

Distribution and origin of felsic volcanic rocks, Tetagouche Group, Bathurst Mining Camp

N. Rogers and C.R. Van Staal

Continental Geoscience Division, Geological Survey of Canada, 601 Booth Street, Ottawa, Ontario K1A 0E8, Canada

The Middle Ordovician Tetagouche Group felsic volcanic rocks have been subdivided into four formations, intrusive units, and later comendites based on detailed petrology and geochemistry. Felsic volcanism commenced early in the depositional history of the Tetagouche Group and is represented by the Spruce Lake and Nepisiguit Falls formations. The Spruce Lake Formation occurs in a number of thrust sheets and consists of chemically distinct feldspar-phyric dacites to rhyodacites. These rocks were deposited at discrete volcanic centres. The Nepisiguit Falls Formation mostly consists of pyroclastic quartz-feldspar porphyries that occur stratigraphically immediately below the Brunswick No.

12 massive sulphide deposit. These two formations are overlain by the predominately aphyric ignimbrites and rhyolite flows of the Flat Landing Brook Formation. A region of coarse volcanic breccias in this formation is interpreted to be the remnants of a caldera. All three formations originated in response to partial melting of thinned and heated heterogeneous basement rocks. The youngest felsic volcanic rocks are comendites that are likely the extreme fractionates of alkalic basalts and occur as a minor component of the Boucher Brook Formation, which overlies the Flat Landing Brook Formation.