

### **Relative Timing of Au Mineralization at the Epithermal Calm Before the Storm Zone, Treaty Creek Area, Golden Triangle, British Columbia**

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The Golden Triangle area in northwest British Columbia is part of the North American Cordillera and comprises Triassic and Jurassic age rocks of the Stikine island-arc terrane. Porphyry Cu-Au, epithermal Au-Ag, and base metal volcanogenic massive sulfide deposits and occurrences are hosted along prospective horizons, commonly unconformities, or pre-existing lineaments.

The Treaty Creek area occurs at the north termination of the Sulphurets trend, a series of world-class Cu-Au porphyry deposits along a northerly structure. In Treaty Creek, the Goldstorm Au-Cu porphyry deposit (Indicated Mineral Resource of 730.2 Mt @ 1.19 g/t AuEQ) is linked with variably Au-mineralized epithermal-style systems, such as the Calm Before the Storm (CBS) zone.

The high sulfidation CBS zone comprises systematically zoned advanced argillic assemblages that formed at or within 1000 m of the paleosurface. Gold occurs in the alunite- and pyrophyllite- dominant zones; however, Au deportment is unclear. Petrographic and mineral chemistry studies suggest that Au is associated with pyrite, which is ubiquitous across the alteration assemblages. Pyrite grains rarely exceed 200 µm. Anhedrals pyrite (<50 µm) occurs dispersed in the host rock. Crosscutting veins contain pyrite as anhedral-subhedral grains with locally abundant inclusions, and as euhedral-subhedral clean grains, locally zoned with inclusion-rich rims or cores. Element maps acquired using laser ablation inductively coupled mass spectrometry are used to determine the deportment of Au and other elements hosted in pyrite.

Constraining the Au deportment will help resolve the relative timing of Au mineralization in relation to the advanced argillic alteration assemblages at CBS, the other epithermal Au-mineralized zones, and the paleosurfaces they represent. This will assist integration of the Goldstorm deposit with Treaty Creek's mineralized zones into a comprehensive model of the magmatic-hydrothermal system in the Treaty Creek area and aid exploration in the Golden Triangle and similar camps worldwide.