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**Mesoproterozoic (?) monzodiorite-syenite hosted  
Au-Ag-Te mineralization at the Aucoin Prospect  
(NTS 13N/6) Hopedale Block, Labrador**

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The Aucoin gold prospect is located 70 km west of Hopedale in the Archean Hopedale Block of Labrador (NTS 13N/6). Remarkably, it represents one of only two examples of gold mineralization in Labrador that have been tested by drilling. It was discovered in 1995 via ground prospecting in the vicinity of a single gold-in-lake sediment geochemistry anomaly, obtained from a regional government survey. Trenching and grab

sampling have yielded assays of up to 478 g/t Au with >100 g/t Ag and, diamond drilling has yielded intercepts of up to 12.4 g/t Au with 14g/t Ag over 1.05 m.

The mineralization occurs within an array of anastomosing, discontinuous, NE- and NW-trending white quartz veins (typically <20 cm wide) that are associated with a NW-SE-trending, strongly chlorite-ankerite-epidote-talc  $\pm$  sericite altered and sheared curvilinear contact zone between massive to weakly foliated syenite and cogenetic monzodiorite. The weak foliation is interpreted as primary magmatic layering. High gold assays correlate with elevated silver and tellurium, reflected by the presence of argentiferous electrum and Ag-Au telluride (petzite?) occurring as inclusions in pyrite, chalcopyrite, and in association with rutile replacing ilmenite. Rare wire gold has been reported at the margins of the veins.

The Aucoin mineralization was previously inferred to be hosted by Archean granitoid gneisses. These are cut by 2235 Ma, vertical diabase dykes with chill margins that were inferred to correlate with the regionally extensive Kikkertavak dyke swarm. Based on the presence of mineralized “diabase dykes” the mineralization was inferred to be younger than the Kikkertavak dykes but likely Paleoproterozoic in age. The fresh igneous nature of the unaltered syenite and monzodiorite host rocks to the mineralized quartz veins, along with their alkaline character, however, suggests an alternate interpretation. The alkaline host rocks are herein inferred to correlate with either the ca. 1500–1420 Ma, intermediate rocks of the Harp Lake Complex or, alternatively, those of the 1350–1290 Ma Nain Plutonic Suite. If this inference is correct, then precious metal mineralization at Aucoin is likely Mesoproterozoic or younger in age and may have a direct magmatic connection with the alkaline plutonic host rocks. Further geoscientific data acquisition, including U-Pb geochronology of the syenite and  $^{40}\text{Ar}/^{39}\text{Ar}$  thermochronological investigations of alteration are currently underway.