

Minerals from Newfoundland and Labrador are processed and shipped to markets around the world.



# DETAILED DISPLAYS

## GEOSCIENCE DATA HELPS MINERS FIND THEIR NEXT PROJECTS STAFF REPORT\*

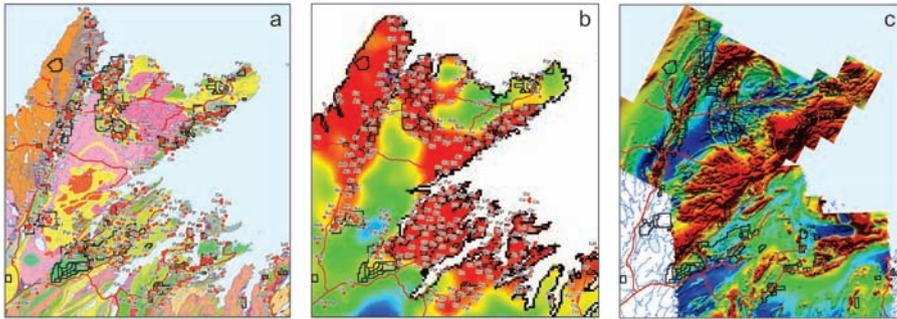
**N**ewfoundland and Labrador has an abundance of mineral wealth, including world-class deposits of iron and nickel, and important current and past production of zinc, lead, copper, gold and silver.

Ongoing exploration projects boast substantial resources of these and other commodities, including uranium, antimony, rare earths, fluorite, molybdenum and tungsten. These resources reflect the considerable diversity of favourable metallogenic environments that formed in the province over a time span ranging from earliest Archean to latest Paleozoic.

However, much of the province remains under-explored relative to other mining jurisdictions, providing an opportunity for companies to explore for the next 'elephant' in a modern, stable, mining-friendly jurisdiction.

Last year marked the 150th anniversary of the Geological Survey of Newfoundland and Labrador, and of modern mining in the province. This period of history has yielded a huge collection of government and industry geoscience data in the form of geological reports and maps, geochemical and geophysical data, drilling and mining records, and much, much more.

This collection represents an immensely valuable resource for all geoscientists who work in the province, particularly for those in the minerals sector. The challenge has always been to preserve this important resource and make it publicly available in the most effective manner possible.



Baie Verte-Springdale area, northeast Newfoundland. a. Geology, mineral occurrences (red dots) and claims (black) b. Copper in lake sediments (image) with mineral occurrences c. Residual magnetics

gis.geosurv.gov.nl.ca). This gateway provides information on the latest developments in the Atlas, links to other data sites, the MIRIAD claim staking portal, and contact information.

Once the Atlas is loaded, the data layers can be accessed via the Contents panel. The primary Map Layer Group contains location data such as roads, place names and UTM and NTS grids. It also has useful technical data including mineral occurrences and drill hole locations.

The Bedrock Geology Group includes a 1:1,000,000 scale geology map of the entire province and more detailed geology for the Island of Newfoundland, with separate layers for faults and contacts. The Surficial Geology Group also provides maps at regional and detailed scales, and includes separate layers for landforms, aggregate resources and striations.

The Geochemistry Group includes lake sediment coverage for the entire province and detailed lake and till surveys in selected areas, for a total of more than

### The Geoscience Atlas

A vital tool in the task of organizing this repository of data and making it widely accessible is the Geoscience Atlas. The Atlas provides state-of-the-art, web-based technology enabling the user to review, analyze, download and output this data at no cost. Users can easily access material to inform decision-making at a variety of stages, especially project-generation. The Atlas is also an important promotional tool to help demonstrate the province's mineral

potential to domestic and foreign investors.

Some of the more useful databases which can be accessed via the Atlas include geology, geochemistry, geophysics and mineral land tenure. The Atlas displays data in layers, and enables the user to overlay various datasets such as geological contacts and faults, geochemical dot plots and geophysical images, making it possible to see relationships between them.

The Atlas is accessed by going through the Geoscience Online webpage (<http://>



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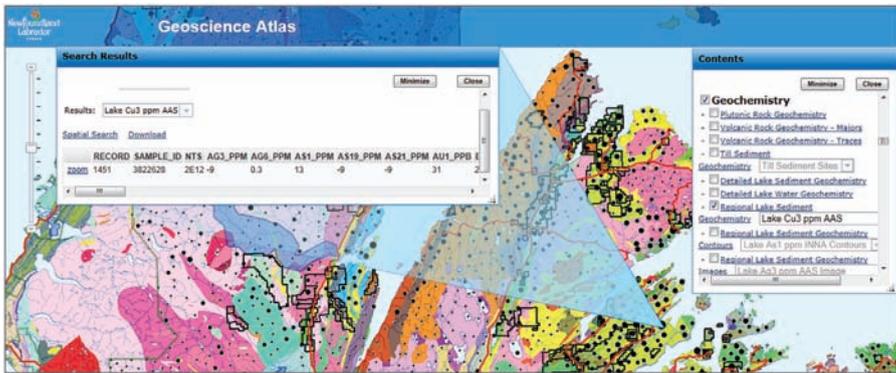
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The Geoscience Atlas enables users to click on Dot Plots to obtain the element values for the sample area.

60,000 samples. Each sample includes analyses of over 30 elements. Volcanic and plutonic rock geochemical data are also available. The Geophysics Group incorporates residual magnetic coverage for the entire province, as well as more detailed surveys in certain areas, with a total of almost 100 images.

A separate group provides indexes for bedrock geology maps, and geochemical and geophysical surveys. These indexes facilitate the identification of detailed data for a given area of interest.

For example, the Index of Airborne Geophysical Surveys contains more than 1,500 polygons delineating the boundaries of analog and digital geophysical surveys. Links are provided to individual (non-confidential) company survey specifications, digital reports and survey data (for more recent surveys). These can be viewed and downloaded separately.

The Mineral Lands Group has an up-to-the-minute display of all current land holdings and links to detailed status reports on individual map-staked licences. A very useful recent addition to this group is the historical claims layer, which includes all ground- and map-staked claims, fee simple mining grants and concession lands that have been cancelled, or otherwise forfeited.

Both current and historic claims are linked to a collection of more than 10,700 (non-confidential) company assessment reports allowing the user to quickly find and research previous work on a property. These can be downloaded in pdf format at no cost. Many recent reports include digital data which can be forwarded on request.

A separate Land Use Group incorporates important regional and local features such as Inuit Lands, municipal boundaries and public water supplies.

Most layers, with their associated point, line or polygon features, can be queried to provide more detailed information in a search result window. For example, a click on a lake sediment site opens a search results window with all the

element values for that sample, including base and precious metal values.

A variety of tools are available to enable customized searches of spatial data, and to perform other tasks such as measuring distances. All layers can be downloaded in a variety of digital formats for further interpretation or display by the user. A print function allows ready output of data in page-size format at a specified scale, and a draw tool enables the user to add simple graphics to enhance the image.

As with any tool, the value of the Atlas is evident by its usage, which includes governments, mining and exploration companies, educational institutions, environmental companies and the public, from more than 50 countries. **CMJ**

\*Information for this article provided by Phil Saunders P.Geo., Mineral Exploration Consultant, and Pauline Honarvar, Project Geologist (GIS), Department of Natural Resources, Government of Newfoundland and Labrador.

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