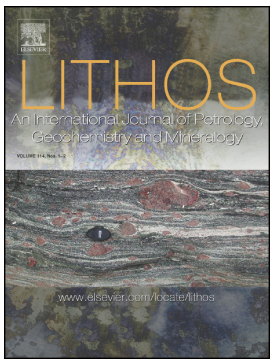

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Petrology, chronology and sequence of vein systems: systematic magmatic and hydrothermal history of a major intracontinental shear zone, Canadian Appalachians

Georgia Pe-Piper[a*], David J.W. Piper[b], Chris R.M. McFarlane[c], Chris Sangster[a], Yuanyuan Zhang[a], and Brandon Boucher[c]

[a] *Department of Geology, Saint Mary's University, Halifax, Nova Scotia B3H 3C3, Canada*

[b] *Natural Resources Canada, Geological Survey of Canada (Atlantic), Bedford Institute of Oceanography, P.O. Box 1006,Dartmouth, Nova Scotia B2Y 4A2, Canada*

[c] *Department of Earth Sciences, University of New Brunswick, 2 Bailey Drive, Fredericton, NB E3B 5A3, Canada*

* Corresponding author. E-mail address: gpiper@smu.ca (G. Pe-Piper).

ABSTRACT

Intra-continental shear zones developed during continental collision may experience prolonged magmatism and mineralization. The Cobequid Shear Zone formed part of a NE–SW-trending, orogen-parallel shear system in the late Devonian–early Carboniferous, where syn-tectonic granite-gabbro plutons and volcanic rocks 4 km thick were progressively deformed. In late Carboniferous to Permian, Alleghanian collision of Africa with Laurentia formed the E–W trending Minas Fault Zone, reactivating parts of the Cobequid Shear Zone. The 50 Ma history of hydrothermal mineralization following pluton emplacement is difficult to resolve from field relationships of veins, but SEM study of thin sections provides clear detail on the sequence of mineralization. The general paragenesis is: albite ± quartz ± chlorite ± monazite → biotite →