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MINERAL OCCURRENCE DATA SYSTEM

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INTRODUCTION

Information on mineral occurrences in Newfoundland and Labrador can be acquired from the Mineral Assessment Report Library. This library consists of over 9,000 geological, geophysical and geochemical reports, maps, journal articles and mineral assessment files. This is the largest and most comprehensive single collection of geoscience documents about Newfoundland and Labrador (Mercer, 1986). Consequently, if information on the geology, history of exploration and development, reserves, nature of mineralization and genesis, type of deposit, and other important data on specific mineral occurrences is required, it can only be obtained by long research through numerous reports. However, with the Mineral Occurrence Data System in place, preliminary research can now be done quickly and efficiently.

The Mineral Occurrence Data System is a two-part project designed to offer an efficient information service on all the mineral occurrences in Newfoundland and Labrador. It consists of a manual Mineral Inventory File and a computerized Mineral Index.

MINERAL INVENTORY FILE

The Mineral Inventory File is part of the National Mineral Inventory and consists of mineral occurrence descriptions that summarize all the publicly available data on known mineral occurrences in the province. In preparing a description, the compiler researches all reports and publications that contain information on a particular occurrence.

At present, the file contains approximately 3,300 descriptions. All mineral occurrences for the Island of Newfoundland have been compiled (Figure 1). Areas in Labrador (Figure 2), which contain the majority of known mineral occurrences, have been compiled. These are major parts of the Labrador Trough and the Central Mineral Belt. Updates are made periodically as land tenure changes and new mineral occurrences are discovered.

The file and topographic location maps are being microfiched; duplicates are available upon request. Each duplicate costs $0.50 and contains several descriptions depending on their length. For further information on the microfiche project see Mercer (1986).

Mineral occurrence maps that have updated geological bases have been published at a 1:250,000 scale, and are available upon request at a cost of $3.00 each. In addition, selected areas have been published at 1:50,000 and 1:100,000 scales. New maps that have been released this past year include: the Burgeo map area (11P) at 1:250,000 scale, the St. Alban's map area (1M/13) at 1:50,000 scale, and the south-central Labrador Trough at 1:100,000 scale. These maps contain locations as well as a listing of these occurrences, including the name, status and minerals present.

MINERAL INDEX

Because mineral occurrence data is generally voluminous, constantly changing and of a varied nature, it is a good candidate for computerization. The purpose of the Mineral Index is to organize important data on the occurrences so that a wide variety of retrievals can be made. The index contains information selectively extracted from the Mineral Inventory File.

The Mineral Development Division has recently purchased a multi-user UNIX-based computer system and five MS-DOS Operating System Computers (Missan, 1986). The UNIX System is the Hewlett Packard HP560, which is a 32-bit machine and has 8 Mbytes of main memory. The computerized Mineral Index is presently being transferred from Newfoundland and Labrador Computer Services, where it has previously resided, to the Division's computing system.

To manage the computer file and to help make retrievals, a computer program called GRASP is used. GRASP is a highly interactive system that was developed at the United States Geological Survey (Bowen and Botbol, 1975) specifically as a geological data-storage and retrieval system, to be used primarily by geologists.

The file can be accessed at the Department of Mines and Energy offices in St. John's. Presently, all of the Island of Newfoundland and 13I, 13J, 13K, 13N, 13O and 14C in Labrador have been keypunched, edited and entered into the GRASP system.

USES OF MINERAL OCCURRENCE DATA SYSTEM

The Mineral Occurrence Data System was built to serve four major-user communities. These are: 1) exploration geologists and prospectors engaged in the search for mineral deposits in the province, 2) geological staff of the Department of Mines and Energy engaged in mapping and evaluating the mineral potential of the province, 3) the Department of Energy, Mines and Resources, which is building Canada-wide mineral occurrence files such as the National Mineral Inventory, CANMINDEX and MINSYS, and 4) academic and research geologists and students of economic geology.

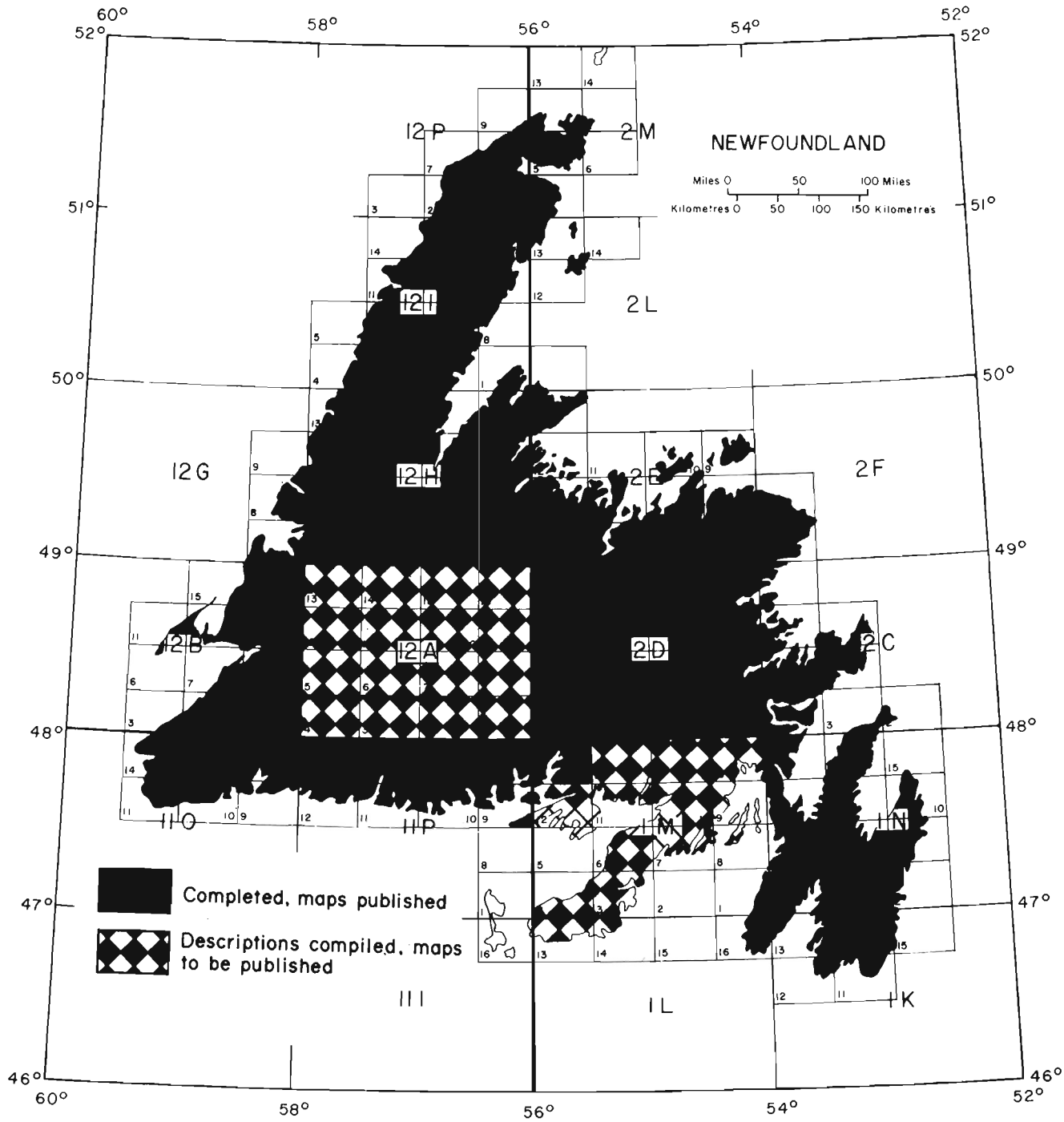

Figure 1. *Index map for Mineral Occurrence Data System project, insular Newfoundland.*

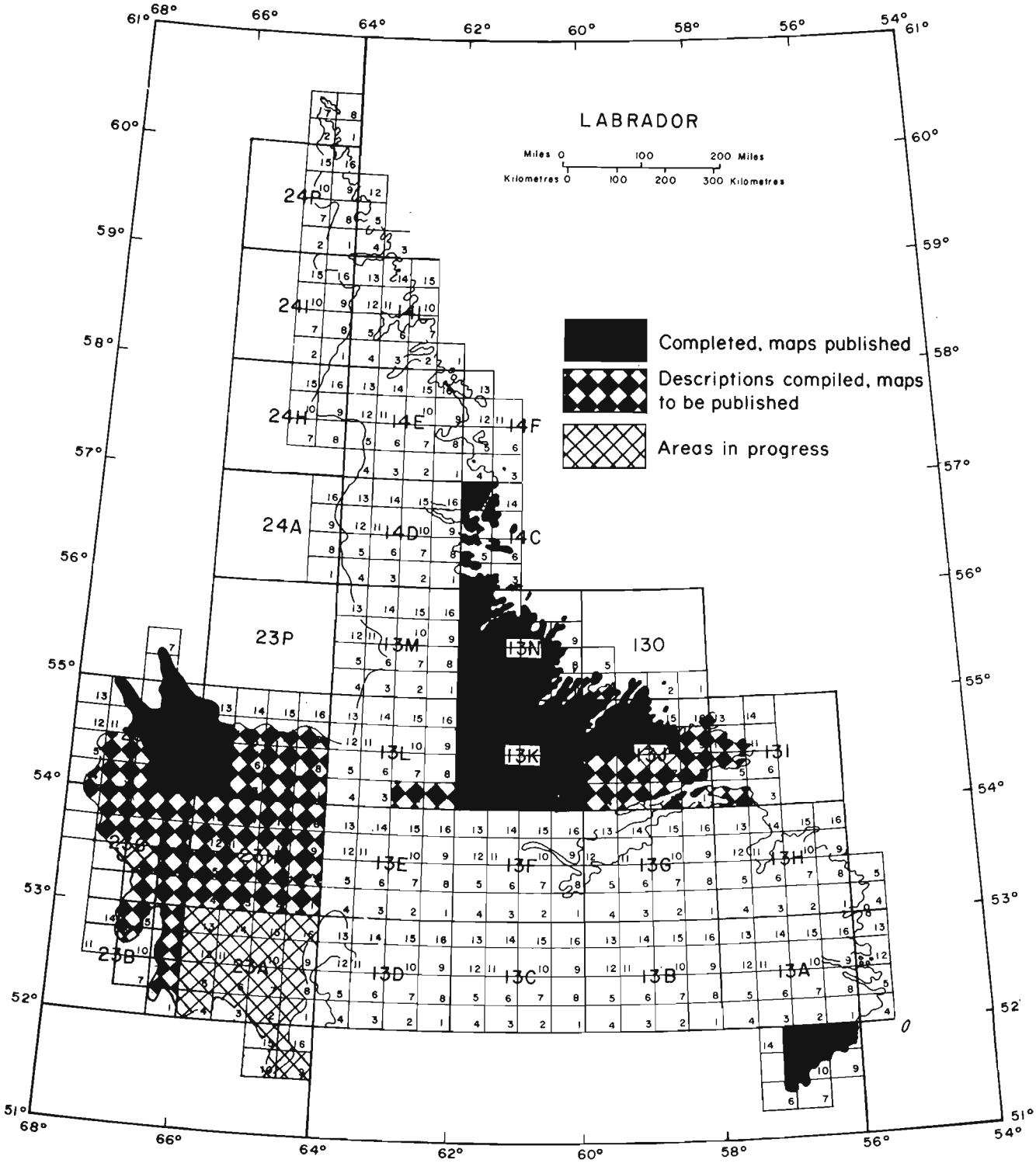

Figure 2. *Index map for Mineral Occurrence Data System project, Labrador*

The manual Mineral Inventory File is used as a quick reference to specific deposits. Exploration company personnel frequently request descriptions of a particular mineral showing or prospect when they want a good summary or a list of references to carry out further research. This is particularly true when companies are new to the province or move into new areas. This preliminary research is generally done at the Department of Mines and Energy. However, since a large part of the file has been microfiched, it is available to all companies at a reasonable cost.

The Mineral Inventory File is used daily by government geologists in land-use planning. Advice is given to various departments of government in establishing wilderness areas, hydro developments, provincial and national parks, and any other developments that may conflict with future mineral exploration and development. In addition, municipal councils and the Department of Municipal Affairs are advised of the location, extent, and nature of mineral deposits in specific areas, so that new housing and commercial developments, municipal parks, water reservoirs and sewage-disposal systems can be located, where possible, in areas of low mineral potential.

Copies of the file are made available to the various agencies of the federal government such as the Mineral Policy Sector and the Geological Survey of Canada. These are then adapted to the National Mineral Inventory, MINSYS and CANMINDEX.

The file is available to anyone who is researching mineral deposits in the province. It is useful to students who are writing papers on specific mineral deposits as well as company and government personnnel who are writing proposals for future work, or preparing information brochures about particular areas.

By the use of computers, the retrieval capability from the computerized Mineral Index is optimized and complex retrievals can be made that would be virtually impossible if a manual system were used. Types of retrievals are only limited by the user's imagination.

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