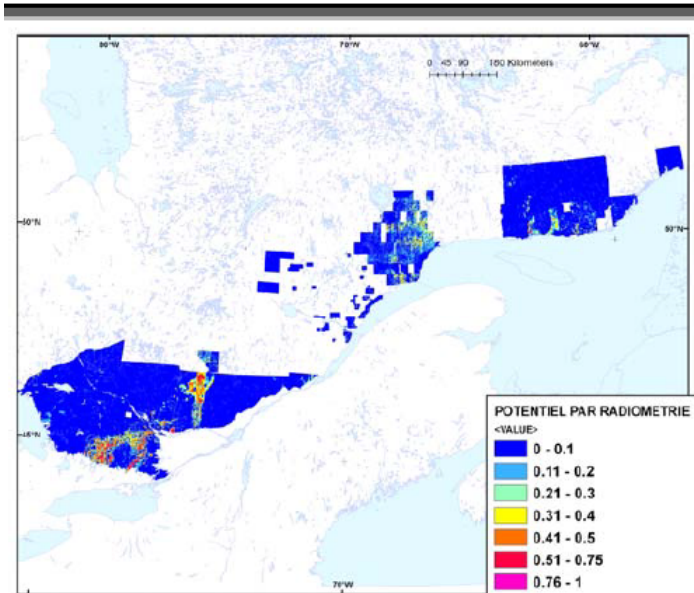
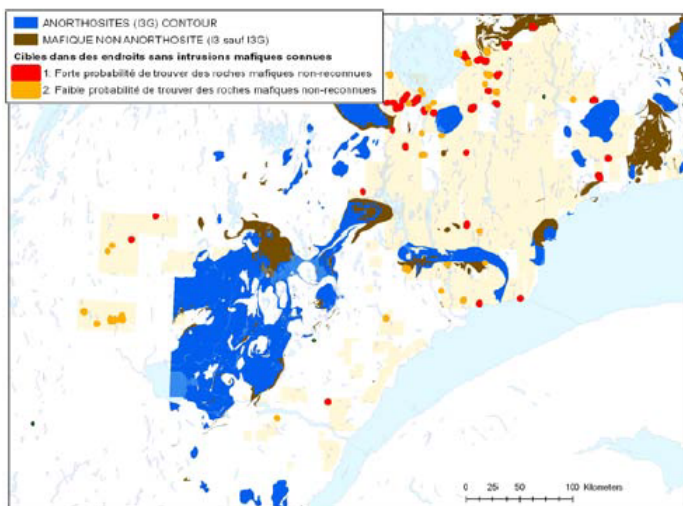


2007-2: Development of radiometric data for Uranium and Ni-Cu-PGE exploration in the Grenville Province (phase 2)

This project is a continuation of project 2006-5 that helped develop an acquisition and semi-automated digitisation technique for analog radiometric surveys (property of SOQUEM). In 2007, several other areas of the Grenville Province were analysed, generating new uranium exploration targets. Project 2007-2 consists of two sections: the first is a Proterozoic iron oxide-type U and Cu-Au-U mineralisation (IOCG) and the second is a magmatic Ni-Cu mineralisation.



New Grenville mineral potential map created in 2007-2008 using radiometry for Rössing-type uranium.



Magmatic Cu-Ni potential identified based on known magmatic rocks (other than anorthosite).

The first phase of the project improved the quality of the radiometric surveys already undertaken in project 2006-5. Quality control was applied to the surveys and digitising errors were corrected. In addition, new surveys (17,300 km of lines) were digitised from analog SOQUEM data during the project. The procedures used were those developed in project 2006-5. The final version of the map for Rössing-type uranium potential was generated with the new data (see figure). In addition, integrating digitised radiometry and other public data, a map of IOCG-type Cu-Au-U deposit potential was produced. The project also helped solve problems associated with stream sediment normalisation using the methods developed in project 2004-09.

The second phase of the project aimed to identify areas favourable for containing previously unknown mafic / ultramafic intrusions. A method of filtering the radiometry for low points caused by lakes and swamps was developed and the results were combined with magnetic and geochemical data to identify potential mafic / ultramafic intrusions. Targets for magmatic Cu-Ni were also generated (figure attached).

After an intensive campaign of digitisation, the Grenville radiometry project generated several exploration targets.

Project 2007-2: Summary

Objectives	<ul style="list-style-type: none"> • To identify new areas in the Grenville Province with potential for Proterozoic iron oxide-type U and Cu-Au-U mineralisation (follow-up to 2006-05) – development of SOQUEM and GSC radiometric data. • To identify new areas in the Grenville Province with potential for magmatic Cu-Ni mineralisation exploration. • To propose favourable areas that may contain previously unknown mafic / ultramafic intrusions. • To develop an interactive database that compiles the mafic / ultramafic intrusions of the Grenville Province and the important characteristics of the intrusions for magmatic Ni-Cu exploration.
Results	<ul style="list-style-type: none"> • New radiometric map for the Grenville Province generated by digitising SOQUEM surveys. • Mineral potential maps created for Rössing-type U and IOCG-type Cu-Au-U mineralisations. • Many exploration targets were identified as much for U, Cu-Au-U as for magmatic Cu-Ni.
Innovations	<ul style="list-style-type: none"> • New methods for digitising and filtering radiometric survey data. • New predictive mapping method for mafic / ultramafic intrusions.