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

LEGEND

Note: This legend is common to National Geochemical Reconnaissance Map 9-1976, Open File 413; Map10-1976, Open File 414 and Map 11-1976, Open File 415

HELIKIAN

- 22 Gabbro, meta-gabbro and diabase dykes [GBBR]
- 21 Granite, quartz monzonite and granodiorite (Nueltin Lake granite) [GRNT]

APHEBIAN

- 20 Granite, quartz monzonite and granodiorite [QZMZ]
- 19 Lithic greywacke to subgreywacke [SBGK]
- 18 Conglomerate [CGLM]
- 17 Arkose to subgreywacke [ARKS]
- 16 Latite, quartz latite, dacite and tuff [DCIT]
- 15 Paragneiss, paraschist, calc-silicate bands derived from 14 [SMRK]
- 14 Undivided 11, 12 and 13 [SMRK]
- 13 Dolomite, limestone and minor argillite, phyllite [SMRK]
- 12 Gabbro sills [GBBR]
- 11 Argillite, phyllite, greywacke, some minor dolomite [SMRK]
- 10 Quartzite, orthoquartzite [ORQZ]
- 9 Greywacke-conglomerate, greywacke, protoquartzite [LCWK]

ARCHEAN

- 8 Meta-gabbro dykes [MGBR]
- 7 Quartz monzonite, granodiorite and granite; massive to foliated [QZMZ]
- 6 Diorite and gabbro [DORT]
- 5 Grey biotite granodiorite gneiss [GDRG]
- 4 Paragneiss, minor paraschist [PRGS]
- 3 Amphibolite, amphibolite gneiss [AMPB]
- 2 Greywacke, greywacke-conglomerate, argillite, phyllite, minor tuff [GRCK]
- 1 Meta-volcanic rocks [MVCC]

Drift-covered areas.......................................
Geological contact..
Fault...
Limit of geological mapping...............................
Eskers (direction of flow known)..........................
Mineral occurence...Zn ×

Legend modified and geology derived for the geochemical map by R.G. Garrett from maps 24-1970, 3-1972 and 4-1972 and G.S.C. Paper 74-54 BY. K.E. Eade

Geological cartography by the Geological Survey of Canada

Base-map at the same scale published by the Mapping and Charting Establishment, M.C.E., 1966

Mean magnetic declination 1977, 9°18'E decreasing 2.4' annually. Readings vary from 7°22.8' in the SE corner to 11°23.4' in the NW corner of the map area

Elevation in feet above mean sea-level

Geochemical Symbol and Data Presentation

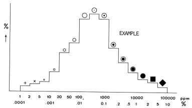
The concentration of an element at a sample site is graphically represented as one of 15 symbols, if a sample was collected but there is no data available a dot is plotted. The symbols are symmetrically arranged so that they first increase in size to the eighth symbol and then increase in blackness to 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 containing the detection limit. The data are grouped on a semi-logarithmic scale, i.e. 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.

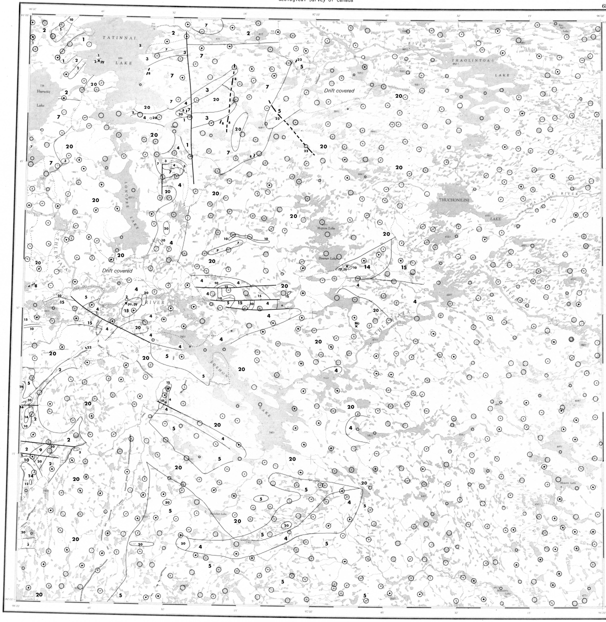
The choice of symbols and the data groups they represent for any specific element is based on the histogram and cumulative frequency plot for the total survey data from one, or more contiguous, open file sheets covered in one field season. The eighth symbol is used for the model group as defined by the histogram, this group usually includes the median of the data as defined by the 0.5 (50%) point on the cumulative frequency plot. Some, or all, of the remaining 14 symbols are chosen so as to achieve an appropriate graphical impact. An example of all 15 symbols is given below.

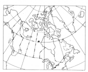
The symbol maps, being based on the total survey data distributions, are unaffected by the availability of ever increasing levels of knowledge in bedrock and surficial geology, and other environmental factors. Therefore, the raw data symbol maps are only intended to assist the rapid inspection of the data for gross regional features. To fulfil 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. To assist in the appraisal and modification of the data in terms of the symbol map bedrock geology, a table of summary statistics and proposed threshold values for drainage samples dominantly 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 along, 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, the table will also illustrate, more clearly than the map, the dependence of mean geochemical levels on 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 from a mineral exploration viewpoint. Locations of samples 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 explorationist.

To comprehensively study an area. all available geological, environmental and recorded data should be utilized. The data separation by bedrock type can often be impoved by constructing new data subsets and deriving local threshold levels based on the most detailed and up-to-date knowledge available.

The term reliability factor and value that appears below the table 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 ÷ RF and X x RF where X is the original value obtained. This factor takes into account variability due to both heterogeneity of the centre-lake bottom sediments and sample preparation and analytical causes.







NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 9-1976
LOSS ON IGNITION

URANIUM RECONNAISSANCE PROGRAM

Scale 1:250,000

Kilometres 6 0 6 12 18 Kilometres
Miles 4 0 4 8 Miles

Universal Transverse Mercator Projection
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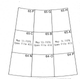

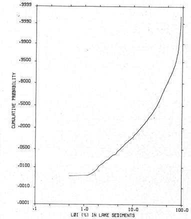

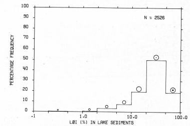

Table of Thresholds by Major Geological Units

Lithology	No. of Samples	Mean	S.D.	C.V.%	Threshold
GBBR	2	69	1	2	-
GRNT	335	32	16	51	-
QZMZ	619	33	20	59	-
SBGK	30	40	22	54	-
CGLM	14	43	25	58	-
ARKS	70	33	18	54	-
SMRK	167	41	21	51	-
ORQZ	20	33	25	75	-
LCWK	3	30	17	58	-
DORT	6	27	22	82	-
GDRG	422	30	18	60	-
PRGS	105	28	23	80	-
AMPB	20	34	19	56	-
GRCK	58	44	23	53	-
MVCC	74	28	20	73	-
Unknown	581	32	21	67	-

Data units are percent

Reliability Factor = 1.50

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 9-1976
OPEN FILE 413

Resource Geophysics and Geochemistry Division

Geological Survey of Canada, Ottawa

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Analytical chemistry by J.J. Lynch
Data monitoring by R.G. Garrett, N.G. Lund and D.J. Ellwood

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 45 sheets released under Geological Survey of Canada, Open FIles 413, 414, 415. The Open Files consists of data for 11 elements each for lake sediments, percent loss on ignition, two elements for lake waters and sample site location

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

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NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 9-1976
OPEN FILE 413
SOUTHERN DISTRICT OF KEEWATIN N.W.T., 1976
LOSS ON IGNITION