Province of Ontario
Ontario Ministry of Natural Resources
Ontario Geological Survey

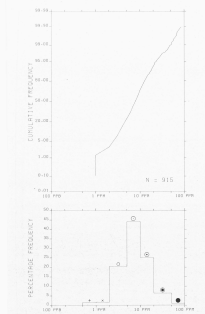
Canada
Department of Energy, Mines and Resources
Geological Survey of Canada

420 and Part of 426

COBALT (ppm)

OPEN FILE 506

THUNDER BAY AREA 1977



Geochemical Symbol and Data Presentation

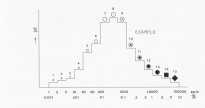
The concentration of an element at a sample site is graphically represented by a symbol which is located on the sample site. Where no data available a dot is plotted. The symbols are symmetrically arranged so that they first increase in size as the eighth symbol and then increase in number. Symbol size and the number of symbols at the low end of the scale are used to respectively denote concentrations below the analytical detection limit, or, in the data group containing the highest 10 percent of the data grouped on a cumulative basis. The 10%(10),15%(15),20%(20) and 25%(25) symbols are reserved for arbitrary division has been chosen for the continuing Canada wide series of maps constituting the National Geochemical Reconnaissance.

The choice of symbols and the data groups they represent for any specific element is based on the histogram and cumulative frequency plot for the total survey data from one, or more contiguous, open file areas. Normally the data from the entire survey area is plotted and is used for the model group as defined by the histogram. This group usually includes the median of the data as defined by the O.5 (50%) symbol. The data groups immediately above and below the median, reaching 10 symbols are chosen so as to achieve an appropriate graphical impact. An example of all 15 symbols is given below.

The symbol maps, being based on the total survey data distributions, are unaffected by the availability of ever-increasing levels of knowledge of the regional geology and the presence of known mineral deposits. Therefore, the raw data symbol maps are only intended to assist in the logical interpretation of the data for grass regional findings. To fulfill the needs of a more specific and thorough interpretation, the raw symbol maps should be modified using the field and analytical data provided in the data listings and any other knowledge available.

The data listings contain notes on survey and analytical methods, and on the regional geology of each survey area. For total data as well as for data grouped on the basis of rock type.

To comprehensively study an area, all available geological, environmental and mineral data should be utilized. The data separation by bedrock type can often be improved by constructing new data subsets for particular local thresholds levels based on the most detailed and accurate knowledge available.



Copies of map material and listings of field observations and analytical data from which the material was prepared may be available at users expense by application to:

O.G. Cambell Corporation
1200 - 1200 Bay Street
Bay No. 1200
Ottawa, Ontario
K1R 5A7

The data is also available in digital form. For further information please contact:

The Director
Mineral Resource Centre
Department of Energy, Mines and Resources
Ottawa, Ontario
K1A 0G4

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LEGEND

Note: This legend is common for National Geochemical Reconnaissance Map 17-1977, Open File 506 and Map 16-1977, Open File 507.

PRECAMBRIAN

LATE PROTEROZOIC (HELIKIAN) INTRUSIONS

	GABBRO/PERIDOTITE - ULTRAMAFIC COMPLEXES (MARKH)
11	Ferrodiorite, nepheline, hornblende, augite syenites, gabbro; olivine, nepheline gabbro.

LATE MAFIC DIORITES ROCKS

10	Diabase, gabbro, anorthosite

BIJLER GROUP

11	Porphyritic rhyolite or dacite, quartz porphyry, felsite
10	Diabase, basalt, minor pyroclastic rocks, conglomerate, sandstone

MAFIC DIORITE ROCKS

9	Diabase, basalt, porphyritic diabase, gabbro, anorthositic gabbro (Sitth and dykes)

SIBLEY GROUP (DMEK)

8	Conglomerate, sandstone, chert, shale, carbonate rocks

MIDDLE PRECAMBRIAN (ARCHEAN)

ARLBRIDGE

7	Knox Formation (ARKA): argillite, shale, greywacke
6	Gunflint Formation: chert (GNFT); chert-carbonate, carbonate rocks, argillites, tuff, taconite

EARLY PROTEROZOIC (ARCHEAN)

INTRUSIVE FELSIC TO ULTRAMAFIC ROCKS

5	Granite (GRNT), granite gneiss (GRNG), granodiorite (GRDR); quartz-feldspar porphyry (QTFP), nanpeite, nagaultite (MGMT), syenite, pegmatite

MAFIC AND ULTRAMAFIC INTRUSIVE ROCKS (GBMC)

4	Gabbro, diorite, serpentinite, hornblendite, amphibolite

METAMORPHICS

3	Conglomerate (CGLM), greywacke (GREY), arkose, quartzite, * schist, phyllite, slate, mica schist and gneiss; quartz-feldspar schist and gneiss (SCST), garnet-feldspar schist and gneiss (GRSC).

METAVOLCANICS

2	Felsic to intermediate metavolcanics (RCVS): Rhyolite, rhyolite lava, pyroclastic lava, pyroclastic rocks, derived schist
1	Intermediate to mafic metavolcanics (BCVS): Amphibolite, schistose, diffuse lava, pyroclastic and epiclastical lava, pyroclastic rocks and derived schists, undifferentiated metavolcanics with some metasediments (MBCS)

* A four letter mnemonic name recorded as rock type as part of field observations

Geological boundary.....

Fault.....

Limits of geological mapping (DKEK).....

The legend modified and geology derived for this geochemical map from Geology Compilation Series maps 2220 and 2222, Ontario Division of Mines and map 2065, Ontario Department of Mines

Geological Survey of Canada
Resource Geophysics and Geochemistry Division
and
Ontario Ministry of Natural Resources
Ontario Geological Survey

CONTRACTORS

Sample collection by Marshall Macklin Monaghan Ltd.
Sample preparation by Bondar Associates.
Uranium in sediment chemical analyses by Atomic Energy of Canada Ltd.
Fluorine in sediment chemical analyses by Geoscience Labs.
Water chemical analyses by Geoforger Research Ltd.

Elevations in feet above mean sea level

Main magnetic declination 1975, 2°9.5' west, changing 0.1' westerly per year. Grid declination at map 0°0.0' to the NE corner of the sheet.

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COBALT (ppm)

OPEN FILE 506

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 17-1977

URANIUM RECONNAISSANCE PROGRAM

THUNDER BAY AREA 1977

Base-map assembled by the Geological Cartography Unit from maps published at the same scale by the Surveys and Mapping Branch in 1965/1977

This map is part of a series of 28 sheets released under National Geochemical Reconnaissance Map 17-1977 and Open Files 506 and 507. Open Files consist of maps for 11 elements, each for lake sediments, 2 elements for lake waters and sample site location.

COBALT (ppm)

OPEN FILE 506

THUNDER BAY AREA 1977