Province of Ontario
Ontario Ministry of Natural Resources
Ontario Geological Survey

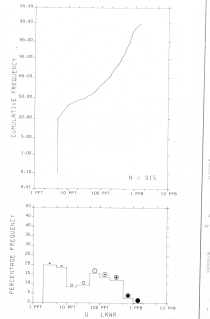
Canada
Department of Energy, Mines and Resources
Geological Survey of Canada

420 and Part of 42E

URANIUM in water (ppb)

OPEN FILE 506

THUNDER BAY AREA 1977



Geochemical Symbol and Data Presentation

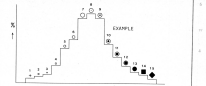
The concentration of an element in a sample site is graphically represented as one of 15 symbols. If a sample was collected but there is insufficient material for analysis, the symbol is omitted. Values are arranged so that they first increase in size in the eighth symbol and then increase in thickness to the fifteenth. The ten-shelf crosses at the eighth symbol are used to represent anomalous concentrations below the analytical detection limit, or, in the data accompanying the detection limit. The data are grouped on a semi-logarithmic scale, 1 PPT, 10 PPT, 100 PPT, etc. Five decades can be symbol 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 based on a study of the regional distribution statistics for the total survey data from one or more contiguous, open-file sheets covered in one field season (above). The eighth symbol (the first to be open) is selected so that the threshold of the symbol exactly includes the median of the data as defined by the 0.5 (50%) point on the cumulative frequency plot. Some, or all, of the remaining symbols may be used to represent the remainder of the data grouped in equal intervals on the probability scale. An example of all 15 symbols is given below.

The symbol maps, being based on the total survey data distributions, are unaffected by the variability of user increasing levels of knowledge in bedrock and surficial geology, and other environmental factors. Therefore, the symbol maps are only intended to assist the rapid interpretation of the data for more regional features. To fulfill the needs of a more specific and detailed interpretation, 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 listing with legend and statistics for total data as well as for data grouped on the basis of rock type.

To comprehensively study an area, all available geological, economic and geochemical data should be used. The use of this data can be improved by bedrock type can often be improved by classifying raw data subsets and deriving local threshold levels based on the most detailed and specific knowledge available.

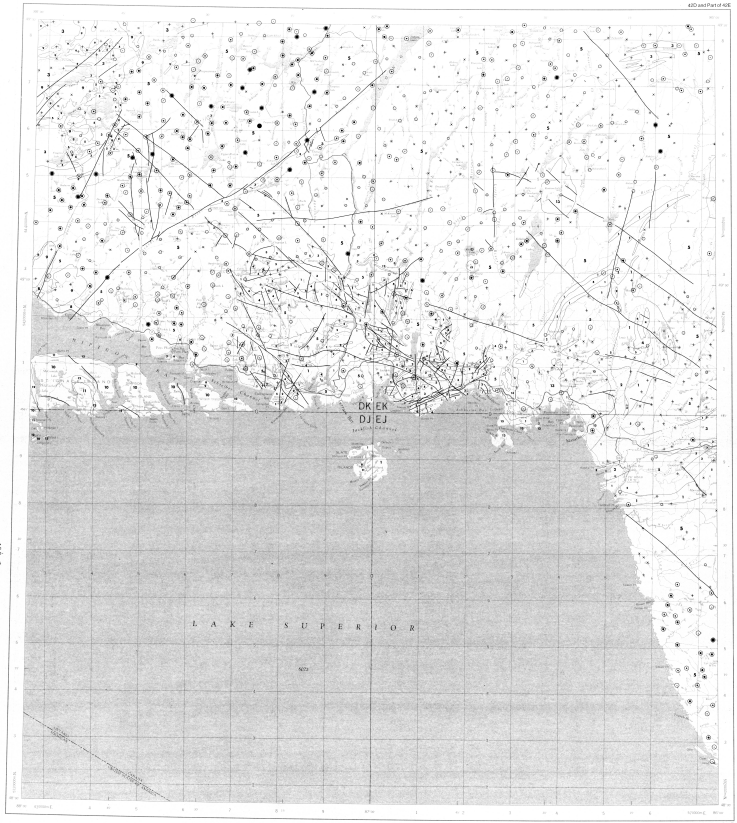


Copies of map materials and listings of field observations and analytical data from which the material was prepared may be available at users expense by application to:

K.G. Campbell Corporation
880 Wellington Street
Suite 1204
Ottawa, Ontario
K1R 6K7

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 0E4



Elevations in feet above mean sea level

Main magnetic declination 1975, 17½ E West, increasing 0.1 annually. Grid declination zero
Triangulation (84) at the SE corner of the map area

Scale 1:250,000

Kilometres 5 0 5 10 15 Kilometres
Miles 4 0 4 8 12 Miles

Universal Transverse Mercator Projection
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Base-map assembled for the Geological Cartography Unit from maps published at the same scale by the Surveys and Mapping Branch in 1968, 1969

This map has been digitized from a
diazotized version of the original map
for the purpose of computerized data
handling and display

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, data listings and publications, 2 elements for lake waters and specific site location.

URANIUM in water (ppb)
OPEN FILE 506
THUNDER BAY AREA 1977

LEGEND

Note: This legend is common for National Geochemical Reconnaissance Map 73-1977, Open File 506 and Map 73-1977, Open File 507.

PRECAMBRIAN
LATE PRECAMBRIAN (HELIKIAN)
KEWEENAWAN

CARBONATITE - ALKALIC COMPLEXES (EARLY)*
15 Carbonatite; nepheline, kaersutenite, augite syenites, gabbro; ultrite, nepheline gabbro.

LATE MAFIC IGNEOUS ROCKS
13 Diabase, gabbro, anorthosite

RILEY GROUP
11 Porphyritic rhyolite or dacite, quartz porphyry, felsite

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

MAFIC IGNEOUS ROCKS
9 Diabase (DIKE), porphyritic diabase, gabbro, anorthositic gabbro (sills and dykes)

STOLEY GROUP (SMRK)
8 Conglomerate, sandstone, chert, shale, carbonate rocks

MIDDLE PRECAMBRIAN (APHEBIAN)
ANIMIKIE
7 Rove Formation (AMRL): argillite, shale, greywacke

6 Conflict Formation: chert (CONF), chert-carbonate, carbonate rocks, argillite, kaft, taconite

EARLY PRECAMBRIAN (ARCHEAN)
FELSIC IGNEOUS AND METAMORPHIC ROCKS
5 Granite (GRAT), granite gneiss (GRNE), granodiorite (GRAD), granodiorite porphyry (GDPY), monzonite, magnetite (MGPT), syenite, pegmatite

MAFIC AND ULTRAMAFIC IGNEOUS ROCKS (LMFC)
4 Gabbro, diorite, serpentinite, hornblendite, amphibolite

METASEDIMENTS
3 Conglomerate (CGLM), greywacke (GRWK), arkose, quartzite, argillite, slate, mica schist and gneiss, quartz-feldspar schist and gneiss (SCST), garnet-feldspar schist and gneiss (GNSC)

METAVOLCANICS
2 Felsic to intermediate metavolcanics (MZVC): rhyolite, pillow lava, porphyritic lava, pyroclastic rocks, derived schists

1 Intermediate to mafic metavolcanics (BICA): massive, schistose, pillow lava, porphyritic and amygdaloidal lava, pyroclastic rocks and derived schist; undifferentiated metavolcanics with some metasediments (MVCT)

* A few better economic name recorded as rock type as part of field observations

Geological boundary

Fault

Limit of geological mapping (EXAM)

The legend modified and geology derived for this geochemical map from Geology Compilation Series maps 2220 and 2232, Ontario Division of Mines and map 2067, 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 Geller Associates.
Uranium in sediment chemical analyses by Atomic Energy of Canada Ltd.
Other sediment chemical analyses by Chemex Labs Ltd.
Water chemical analyses by Barringer Research Ltd.