

Geology of the Meguma Group, Kennetcook (NTS Sheet 11E/04)

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The Cambrian-Ordovician Meguma Group within the Kennetcook area (NTS sheet 11E/04) consists of the lower metasandstone-dominated Goldenville Formation and overlying slate-dominated Halifax Formation. The Goldenville Formation has not been subdivided and consists of thickly-bedded metasandstone with lesser thin green metasilstone and rare dark slate beds. Carbonate concretions are locally common at the top of the Goldenville Formation. The Halifax Formation has been subdivided into three conformable stratigraphic members. The lowermost Beaverbank member, which conformably overlies the Goldenville Formation, consists of distinctive metasilstone characterized by brown (Mn-rich?) laminations and, locally, distinctive orange, carbonate-rich laminations. The Cunard member overlies the Beaverbank unit and consists of sulphide-rich black slate and thin metasilstone beds. Locally this unit is subdivided into a lower sulphide-rich unit and upper sulphide-poor unit. The uppermost Glen Brook member consists of green-gray, banded metasilstone/slate. This unit is extremely monotonous and, except for a few beds near the bottom, devoid of metasandstone. Stratigraphy of the map area is clearly reflected by aeromagnetic data.

Northeast-trending, kilometre-scale, regional folds (F_1) are the dominant structure of the area and include the Rawdon Synclinorium and Renfrew Anticlinorium. At the present level of erosion these structures are defined within the Halifax and Goldenville formations respectively. The Rawdon Synclinorium is slightly inclined to the south and plunges moderately to the northeast. Minor folds are common within the Glen Brook member (core of the synclinorium) and are defined by bedding-cleavage relations and parasitic fold geometry. These folds define upright to inclined plunging structures which

plunge northeast or southwest. The Renfrew Anticlinorium defines a modified box-fold, where the Renfrew and Rawdon Gold Mines anticlines represent the hinges of the box fold and the Long Lake Syncline represents the folded, flat top of the box fold. All F_1 folds are upward facing and associated with a common, axial planar cleavage. Joints, kink folds, veins and other minor structures are ubiquitous and define systematic regional trends related to the fold geometry.

Several regional-scale faults occur within the area. The Rawdon Fault is a major northeast-trending structure along the northern margin of the Rawdon Synclinorium which separates the Rawdon Block, including the Meguma Group and locally attached Horton Group, from the Carboniferous Kennetcook Basin to the north. A wide zone of fault-related deformation occurs within the Meguma Group adjacent the fault, including F_2 folds, locally developed crenulation cleavage (S_2), northwest-trending extensional veins, and south-dipping brittle faults. Geophysical data and diamond drill holes indicate a steep attitude with significant dip slip offset and the fault is interpreted as a northwest-directed reverse fault. The northeast-trending Roulston Corner Fault is defined by a narrow cataclastic zone within the Goldenville Formation south of the Rawdon Synclinorium. The Rawdon and Roulston Corner faults bound an elevated plateau (Rawdon Hills), and may define a horst structure. Several small-scale, northwest-trending faults occur throughout the area and may be related to kinks.

Several mineral occurrences occur within the Meguma Group in the area, including several past producing gold and antimony-gold deposits. A slate quarry within the Glen Brook member is currently producing flagstone and tiles.