LEGEND

Note: This legend is common to National Geochemical Reconnaissance Map 13-1976, Open File 416; Map 13-1976, Open File 417

PROTEROZOIC

ANORTHOSITE (UPPER PROTEROZOIC)

23a	23a, gabbro and diabasic gabbro dykes [GDBR]

HELIKIAN (MIDDLE PROTEROZOIC)

DARNAUT GROUP (19-22)

21	Conglomerate, pebble sandstone, some intercalated sandstone. In part, may be older than 20 or 19 [DGRM]
22	Mainly porphyritic (quartz and/or feldspar, biotite and/or pyroxene) igneous rocks; probably mainly metaphase, but in part intrusive; some breccia, tuff, agglomerate; minor sub-porphyritic aphanitic rocks [DZPP]
20	Sandstone and subdly sandstone, grit, arkosic siltstone and minor breccia, probably includes some undifferentiated conglomerate (18 and/or 21) [SABS]
19	Conglomerate; intercalated gritty sandstone [CGLR]

ARCHEAN (LOWER PROTEROZOIC)

13	Granite, granodiorite and allied rocks: in large part gneissic and migmatitic, with many bands of partly assimilated schist, gneiss, amphibolites, stratiform granite-gneiss; mylonitic gneisses of granitic composition; some porosene granulite. In part probably older than 9 and, possibly, 7 [GRNT]
12	Gneiss, schist, amphibolite, and granulite derived mainly from sedimentary and volcanic rocks of Archaean and/or Lower Proterozoic (Aphebian) age; some impure quartzite and greywacke; commonly with some granitic material [GNSS]
9	Intermediate to basic volcanic rocks (greenstone) and derived amphibole schist and gneiss; in part includes much schistose greywacke (lower Thelon belt); some mystites, tuff, agglomerate; minor quartz-mica schist and magnetite iron-formation (Southern Kewatin), undifferentiated basic intrusions. May be younger in part (Marwitz) [VMCA]
8	Diorite and gabbro in granitic and gneissic terrains [DGRT]
6	Basic syenites, diorites, gabbros [GDBR]

Geological contact.

Fault.

Mineral prospect.

Geological cartography by the Geological Survey of Canada

Legend and geology for the geochemical map by R.G. Garrett, from map 12164 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.C., 1966

Mean magnetic declination 1977, 30°40' East increasing 2.3' annually. Readings vary from 19°26.6' in the SE corner to 19°59.4' in the NW corner of the map area

Elevations in feet above mean sea-level

Geochemical Symbol and Data Presentation

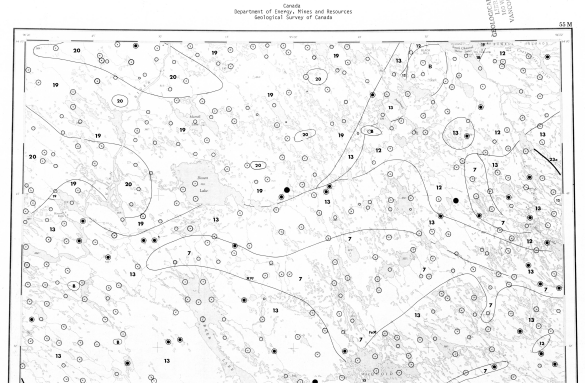
The concentration of an element at a sample site is graphically represented as one of 15 symbols, if a sample was collected but there is no data available a dot is plotted. The symbols are symmetrically arranged so that they first increase in size to the eighth symbol and then increase in blackness to the fifteenth. The two small crosses at the low end of the scale are used to respectively denote samples which are below the detection limit and those which are marginally exceeding 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 population of samples. Background, threshold and anomalous data are thus readily known. 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 errors, and to act as a "first look" at the data for the purpose of stating hypotheses, the raw symbol maps should be modified using the field and geological information 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 equal lithologic unit, again based on the total survey data, is presented below the histogram. This table can be compared with the histogram and the raw symbol map to assist the user in deciding 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 a single bedrock unit may not. Such observations are of importance in prospecting. 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 in be derived from, should be studied carefully. The above threshold concentration may be due to the presence of additional environmental factors, but one or more could be the presence of economic 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 data listed in the table below can be used to derive an estimate of the reliability of the geochemical map. On the basis of duplicate sampling 51 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 recorded. This factor takes into account variability due to both heterogeneity of the centre-lake bottom sediments and sample preparation and analytical causes.


Canada
Department of Energy, Mines and Resources
Geological Survey of Canada
55 M
Lake Dubawnt
Lake Wollaston
Lake Athabasca
Lake Cree
Lake Athabasca
Lake Reindeer
Lake Wollaston
Lake Dubawnt
Lake Cree
Lake Reindeer
Lake Athabasca