LOGOTOO

Note: This legend is common to National Geochemical Reconnaissance Maps 11-1976 (Open File 413, May/31/1976, Open File 414 and May/31/1976, Open File 415)

RELIEVEN

Mg	Gabbro, meta-gabbro and diabase dykes [GABB]
Mg	Granite, quartz monzonite and granodiorite (Quartz Lake granite) [QUAR] granodiorite
Mg	Granite, quartz monzonite and granodiorite [GIMC]
Mg	Lithic greywacke to subgreywacke [LGGS]
Mg	Conglomerate [CLGM]
Mg	Arkose to subgreywacke [ARKS]
Mg	Lutite, quartz lutite,dacite and tuff [QUIT]
Mg	Ferruginous, pyroclastic, calc-silicate beds derived from 14 [CMRG]
Mg	Undivided 11, 12 and 13 [CMRG]
Mg	Dolomite, limestone and other argillite, phyllite [DMRG]
Mg	Gabbro sills [GABB]
Mg	Argillite, phyllite, greywacke, some minor dolomite [CMRG]
Mg	Quartzite, orthoquartzite [QRQZ]
Mg	Greywacke-conglomerate, greywacke, protoquartzite [LCAR]
ASCACAN	
Mg	Meta-gabbro dykes [MGDY]
7	Quartz monzonite, granodiorite and granitic massive to foliated [GIMC]
6	Diorite and gabbro [DIOT]
5	Grey biotite granodiorite gneiss [GGNS]
4	Ferruginous, minor pyroxenite [FMBS]
3	Amphibolite, amphibolite gneiss [AMFB]
2	Greywacke, greywacke-conglomerate, argillite, phyllite, minor tuff [GRCX]
1	Meta-volcanic rocks [MVCC]

Drift covered area.....
Geological contact.....
Fault.....
Limit of geological mapping.....
Ickers (direction of flow known).....
Mineral occurrence.....

Legend modified and geology derived for the geochemical map by R.G. Garrett from maps 20-1970, 31-1972 and 4-1972 and G.S.C. Paper 74-54 BY. E.C. 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., 1963

Mean magnetic declination 1977, 16°25.5'E decreasing 6.0' annually. Readings vary from 14°10.4' in the SE corner to 18°02.2' in the NW corner of the map area

Elevation in feet above mean sea-level

Geochemical Symbol and Data Presentation

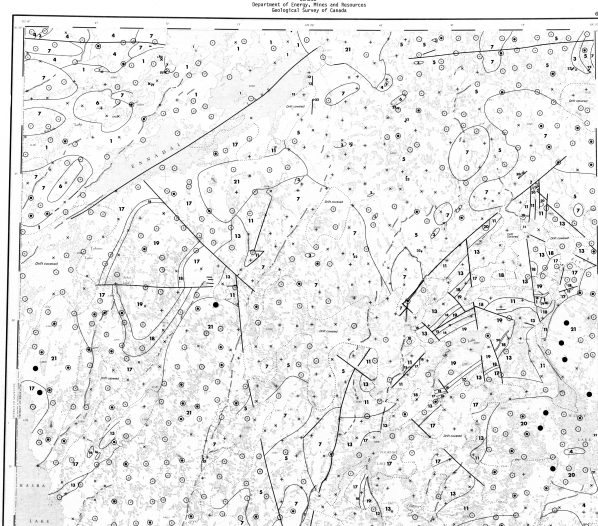
The concentration of an element at a sample site is graphically represented on the map by a symbol. The majority of symbols are circles, with the exception of a dot in plotting. The symbols are symmetrically arranged so that they first increase in size to the eighth symbol and then increase in blackness to the fifteenth. The two small crescent cut from the end of the scale are used to respectively denote concentrations below the analytical detection limit, or, in the data group containing 5% or more "zero" values, the lowest quantile. The class intervals (quantiles 1-6, 7-8,9-10,11-12,13-14,15-15) etc. Five decades can be summed and this arbitrary division has been chosen for the continuing Canada wide series of maps constituting the National Geochemical Reconnaissance.

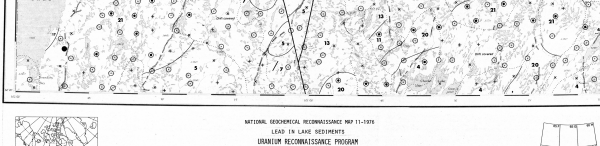
The choice of symbols and the data groups they represent for any specific element is made by the computer programme after examination of the data for the survey area from one, or more contiguous, open file sheets covering a one field season. The eighth symbol is used for the model group as defined by the histogram. This group usually includes the median of the data as defined by the G.S (50%) point on the cumulative frequency plot. Some, or all, of the remaining 14 symbols are assigned to the groups on appropriate gravitational basis. An example of all 15 symbols is given below.

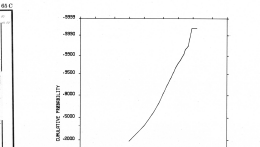
The symbol maps, being based on the total survey data distributions, are unaffected by the reliability of over thirteen-log levels of knowledge in bedrock and surficial geology, and other environmental factors. Therefore, the raw data maps, although they may be used for the study of regional trends, do not display regional features. 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. To assist in the appraisal and modification of the data in terms of the symbol map bedrock geology, the data listings include statistical parameters for the data populations 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 along, or in conjunction, with the sample location map and data listings to indicate above threshold samples where they occur on the map. In many instances, the data for a single bedrock unit will display a bi-modal occurrence 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 each 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 anomalous concentrations of the element.

To comprehensively study an area - all available geological, environmental and recorded data should be utilized. The data separation by bedrock type can be modified by the addition of geological and environmental factors, and derived local thresholds based on the most detailed and up-to-date knowledge.

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 95 of all lakes sampled it can be stated that there is a 95% chance that the true value for a sample will be within the reliability factor of the value analysis are used the new value will lie between 1 - RF and 1 + RF where RF is the reliability value obtained. This factor takes into account variability due to both heterogeneity of the centre-lake bottom sediments and sample preparation and analytical causes.







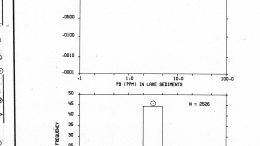


Table of Thresholds by Major Geological Units

Lithology	No. of Samples	Mean	S.D.	C.V.	Threshold
GABB	2	2.5	0.7	28	-
GRNT	335	2.6	2.4	93	20
GIMC	619	3.6	2.5	69	15
GGNS	30	3.0	1.8	60	10
AMFB	76	2.3	1.0	43	10
ARKS	16	2.5	1.3	52	10
SMRX	163	2.7	2.1	76	10
QRQZ	70	2.2	1.2	55	10
LCAR	3	4.0	1.0	25	-
CMRG	407	2.7	1.0	40	5
GRWC	407	2.2	1.0	45	10
FMBS	106	4.1	2.1	52	15
AMFB	20	3.4	2.4	71	10
GRCX	58	2.8	1.7	61	10
MVCC	78	3.2	1.7	53	10
Unknown	581	3.9	2.5	63	15

Data units are ppm — Reliability Factor = 2.20

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 11-1976
OPEN FILE 415

Resource Geophysics and Geochemistry Division

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Geochemistry by I.M.W. Hornbrook
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 Kelser Ltd.
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 11-1976
OPEN FILE 415
SOUTHERN DISTRICT OF MACKENZIE N.W.T., 1976
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