

## **Mesothermal lode gold in the Davidsville Group, eastern Dunnage Zone, central Newfoundland, Canada**

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Gold mineralization was first noted in quartz veins in “silky bluish slates” on the Gander River by Alexander Murray and James Howley in 1876. No attention was paid to this discovery until the late 1970s when Frank Blackwood, while mapping for the provincial government, discovered Au/As mineralization along the Gander River Ultrabasic Belt (GRUB) Line near Jonathan’s Pond. Subsequent gold exploration, using widely spaced till sampling, pioneered by Noranda in the early 1980s, resulted in the discovery, through prospecting follow up, of many gold showings between Gander Lake and Gander Bay on the coast, including the Knob, Bullet, Big Pond, Goldstash, Bowater, Duder Lake and many others.

The area lies in the Exploits subzone near the eastern edge of the Dunnage Zone in units of the Davidsville Group (DG), a NNE-trending belt of mainly slate, interbedded with thick, coarse-grained greywacke units and intruded by linear, mafic to ultramafic, dykes that trend NNE and NNW and are thought to dip subvertically. Alteration, associated with quartz veining and gold mineralization, includes sericite and iron carbonate, most intensely developed proximal (~20 m) to the main auriferous, quartz-veined zones, with the iron carbonate occurring locally as “spots” in the sedimentary units. Finely disseminated pyrite, coarse granular pyrite and arsenopyrite as fracture fillings and porphyroblasts (up to 3 cm), which cluster along bedding planes, are associated. Chlorite is noted in late fractures and veinlets.

Two, linear, NNE-trending, structurally related zones carrying extensive gold mineralization, including visible gold (VG), the Appleton Linear (AL) and Joe Batts Pond (JBP), which lie approximately 5 km apart, and can be traced for over 15 km each from Gander Lake to the north, are well defined in the Glenwood – Appleton area. Gold mineralized zones along the AL include: Dome, Road, Keats-Baseline, and Lotto on the east side and the Cokes, Hornet, Little, Powerline and Trench 26 on the west side, with extensive VG noted on the east side. Drilling has given values to 8.8 g/t Au over 4.3 m incl. 61.3 g/t Au over 0.6 m in LG-11 (Keats zone). On the JBP, two significant zones – H Pond and Pocket Ponds, approximately 2 km apart, have been defined by diamond drilling with values to 11.11 g/t Au / 11.9 m incl. 255 g/t Au / 0.5 m in HP-08-48 (Pocket Ponds).

The mineralized quartz veins both cross-cut the  $S_1$  foliation and is folded by the  $F_1$  fold system, interpreted to indicate that they are a late syntectonic structural feature. Textures in deformed veins are heavily modified; however, vugs with druzy quartz crystals and remnants of quartz crystals, formed perpendicular to the vein margin, suggest that the veins formed as extensional veins (Calon and Buchanan -2004). Recent staking over the known gold showings and Au in till anomalies along the trend to the north and south of Gander Lake indicates that the systems have yet to be fully explored. It is anticipated that more discoveries will be made over the next few years.