

O R O G E N

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# Cuprite

**STEAM HEATED ALTERATION CELL IN THE WALKER LANE  
A DIRECT SILICON ANALOG**

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TECHNICAL PRESENTATION  
September 2022

[WWW.OROGENROYALTIES.COM](http://WWW.OROGENROYALTIES.COM)

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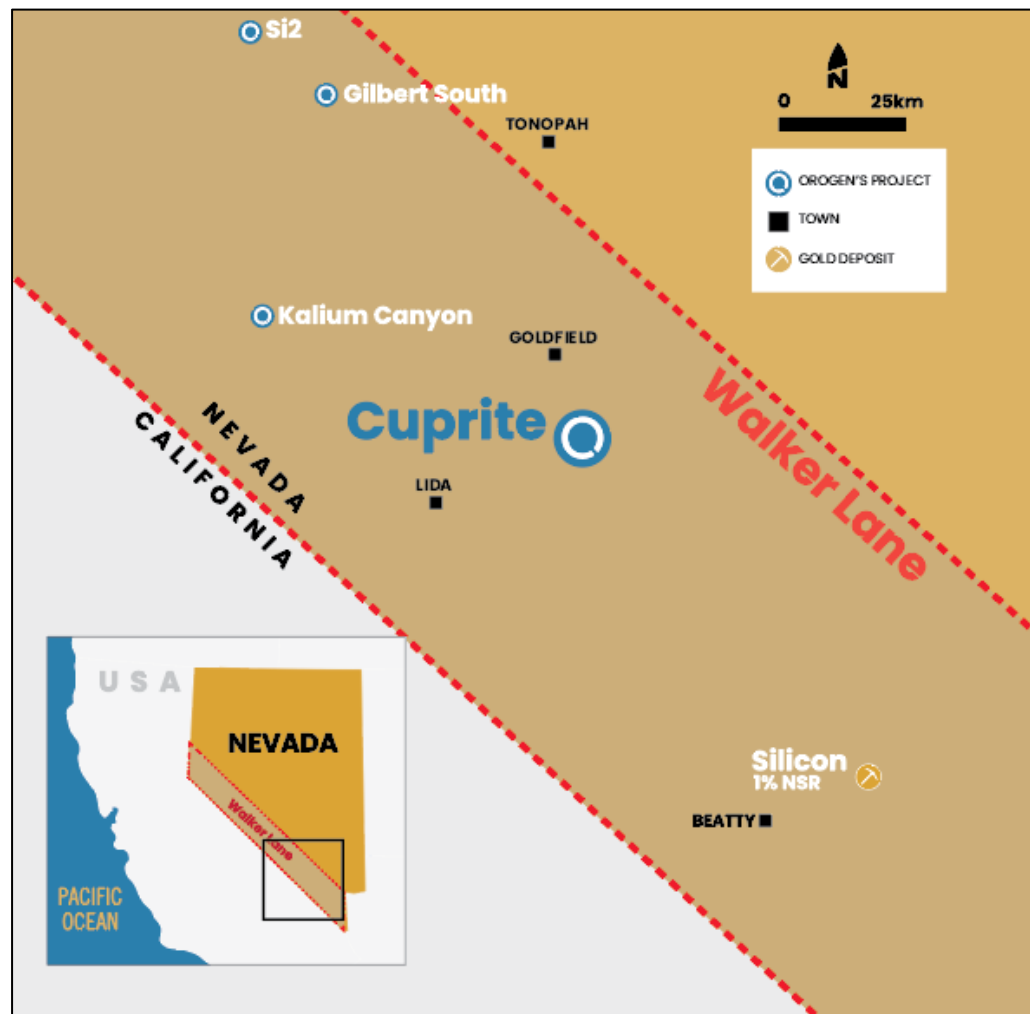
# Project Summary

- One of the largest steam-heated cells in the Walker Lane
- Generally gold poor at surface although a 1907 reference to gold-bearing veins in Tertiary rhyolites on the northeastern end of the district
- Alteration vectors into the eastern margin where the cell is covered by shallow gravel deposits
- Favorably oriented fault on the eastern margin represent potential feeder zones and the primary target at Cuprite
- Strong analog to Anglo's recent discovery at Silicon: Inferred resource of 3.37 millions ounces of oxide gold and 14.17 million ounces of silver<sup>1</sup>



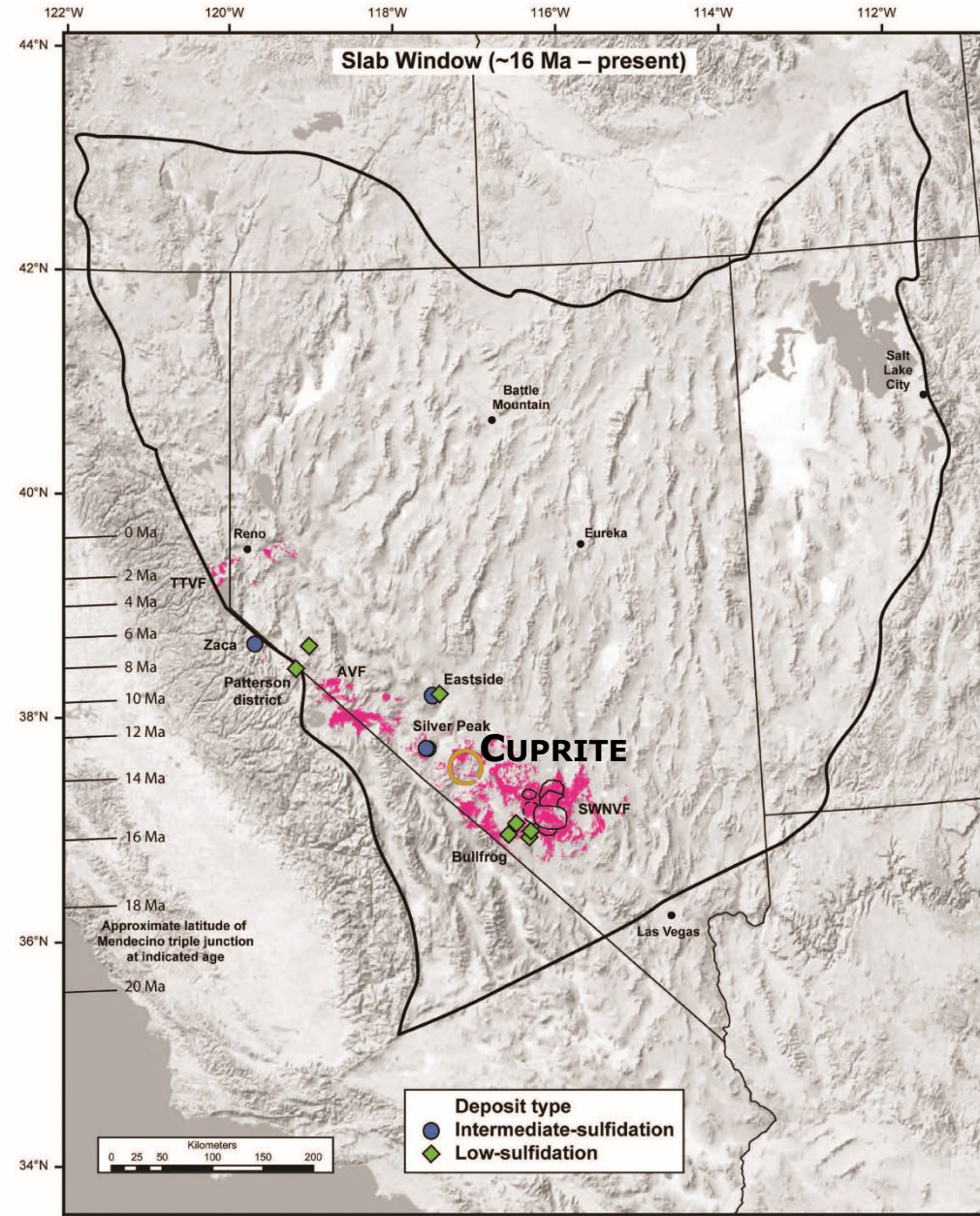
# Location

- 264 claims located on BLM ground covering 21.7 km<sup>2</sup> (2170 Ha)
- Project is 14 kilometres south of Goldfield, Nevada (Historic Production of 4.2 Moz Gold and 1.5 Moz Silver)
- Eighty kilometres northwest of Silicon discovery



# Regional Geology

- Located in the Walker Lane a 100 km wide northwest trending zone of dextral shear and transtension extending over 800km across southern Nevada
- Walker Lane contains many precious metal bearing Miocene epithermal deposits
- Deposits are related to extensive Cenozoic magmatism
- Low-Sulfidation systems in the Beatty district linked to Slab Window volcanism and Silicic Ignimbrite Calderas

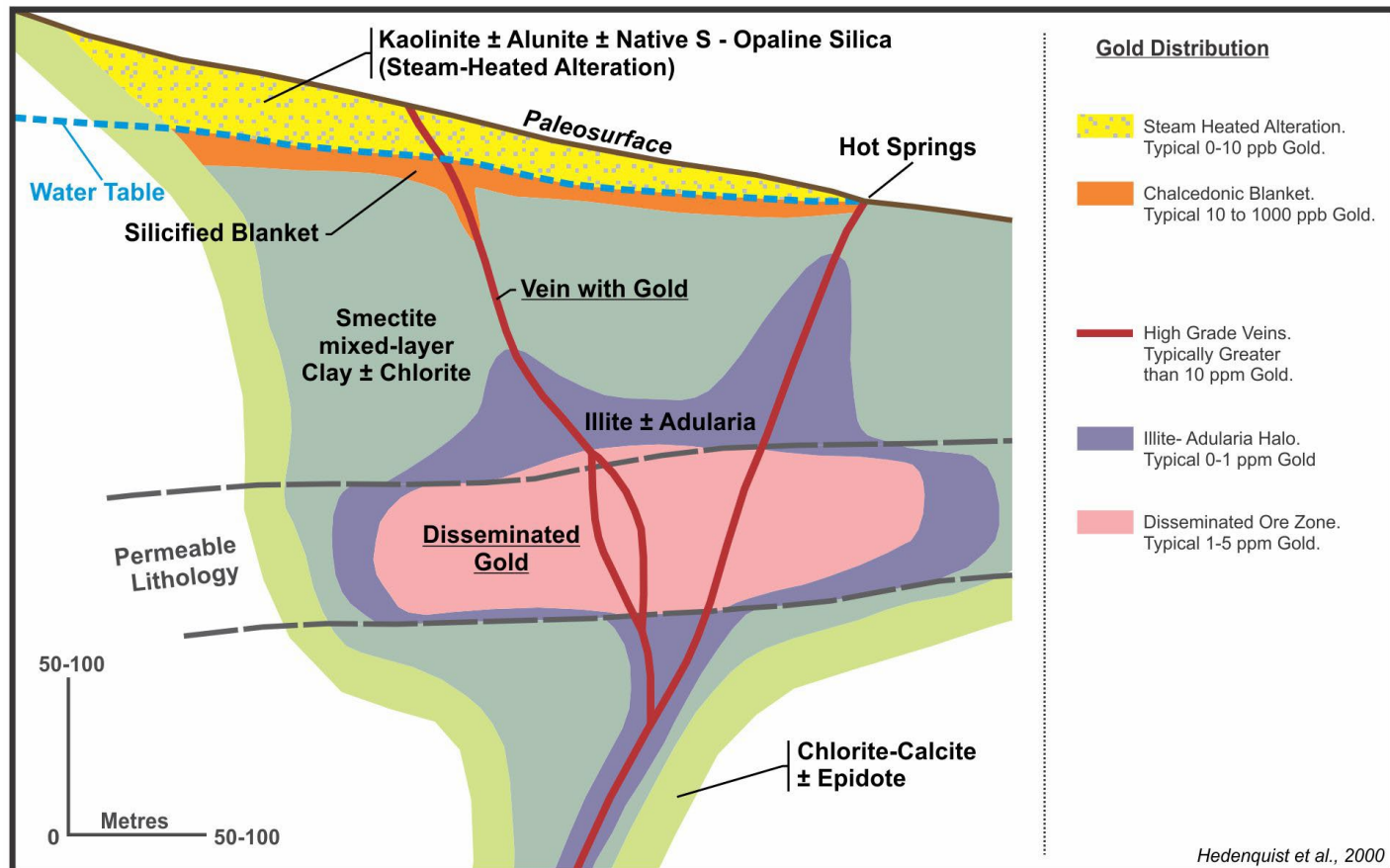


Adapted from Muntean et al. 2020



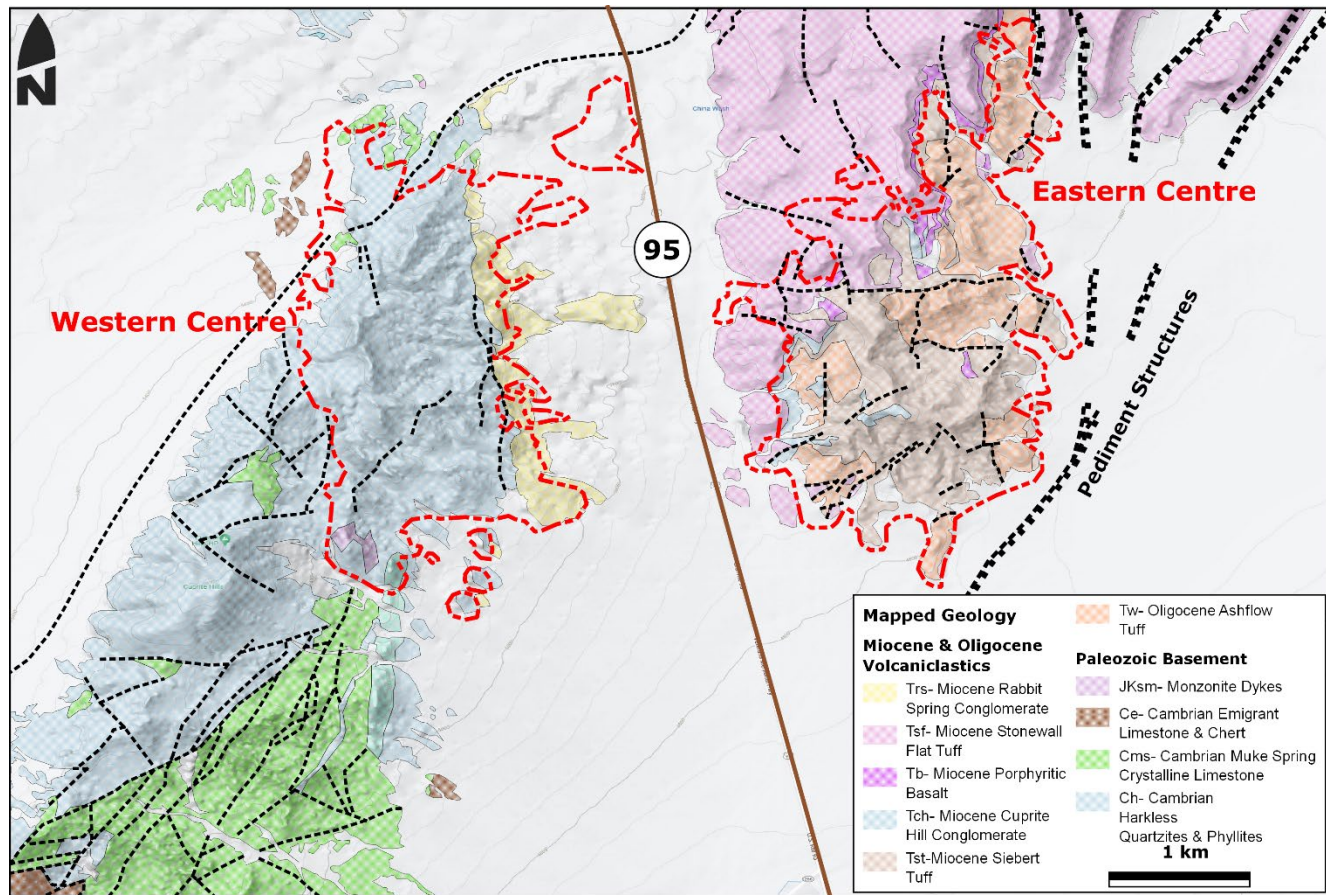
# Exploration Methodology

- Advanced Argillic alteration forms in multiple environments, some prospective for gold and some not
- Orogen have spent the last 5 years working on strategies to rapidly distinguish environment of formation based on mineral assemblage, texture, morphology and associated geochemistry



# Geological Overview

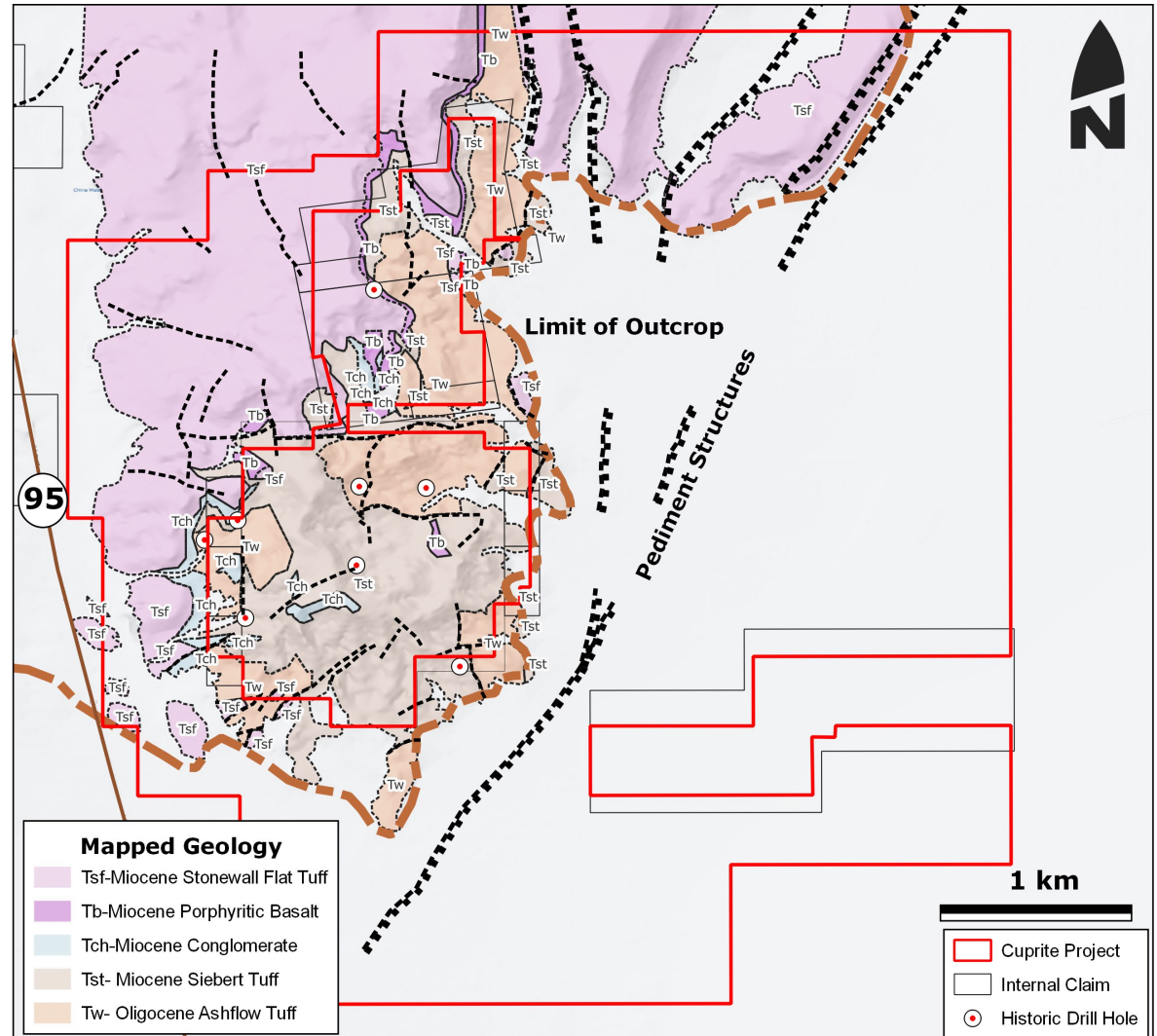
- Large, steam heated alteration cell at least 20 km<sup>2</sup> in size and open ended to the east and south
- Cell is split by the approximately north south Highway 95. Western cell is developed over Cambrian basement. Eastern cell is developed over Miocene and Oligocene tuffs
- Hydrothermal alteration linked to activity of the Stonewall Mountain volcanic complex
- Hydrothermal activity started at 7.6 Ma and ended by 6.2 Ma



Geological map of the Cuprite Area showing pre-Quaternary units from Swayze et al. 2014

# Cuprite Project

- Eastern cell is principal focus of Orogen's exploration efforts
- Gold poor at surface. Prospected and mined for silica, sulfur, mercury and clay
- Tested by eight historic drill holes penetrating over 300 metres of altered tertiary volcanics
- Volcanic host rocks thicken to the east beneath shallow alluvium/gravels
- Favorably oriented faults project into the covered area to the east
- On the margin of the Stonewall Mountain Caldera (Southwest Nevada Volcanic Field)

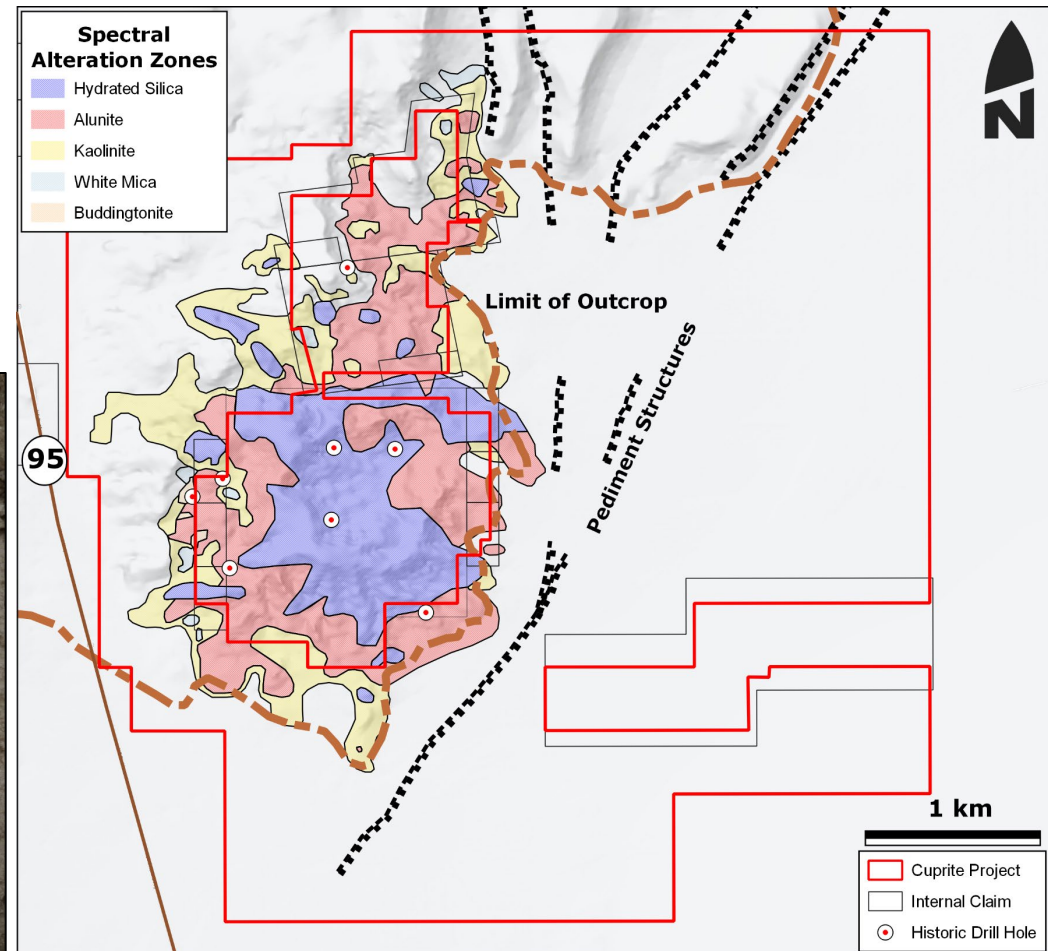




# Cuprite Alteration

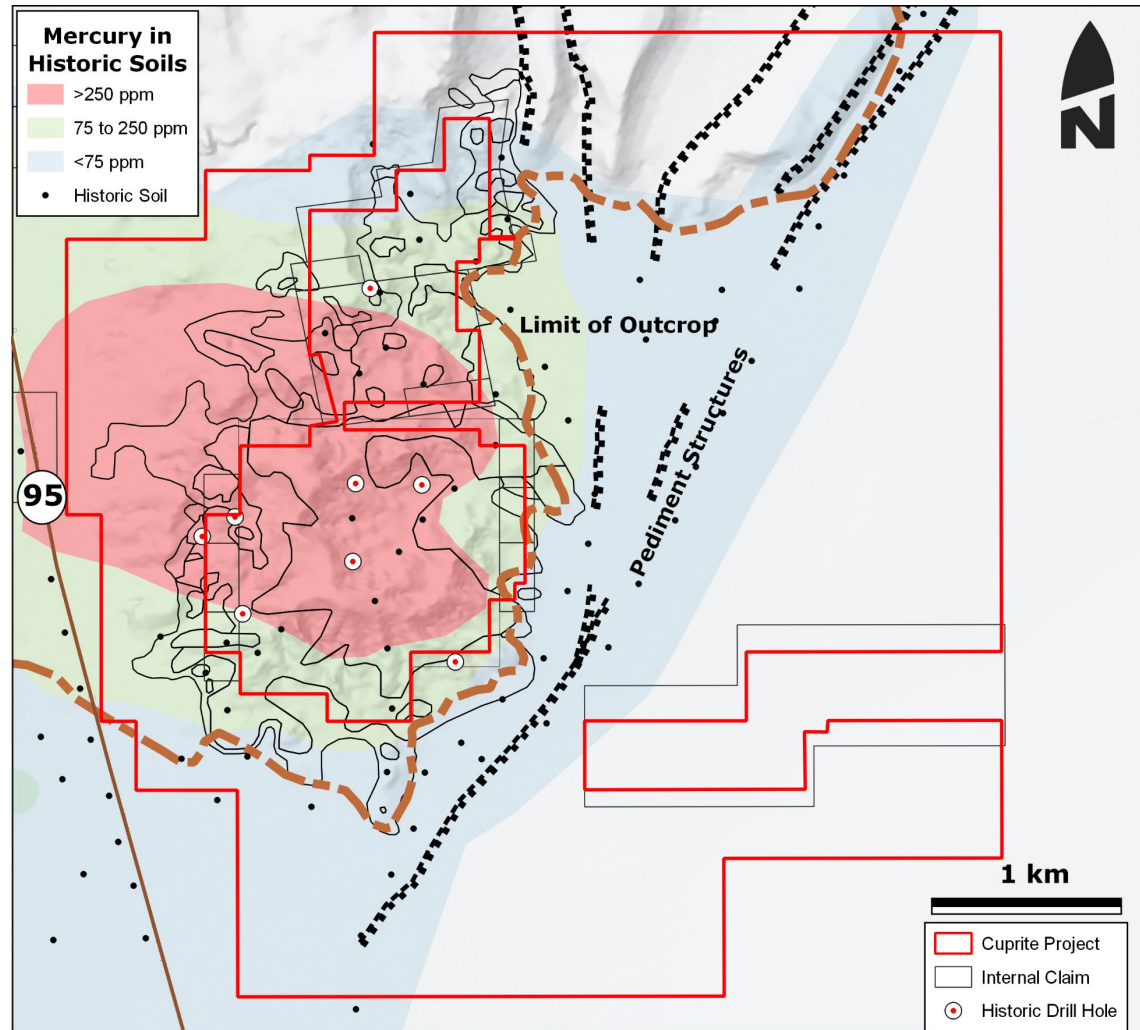
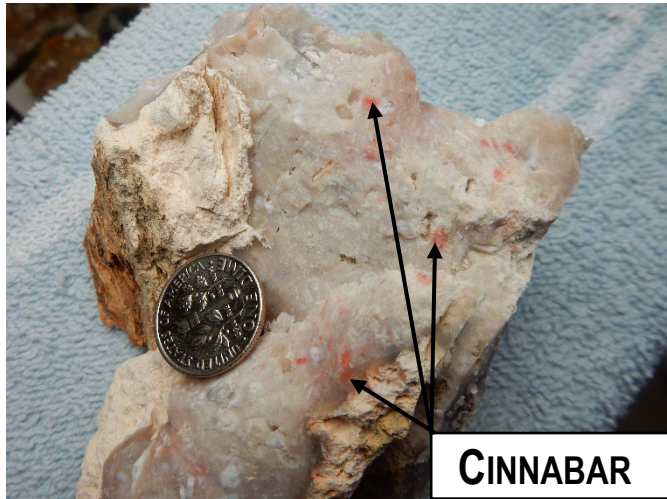
- Late Miocene advanced argillic alteration intensity increases eastward towards shallow gravel cover
- Cinnabar (see next slide), residual silica and powdery silica all observed at the eastern margin of the alteration cell
- Spectral alteration zones confirmed with field checks
- Alteration cell open to east and south

**POWDERY SILICA**



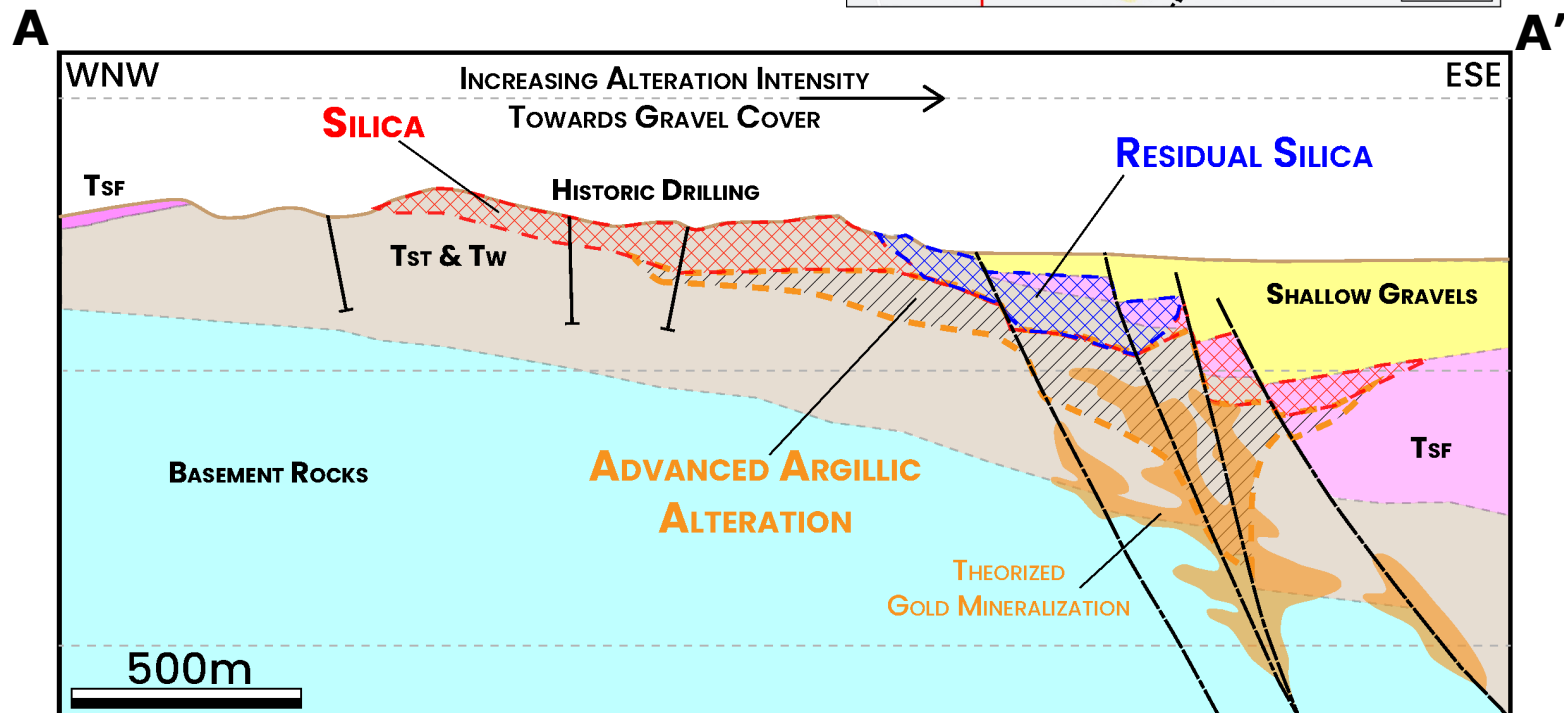
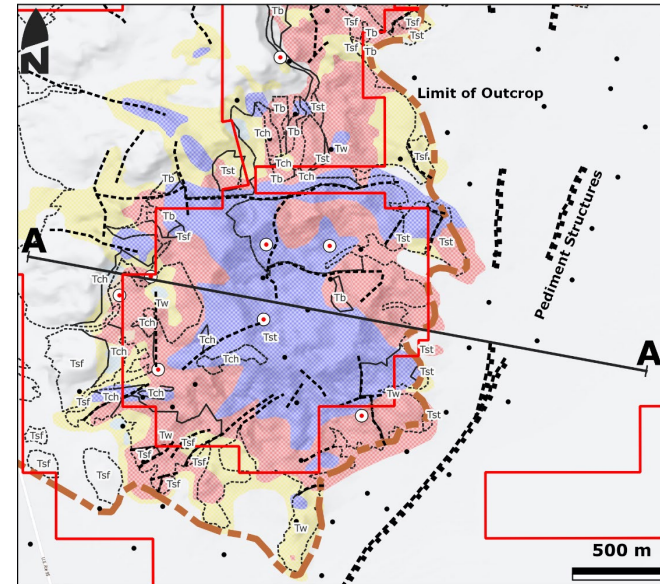
# Cuprite Geochemistry

- No known gold anomalism at surface
- Historic soil geochemistry outlines large mercury anomaly
- Mercury anomalism remains strong to limit of outcrop
- Mercury anomalism supported by cinnabar located on the eastern margin of the steam heated cell and small historic mercury workings



# Principal Target

- Primary gold target is represented by a series of faults – potential feeder structures – concealed beneath shallow gravel deposits at the eastern margin of the Cuprite alteration zone
- Shallow steam cap formed by westerly migrating fluids focused by westward rising volcanic stratigraphy and the eastward dip of fluid controlling structures

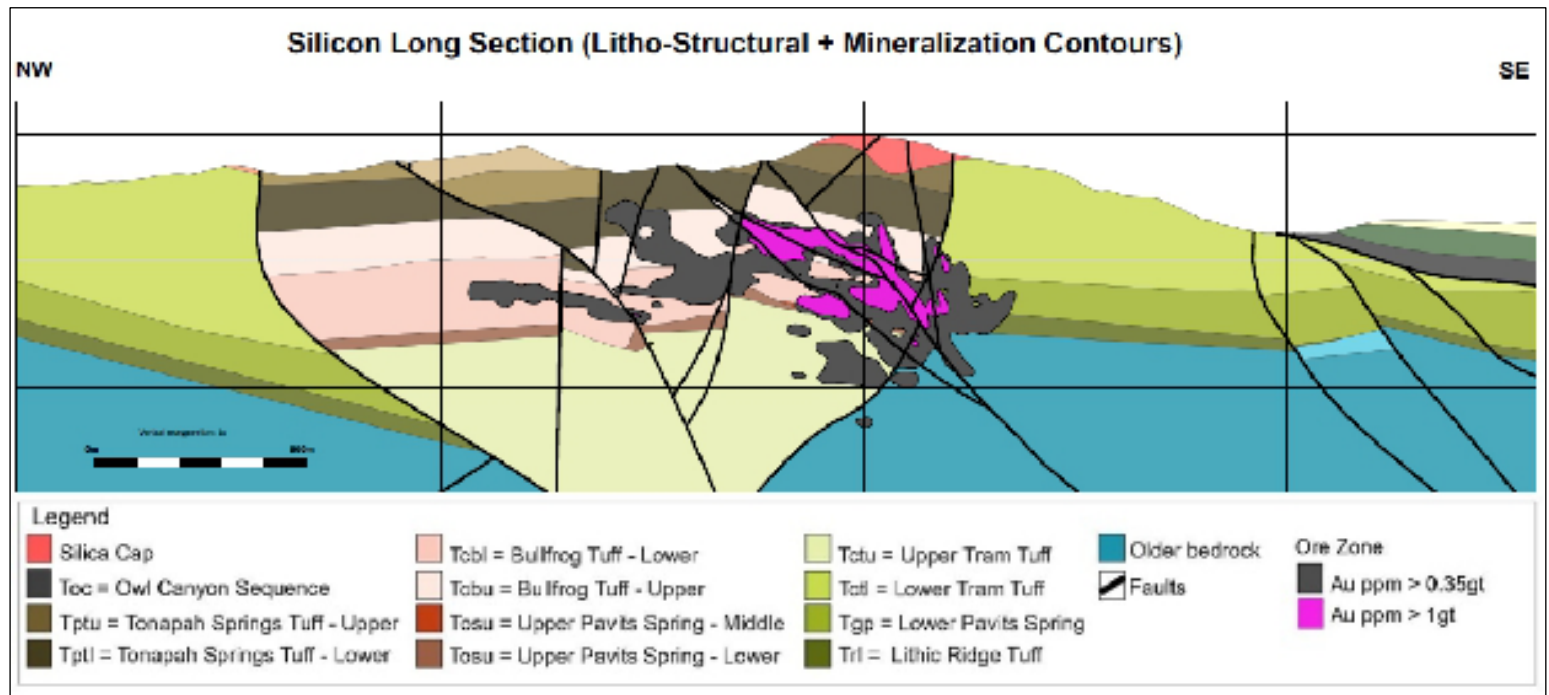
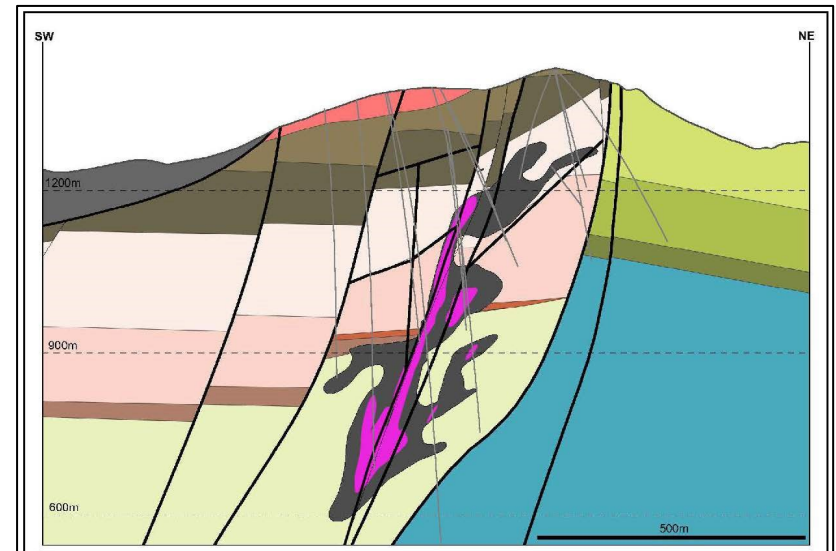




# Silicon Analog

Cuprite structural setting shares multiple similarities with the recent Silicon discovery (Inferred resource of 3.37 million ounces of oxide gold)

1. An extensive, strongly developed, gold-poor steam heated alteration zone
2. Anomalous mercury and cinnabar
3. Association with slab-window type magmatism
4. Location close to caldera margin in the Southwestern Nevada Volcanic Field



# Silicon Analog

**Powdery silica from shallow drilling at Silicon Central**



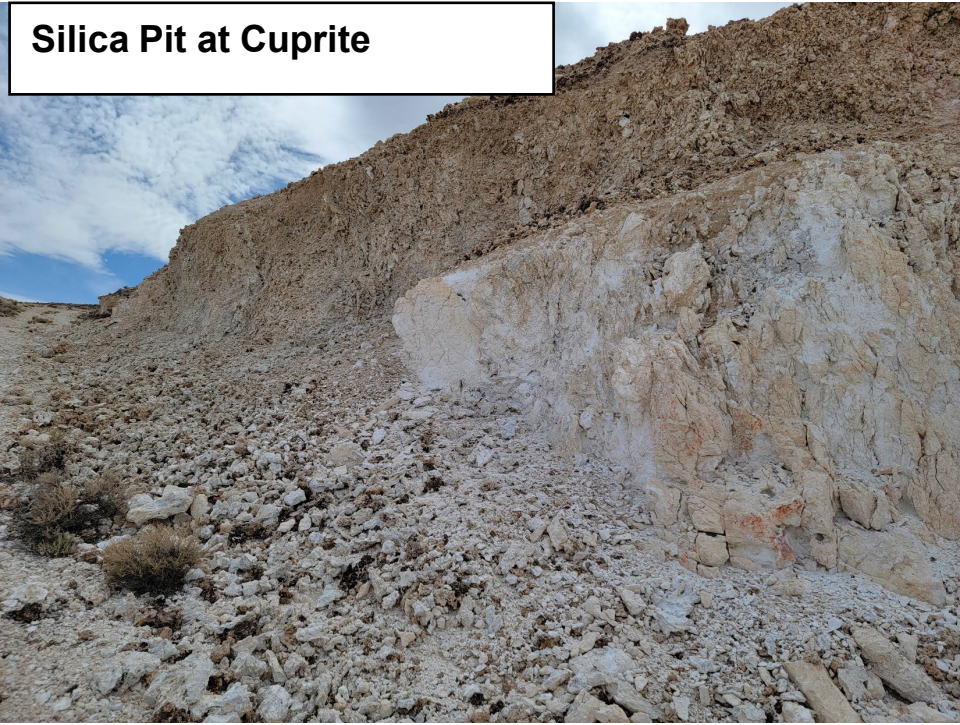
**Gold-pyrite mineralization downhole at Silicon Central**





# Silicon Analog

**Silica Pit at Cuprite**



**Silica Pit at Silicon Central**





# Silicon Analog

	<div> <b>SILICON CENTRAL</b> <b>CUPRITE</b> </div>	
REGIONAL SETTING	Walker Lane	Walker Lane
ASSOCIATED INTRUSIVE	Slab Window Calderas	Slab Window Calderas
ALTERATION	Multi-kilometre steam-heated cap	Multi-kilometre steam-heated cap
HISTORIC MINERAL OCCURRENCES	Silica, Mercury	Silica, Mercury, Sulfur, Clay
STRUCTURAL SETTING	Mineralization associated with regional normal faults; marginal to caldera	Regional normal faults proposed to control mineralization; marginal to caldera
EXPLORATION HISTORY	Minimal shallow drilling Focus on industrial materials	Minimal shallow drilling Focus on industrial materials
PREVIOUS BIASES	No gold at surface led to downgrading of the region	No gold at surface led to downgrading of the region

# Opportunity

- Large, untested, district-scale play
- One of the largest steam-heated cells in the Walker Lane. Open-ended to the east and south
- Alteration vectors into the eastern margin where the cell is covered by shallow gravel deposits
- Favorably oriented fault on the eastern margin represent potential feeder zones and the primary target at Cuprite
- Property ready for geophysical survey and drill testing
- Strong analog to Anglo's recent discovery at Silicon: Inferred resource of 3.37 millions ounces of oxide gold and 14.17 million ounces of silver<sup>1</sup>





## Contact

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