

Geology of a mineralized belt along the southeastern contact aureole of the Poklok Batholith

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The Pokiok Batholith lies at the boundary of the Miramichi Terrane and the Fredericton Cover Sequence in southwestern New Brunswick. The present investigation is confined to a mineralized belt along the southeastern contact of the intrusion. This entire belt lies within turbidites of the

Fredericton Cover Sequence. The Lake George Antimony-Gold Deposit is the largest known deposit in the area.

The turbidites of the Fredericton Cover Sequence are composed of medium- to thick-bedded, medium to dark grey calcareous greywacke intercalated with thin beds of black

slates. The outer contact aureole is reddish brown due to the presence of biotite. The inner contact aureole is also reddish brown and is characterized by biotite and micaceous aggregates replacing andalusite and/or cordierite. The most calcareous turbidite beds in the contact aureole have been replaced by skarn and are more common within the andalusite and/or cordierite isograd.

On the southwestern side of the Saint John River, the turbidites are deformed by open folds with interlimb angles of 80° to 90° that plunge either to the north or south. The cleavage strikes approximately north-south, dips steeply either to the east or west, and appears to transect the axial surfaces of the mesoscopic folds at a small angle. The main cleavage on the northeastern side of the Saint John River strikes more northeasterly and, locally, is overprinted by a second cleavage striking approximately north-south and

dipping 30° to 60° to the east. The second cleavage overprints the retrogressed porphyroblasts in the contact aureole, suggesting that this cleavage postdates the emplacement of the batholith. However, no deformation has been found in the batholith.

The Lake George Antimony-Gold Deposit lies within the contact aureole of a monzogranite cupola fringing the Pokiok Batholith. Tungsten and molybdenum are associated with skarn alteration whereas the antimony-gold mineralization is associated with younger sericitic alteration. The gold is associated with arsenopyrite-bearing zones within areas of sericitic alteration. Tungsten-gold mineralization in the Coac Stream area northeast of Lake George occurs in quartz veins associated with an east-west-trending shear zone. Gold occurrences in the contact aureole near Springfield are hosted by an east-west-trending hydrothermal breccia zone.