

TILL GEOCHEMISTRY AND EXPLORATION FOR GOLD
IN NORTHERN NEW BRUNSWICK

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Within two years after the discovery of Lacana's "Elmtree gold," at least a half dozen other showings have been found throughout northern New Brunswick. Several of these are located in the Upsalquitch Forks area and appear to be related to the Rocky Brook-Millstream fault zone. No showings associated with this fault are known in the Tetagouche Lakes area (21 0/9), situated between the Elmtree-Au find and the Upsalquitch Forks map sheet (21 0/10), but Northumberland Mines has drilled gossan developed over the Murray Brook sulphide deposit and proven minable reserves of gold.

A regolith-mapping and till geochemistry survey was carried out in the Tetagouche Lakes area during the summer of 1985 and in the Upsalquitch Forks area in 1986. Initially a forestry-related study, it has proven to be successful in outlining target areas for further gold exploration. B- and C-horizon basal till samples were taken on a 2 km

grid and analyzed for Cu, Pb, Zn, Ag, Mn, Fe, Ni, Co, Cd, Mo, As, Sb, and Au.

One of the problems in geochemical exploration for gold is the reproducibility of analytical results. Traditionally in soil surveys, the -80 mesh fraction and heavy mineral concentrates have been used, but in the last few years, more emphasis is being put on analyzing the -250 mesh fraction (clay plus silt). Further attention was given to the clay fraction analysis used by the GSC in regional surveys and comparison was made with the -250 mesh fraction. The latter is less costly and seems more advantageous in New Brunswick with its locally derived tills and heterogeneous bedrock. Satisfactory site to site correlations can be made and regional patterns outlined.

A more detailed survey using the -250 mesh fraction or humus samples would be a cost-effective means for following up detected anomalies.