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LEGEND

Note: This legend is common to National Geochemical Reconnaissance Map 12-1976, Open File 410 May 13-1976, Open File 411

HUDSONIAN (UPPER PROTEROZOIC)

39 (Dx, gabbro and diabasic gabbro dykes [GSNB]

WILLIAN (MIDDLE PROTEROZOIC)

DURANT GROUP (18-22)

21 Conglomerate, quartz sandstone, some intercalated sandstone. In part, may be older than 20 or 19 [GSLM]

20 Mainly porphyritic (quartz and/or feldspar, biotite and/or pyroxene) igneous rocks; probably mainly extrusive, but in part intrusive; some breccia, tuff, agglomeratic; minor sub-porphyritic syenitic rocks [GSFP]

19 Sandstone and pebbly sandstone, grit, arkose; siltstone and minor breccia, probably includes some ventifferentiated conglomerate [GS and/or IT] [GNDS]

18 Conglomerate; intercalated gritty sandstone [GSLM]

ARCHEAN (LOWER PROTEROZOIC)

13 Gneiss, schist, migmatite and allied rocks: in large part granitic and igneous, with some bands of lamfly assimilated schist, gneiss, amphibolite; stratiform granite-gneiss; sylloitic gneisses of granitic composition; some pyroxene granulite. In part probably older than 9 and, possibly, 7 [GRNT]

12 Gneiss, schist, amphibolite, and granulite derived mately from sedimentary and volcanic rocks of Archaean and/or Lower Proterozoic (Aphebian) age; some leisure quartzite and pyroxenoles commonly with some granitic material [GNDS]

2 Intermediate to basic volcanic rocks (greenstones) and derivec mphibole schist and gneiss; in part includes much schistose pyroxeclo (Lower Thelon belt); some rhyolite, tuff, agglomerate; minor quartz-mica schist and magnetite iron-formation (Southern Keewatin); undifferentiated basic intrusions. May be younger in part (Aunwils) [VOLC]

6 Diorite and gabbro in granitic and gneissic terrains [GRNT]

7 Basic syenites, diorites, gabbros [GSBR]

Geological contact.....
Faults.....
Mineral prospect.....

Geological cartography by the Geological Survey of Canada

Legend and geology for the geochemical map by R.G. Garrett, from map 1216A of G.S.C. Memoir 350 by G.M. Wright

Base-map at the same scale published by the Mapping and Charting Establishment, M.C.E., 1968

Mean magnetic declination 1977, 0°05' East increasing 0.3' annually. Readings vary from 0°04.3' to the SE corner to 12°59' to the NW corner of the map area

Elevations in feet above mean sea-level

Geochemical Symbol and Data Presentation

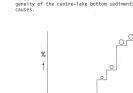
The concentration of an element at a sample site is graphically represented as one of eight symbols. The range of concentration of the element in the area of the dot is plotted. The symbols are symmetrically arranged so that they first increase in size to the eighth symbol and then increase in blackness to the fifteenth. The two small crosses at the low end of the scale are used to respectively denote concentrations below the analytical detection limit, or, in the data group consisting of more than 80 samples, the lowest 5 percentile of the concentrations. I.e. 1,2,5,10,20,30,50,100 etc. Five decades can be covered and this arithmetic 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 after examination of histograms of the distribution of the data. If survey data from one, or more contiguous, open file sheets covered in one field session. The eighth symbol is used for the model group as defined by the histogram, this group usually includes the median of the data as defined by the G.S (50%) point on the cumulative frequency plot. Some, or all, of the remaining 14 symbols are then used to show as appropriate geochemical impact. An example of all 15 symbols is given below.

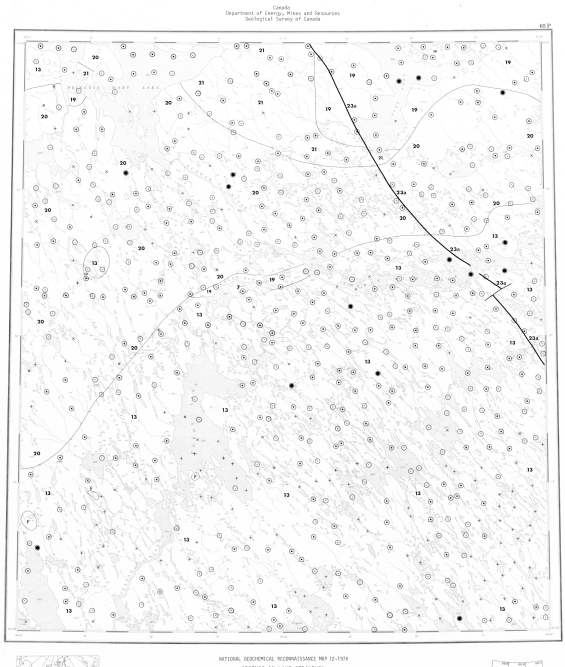
The symbol maps, being based on the total survey data distributions, are unaffected by the availability of ever-increasing levels of knowledge in bedrock and surficial geology, and other environmental factors. Therefore, the raw data symbol maps should not be used for any interpretive purpose other than to show regional features. To fulfil the needs of a more specific and improved interpretation, the raw symbol maps should be modified using the field and analytical data provided in the data listings and any other knowledge available. To assist in the appraisal and modification of the data in terms of the symbol map bedrock geology, a separate histogram and probability plot is presented for each bedrock unit, predominantly derived from each mapped bedrock unit, or broad lithologic unit, again based on the total survey data, is presented below the histogram. This table can be used alone, or in conjuction, with the sample location map and data listings to indicate above threshold samples where they occur on the map. In many instances, it will be found that the above threshold samples will define geochemical areas of mean geochemical levels in bedrock type. It may often be also observed that whilst the total data appears to approximate a log-normal distribution the data for individual map or lithologic units appears to approximate a normal distribution. The proposed thresholds presented are believed to be useful in interpreting the data in terms of mineral exploration. Any anomalous concentrations with concentrations in excess of the threshold for the rock unit they appear to be derived from, should be studied carefully. The above threshold concentration can be due to a wide range of geological and environmental factors, but one of these could be the presence of abnormal concentrations of the element in a form of interest to the mineral exploration industry.

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 and deriving local threshold levels based on the most detailed and up-to-date knowledge available.

The sample density for the Canada Geochemical Reconnaissance is an estimate of the reliability of the geochemical map. On the basis of duplicate sampling 5% of all lakes sampled it can be stated that there is a 95% chance that if any lake is resampled and identical methods of sample preparation and analysis are used the new value will lie between X ÷ 10² and X x 10² where X is the original value. This factor is a measure of the reproducibility of the data and the homogeneity of the centre-lake bottom sediments and sample preparation and analytical causes.



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



INDEX MAP

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 12-1976
ARSENIC IN LAKE SEDIMENTS
URANIUM RECONNAISSANCE PROGRAM

Scale 1:250 000

Kilometres 0 5 10 15 Kilometres
Miles 0 5 Miles

Universal Transverse Mercator Projection
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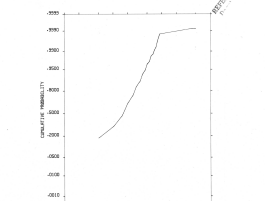

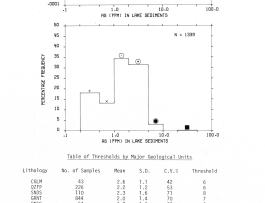

Table of Thresholds by Major Geological Units

Lithology	No. of Samples	Mean	S.D.	C.V.1	Threshold
CBUM	82	2.8	1.3	42	6
CBUU	202	2.8	1.3	42	6
INSS	110	2.3	1.8	71	8
GRNT	844	2.3	1.4	76	7
GNDS	114	1.7	1.3	68	6
VOLC	44	4.2	9.4	223	9
GSBR	14	1.4	0.5	32	2
GSDR	14	2.4	1.5	62	5

Data sets are pow — Reliability Factor = 2.64

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 12-1976
OPEN FILE 410

Resource Geophysics and Geochemistry Division

Geological Survey of Canada, Ottawa

Geochemistry by C.R.W. Hornbrook
Analytical chemistry by J.J. Lynch
Data monitoring by R.G. Garrett, N.G. Lund and D.J. Ethwood

Contractors

Sample collection by Trigg, Woollett & Associates Ltd.
Sample preparation by Golder Associates
Chemical analyses by Chemex Labs Ltd.

This map forms one of a series of 20 sheets released under Geological Survey of Canada, Open Files 410-417. The Open Files consists of data for 11 elements each for lake sediments, percent loss on ignition, uranium in lake waters and sample site location

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

The Director,
Computer Science Centre,
Department of Energy, Mines and Resources,
Ottawa, Ontario K1A 0E9

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 12-1976
OPEN FILE 410
BAKER LAKE N.W.T., 1976
ARSENIC

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