

Geochemistry and petrography of part of the Sprogge property, Yukon Territory

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Underlain by Hyland Group off-shelf Selwyn Basin sedimentary rocks, the Sprogge property contains mineralization in the form of quartz-arsenopyrite veins, pyrrhotite-bearing calc-silicate replacement horizons, and pyrrhotite (\pm chalcopyrite) pyroxene skarns.

On the property, the Hyland Group consists of the Precambrian Yusezyu Formation, a sequence of sedimentary lithologies consisting of limestone, sandstone, siltstone, and quartz-pebble conglomerate. These units are planar bedded and traceable along strike across the study area (4 km²) except where displaced by faults. Felsic to intermediate porphyritic dykes intrude stratigraphy in a steeply dipping north-south direction, coincident with regional structural trends. Minor diorite dykes and older mafic dykes are present. Hydrothermal alteration minerals consist of clinopyroxene, garnet, hornblende, wollastonite, muscovite, chlorite, and sphene. Large areas of biotite \pm cordierite, and calc-silicate hornfels

suggest the presence of a larger intrusive body at depth.

Analysis of 3,168 soil samples collected on a property-wide grid, demonstrates that lithologies are broadly mappable using the distribution of trace element soil concentrations. Thin sections of 24 representative samples of the dominant lithologies in the study area indicate that the region has undergone lower greenschist metamorphism and that skarns are pyrrhotite-bearing and that clinopyroxene has a salite to hedenbergite composition.

Concentrations of gold on the property are generally low (< 30 ppb) except where associated with quartz-arsenopyrite veins. These veins generally occur too sparsely and too far apart to be a viable exploration target. Isolated anomalous copper and base metal concentrations occur throughout the property; however, economic grades have not yet been discovered in sufficient quantity to motivate further mineral exploration.