

Geochemistry of, and mineralization at the Adeline Island Prospect, Seal Lake, Labrador

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The 1320 Ma Seal Lake Group consists of five formations viz. the Bessie Lake/Majoqua, the Wuchusk Lake, Whiskey Lake/Salmon Lake, Adeline Island, and Upper Red Quartzite Formations and is the youngest of the six Proterozoic supracrustal sequences that comprise the Central Mineral Belt of Labrador. This group is reputed to contain over 250 copper occurrences. Structurally the Seal Lake Group consists of a 200 km x 50 km folded syncline with structural detachment zones. Copper mobilization occurred along these thrust planes, presumably in response to the Grenville Orogeny. The mineralization was concentrated along these sheared zones in quartz veins that are syn- to post- D₁ folding. The Adeline Island Prospect consists of bornite, chalcocite, and ± pyrite hosted by pink-grey quartzite and green-black phyllite. The mineralization occurs in dissemi-

nated form analogous to the White Pine Deposits. All of these epigenetic occurrences appear to be the products of a single stage of mineralization, but the ultimate source of the fluids (magmatic and/or meteoric) is still a matter of some speculation. Preliminary geochemical and structural evidence, however, suggest that the copper was deposited as a product of hydrothermal fluid flow along fracture planes and was not leached from the surrounding sediments.

Previous assays from this showing have documented surface values ranging from 5.1% Cu over 0.84 m to 2.45% over 6.3 m. Grab sample collected during this study have values ranging from a low of 0.5% Cu up to 3.5% Cu. Analysis of other base metals has yielded negligible values.