Mineral Inventory Activities for 1999

G. A. O’Reilly and G. J. DeMont

Introduction

The field verification of mineral occurrences in the eastern shore region of the mainland and central Cape Breton Island continued to be a priority for the Mineral Inventory staff during 1999 (Fig. 1). In addition, staff directed attention to several project-related initiatives. G. J. DeMont worked with Industrial Minerals Geologist P. W. Finck and Mineral Promotions Geologist M. A. MacDonald examining the economic potential of several red marble and limestone prospects in the Kennedys Big Brook and Glen Brook (also known as Diogenes Brook) areas of Cape Breton Island. DeMont also assisted Geochemist T. A. Goodwin with a till and stream sediment geochemical survey in the Kennedys Big Brook area. G. A. O’Reilly provided field support as part of a cooperative effort between ASEDEX Minerals Corp. Ltd., College of Geographic Sciences, Dalhousie University Earth Sciences Department, Geological Survey of Canada and the Department of Natural Resources on the metasediment-hosted Eastville Zn-Pb Prospect near Upper Stewiacke. O’Reilly also carried out an examination of richly garnetiferous units within the Liscomb Complex southwest of Trafalgar, Guysborough County to evaluate their potential as a source of industrial garnet.

In addition, Version 4 of the DP-001b, the Mineral Occurrence Database, was released in October 1999. This release consists of information added to the database during 1999.

Field Activities

Figure 1 illustrates the NTS map areas in Nova Scotia in which field verification of mineral occurrences were carried out as well as the locations of other activities carried out by Mineral Inventory Program staff during 1999.

Eastern Shore Region

Field checking of mineral occurrences in the eastern shore region continued, for the third year, to be a priority of the Mineral Inventory Program. During 1999, most attention was concentrated on NTS map sheets 11D/13, 14, 15; 11E/01, 02, 07, 08; and 11F/04 and 06. These map sheets include a mix of gold and base metal deposits. Among the gold districts and prospects visited were Miller Lake, Lake Charlotte, Beaverdam, Wine Harbour, Little Liscomb Lake, Geggogan, Ragged Falls, Barneys Point and Lower Caledonia. Other sites visited were the Pembroke Pb-Zn prospect, Lazy Head W-Cu-Zn skarn, Enfield Quarry Zn occurrence, Waverly W prospect, Tickle W occurrence, Lake Charlotte Mn prospect and Boylston quartz crystal occurrence.

A pegmatite dyke, richly mineralized with beryl, was discovered during a field check of the Lower Caledonia gold prospect. Although the existence of the pegmatite dyke was noted when exploration and diamond drilling of the site for gold and base metals were carried out during the 1950s to 1970s, the presence of beryl was not recognized. The beryl pegmatite is being included as a separate occurrence in the database (E08-039) and a description of the mineralization and relationship to the Au-base metal mineralization are provided in a separate article in this volume (O’Reilly, 2000).

Liscomb Complex Garnet Gneiss

Geological mapping by the Nova Scotia Department of Natural Resources and Geological Survey of Canada in the late 1980s and early 1990s recognized the presence of the Liscomb Complex in the area between Trafalgar, Guysborough County and the eastern end of the Musquodoboit Valley (Giles et al., in press). The northern half of the Liscomb Complex consists predominantly of a diverse suite of granitoid rocks ranging in composition from tonalite to leucosome granite. The southern half is dominated by high metamorphic grade felsic-intermediate gneissic rocks. Diatreme-like intrusions of gabbro and quartz-gabbro, rich in enclaves and xenoliths, are found to have intruded both the Liscomb Complex gneisses and Meguma Group metasedimentary rocks.

Earlier mapping recognized concentrations of boulders of garnet-rich gneiss restricted to the area surrounding Pogue Lake and northeast toward Trafalgar. Garnet in these boulders occurs as coarse, well-formed crystals and reaches concentrations of 25–30 modal %. During the past field season G. A. O’Reilly examined the economic potential of these unit(s) as a source of industrial grade garnet. An attempt was made to locate the source(s) of the boulders or, at least, narrow down...
the region in which they occur. Only four outcrops of garnet gneiss were located, but none contain the high concentration of garnet noted in the boulders. However, a close association of the garnet boulders with a series of medium- to high-amplitude second derivative vertical gradient anomalies (King, 1997) underly the area between Pogue Lake and Trafalgar (Fig. 2) strongly suggests a relationship with a particular unit(s) within the Pogue Lake metamorphic suite that underlies that area.

A large boulder sample of garnet-bearing gneiss was collected and processed at the Minerals Engineering Centre, DalTech Campus, Dalhousie University, Halifax. The 13.63 kg sample produced a 2.09 kg (15.33%) garnet separate of various size fractions. Testing of the quality of this garnet separate is planned.

**Weymouth Area**

The Geological Mapping and Geochemistry Section of the Department is currently mapping lower to middle Paleozoic metasedimentary rocks in the Weymouth and Church Point areas of southwestern Nova Scotia (NTS map sheets 21A/05, 21B/08; Fig. 1; Home et al., 2000). The Mineral Inventory Program provides updated information about mineral occurrences. The mapping has discovered several new mineral occurrences and these were visited and sampled during the field season. Well developed skarn zones in upper Goldenville Formation units are exposed along the sea shore at Gilberts Cove and in the Weymouth Mills spillway (a portion of the Sissiboo River hydro-power system). In addition, the mapping recognized the presence of a subcropping 2-mica leucocmzonogranite intrusion in the area of Clayton Hill a few kilometres southeast of Weymouth, and a significant distance west of the South Mountain Batholith. A recent logging road in that area has unearthed numerous boulders of mineralized and hydrothermally altered leucogranite. Mineralization in the boulders consists of quartz veins with greisen selvages containing molybdenite and chalcopyrite as well as pervasive alteration with disseminated pyrite and minor chalcopyrite.
Central Cape Breton

Field examination of mineral occurrences of a Au-Ag-Te association in the Barachois River-Indian Brook area was carried out by G. J. DeMont. This is a continuation of work initiated previously in which DeMont discovered several new occurrences of this association during field checks of previously known precious metal occurrences in the area.

During the field checking of mineral occurrences in the Glen Brook (also known as Diogenes Brook) area a previously unknown red marble unit was discovered within Precambrian George River Group rocks. Follow-up mapping by DeMont suggests the unit has lateral extent and, therefore, economic potential. This aspect will be examined further as part of the cooperative effort outlined in the following section.

DeMont provided mapping support to Natural Resources Geochemist T. A. Goodwin as part of a geochemical pilot project in the Kennedys Big Brook area (Goodwin, 2000). The project examined the base and precious metal expression in glacial tills and stream sediments along a fault zone in an area of mixed metasediments and carbonates of Precambrian age.
Kennedys Big Brook Marble Project

G. J. DeMont collaborated with Industrial Minerals Geologist P. W. Finck and Mineral Promotions Geologist M. A. MacDonald to provide advice and geological mapping support to a consortium consisting of the Strait Highlands Regional Development Agency, Nova Scotia Department of Economic Development and Enterprise Cape Breton. The consortium is examining the economic potential of several red marble and limestone prospects in the Kennedys Big Brook area. As of January 2000, the consortium had just made final funding to undertake a diamond-drill examination of the sites. The necessary approval permits are being obtained after which the drilling is expected to begin in February 2000. A more detailed description of this project is provided in DeMont et al. (2000).

Version 4 of the Mineral Occurrence Database

Version 4 of the Mineral Occurrence Database (DP-001b) was released to the public in October 1999. This release consists of information added to the database since Version 3 of the database was released in February 1999. With Version 4, the Mineral Occurrence Database has information for 1190 metallic and 869 industrial mineral occurrences. The Mineral Occurrence Database, Version 4 (DP-001b) and the Computer Query Program designed to view, search and print the data in the database (DP-001a) are available free-of-charge from our branch internet site (URL www.gov.ns.ca/natr/mdb) or at minimal cost from the department's library.

References


