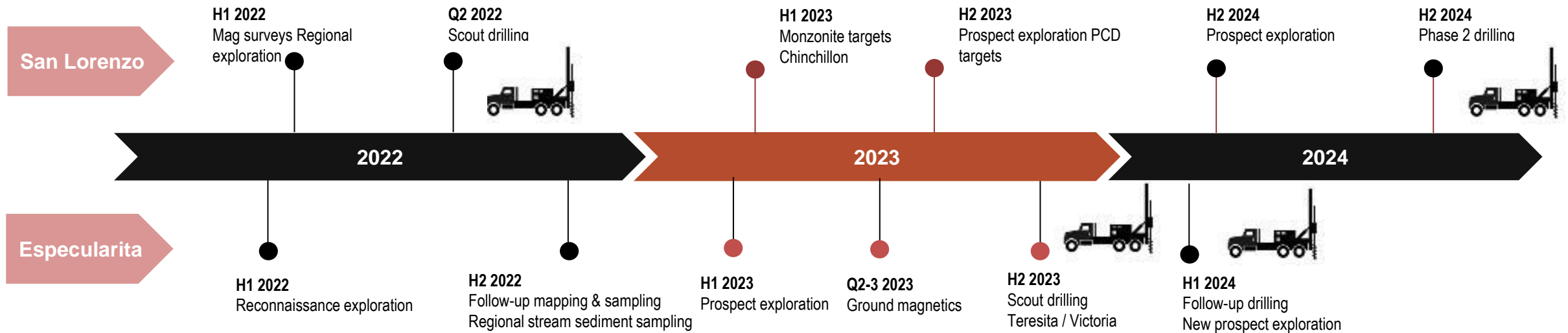
- Regional mapping - identifies district-scale potential for porphyry-epithermal-skarn-IRGS deposits
- Regional sampling - discovers high-grade vein-breccia swarms at Teresita / Victoria
- Prospect exploration - defining pipeline of drill targets at Teresita/Victoria
- New claims – increases prospective area at Teresita and adds new high-grade skarn target at Aurelia

## San Lorenzo

- Magnetism - identifies deep intrusive monzonite targets
- Scout drilling - discovery of intrusive-related Cu-Au system driven by monzonite dyke swarms
- New claims - increased concession footprint including new un-tested porphyry Cu-Au targets

*“Boots-on-ground” exploration is driving the potential for near-term discoveries on multiple prospects*

# Exploration Timeline – news flow



## Notes:

- GSC is actively evaluating the potential for new project opportunities outside of the 2 headline projects
- All work programmes and schedules subject to contractor availability, access and permitting restrictions

# INVESTMENT OPPORTUNITY

Large claim blocks in emerging under-explored coastal belt

Two early-stage, large scale Cu-Au projects – 100% owned

Exploration results underscore potential for significant discovery

## San Lorenzo Project:

- Discovery of IRCG\* system
- Emerging mineral trend
- Un-explored PCD targets

## Especlarita Project:

- District scale PCD\* system
- Discovery of HBx\* Cu-Au
- Drill target pipe-line ready

Pipeline of drill-ready Cu-Au targets in 2023 - 2024

Established local exploration team and executive management

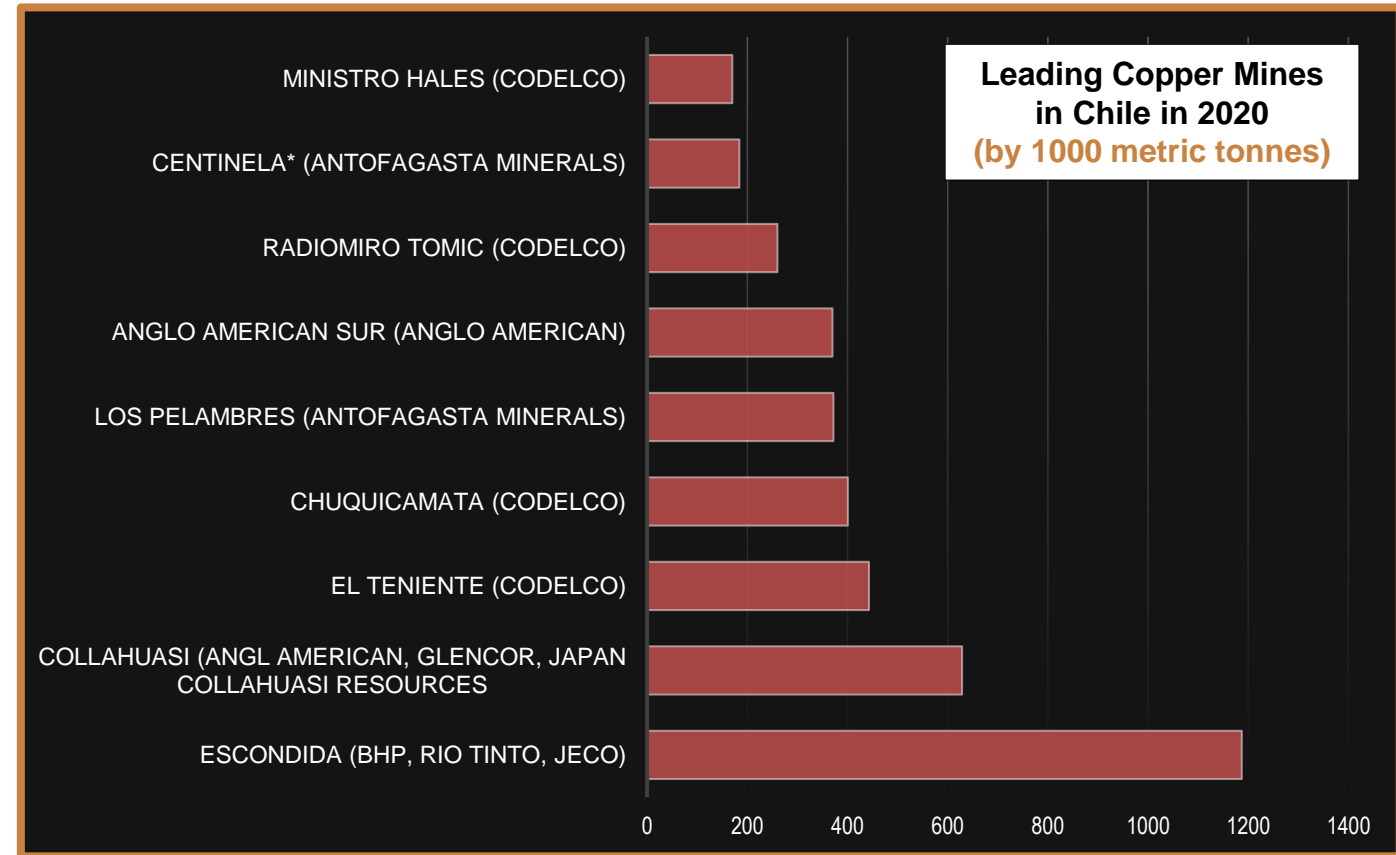
*\*Note: PCD = Porphyry Copper Deposit / IRCG = Intrusive-related Cu-Au / HBx = Hydrothermal Breccia*



# Chile: Globally Significant Copper Mining Destination



- Largest producer and exporter of copper
- Largest reserves of copper and 4<sup>th</sup> largest for gold
- Replacement of copper reserves not matching depletion
- Copper grades in decline and mining costs rising
- Forecast supply shortage (sustained high prices)
- Mining accounts for 53% of Chile's exports (9% of GDP)\*
- Stable political environment and experienced workforce



\*2018 data:  
Consejo Minero Annual Report 2018



**ANGLO  
AMERICAN**



**GLENCORE**

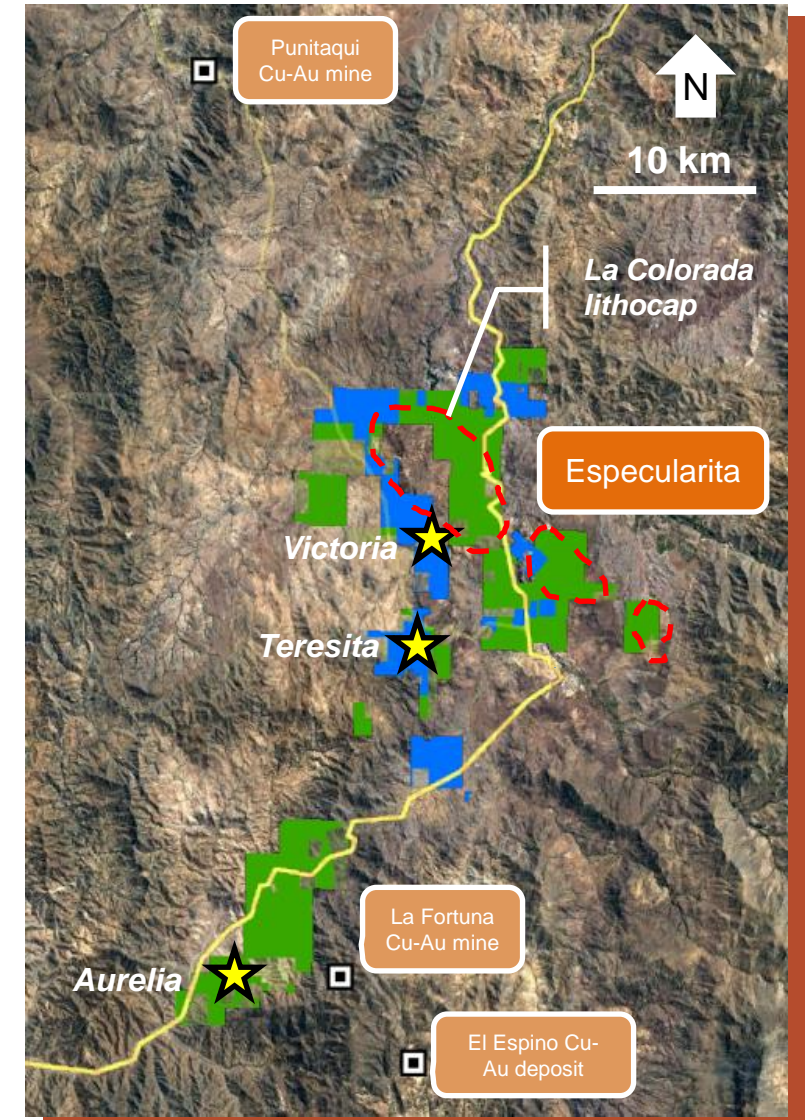


**ANTOFAGASTA  
MINERALS**

# Especularita – High-grade Cu-Au targets



- District-scale mineralisation system showing evidence of porphyry – epithermal – skarn style mineralisation
- Project partially includes and surrounds the La Colorada lithocap - a large under-explored advanced argillic alteration zone that may be related to a concealed porphyry-epithermal deposit
- Mining and Exploration Concessions covering 18,209 ha (182 km<sup>2</sup>)
- Extensive small-scale Cu-Au mining and processing in the district – limited modern style exploration evident
- Located within the coastal metallogenic belt along trend from large-scale Cu-Au deposits such as Teck's Andacollo mine
- Excellent infrastructure, low altitude, year-round access
- Exploration in progress at three prospects plus regional generative work



# Especularita — Complete Porphyry – Epithermal System

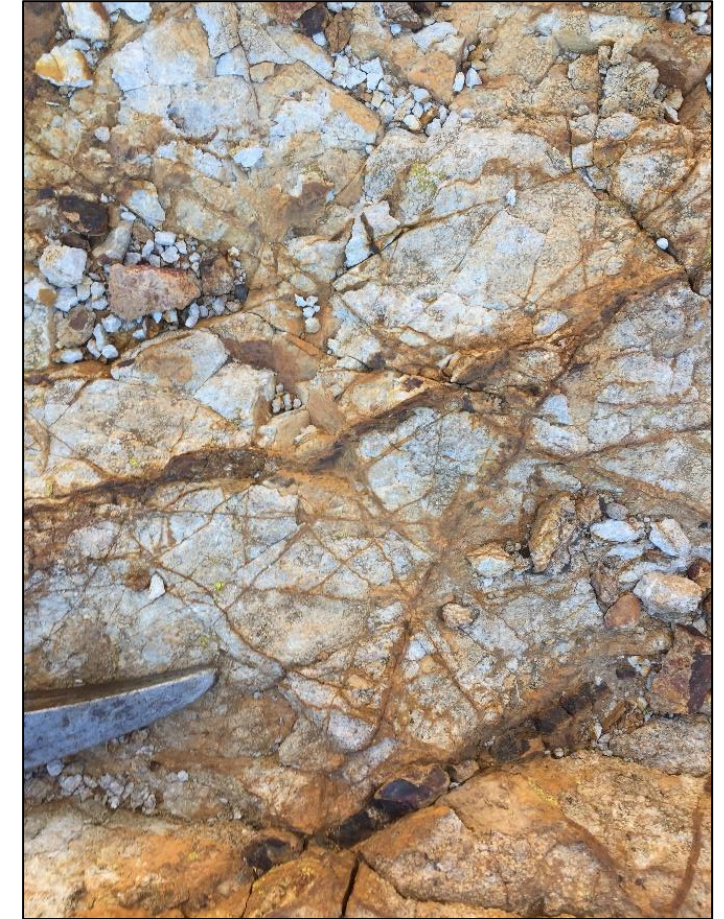
- “Boots-on-ground” exploration by GSC has identified a pipeline of drill targets at Especularita



*Epithermal style quartz-carbonate vein-breccia systems with high-grade Au-Cu in outcrop*



*Outcropping disseminated copper hosted in advanced argillic high sulphidation style alteration*



*Porphyry style stockwork veining in weathered outcrop, La Colorada lithocap, Especularita*

# Especularita – Pipeline of **untested high-grade Cu-Au** targets

Victoria Prospect



- High grade Cu-Au in vein-breccia
- Up to 6.9% Cu, 1.3g/t Au in outcrop
- **Drilling planned in H2 2023**
- No historical drilling

Teresita Prospect



- High grade Au-Cu in vein-breccia
- Up to 13.1g/t Au, 2.9% Cu in outcrop
- **Drilling planned in 2023 – 2024**
- No historical drilling

Aurelia Prospect



- High grade Cu-Au in skarn rocks
- Up to 7.6% Cu, 2.9g/t Au in mine dumps
- Extensive artisanal mining
- No historical drilling

# Teresita prospect – High-grade Au-Cu vein and breccia targets

- +5km cumulative strike of quartz-carbonate vein-breccias and open along strike
- Gold grades up to 13.7g/t from surface samples
- Copper grades up to 2.9% in mine dump samples
- No evidence of historical drilling
- Copper mineralised tourmaline breccia pipe
- Drill ready
- Work to date by GSC includes;
  - Mapping, rock and drainage sampling
  - Claims consolidated to control full system
- 2023-24 exploration to refine and test targets;
  - Ground magnetics
  - RC scout drilling



*High-grade disseminated chalcopyrite in quartz matrix vein-breccia, Teresita*



*Tourmaline shingle-breccia pipe with disseminated copper-oxide in matrix, Teresita*

# Victoria prospect – High-grade Cu-Au in vein-breccias

- Quartz+carbonate vein-breccia swarm
- Multiple vein-breccias mapped over 1 x 0.6km
- High-grade Cu-Au in quartz-dominant zones
- Up to 6.9% Cu and 4.3 g/t Au at surface
- No historical drilling
- Previous exploration by GSC includes;
  - Float mapping and sampling
  - Outcrop mapping and sampling
- 2023-24 exploration to define drill targets
  - Ground magnetics
  - Soil sampling
  - RC scout drilling



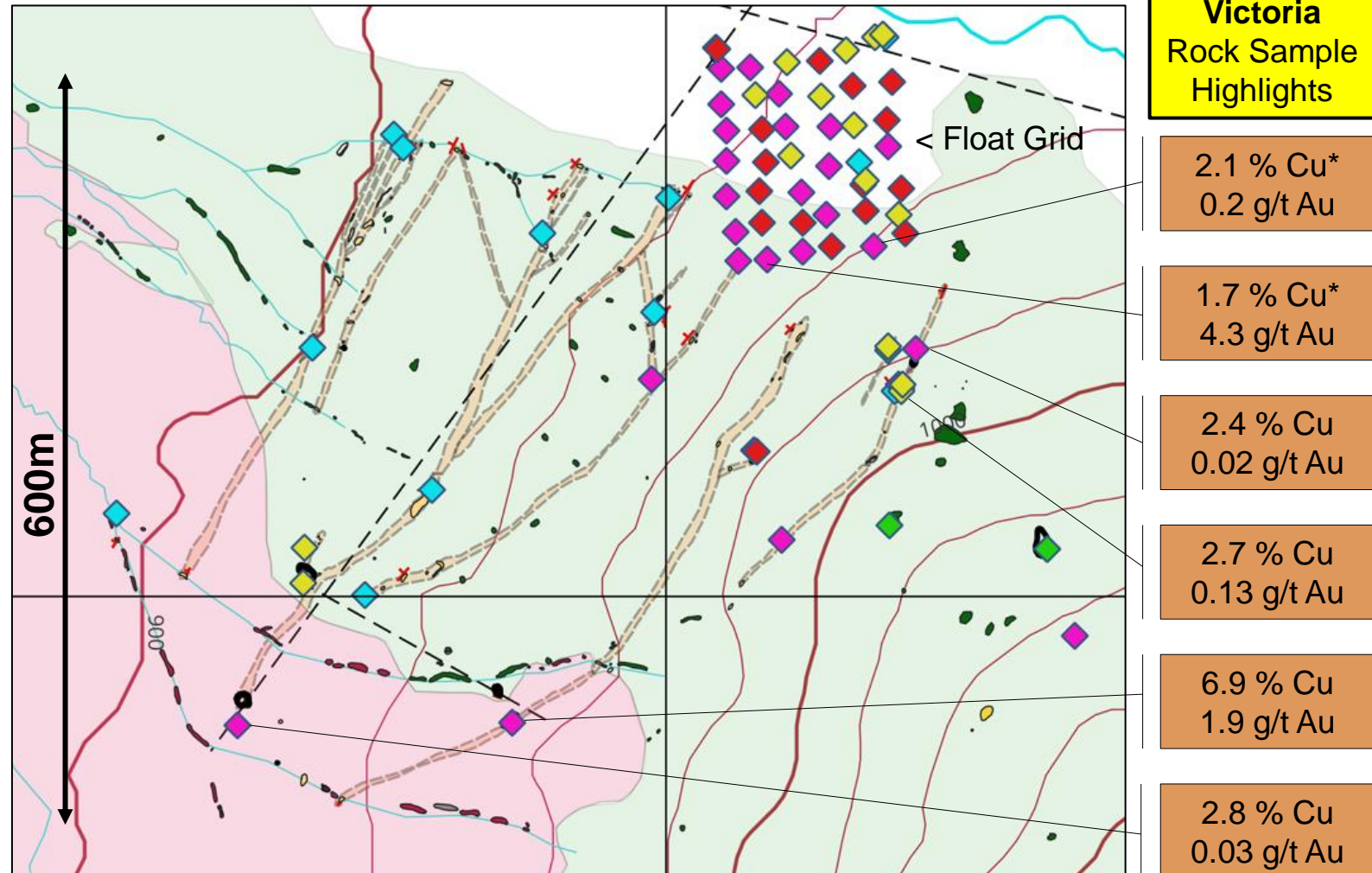
*Outcropping quartz matrix vein breccia, Victoria*



*Coarse disseminated chalcopyrite mineralisation hosted in vein-breccia, Victoria prospect*

# Victoria prospect – High-grade Cu-Au vein-breccia target

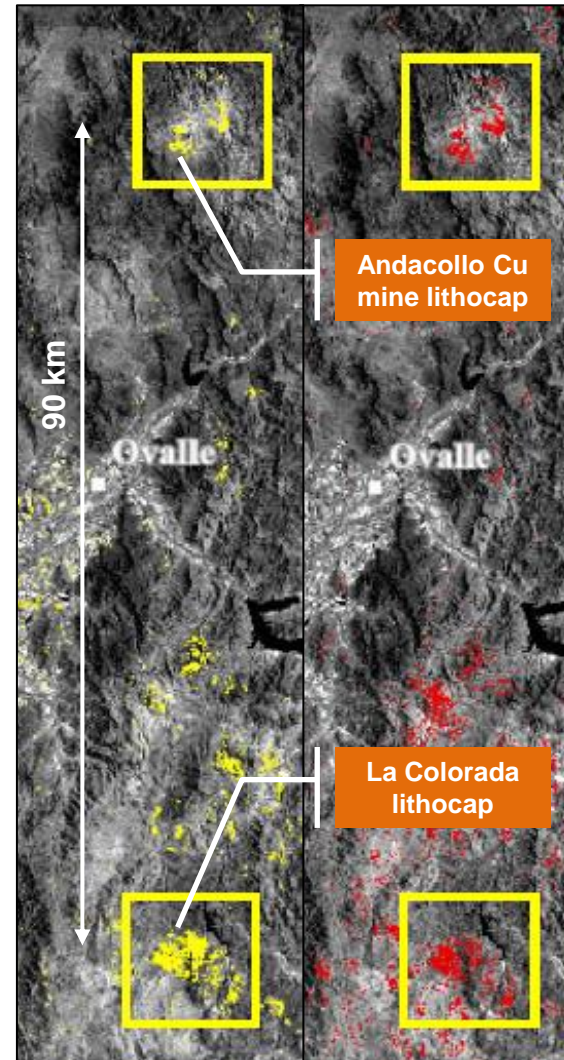
- Quartz+carbonate vein-breccia swarm
- Similar style to Teresita
- Follow-up of float geochem led to outcrop discovery
- Vein-bx structures open along strike
- Shallow cover and scree obscures geology – potential for additional veins
- Mineralisation style suggests geophysics methods (mag / IP) should be effective



Geology interpretation map, Victoria prospect, Especlarita

# La Colorada Lithocap - Porphyry Cu-Au targets

- Project centred on a large (>35km<sup>2</sup>) advanced argillic alteration system (La Colorada lithocap)
- Geological and structural setting like the large porphyry deposits on trend – Andacollo (Teck)
- Work by GSC includes;
  - Reconnaissance mapping and sampling discovered multiple zones of porphyry Cu-Au style stockwork veining and alteration
  - Regional stream sediment sampling in progress (>500 drainage samples)
- Future work to include;
  - Detailed mapping and sampling
  - Spectral and geochemical vectoring studies
  - Geophysics



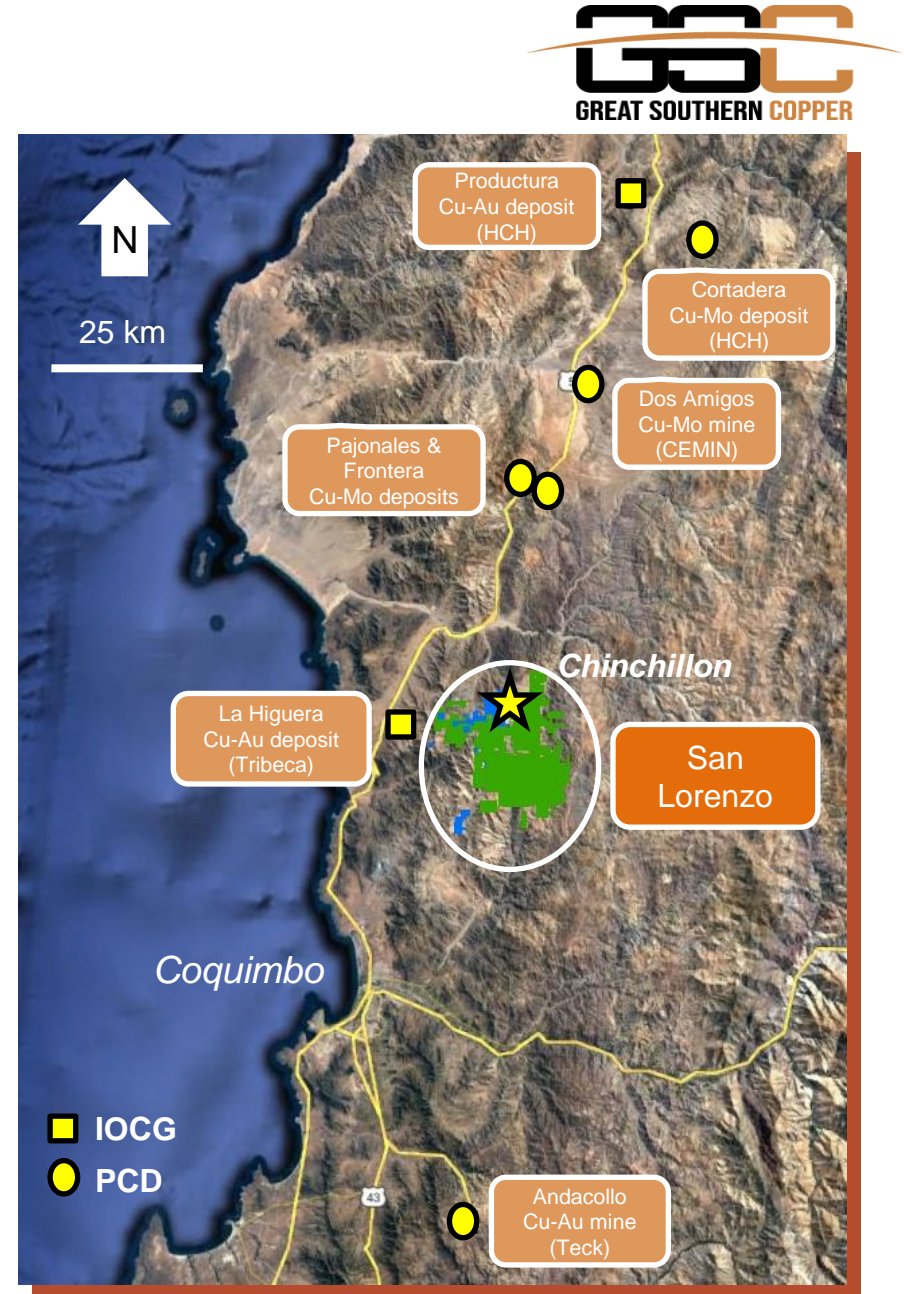
Clay-sericite band Radiometric image   Hematite band Radiometric image



Porphyry Cu style stockwork alteration in outcrop, La Colorada

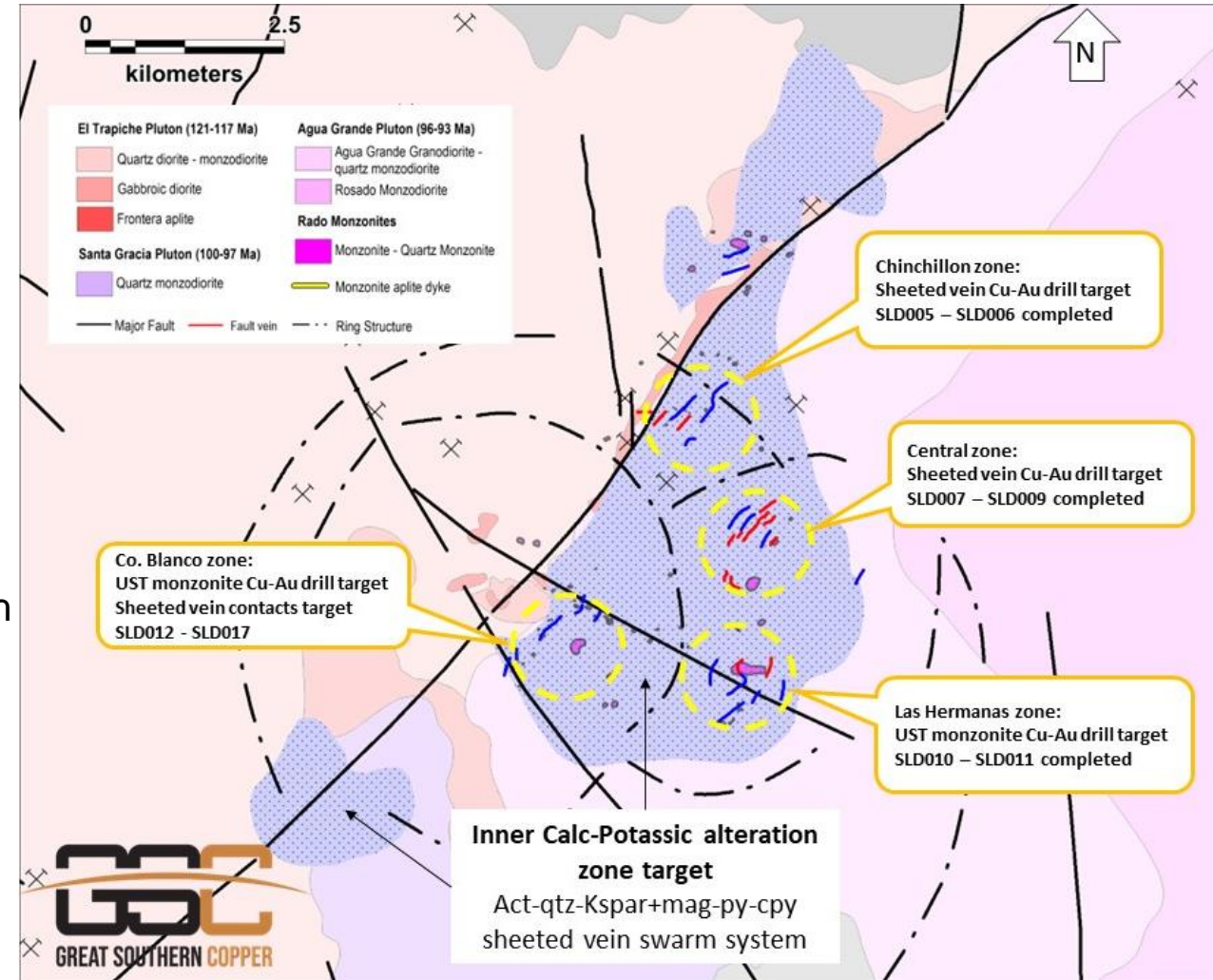
# San Lorenzo Cu-Au Project

- Mining and Exploration Concessions covering 28,645 ha (286 km<sup>2</sup>)
- Re-invigorated exploration district in coastal PCD-IOCG belts due to recent exploration successes (Hot Chili, Tribeca)
- Significant Cu-Au mines on trend (Andacollo – Teck)
- Discovery by GSC of Intrusive Related Cu-Au system at Chinchillon (3,000m scout drilling in 2022-23)
- Significant untested regional potential in the greater San Lorenzo project area – work at Chinchillon covered less than 10% of project



# Chinchillon – Intrusive Related Cu-Au Discovery

- >20-25km<sup>2</sup> area of calc-potassic alteration in granodiorite intruded by monzonitic stocks
- UST\* indicates fertile system and cupola level erosion for monzonites
- Abundant anomalous surface Cu-Au geochem, artisanal mine workings and placer gold workings
- 3,000m Scout drilling (2022-23) targeted multiple prospect areas at Chinchillon
  - Test oxide fracture-vein swarms for sulphide at depth
  - Test monzonites and USTs for Cu-Au fertility
  - Determine controls on and vectors to mineralisation
  - Evaluate appropriate exploration methodologies



\*UST = Unidirectional solidification textures

# Chinchillon – Cu-Au+Mo fracture-vein mineralisation

- Oxidised fracture-vein swarms define broad calc-potassic alteration zone in granodiorite
- Scout drilling confirms fractures host hypogene Cu-Au+Mo
- Broad intervals of elevated Cu-Au-Mo (>250-500ppm Cu) associated with fracturing 1-2 orders of magnitude above background (<10-100 ppm Cu)
- Significant introduction of copper
- Higher Cu associated with K-feldspar alteration – exploration vector
- Higher Cu associated with increased fracture intensity – exploration vector



*Oxidised sheeted fracture-vein swarm in outcrop, Chinchillon prospect.*



*Coarse chalcopyrite-pyrite vein with K-feldspar halo, SLD008 Central prospect.*

# Chinchillon – Monzonite-hosted Cu-Au and UST

- Dyke swarms and stocks of monzonite invade granodiorite
  - scout drilling tested only 2 dykes
- UST indicates high level (cupola) and potential for fertile Cu-Au system
- Elevated Cu (>300-500ppm Cu) relative to granodiorite indicates the monzonites are a potential driver of the system
- Trace element ratios indicative of Cu-Au system fertility c/f global porphyry Cu-Au deposits
- No previous exploration or drilling of this system

UST = Unidirectional solidification textures



Outcropping monzonite dyke with oxide Cu, Chinchillon prospect. Not drill tested



UST in drillcore with overprinting mineralised fractures.

# Copper and Gold – Strong Market Drivers



## COPPER is powering the clean energy transition

- Electric vehicles (up to 4x more copper compared to internal combustion engine)
- Solar panels, wind turbines, hydro and thermal energy
- Electrical wiring and high-speed telecommunication devices
- **Infrastructure spend** (driven by Chinese market and US \$1 trillion infrastructure bill)
- **Widening supply imbalance** – lack of investment in new discoveries over the last decade has lowered copper production at a time when it needs to ramp up significantly
- Copper demand to **increase 53% to 40 million metric tons (MT) by 2040** creating potential supply shortfall of 14Mt (BloombergNEF, Aug'22)
- **“Copper is the new oil”** – projected to reach \$15,000 by 2025 (*Goldman Sachs, May 2021*)

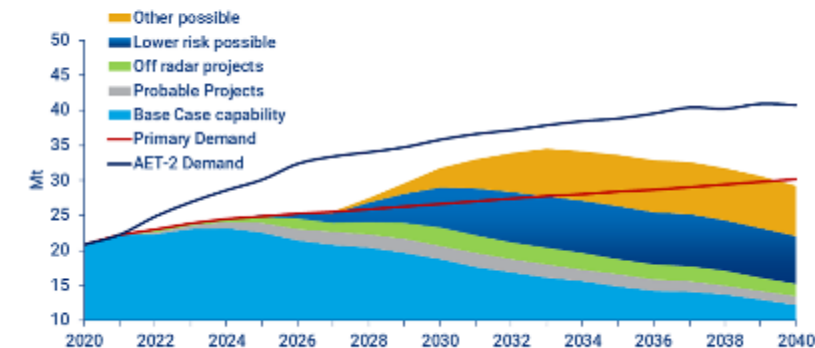
## GOLD is strengthening and testing beyond USD 2,000/oz

- Unprecedented fiscal and monetary stimulus around the world
- Interest rates increasing globally to combat rising inflation
- New discoveries not keeping pace with the depletion of existing reserves globally



### Copper demand growth puts supply elasticity under stress in an accelerated energy transition (AET-2) scenario

Primary copper demand scenarios versus mine supply potential



# Summary

- **Chile** Largest producer and exporter of copper
- **Jurisdiction** Tier 1 - Globally significant mining location
- **Copper and gold** Strong market drivers
- **Two projects** San Lorenzo Cu-Au and Especularita Cu-Au
- **100% rights** Leveraged for success. No NSR
- **Infrastructure** Well located near to roads, power, towns
- **Scale** Targeting PCD-IR-IOCG Cu-Au deposits
- **LSE listed** Dec. '21 listing on LSE raising c.£3.5m
- **Executive Management** Significant discovery experience in Cu-Au





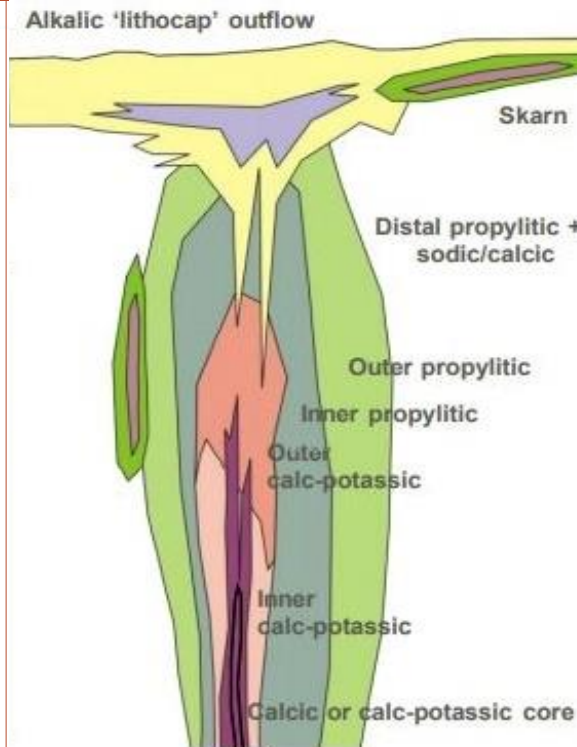
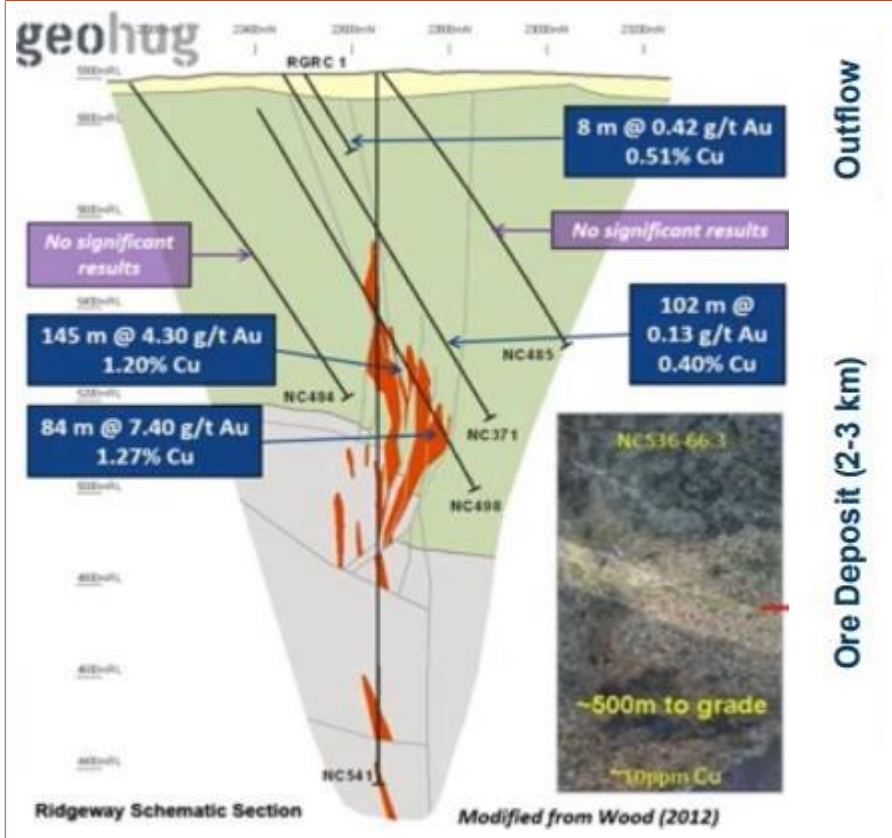
# Appendices



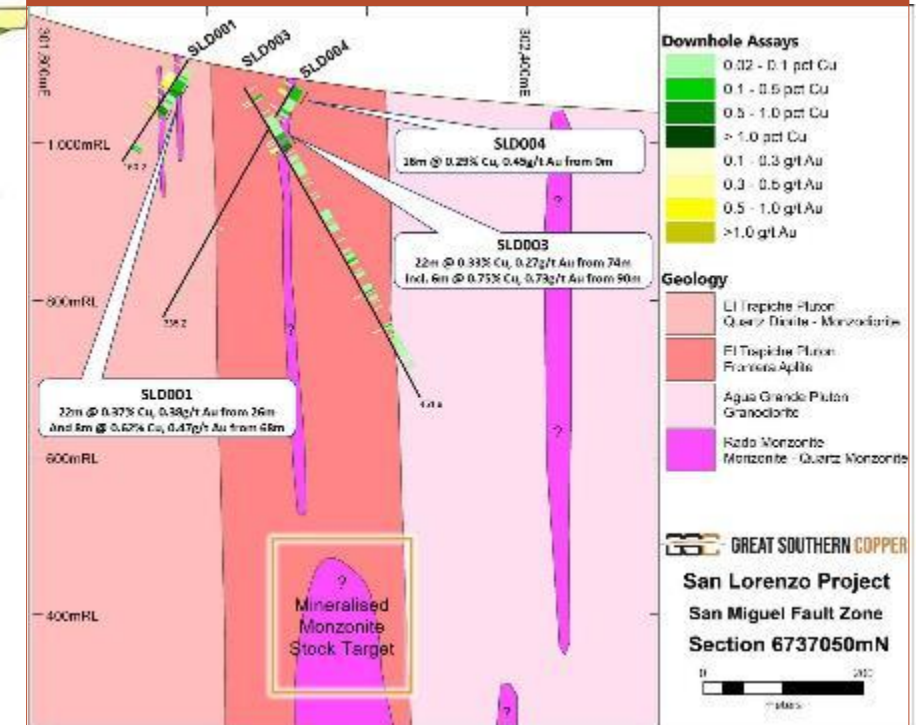
# Model for Alkali Porphyry Cu-Au Deposits

(Holliday and Cooke 2007)

## Ridgeway deposit, Cadia Valley

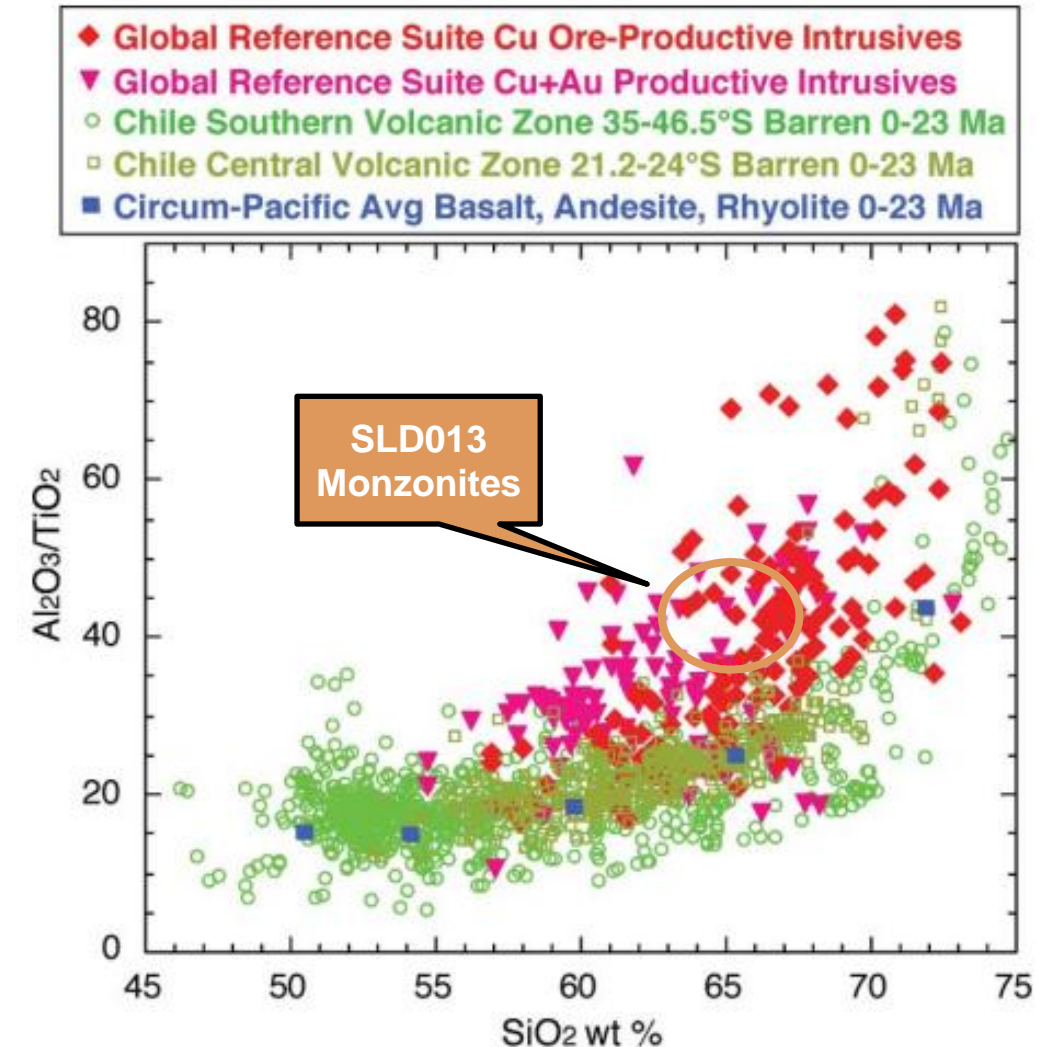
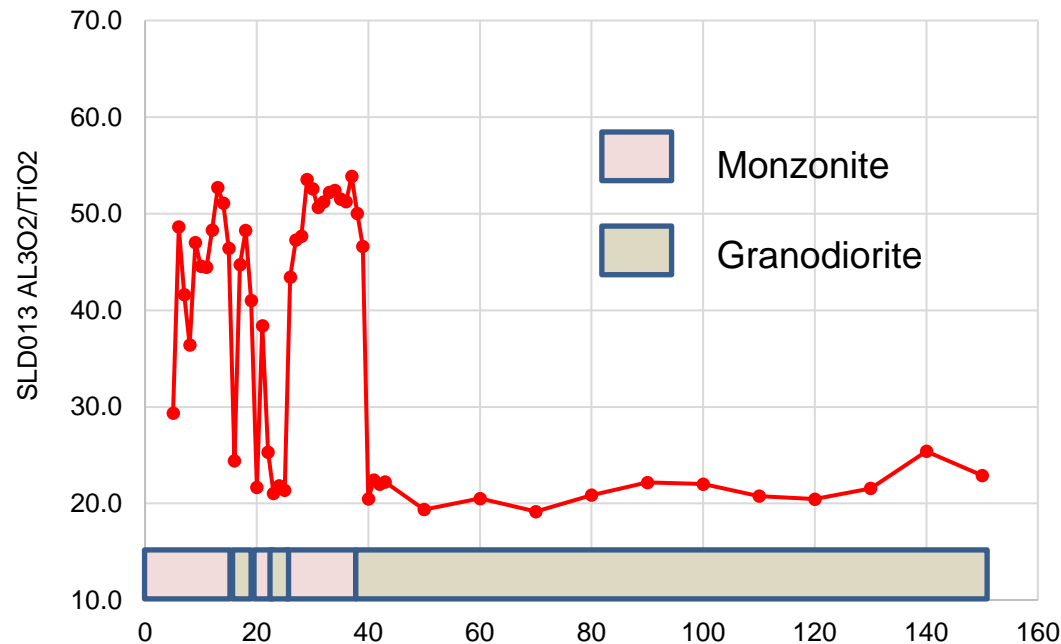


## San Lorenzo, West of Chincillon Fault



# Chinchillon – Trace element ratios SLD013 example

- $\text{Al}_2\text{O}_3/\text{TiO}_2$ , Sr/Y and V/Sc ratios used to determine intrusive fertility for intrusive-related Cu-Au deposits\*
- Chinchillon monzonite ratios indicative of Cu-Au ore productive intrusives
- Further studies in progress



\* Loucks R. R., (2014): Distinctive composition of copper ore-forming arc magmas, *Australian Journal of Earth Sciences*, Geological Society of Australia, 61:1 5-16



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*Drilling at San Lorenzo project*