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SYNTHESIS OF THE EASTERN PART OF THE BLAKE RIVER GROUP, PHASE 1 : AREA TO THE EAST OF THE RUISSEAU DAVIDSON FAULT (32D/07 SE)

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Synthesis of the eastern part of the Blake River Group, phase 1: area to the east of the Ruisseau Davidson Fault (32D/07 SE)

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ABSTRACT

The study of the eastern part of the Blake River Group was undertaken in the summer of 2003 to define the stratigraphy, volcanology, and structural characteristics of the Renault-Dufresnoy Formation and adjacent units. Comparing these characteristics with those of the Bousquet Formation farther east will lead to a better understanding of the tectonic and volcanic evolution of this part of the Blake River Group. Among other things, this knowledge will allow us to evaluate the discovery potential for Bousquet-LaRonde type gold-bearing, volcanogenic, polymetallic sulfides of the within the Renault-Dufresnoy Formation.

Preliminary results allow the division of the Renault-Dufresnoy Formation (2697.3 ± 0.8 Ma) into ten informal lithostratigraphic units. These ten units are grouped into five suites of distinct magmatic affinity ranging from tholeiitic to transitional. Rocks belonging to these various magmatic suites are interstratified and some suites are repeated within the volcanic sequence. The volcanic rocks fall into bimodal compositional groups composed of andesitic basalt and rhyolite. Dacite and rhyodacite are rare.

Volcanoclastic rocks (fine- to coarse-grained tuff, lapilli tuff, block tuff breccia) are rare. The area is underlain mostly by massive and pillowed mafic volcanic rocks and massive rhyolites. Hyaloclastic lobe flows, flow banding structures, and block tuff occur locally. The flows and felsic volcanic material seem to have originated from two main volcanic centres.

Using molar shaped pillow lava tops and polarity reversals, four new major axial planes have been defined. Deformation in the area is heterogeneous, ranging from weak to intense. Deformation is strongest near fold axes and along fault zones such as the Lac Imau Fault. This fault separates the folded rocks of the Renault-Dufresnoy Formation from the homoclinal sequence which constitutes the Hébécourt Formation.

The geological context of the Renault-Dufresnoy Formation appears to differ from that of the Bousquet Formation. However, hydrothermalism was synchronous in the two areas and the gold content of the Bouchard-Hébert mine is rather high. These facts suggest that the two areas are somewhat similar and that potential exists for the discovery of gold-bearing, volcanogenic massive sulfide (VMS) deposits. Regardless of these facts, the potential for discovering Zn-Cu-rich, VMS mineralisation in the Renault-Dufresnoy Formation remains high.

The study will continue in 2004 with the geological mapping of the area between Rouyn-Noranda and the Ruisseau Davidson Fault.