

Application of mineral and whole rock analysis in identification of petrogenesis of the pillow lavas in the Nain ophiolite

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Abstract: Pillow lavas are one of the important rock units of Nain ophiolite. Rock forming minerals of Nain ophiolite pillow lavas are chloritized olivine, plagioclase, clinopyroxene (augite), Cr-spinel, magnetite, amphibole, chlorite, pumpellyite, epidote, prehnite and calcite. Whole rock geochemical analyses and composition of clinopyroxenes and chromian spinels of these rocks indicate that they are similar to mid-ocean ridge basalts. These lavas are basalt to andesite in composition and produced by high degree of partial melting of a depleted mantle lherzolite. According to their field studies, petrography, mineral and whole rock geochemistry, they have undergone sub-sea floor metamorphism and changed to spilite. Application of clinopyroxene thermometry shows that they have formed at 1058 to 1170 °C.

Keywords: *Petrology, Ophiolite, Pillow lavas, Nain.*