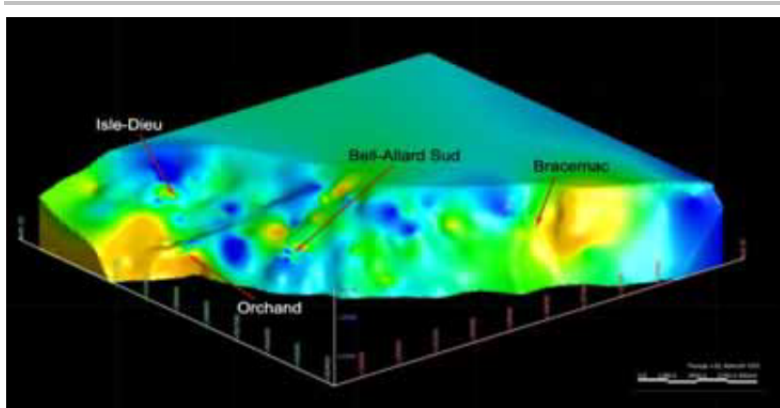


2007-5: Hydrothermal overprint in the roof of VMS deposits

Project 2007-05 focused on hydrothermal alteration in the roof of volcanogenic massive sulphide deposits. Hydrothermal alteration of VMS is relatively well understood in the walls of mineralised bodies, but the roof is usually less well documented. The purpose of the project was to determine if there is alteration detectable in the roof of the body created strictly by an exhalative process and where there is an absence of telescoping. Following verification of several sites of interest to test the hypothesis, the Matagami mining camp was selected because of the great amount known about it and for the quality of the available data.

Available lithogeochemical data belonging to Xstrata Zinc was analysed to determine 43 alteration indicators listed in the literature. The calculations were made using CONSOREM tools. The analyses were represented using 3D surface interpolation by successive sections above the mineralised horizon, in this case the Key Tuffite (figure attached). Results show that hydrothermal alteration is detectable up to about 30 metres above the Matagami camp deposits. The alteration is more extensive where there is telescoping and is relatively similar to the wall alteration. The best roof / wall discriminator is a strong positive MnO anomaly (halo).



Representation of the roof alteration at 10 m from the Key Tuffite, Matagami, determined using relative mass balance calculation. Shades of blue represent areas of mass loss, whereas shades of yellow represent mass gains.

Project 2007-5: Summary	
Objectives	<ul style="list-style-type: none"> • To test the hypothesis that there is a specific alteration overprint in the roof of a volcanogenic massive sulphide lens. • To establish the signature of this alteration and to propose exploration strategies adapted to this setting.
Results	<ul style="list-style-type: none"> • Low volume alteration halo detectable up to 30 m above the Malartic camp deposits. • Gain in MnO in the roof appears to be a significant factor.