MINERAL INVENTORY PROJECT

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ABSTRACT

The primary mandate of the Mineral Inventory Project is to document all geological and mineral resource information on the Province’s mineral occurrences and to make the information available to the public. A secondary responsibility is in the area of land-use planning. Mineral Inventory personnel review all Provincial Government land-use applications and environmental assessment projects with the objective of minimizing their impact on the Province’s documented mineral resources and areas of high mineral potential.

INTRODUCTION

The Mineral Inventory Project is the principal repository for geological information on the Province’s mineral resources and is a two-part infobase consisting of the Mineral Occurrence Data System (MODS), which is a digital mineral occurrence database, and a collection of mineral occurrence maps (Stapleton et al., 2000).

The MODS comprises summaries of data including; geological descriptions, mineralogy, deposit type, bibliographic, work histories, resource and/or reserve statistics and analytical results on known mineral occurrences. It is an important mineral exploration and research tool that offers fast and easy access to mineral occurrence descriptions covering all of Newfoundland and Labrador. The main delivery point for the MODS data is the Geological Survey of Newfoundland and Labrador website (http://www.nr.gov.nl.ca/nr/mines/Geoscience/index.html). Clients are able to search the database using either the ‘Mineral Deposit (MODS) Index Search Form’ or ‘Geoscience Atlas’.

MINERAL OCCURRENCE DATA SYSTEM (MODS)

MODS (ORACLE)

The MODS data are housed within the Oracle database management system; however, data entry is achieved using an application of Microsoft-Access database software (Stapleton et al., 2005). Data are reviewed to ensure compliance with the MODS coding standards. Microsoft-Access connects to the Oracle database using object database connectivity technology. In addition to increasing the security of the MODS data, Oracle is the common database platform for all of the Geological Survey’s databases, which enables efficient sharing of information between the databases. The MODS internet application is dynamically linked to the Oracle database, giving clients same-day access to updated information.

DELIVERY MECHANISMS

GeoScience OnLine

Most MODS users access the system via the internet from the Geological Survey’s website. Detailed MODS data can be queried and viewed in a map environment in conjunction with other geoscientific datasets online, using the GeoScience Atlas map viewer.

MapInfo™ and ArcView™

Selected fields (Table 1) from the mineral occurrence database are available upon request in both MapInfo™ and ArcView™ formats. MODS GIS datasets are also available for download from the GeoScience Atlas.

MINERAL OCCURRENCE MAPS

Mineral occurrence maps on geological bases have been published at 1:250 000 scale, and selected areas have been published at 1:50 000 and 1:100 000 scales. An industrial minerals map for insular Newfoundland, at 1:1 000 000 scale, on a coloured geological base, is also available. These maps provide the location, minerals present and status of each occurrence. Mineral occurrence locations are also plotted on 1:50 000-scale topographic maps and are available for viewing at the Geological Survey’s offices in St. John’s, NL.
The Mineral Inventory Project has also published six, thematic mineral occurrence maps on geological bases, which are produced on demand. These are, Epigenetic Gold and Related Mineralization, Newfoundland; Copper and Associated Mineralization, Newfoundland; Zinc–Lead and Related Mineralization, Newfoundland; Mississippi Valley Type Lead–Zinc Mineralization, Newfoundland; Volcanogenic Massive Sulphide Deposits, Dunnage Zone, Newfoundland; and Metallic Mineral Occurrences of the Avalon Zone, Newfoundland.

All maps are available, upon request, from the Geological Survey’s Geoscience Publications and Information Section.

**MINERAL COMMODITIES SERIES PROJECT**

Since the late 1990s, the Geological Survey has produced several ‘Mineral Commodities Brochure’ reports, which are short summaries of particular commodities with emphasis on their geological settings and exploration potential. The primary information base for developing such reports is the MODS and work continued in 2013 on three reports. These reports include barite, fluorite and molybdenum-tungsten-tin (a combined treatment).

The latest contribution on fluorite to the ‘Mineral Commodities Series’ was initiated in 2012 and completed in 2013. A report for barite was also initiated in 2012 and is currently in the publication process. These reports (Figure 3) provide a brief summary of fluorite and barite commodities within the Province, including their geological setting and production history. Use of the MODS served as a critical foundation in the creation of the reports and provided location data, and occurrence descriptions. Data downloaded from the MODS provided a basis for map construction showcasing significant occurrences of barite and fluorite in the Province.

The commodity series reports are intended to act as a bridge between summary information of a promotional nature and the detailed information that is accessible through MODS and in the Geofiles library.

**UPDATES**

The main objective of the Mineral Inventory Project is to update information on existing mineral occurrences and to document new discoveries. During 2013, updates were implemented on a Province-wide basis by accessing mineral deposit information from mineral industry press releases and assessment reports as they gained public-domain status. NTS map areas 1L, 1M, 1N, 2C, 2D, 2E, 3D, 11O, 12A,
12B, 12G, 12H (Newfoundland) (Figure 1) and 13A, 13D, 13E, 13F, 13G, 13L, 23B, 23G, 23H, 23J and 23O (Labrador) (Figure 2) were updated, in part. This update of the database provides the mineral exploration community with a more current, high-quality, on-line mineral deposit dataset that will help guide mineral explo-
The data generated by the Mineral Inventory Project will contribute toward longer term benefits evidenced by increased investment in the provincial mineral exploration and mining industries.

In 2013, consistent delivery of new information through both the Online Query Form and the Geoscience Atlas continued with updates occurring on a 24-hour basis.

**Figure 2. NTS areas updated, Labrador.**
LAND-USE PLANNING

The MODS is used daily by government geologists in land-use planning. Advice is given to various government departments through the Interdepartmental Land Use Committee referral process and the Environmental Assessment registration process on establishing wilderness areas, hydro developments, provincial and national parks, cottage devel-
developments, water reservoirs, etc., so that, where possible, these developments proceed in areas of low mineral potential. In 2013, project personnel reviewed over 1200 land-use applications and over 50 environmental assessment registrations.

**MODS USERS**

The MODS is used by mineral-exploration company personnel and consultants, independent prospectors, personnel and students of academic organizations and the general public.

The MODS data are made available to various federal government agencies such as the Minerals and Metals Sector and the Geological Survey of Canada of Natural Resources Canada, and the Mineral Deposits Subgroup of the Canadian Geoscience Knowledge Network (Stapleton and Smith, 2004).

**REFERENCES**

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