Province of Ontario
Ontario Ministry of Natural Resources
Ontario Geological Survey

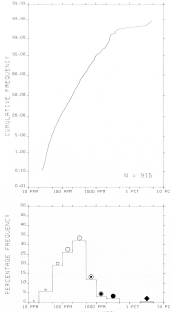
Canada
Department of Energy, Mines and Resources
Geological Survey of Canada

42D and Part of 42E

MANGANESE (ppm)

OPEN FILE 506

THUNDER BAY AREA 1977



Geochemical Symbol and Data Presentation

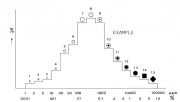
The concentration of an element at a sample site is graphically represented as one of 15 symbols. If a sample was collected but there is no data available a dot is plotted. The symbols are symmetrically arranged so that those with the most emphasis to the eye are those which represent anomalous concentrations. To the first order the small circles at the low end of the scale are used to respectively denote concentrations below the analytical detection limit, or, in the data group containing observations from a number of laboratories, below the lowest detection limit. e.g. 1,2,5,10,20,50,100 etc. Five decades can be spanned and this 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 made from a study of the cumulative frequency plot for the total survey data from one, or more contiguous, open file sheets covered in one field season (above). The eight symbol is used for the most anomalous element concentrations. This group usually includes the highest 2 per cent of the data as defined by the 98 per cent value on the cumulative frequency plot. The size of the remaining 14 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. Unlike the Regional Reconnaissance Series Maps, the map data symbol maps are only intended to assist the rapid inspection of the data for gross regional features. To PLOT the needs of interpretation, the symbol boundaries chosen for the 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, raw data statistics, symbol and class limits 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 recorded data should be utilized. The data separation by bedrock type can often be improved by constructing new data subsets after applying local knowledge levels based on the most detailed and up-to-date knowledge available.

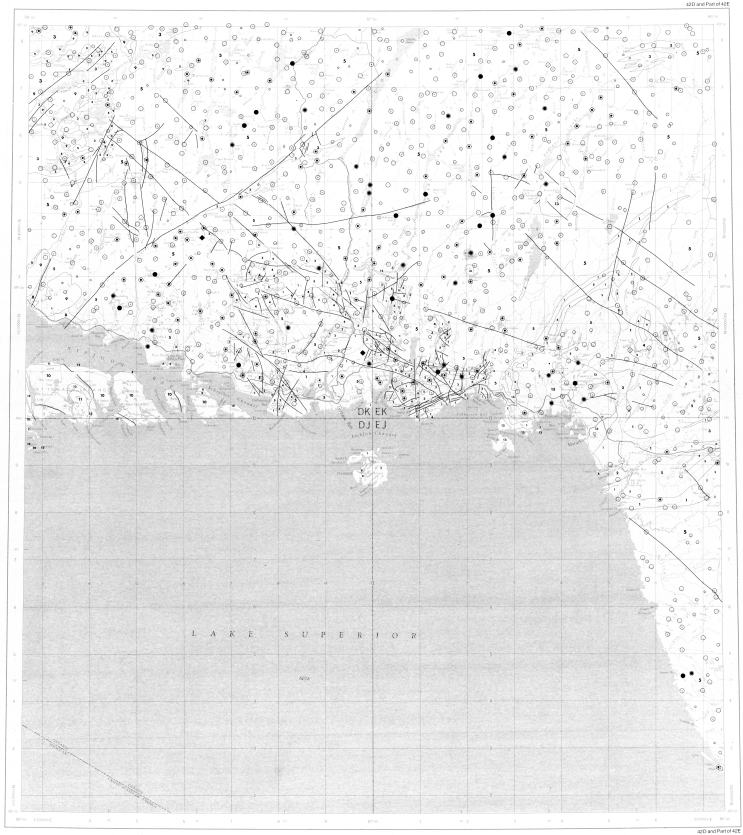


Copies of map material and listings of field observations and analytical data from which the material was prepared may be available at users expense by application to:

C.S. Campbell Corporation
Suite 1710, Scott Tower
Box No. 1710
Ottawa, Ontario
K1R 5P2

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

The Director
Computer Science Centre
Department of Energy, Mines and Resources
Ottawa, Ontario
K1A 0G4



42D and Part of 42E

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 PRECAMBRIAN (HELIKIAN)
DIKE/DAMAN

CARBONATITE - ALKALIC COMPLEXES [MANX]*
12 Carbonatite, nepheline, hornblende, augite syenites, gabbro, diorite, minor intrusive gabbro.

LATE MAFIC DIABASE ROCKS
12 Diabase, gabbro, anorthosite

KILEY GROUP
11 Pyroclastic rhyolite or dacite, quartz porphyry, felsite

10 Diabase, basalt, minor pyroclastic rocks, conglomerate, sandstone

MAFIC DIABASIC ROCKS
9 Diabase [DIBS], porphyritic diabase, gabbro, anorthositic gabbro (titis and dykes)

SIBLEY GROUP [SMN]
8 Conglomerate, sandstone, chert, shale, carbonate rocks

MIDDLE PRECAMBRIAN (ARCHEAN)
INTRUSIVE
7 Nova Formation [ANA]: argillite, shale, greywacke

6 Gunflint formation: chert [CHRT], chert-carbonate, carbonate rocks, argillite, tuff, taconite

EARLY PRECAMBRIAN (ARCHEAN)
FELSIC GNEISS AND METAMORPHIC ROCKS
5 Granite [GRAN], granite gneiss [GRNG], granodiorite [GRDI], granodiorite porphyry [GDPY], monzonite, migmatite [MGMT], syenite, pegmatite

MAFIC AND ULTRAMAFIC GNEISSIC ROCKS [AMGN]
4 Gabbro, diorite, serpentinite, hornblendite, amphibolite

METASEDIMENTS
3 Conglomerate [CGLM], greywacke [WACK], arkose, quartzite, argillite, slate, oliqo schist and gneiss, quartz-feldspar gneiss and schist [SCQF], garnet-feldspar schist and gneiss [GNFS]

METAVOLCANICS
2 Felsic to intermediate metavolcanics [ACID]: flows, intermediate lavas, porphyritic lavas, pyroclastic rocks, derived schists

1 Intermediate to mafic metavolcanics [BIXV]: massive, schistose, pillow lavas, porphyritic and amygdaloidal lavas, pyroclastic rocks and derived schists, undifferentiated metavolcanics with some metasediments [MVOI]

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

Geological boundary

Faults

Lists of geological mapping [GRPH]

The legend modified and geology derived for this geochemical map from Geology Compilation Series maps 2203 and 2232, 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 Varian Associates
Uranium in sediment chemical analyses by Atomic Energy of Canada Ltd.
Other sediment chemical analyses by Chemex Labs Ltd.
Water chemical analyses by Borringer Research Ltd.

Elevations in feet above mean sea level

Mean magnetic declination 1970, 27°-0' West, increasing 2.0' annually. Boundary surveyed by U.T.M. grid

From 297,21' N. to the SE corner of 1751,21' N. on the shore of the sea-area

MANGANESE (ppm)
OPEN FILE 506
NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 17-1977
URANIUM RECONNAISSANCE PROGRAM
THUNDER BAY AREA 1977

Scale 1:250,000

Kilometres 0 5 0 5 10 Miles

Universal Transverse Mercator Projection

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Base-map assembled by the Geological Cartography Unit from maps published at the same scale by the Surveys and Mapping Branch in 1963, 1967

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This map forms one of a series of 28 sheets released under the Geological Survey of Canada, Open Files 506 and 507. The Open Files consist of maps for 11 elements, each for two geological environments, 2 base metals and sample site location.

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OPEN FILE 506
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