

Petrology of the Chuggin Road complex, Creignish Hills, Cape Breton Island, Nova Scotia, Canada

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The Chuggin Road complex is located in west-central Cape Breton Island at the northeastern tip of the Creignish Hills. It is situated in the Bras d'Or terrane, which is characterized by Neoproterozoic metasedimentary and plutonic rocks. The Chuggin Road complex is part of the Bras d'Or metamorphic suite, characterized by high-grade metamorphic units. An orthogneiss in the Chuggin Road complex previously yielded a U-Pb (zircon) age of 561 ± 3 Ma, interpreted to represent the igneous crystallization age of the tonalitic protolith of the orthogneiss and providing a minimum age for the metasedimentary components of the complex. However, the associated metamorphic and igneous rocks have not been examined or compared to other parts of the Bras d'Or metamorphic suite elsewhere in the Bras d'Or terrane, which is the goal of the present study. Eighteen samples were collected from the varied igneous and metamorphic rocks exposed in two quarries near Chuggin Road in order to investigate their petrography, mineral chemistry, and whole-rock chemistry. Samples include mafic orthogneiss, biotite-rich gneiss, mingled diorite and granite, hornblende, tonalite, quartzite, quartzofeldspathic banded gneiss, calc-silicate rock, and marble. The rocks are cut by faults, sulphide-bearing shear zones, and mafic dykes. In the western side of one of the quarries, interlayered quartzite and marble are overthrust by gneiss. [Poster]