

massive sulphide (VHMS) deposit just outside Flin Flon, Manitoba. The deposit occurs in the Flin Flon Volcanic Belt (FFVB) of 1.90–1.87 Ga age, in basaltic and rhyolitic volcaniclastic rocks and flows and correlates stratigraphically with the Flin Flon and Callinan VHMS deposits. Fourteen geochemical samples and 21 thin sections from drill core 4Q71W15 through the massive sulphide and host bimodal volcanic layers were used to study the sulphide and Au petrology and geochemistry of the deposit. This study is expected to provide new information that can be used to improve gold recoveries from the Triple Seven Zn-Cu deposit.

The rocks that host the deposit are chlorite- and sericite-altered porphyritic rhyolite, and these lie between basaltic volcanic breccias and flows in the footwall and hanging wall. Massive sulphide comprises two stacked zones. The lower zone is zinc and precious metal-rich consisting of pyrite, sphalerite, chalcopyrite, and pyrrhotite with minor galena and arsenopyrite. The upper zone is copper-rich, significantly smaller, and characterized by chalcopyrite, pyrite, and pyrrhotite with minor chalcocite. Stockwork mineralization consisting of chalcopyrite and pyrrhotite exists beneath massive sulphide, which exhibits local brecciation and minor layering. Microprobe analyses confirm the presence of native silver, which is associated mostly with arsenopyrite. Microprobe and geochemical data have been collected for the study of the sphalerite geobarometry and determination of where gold occurs within the massive sulphides.

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**Petrology of the Triple Seven Zn-Cu volcanic hosted massive sulphide deposit, Flin Flon, Manitoba**

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In 1993, Hudson's Bay Exploration and Development Ltd. (HBED) discovered the Triple Seven Zn-Cu volcanic-hosted