LEGEND

NOTE: This legend is common to both 1:50 000 and 1:250 000 maps

IGNEOUS INTRUSIVE ROCKS

35	FELSITE-QUARTZ PORPHYRY, Felsite
34	BASIC DIKE-GABBRO, Trachyte
33	RHYOLITE-sanidine, andesine, Trachyte
	QUARTZ-FELDSPAR PORPHYRY
32	SYENITE, pulaskite
31	MONZONITE-sanidine, andesine
	SYENITE-GRANITE
30	SYENITE-sanidine, andesine
29	Felsite
28	Rhyolite
27	Trachyte
26	Dry quartz-free monzonite porphyry
25	Monzonite
24	Pulaskite, syenitic porphyry
23	Quartz-bearing monzonite porphyry

	ANDESITE-DIORITE
22	Dry andesite porphyry
21	Dry diorite porphyry
	Dry andesite-diorite porphyry
	Dry quartz-bearing andesite-diorite porphyry
	Dry quartz-free andesite-diorite porphyry
	Dry quartz-bearing andesite porphyry
	Dry quartz-free andesite porphyry
	Dry quartz-bearing diorite porphyry
	Dry quartz-free diorite porphyry
	GABBRO
20	Dry gabbro porphyry
19	Dry gabbro
	Dry quartz-bearing gabbro porphyry
	Dry quartz-free gabbro porphyry
	Dry quartz-bearing gabbro
	Dry quartz-free gabbro
	Trachyte
	Trachydiorite porphyry
	Trachyte, syenitic porphyry
	Trachydiorite-hyperstheme porphyry

Geological contact.....

Fault.....

Dyke.....

Geology derived from the map 1124-A, Sturtevant Gatchene at the scale of 1: 1,000,000. Compiled by A.L. Roe, W.M. Poole and D.F. Sandford, 1951

Geological cartography by the Geological Survey of Canada

Base-map at the same scale published by the Mapping and Charting Establishment, M.C.E., 1966-67

Mean magnetic declination 1977, 15°02.0' west decreasing 5.7' annually. Readings vary from 13°52' in the S.E. corner to 15°55.0'in the W 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 one of 14 symbols. If a sample was collected but analysis for the element in question was not undertaken, or the analysis was lost or rejected because the first increase in value in the signal symbol and the increase in value between successive symbols is not constant, but is designed to emphasize the lower concentrations. Values below the analytical detection limit, are, in the data group containing the detection limit, represented by the smallest symbol, a dot within a circle. Values above the highest five deciles can be expanded and this attribute division has been chosen for the sixty-six constituting Canada wide series of maps constituting the National Geochemical Reconnaissance. The data for each element are divided into deciles, each decile containing 10 percent of the samples, based on the Geological and Landsliding Committee plot for the total survey data from one, or more contiguous, such 1°sq sheets covered in one field season. The deciles are represented by 10 symbols, the first of which, a dot within a circle, would include the median of the data as derived by the G.S.C.(GSC) point on the cumulative frequency plot. Some, or all, of the remaining 14 symbols are chosen on the basis of an approximate graphical relation. An example of all 24 symbols is given below.

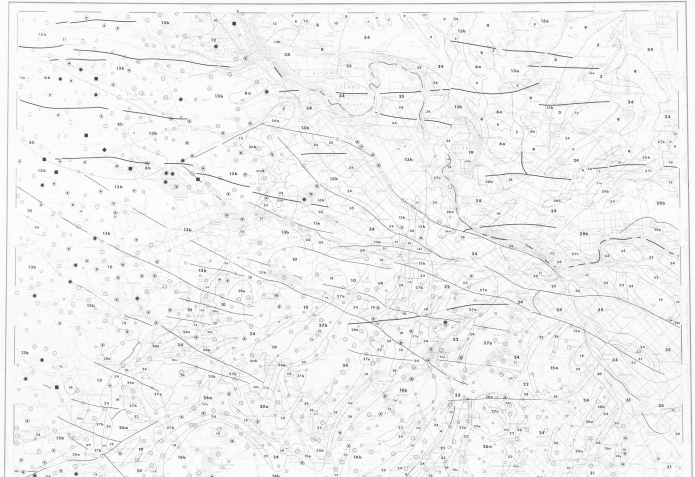
The symbol maps, being based on the total survey data distributions, are unaffected by geographical and geological boundaries. Therefore, the use of these maps in conjunction with geological, and other environmental data, is facilitated. Nevertheless, the raw data spread sheets are duly intended to assist the rapid inspection of the data for gross regional features. The data, as presented on the spread sheets, are unedited and any subsequent studies of them would be modified during the field and analytical data processing of the data. Plotting, and any other knowledge available. To assist in the appraisal and modification of the data, histograms, cumulative frequency plots, and the statistical parameters, mean and standard threshold values for each mapped bedrock unit, or broad lithological unit, again based on the total survey data, is presented below the histograms. This table is not intended to be definitive, but is a guide to the reader in the use of the maps. Similar tables are also given for each of the 1°sq sheets in the series. In many instances, the table will also illustrate, more clearly, the effect of the analytical detection limit. Some data appears to approximate to a normal distribution, but in many instances, the data appears to approximate to a logarithmic normal distribution. The presented thresholds presented are believed to be useful in interpreting the data from a mineral exploration point of view. Where the data approximates to a normal distribution, the thresholds further multiples may appear to be over-fine, should be studied carefully. The above threshold concentration can be due to a wide range of geological and environmental factors, and is not necessarily indicative of economic concentrations of the element in a form of interest to the mineral exploitationist.

To comprehensively study an area, all available geological, environmental and geochemical data should be used. Anomalous areas should be defined on the data so organized by constructing new data networks and deriving local threshold levels based on the most detailed and up-to-date knowledge available.

The probability that a sample collected from below the table is an estimate of the reliability of the geochemical map. On the basis of duplicate sampling 91 of all taken sampled it can be stated that there is a 95% chance that if any take is collected from the same site as a sample already collected, the value of the second sample will lie between a + 20 and a + 40 where X is the original sample value. This factor takes into account variability due to both heterogeneity of the centre-take between catchments and sample preparation and analytical causes.

Province of Ontario
Ministry of Natural Resources
Geological Branch

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



NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 31-57E
ZONE 16 GAUL SEGMENTS

CANADA-ONTARIO SUBSIDIARY AGREEMENT ON MINERAL EXPLORATION AND DEVELOPMENT

Scale 1:250,000

Kilometres 0 5 10 15 Kilometres
Miles 0 2 4 6 8 10

Universal Transverse Mercator Projection
(1) Lower Cumulative Journal

This map has been digitized from a
registered version of the original map
Digitizing and automated cartographic
techniques were employed

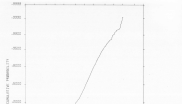


Table of Thresholds for Major Geological Units

Lithology	No. of Samples	Mean	S.D.	C.V.%	Threshold
Sandstone	11	1.4	1.3	93	3
Sandstone	12	1.4	1.3	93	3
Granite	7	1.4	1.3	93	3
Ivory	13	1.5	1.3	87	3
Marble	143	1.5	1.3	104	4
Metasediments	11	1.5	1.3	104	4
Andesite	75	1.5	1.3	104	4
Mixed Tuff	2	0.6	0.8	130	4
Mixed Tuff	14	0.6	0.8	130	4
Granite	14	0.6	0.8	130	4
Granodiorite	41	0.7	0.9	130	4
Granite	6	0.7	0.9	130	4
Granodiorite	43	0.8	0.9	130	4
Granite	14	0.8	0.9	130	4
Granite	302	1.9	1.5	130	4
Granodiorite	14	1.9	1.5	130	4
Migmatite	2	1.9	1.5	130	4
Unknown	8	1.4	1.2	84	4

Data units are ppm/cent

Ref:monthly Fosher= 1.46

NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 31-57E
OPEN FILE 488

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Contractors
Sample preparation by Bolden Associates
Analytical services by Chemex Labs Ltd.

This map forms one of a series of 73 sheets released under Geological Survey of Canada, Open-File, 488-488. The open files consist of data for 73 elements each, per cent loss on ignition and labels in the location.

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

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NATIONAL GEOCHEMICAL RECONNAISSANCE MAP 31-57E
OPEN FILE 488
SOPHIASTON ONTARIO, 1976
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