

Intrusion-related precious-metal mineralization in the northern Mount Peyton intrusive suite: implications for the origin of the Mount Peyton trend, central Newfoundland, Canada

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Exploration, west of Glenwood in the Mount Peyton intrusive suite, has outlined a 13.5-km, north-northwest-trending corridor, termed the Mount Peyton trend, which is anomalous in gold, silver, arsenic, and antimony. In the south-southeast part of the trend, mineralization occurs at the Corsair, Hurricane, and Peyton prospects and the Sabre and Commanche showings; in the north-northwest, mineralization occurs at the Slip and associated showings. Mineralization at Corsair and Hurricane consists of narrow (typically <2 cm), sulphide-poor quartz veins that have broad (cm- to 13 m-scale) pyrite–arsenopyrite–sericite–siderite–silica alteration envelopes in fine-grained quartz diorite, locally intruded by monzogranite. The alteration zones and mineralized veins are northeast trending and moderately southeast dipping, and veins at surface correlate with one set of conjugate regional joint surfaces. Mineralization at Hurricane–Corsair has elevated concentrations of As, Au, Sb, Ag and locally Cd. At the Slip showing, gabbro–diorite is cut by straight margined, miarolitic monzogranitic dykes containing pyrite–muscovite–calcite–chalcopyrite ± galena ± arsenopyrite-filled miarolitic cavities that have anomalous Au, As, Sb, and Ag, and enrichment in Cu, Pb, Zn, Mo, and Bi. The data show that the mineralized monzogranite at the Slip showing is a late-stage, deuteric fluid-enriched and metal-bearing residual magma that intruded a slightly older gabbro–diorite. A CA-TIMS U–Pb zircon crystallization age of 418 ± 1.6 Ma constrains the age of the miarolitic monzogranite and 'intrusion-related' gold mineralization and places a minimum age on the gabbro–diorite and granophyric monzogranite. Similar metal enrichments along the length of the Mount Peyton trend suggest that the metal endowment of this mineralized corridor may be, at least, in part, a result of contributions from such, 'intrusion-related' fluids. The Hurricane–Corsair mineralization and that along the length of the trend may represent more distal, vein-related, disseminated mineralization structurally above miarolitic granite dykes and cupolas.