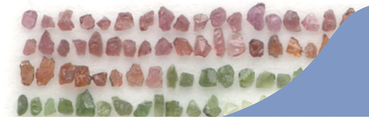

SURFICIAL GEOCHEMISTRY AND INDICATOR MINERAL DATABASE COMPILATION

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Ontario

Ontario Geological Survey

Introduction

Over the years, the Sedimentary Geoscience Section of the Ontario Geological Survey (OGS) has generated large volumes of project-related data, including lake sediment and lake water geochemistry, indicator mineral data and overburden geochemistry. A database compilation was undertaken to consolidate the data, with the following objectives:

- Enable clients and ministry staff to more easily use data spanning different study areas, thus increasing the usefulness of the data.
- Provide data to Internet applications, increasing accessibility of the data.
- Provide a safe, long-term data repository.

The database contains information from 79 published digital data sets, and is current to mid-2003. It contains information about 67,746 sample locations, 142,849 samples, and 5,909,874 surficial geochemistry values (December 2004).

The database has also been called the Sedimentary Geoscience Observations (SGO) database.

Database development

- Data modeling was led by Land Information Ontario (LIO) analysts.
- The process involved client consultation and working group meetings.
- An existing OGS pilot database, the OGS lithogeochemistry database, and the Geological Survey of Canada (GSC)/ Canadian Geoscience Knowledge Network (CGKN) geochemistry database were considered.
- A pilot Internet application for geochemistry was demonstrated by GSC/ CGKN staff at the main client consultation meeting.
- Clients requested that the OGS database model should be compatible with GSC/ CGKN.

The data model that OGS adopted is shown in Figure 1, and it is quite compatible with the GSC/ CGKN data model. A simpler data model is used for plotting geochemistry (Figure 2).

In early 2003, CGKN staff successfully displayed some OGS data on the Internet together with data from across Canada.

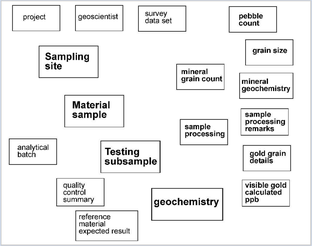

Figure 1. Data objects (data model)

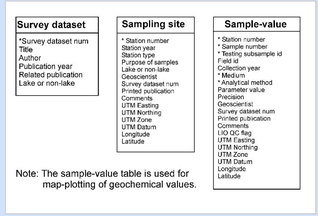

Figure 2. Simplified data model for plotting geochemistry.

Data loading

- A contractor converted each individual data set into an individual Microsoft ® Access ® database.
- OGS staff did quality assurance checks of each data set-specific database.
- The contractor did corrections, and appended each data set to the main database, which resided in Oracle ®.

Ongoing and future work

- Add to the database and populate "standardized" columns, such as standard digestion, standard mineral name and standard units of measure. In this way the diverse scientific vocabulary within the database is simplified.
- Prepare data set(s) for publication on CDROM or DVD media, for possible Spring 2005 release.
- Display data on the Internet via LIO or the Ministry of Northern Development and Mines' (MNDM) under-development Geoscience Portal.
- Continue to add new data sets and perform ongoing database maintenance.

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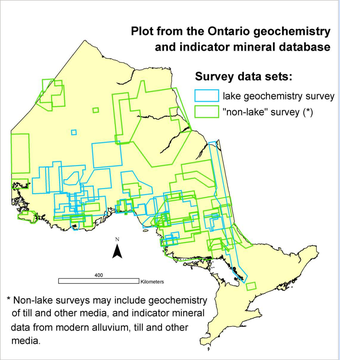
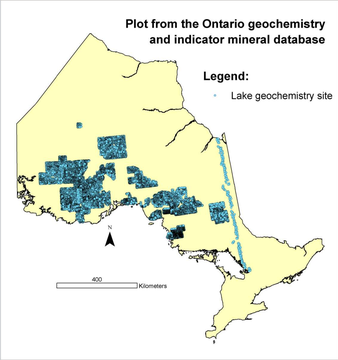
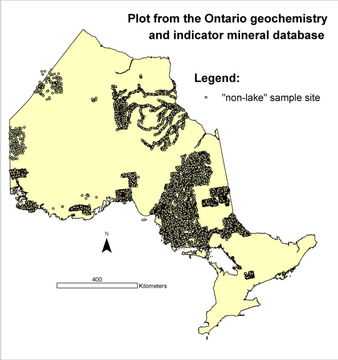
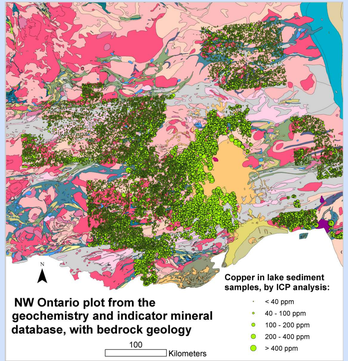
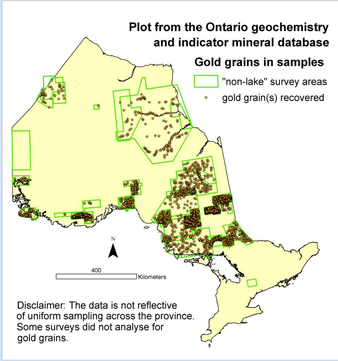
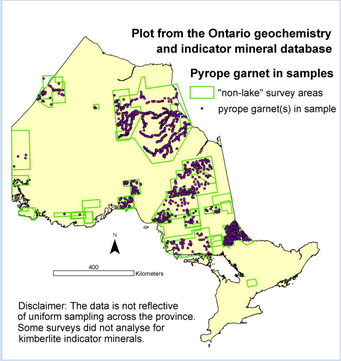
- OGS geoscientists.

Parts of this poster may be quoted if credit is given. It is recommended that reference be made in the following form:

van Haaften, S. 2004. Surficial geochemistry and indicator mineral database compilation; Ontario Geological Survey, poster, Ontario Exploration and Geoscience Symposium, Toronto, Ontario, December 14-15.

Example plots from the surficial geochemistry and indicator mineral database