

# From the Mineral Inventory Files

## The Lake Peter Gold Prospect: Is There a Granite Connection?

I delight in noting gold occurrences in Nova Scotia that don't conform to commonly accepted genetic models. Generally, most models propose that the metasediment-hosted, lode gold deposits of the Meguma Zone formed during folding associated with the Devonian Acadian Orogeny. Evidence supports this type of model for most deposits, but some exceptions also occur. One of these is at Lake Peter, Lunenburg County, and a recent visit leads me to believe that the gold prospect there is genetically linked to a granite-hosted mineral occurrence in nearby Upper New Cornwall (Fig. 1).

Lake Peter is located amid rolling hills and lakes east of Barss Corner in northern Lunenburg County. Prospector Frank MacDougall discovered thin gold-bearing quartz veins there in 1989. He explored the property under Gold Bank Resources Inc., and with an option to Wabana Explorations Inc., until 1997. Exploration consisted of prospecting, soil geochemistry, IP geophysics, trenching and a 17 hole diamond-drill program (2,231 m). These efforts unearthed several bedding discordant, gold-bearing quartz-pyrite-arsenopyrite veins and quartz stockworks. The veins are usually no more than 3-4 cm thick, but consistently return gold levels up to several grams per tonne. A bag full of quartz and sulphide chips I collected from a 4 cm thick vein in 1999 (Fig. 1) returned an impressive 78.5 ppm Au and 3.2 ppm Ag. In addition to the veins, Wabana found several zones of associated bleaching and carbonate alteration of the host Meguma Group metasilstone and slate that contain up to a few grams of gold per tonne. Encouraging results from the drill program led Wabana to recommend further exploration; however, the company disappeared, leaving behind several unpaid creditors, among them a couple of irate landowners.

Several features suggest that granite may be part of the genetic mix at

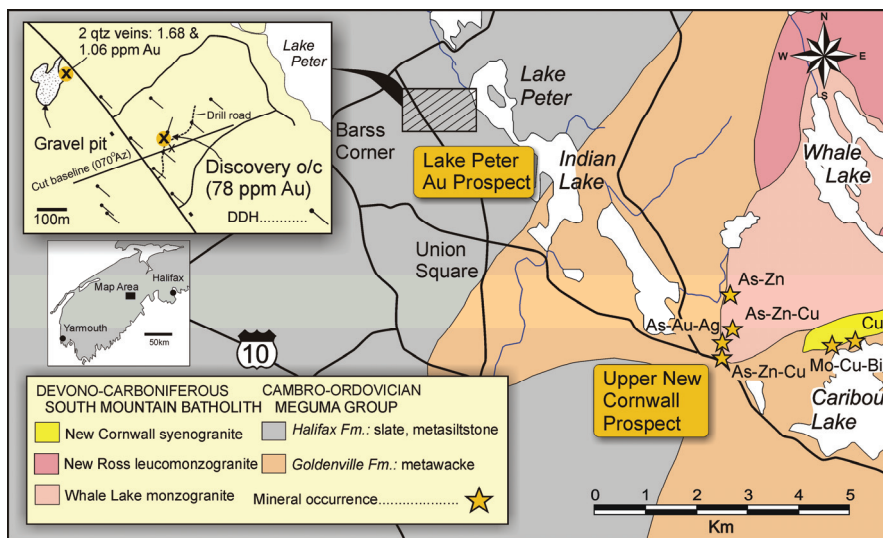
Lake Peter. All of the veins are discordant to bedding and fill northwest-trending extensional fractures, an orientation consistent with the trend of most of the quartz veins and greisens in the South Mountain Batholith (as determined by DNR geologist R. J. Horne). Particularly compelling is the restricted presence of well developed spotted hornfels in the slate units at Lake Peter, coincident with the veins and geophysical anomalies. The spotting is due to development of the metamorphic mineral cordierite and results from thermal metamorphism adjacent to granite intrusions. Years of working in granite terrains have convinced me that visible spotting of slate indicates that there is a granite contact within a few hundred metres. However, Lake Peter is several kilometres from any known granite intrusion (Fig. 1).

Could it be that a satellite pluton of the South Mountain Batholith sub-crops below Lake Peter? If so, then perhaps this pluton is similar to the granite at Upper New Cornwall, 5-6 km to the southeast. In the early 1980s, Kidd Creek Mines Limited explored the New Cornwall area for Sn-W and

found several sites of Zn-W-Mo mineralization. These sites are associated with well developed zones of greisen and albitite (Na-altered granite) in the exo-contact of the Whale Lake monzogranite extending into Meguma Group country rock (Fig. 1). Kidd Creek was intrigued by the presence of rubble crop (loose boulders almost in place) of quartz veins intruding altered monzogranite in which levels reached up to 1,000 ppb Au and 6 ppm Ag. One such boulder I analyzed in 1987 returned levels of 2,010 ppb Au and 11 ppm Ag as well as >6,000 ppm As, 2,154 ppm Cu, 300 ppm Bi and 200 ppm Co. The greisen and albitite selvage to the vein indicates it formed by the same processes that produced the typical granitic-style Zn-W-Mo enrichment.

It seems entirely possible that a precious metal-rich mineralizing system similar to that of granitic origin at Upper New Cornwall also existed in the Lake Peter area. Hydrothermal fluids escaping this granite likely formed the Lake Peter veins and alteration zones in metasediments adjacent to or above the satellite pluton.

G. A. O'Reilly



**Figure 1.** Geology of northern Lunenburg County showing locations of the Lake Peter gold prospect and Upper New Cornwall Zn-Cu-Mo prospect.