

CANADA
DEPARTMENT OF ENERGY, MINES AND RESOURCES
GEOLOGICAL SURVEY OF CANADA



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GEOCHEMICAL ORIENTATION SURVEY FOR
URANIUM IN THE GRENVILLE PROVINCE OF ONTARIO

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OTTAWA
1977

Geochemical Orientation Survey for
Uranium in the Grenville Province of Ontario

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Abstract

A helicopter-mounted lake sediment and lake water survey was carried out over Grenville rocks in the Renfrew area (parts of Renfrew and Lanark Counties) during four days of October, 1975. In the course of this survey 1150 square kilometers were covered with 246 lake sediment and 276 lake water samples collected from every body of water on which the helicopter could land. Sample sites which averaged one per 4.6 square kilometers included lakes, ponds, beaver ponds, swamps and marshes. Lake sediment samples were taken using a G.S.C. sampler. Waters were collected directly into polyethylene bottles. At each sample site surface and bottom water pH, dissolved oxygen content, conductivity and temperature were measured using a Martek Water Quality Analyser.

The lake sediments were air dried and then ball milled to pass a minus 80-mesh sieve. Lake sediments were analyzed for U by delayed neutron activation and for Mo, Cu, Zn, Pb, Fe, Mn, Ni and Co by atomic absorption techniques. The Cu, Pb, Zn, Ni, Co, Fe, Mn, Mo, Sr, Ba, Ti, Al, Ca, Mg, K, V, Cr, Be, La and Y contents of the lake sediments were analyzed quantitatively by D.C. arc emission spectroscopy. The organic content of the sediments was determined by loss on ignition at 450°C. Lake waters were acidified with nitric acid on the day of collection. The U content of the waters was determined by fluorometry; the Cu, Zn, Pb, Fe, Mn, Ni and Co contents of the waters were determined by solvent extraction - atomic absorption techniques.

A close relationship was found between bodies of granitic, syenitic and pegmatitic bedrock and elevated U levels in the lake sediments. The Hurd Lake and White Lake granitic intrusives were encompassed by an annulus of higher U activity. Field inspection revealed that the U concentrations occur within a zone which may represent a contact metamorphic aureole. Within these complexes anomalous concentrations of U appear to be associated with Mo. Information derived from the lake water data reinforces the geochemical distributions outlined by the lake sediment survey.

This survey was carried out in order to develop optimum sampling and analytical procedures for geochemical reconnaissance of the Grenville Province that may be carried out under the auspices of the Uranium Reconnaissance Program.

Introduction

An orientation survey of the trace element geochemistry of drainage basin sediments and surface stream and lake waters was carried out in an area covering parts of Renfrew and Lanark Counties. The survey, which covered all of the 1:50,000 map sheet of Renfrew (31E/7), was completed in four days of flying with a Hughes 500-C helicopter.

The work forms a continuing part of the National Geochemical Reconnaissance (N.G.R.) programme which comprises not only regional reconnaissance surveys, but also detailed sampling within selected orientation scale projects and follow-up studies.

A major objective of the programme is to direct attention to areas which may prove of interest in uranium geoexploration. In some cases, as in Eastern Ontario, an area may already be well known for its uranium occurrences but geochemical methodologies which might be employed to locate further zones of interest have not been thoroughly tested.

In particular, the Renfrew area, which lies to the east and within 80 km of the Bancroft Mining District has not received the attention it might otherwise have deserved because of that proximity to known uraniferous zones.

Thus, the orientation survey of the Renfrew area, described herein, was designed to permit testing of geochemical methods with regard to their responses to typical Grenville geological and environmental influences. The information gathered could be viewed on the one hand as research information and on the other, as the basis for anticipated future regional surveys of these and similar nearby terrains.

Geology and Previous Work

The geology of the area has been described by Quinn *et al* (1956) and published as Geological Survey of Canada Map 1046A, Renfrew (See Fig. 1). A

**RENFREW AREA
(31-F-07)**

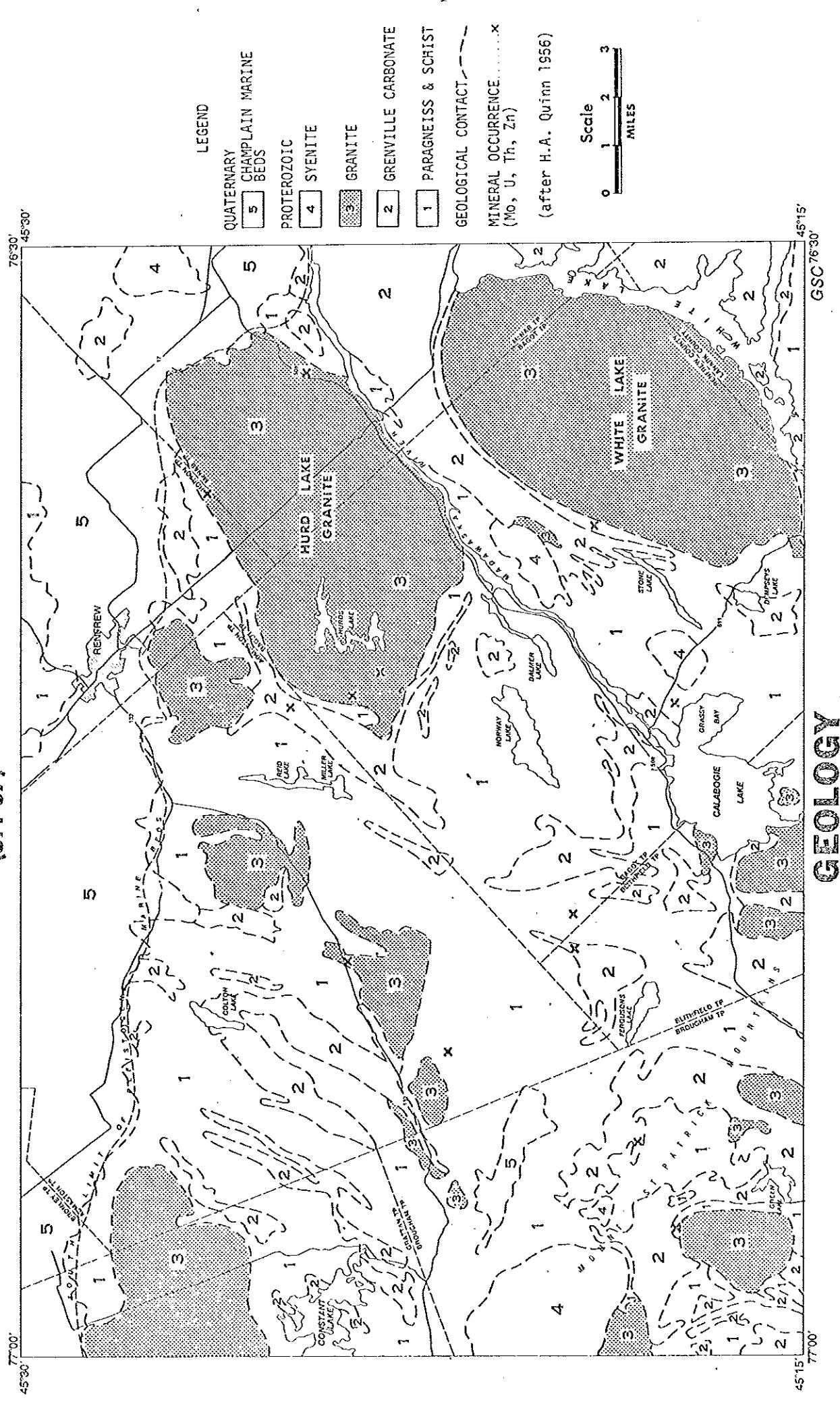


Figure 1. Generalized geology of the Renfrew area, Ontario.

compilation of the geology of Renfrew County showing, amongst other things, the relationships between the Bancroft and Renfrew areas has been published by the Ontario Department of Mines as Map No. 53b, Renfrew area (Satterly, 1944). Of principal interest from the viewpoint of uranium possibilities, are three granitic bodies which are located in turn, near Renfrew town, surrounding Hurd Lake and west of White Lake. Smaller similar bodies lie to the west of Calabogie Lake, in Brougham Twp and in the northwest of the area covered (Grattan Twp.). All of these intrusives comprise granites and/or granodiorites with some syenite facies. Some true syenites are also mapped near White Lake and in Brougham Twp. The Hurd Lake granitoid differs from the others in that it contains extensive formations of granite pegmatites which are known to host minor occurrences of tourmaline, molybdenite and occasionally, uraninite. Prominent zones of hornblende and other types of gneiss commonly surround the granites, although the nature and grade of alteration of metamorphic rocks observed clearly depends on the nature of sediments which have been intruded. To the west and south of the Hurd Lake granite lies a zone of Grenville marbles which contain showings of sphalerite and galena (Renprior Claims). Close to these zinc-lead showings but still within the Hurd Lake pegmatites are some old workings from which molybdenite was once mined (Vokes, 1963; Satterly, 1944). The most prominent of these are the Zenith and Buckhorn Mines which now reveal their presence by a few overgrown pits, shafts and trenches. The more significant ones lie in Brougham Twp. and are now known as the Hunt and the Ross-O'Brien Mines where the host rocks for mineralization are mainly amphibolite and gneiss. No uranium showings have been reported from these areas.

Algoma Ore Properties holds a magnetite deposit in the Campbell - Caldwell ore zone about 1 mile east of Calabogie. A number of other minor magnetite deposits in the same area include the Black Bay and Culhane mines.

There is a general distribution of magnetite occurrences in a belt extending from Calabogie Lake north to Hurd Lake.

All of the small tonnage of celestite mined in Canada has been obtained from a deposit south of Virgin Lake. (*Is it on Map?*)

A considerable amount of prospecting and geophysical work has been carried out close to and across the survey area.

A study of the radioactive pegmatites of the Renfrew area has been made by Charbonneau and Jonasson (1975). Their work followed on previous investigations of uranium showings within the Ordovician March - Oxford Formations which lie between the eastern limits of the study area and Ottawa (Charbonneau et al 1975a; Jonasson and Dyck, 1974). Other reports of radioactive pegmatites in the Gatineau Hills, Quebec (Hogarth, 1970) and studies of the uraniferous Bancroft and Mont Laurier pegmatites (Allen, 1971; Satterly, 1957) also form part of the background to this present work.

The airborne radiochemical work of Charbonneau et al (1975b) and G.S.C. (1976, 1977) in the Ottawa Valley west of Ottawa and certain cross-country airborne gamma ray spectrometry profiles which transect Renfrew area have also indicated significant radioactive anomalies in the study area (Darnley et al, 1971).

The working hypothesis which drew Charbonneau and Jonasson into the Hurd Lake area is twofold. Firstly, earlier works noted above indicated that a "source" area in Precambrian rocks of Grenville age for uranium found in Paleozoic sediments should lie immediately to the west and north of these formations. Secondly, the chemical and mineralogical similarities between pegmatites found in Bancroft and Mont Laurier, where there is a positive correlation of radioactivity with contained magnetite or biotite, leads one to look for similar relationships in the Renfrew area granites. In fact this

is so (Charbonneau and Jonasson, 1975). Satterly's map (1957) also shows a general correlation between the structure of granitoid masses with peripheral gneiss and related radioactive occurrences at Bancroft and Renfrew.

Charbonneau and Jonasson (1975) concluded their investigation by suggesting that possibly there exists a continuous belt of radioactive granitoids between Bancroft and Mont Laurier. The regional unconformable contact of Grenville rocks and the underlying granitic basement is considered to have generated, through remobilization, uranium enriched pegmatites worthy of further attention with regard to mineral exploration.

In this present work it was resolved to check surficial geochemical responses against known and considered underlying geology with regard to uranium occurrence.

The Survey

In the course of this orientation survey, which was conducted in October 1975, 1150 km^2 (450 mi^2) were covered with 246 lake sediments and 276 lake water samples (see Sample Location Map, Appendix I). These were collected from every body of water on which the helicopter could safely land. Sample sites, which averaged one every 4.6 km^2 (1.8 mi^2), included lakes of all sizes, ponds - permanent and intermittent, beaver dams, true swamps and flooded marshes. Heavy rains in the area had broken dry conditions some 5 or 6 days prior to commencement of the survey, and as a consequence the ease of landing at certain sites was enhanced due to increased water flows in intermittent drainage courses. The effects this circumstance had on availability of sediments samples and on the condition of water samples can be discussed.

The physical nature of a lake sediment, usually collected from what was thought to be the deepest part of the lake, did not vary much for samples from deep, permanent lakes. It was commonly a thixotropic gel, brown, black or

green in colour, sometimes smelling of hydrogen sulphide. Occasionally pink or yellow sediments would be gathered but these were more typical of shallower lakes such as White Lake. Often these were more chaff-like in texture and less mature than gels. No difficulty was experienced in collecting such samples. Lake waters were clear but sometimes stained yellow in the shallower lakes, presumably by dissolved organic substances.

Some 30 more water samples than sediments were collected. Sediment recovery was reasonably good in permanent waterfilled swamps where rotting organic matter or bog soils were readily gathered, but in grassy marshes it was very poor. It is suspected that a number of these latter sites were intermittent water bodies and in fact there was no true sediment to be collected. The sampler would not penetrate the "lake" bottom at all. This situation was also true of most beaver dams and also in the flooded northern reaches of Calabogie Lake and Black Donald Lake. The last two bodies were sampled for water only, due to the inability of the sampler to recover any sediment.

It would seem that in any relatively young water body there has not been sufficient time to lay down a drainage basin sediment of any thickness which can be usefully sampled. The two large lakes mentioned above are products of fairly recent flooding due to dam building. These lakes were found to be too deep to sample in their centres; i.e., in the "original" lake basins wherein a normal sediment would be readily available.

The water bodies within the granite west of White Lake were found to be particularly difficult to sample not only for the abundance of beaver dams and intermittent ponds but also for the inaccessibility of flooded marshes due to dead-head trees. Consequently, coverage with sediments is more sparse in this region than elsewhere in the survey area.

The water samples from ponds suspected to be flood-filled were generally very clear and fresh-looking. It is considered here that they could well closely reflect the trace geochemistry of the rocks they have recently drained, particularly for elements considered to be hydrogeochemically mobile, such as U.

As will be shown later, the presence of dissolved carbonate is probably ubiquitous through the study area; water pH was almost invariably alkaline. Such conditions are favourable for the dispersion and retention in solution of the elements U, Mo and to a lesser extent, Zn, but less favourable for say, Cu, Pb, Fe and Mn.

Sampling techniques and analytical procedures

Sediment samples were obtained using a G.S.C. sampler. Surficial (top 5-10 cm) sediment, at the sediment - water interface was avoided.

Surface waters were collected directly into polyethylene bottles and acidified (250 μ l of HNO₃ per 125 ml of water) on the day of collection.

Measurements of the surface and bottom water pH, dissolved oxygen content, temperature and conductivity were made using a Martek Mark V Water Quality Analyzer. Sample depth was also recorded.

A number of standard observations, as well as the Martek data, were recorded on lake sediment and lake water field data cards for the corresponding sample taken at each sample site. The field data cards have been described by Garrett (1974).

Air drying generally resulted in the organic-rich bottom sediment samples becoming extremely hard. The samples were disaggregated, using a mortar and pestle and an alumina ball mill, to obtain a fine powder which could pass through a minus 80-mesh sieve.

A 1 g sample of minus 80-mesh lake sediment was digested in a test tube with 6ml of a 4M HNO₃ - 1M HCl mixture overnight. After digestion the

sample solution was cooled to room temperature and diluted to 20 ml with distilled water. The contents of Cu, Zn, Fe, Mn, Pb, Co and Ni were estimated by atomic absorption spectrophotometry. Analyses for the last three elements were carried out using simultaneous, automatic background correction.

A 500 mg sample of minus 80-mesh lake sediment was decomposed in 1.5 ml of conc. HNO_3 overnight, 0.5 ml conc. HCl added and the solution allowed to cool to room temperature. An 8 ml aliquot of a 1250 mg/ml Al solution was then added and the solution was made up to 10 ml with distilled water. Mo was estimated by direct aspiration of the sample solution into the nitrous oxide - acetylene flame of an atomic absorption spectrophotometer.

A 50 ml aliquot of the acidified water sample was extracted in 6 ml of MIBK with 3 ml of 1% APDC. The contents of Zn, Cu, Pb, Ni and Co in the concentrate were estimated by atomic absorption spectrophotometry. The contents of Mn and Fe in the water samples were determined by direct atomic absorption spectrophotometry.

The delayed neutron activation method of analysis, by which the lake sediment samples were analysed for total U, was developed by Atomic Energy Canada Ltd., Commercial Products Division, and is described in some detail by Boulanger et al., (1975).

The fluorometric method of analysis of the lake water samples for acid-extractable uranium was based on that described by Smith and Lynch (1969).

The D.C. arc emission spectroscopic method used to analyze the lake sediments was developed by Timperley (1974).

The organic carbon content of a lake sediment sample is proportional to the percent weight loss on ignition (Coker and Nichol, 1975). Loss on ignition (L.O.I.) was determined on a 1 g portion of sample by ashing during a three hour time - temperature controlled rise to 450°C.

All data including field observations and analytical results are listed for lake water and lake sediment samples in Appendixes II and III respectively.

Results and Discussion

A summary of the analytical data for 204 surface water samples is presented in Table I. Both physical and chemical measurements are given. Temperature, pH, conductivity and dissolved oxygen content were found to be distributed normally whereas trace metal contents were found to be distributed lognormally. pH was observed always to be alkaline and to exhibit little variation from site to site. The range 7.8 to 8.5 suggests that carbonate-bicarbonate buffering is controlling water acidity. It is considered that these small pH variations will not have a significant effect on the levels of trace metals measured in the lake waters. Conductivity measurements yielded the lower set of values in granitic terrane and the higher set of values in carbonate-enriched terrane as might be expected. All surface waters were more or less oxygenated; the effects that the observed variations might have on the nature of speciation of U and Mo in particular are not yet known. Of the trace metals Ni, Pb and Zn sometimes reached high local levels (Table I) compared with respective mean values for the whole region. U values reached 3.0 ppb compared with a regional mean of 0.07 ppb. By comparison Cu data are relatively featureless. Fe and Mn were also determined to provide information on mechanisms which may exert some control on observed levels of U.

The distribution of elevated U values in the surface lake waters appears to be confined to the periphery of certain granitoid intrusives (Fig. 1) viz., those near Hurd Lake and west of White Lake (Fig. 2). Zn and Pb were found to be highest in lakes within Grenville marble units as would be anticipated from a knowledge of mineral showings in the study area.

	min	$\bar{x} - 2\sigma$	$\bar{x} - \sigma$	\bar{x}	$\bar{x} + \sigma$	x	2σ	max
Temp °C	10.0	12.1	13.1	14.2	15.2	16.3	17.0	
pH	7.8	7.9	8.0	8.1	8.2	8.3	8.5	
Cond umho/cm	13	8	70	132	194	256	297	
O_2 ppm	2.3	6.3	7.9	9.5	11.1	12.7	13.9	
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U	0.0	-	0.02	0.07	0.23	0.79	3.0	
Zn	*0.2	-	-	0.4	0.9	2.2	24	
Cu	*0.2	-	-	0.3	0.5	0.9	7.8	
Pb	*2.0	-	-	2.1	2.6	3.3	65	
Co	*1.0	-	-	1.5	2.7	4.8	5.0	
Ni	*0.2	-	0.6	1.8	5.6	17	105	
Fe	*5	-	10 ^a	39	157	636	2394	
Mn	*5	-	-	20	48	115	508	
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* Values equal half detection limit

All metal values in ppb (ng/ml)

204 samples

TABLE I SURFACE LAKE WATERS: RENFREW

RENFREW AREA
(31-F-07)

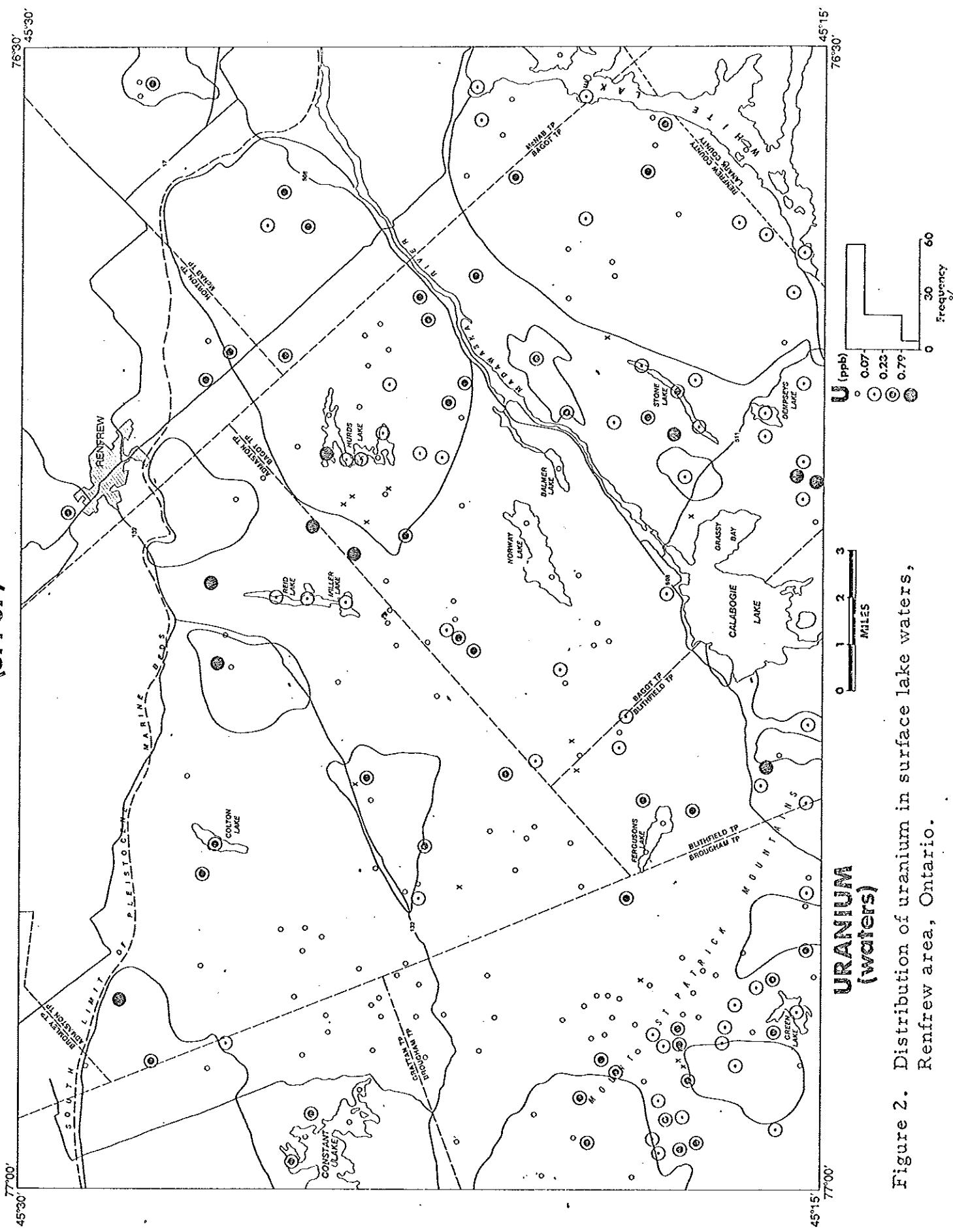


Figure 2. Distribution of uranium in surface lake waters,
Renfrew area, Ontario.

Although interesting in their own right, data from water samples are best viewed with complementary sediment data (Table II). It is evident from the information presented that U distribution in sediments (Fig. 3) is much the same as in waters (Fig. 2). The same granites are outlined but some additional areas of interest appear around a pegmatitic granite west of Calabogie Lake.

Exact correspondence of water and sediment anomalies is missing, however, taken together the respective data reinforce each other and do direct attention to the same geological features. This is particularly true of the Hurd Lake granite where there is an annulus of elevated U values (water, sediments or both) around the intrusion. Field inspection, using scintillometers, of some of these locations confirms the presence of radioactive mineralization in pegmatites and skarns.

The regional distributions of Mo (Fig. 4) suggests a close correspondence between U and Mo mineralization around the peripheries of the granites. Field inspection again revealed the presence of molybdenite showings in a number of old mining operations west of Hurd Lake, some of which were observed to be radioactive (A.E. Soregaroli, G.S.C. pers. commun.).

Another area of high Mo values occurs in amphibolites, schists and paragneisses in the Mount St. Patrick highlands. However, in this case there are no U highs associated with the known Mo occurrences which are located entirely in paragneiss (A.E. Soregaroli, G.S.C., pers. commun.). Rather, the overlapping U and Mo anomalies lie to the south of the Mo mineralization and appear to be related to a granitoid intrusive.

These observations lead to the conclusion that there are two types of Mo mineralization influencing the hydrogeochemical survey data. The first type is that which is found in the contact metamorphic aureoles surrounding certain granitoids (eg., Hurd Lake). Molybdenite is found mainly in pegmatites,

	min	$\bar{x} - 2\sigma$	$\bar{x} - \sigma$	\bar{x}	$\bar{x} + \sigma$	$\bar{x} + 2\sigma$	max
Depth m	1	-	-	6	12	17	34
Temp °C	4.0	5.9	9.2	12.5	15.8	19.1	17.0
pH	7.6	7.7	7.9	8.0	8.1	8.3	8.5
Cond umho/cm	14	-	39	156	273	390	1324
O_2 ppm	0.2	-	3.0	6.8	10.6	14.4	14.8
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U	0.5	1.0	2.5	6.1	14.9	36.4	281
Mo	0.5	1.1	2.0	3.8	7.1	13.3	23.6
Zn	17	29	46	73	115	184	706
Cu	*1	6	11	21	38	68	151
Pb	*1	-	3	7	14	27	450
Ni	*2	-	6	10	16	27	45
Co	*1	-	2	4	8	14	15
Mn	24	4	8	165	338	691	11800
Fe %	0.1	1.6	3.2	0.6	1.3	2.5	12.7
L.O.I. %	6	27	41	62	-	-	90

* Values equal half detection limit

Trace metal values in ppm (U by delayed neutron activation; Mo, Zn, Cu, Pb, Ni, Co, Mn and Fe by atomic absorption techniques)

166 samples

Physical data refer to bottom waters

TABLE II LAKE SEDIMENTS: RENFREW

RENFREW AREA
(31-F-07)

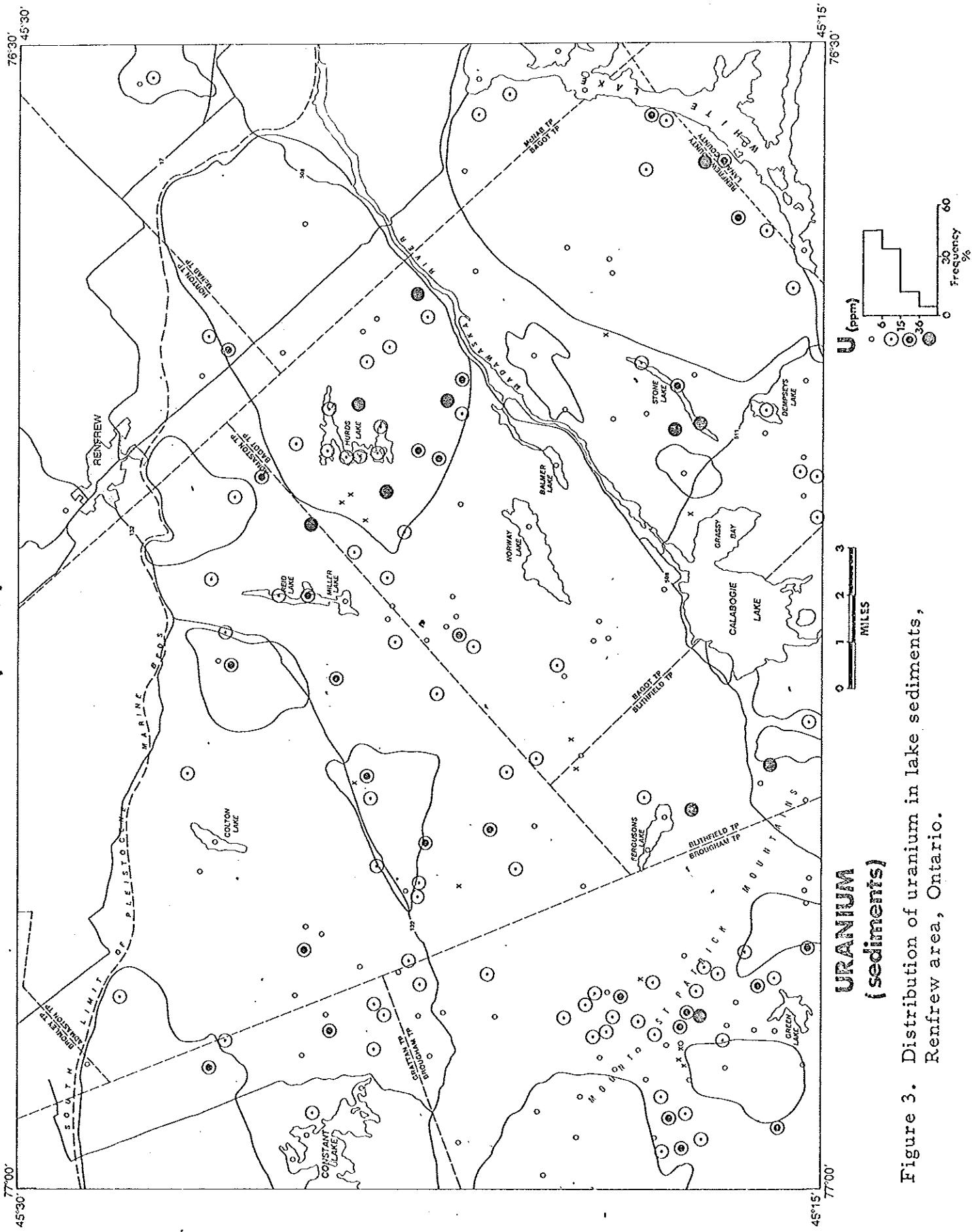


Figure 3. Distribution of uranium in lake sediments,
Renfrew area, Ontario.

URANIUM
(sediments)

**RENFREW AREA
(31F-07)**

- 17 -

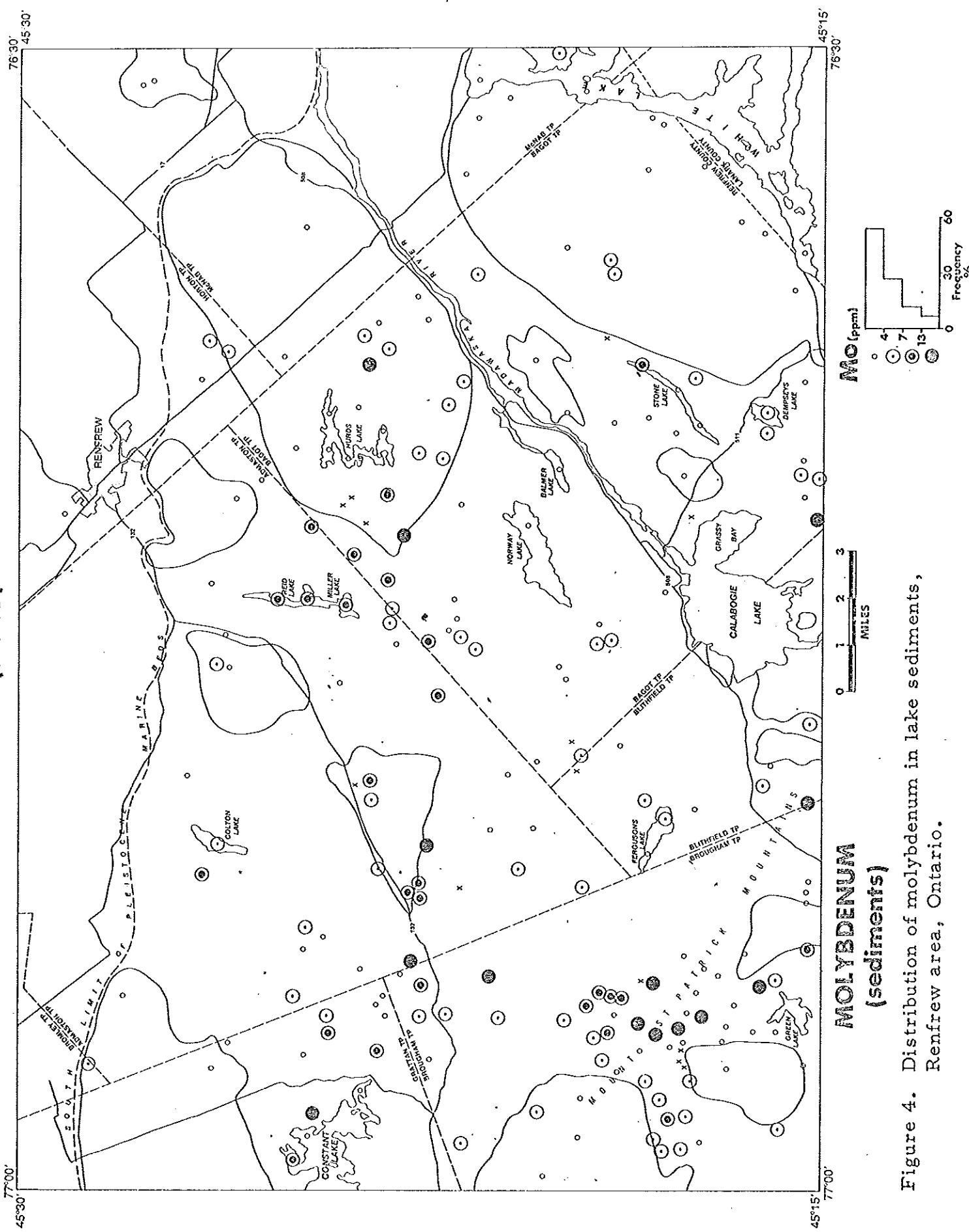


Figure 4. Distribution of molybdenum in lake sediments,
Renfrew area, Ontario.

hornblende gneiss and pyroxenites. Occasionally some is found in true granite. These Mo aureoles are not necessarily wholly coincident with U (or radioactivity) anomalies but are always in close proximity. It is possible that cogenetic Mo and U show different mobilities in this type of environment and have tended to separate during metamorphism and remobilization. All of these zones contain considerable carbonate-enriched skarns and their presence may have a bearing on the nature of remobilization processes. Moreover, the skarns themselves could well be of interest as hosts of U-Mo mineralization.

The second type of Mo mineralization is that which is associated with interfingered gneisses and carbonate-rich skarns, and which on the basis of field examinations does not show much radioactivity. The Mo showings at the defunct Ross-O'Brien mine are typical examples.

At the Hunt mine, a granite intrusive is to be found well within the mineralized zone but there is apparently no associate radioactivity.

The distribution of Cu in sediments is shown in Fig. 5 but it would seem that the Cu occurrence is related to granites rather than to metasediments.

Examination of the D.C. arc emission spectroscopic data for the lake sediments (Appendix III) reveal that other trace elements may be related to the U and Mo (Fig., 3 and 4). The distributions of Ti and Be are particularly interesting. In the White Lake (Ti and Be) and Stone Lake (Ti) areas these elements appear coincident with U anomalies however in the Hurd Lake granite the Be and Ti anomalies lie to the east and south of coincident U-Mo anomalies. It is considered likely that these patterns are related to differentiation within the granitoids. Spot highs of Ti also occur in the

**RENFREW AREA
(317-07)**

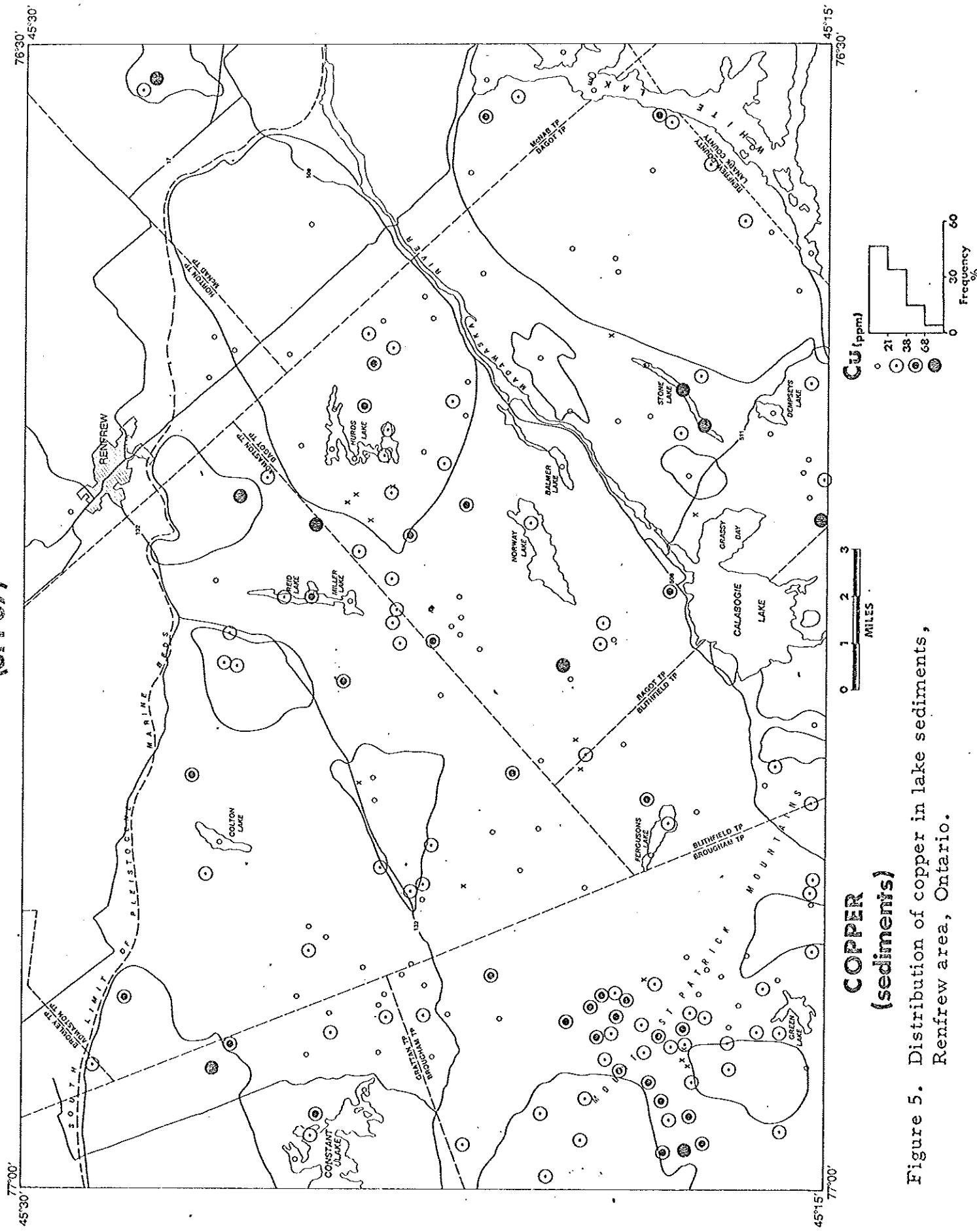


Figure 5. Distribution of copper in lake sediments,
Renfrew area, Ontario.

gneisses and granitoids of the Mt. St. Patrick Highlands peripheral but not directly associated with the local Mo anomaly (Fig. 4).

A broad regional Sr anomaly is located in a zone centred on Dempseys (Virgin) Lake site of a past producing celestite mine. However the anomaly outlined extends from the south limit of the survey area, south of Dempseys Lake, north to the Madawaska River, a distance of some 8 miles. Minor Ba highs appear to be associated with the Sr anomaly.

Distribution of other elements studied (Appendices II and III) have not been plotted. However, there is no indication in the data derived from this survey that these could be useful as indicators of possible U mineralization. Moreover there is no evidence from known mineral showings that such relationships could be anticipated.

Fig. 6 is an elemental association map which displays the top 15% of data for each of U, Mo, Cu, Zn and Pb (i.e., all values $>(\bar{x} + 1\sigma)$). Using an empirical form of cluster analysis, which is based on elemental assemblages as represented by known mineral occurrences, a series of anomalous zones have been outlined.

In summary these are: U alone or with associated Mo around granites and pegmatites near Hurd, White and Calabogie lakes; Mo mineralization in Mount St. Patrick highlands; Pb and Zn associations west of Hurd Lake and north of Mount St. Patrick village.

The Pb-Zn anomaly northwest of Hurd Lake (Fig. 6) is reflecting the Pb-Zn showings once worked as the Renprior claims. Elevated values of Fe, Mn and Ba are also characteristic of the lake sediments in this area. A similar Fe, Mn, Ba association is also found in an area bounded by Culhane, Fergusons and St. Pierre Lakes. One further area of Zn-Pb anomaly, but without related Fe, Mn and Ba, is located about 4 miles north of Mt. St. Patrick village (Fig. 6). The latter Pb-Zn anomaly cannot yet be related to any known showings and is

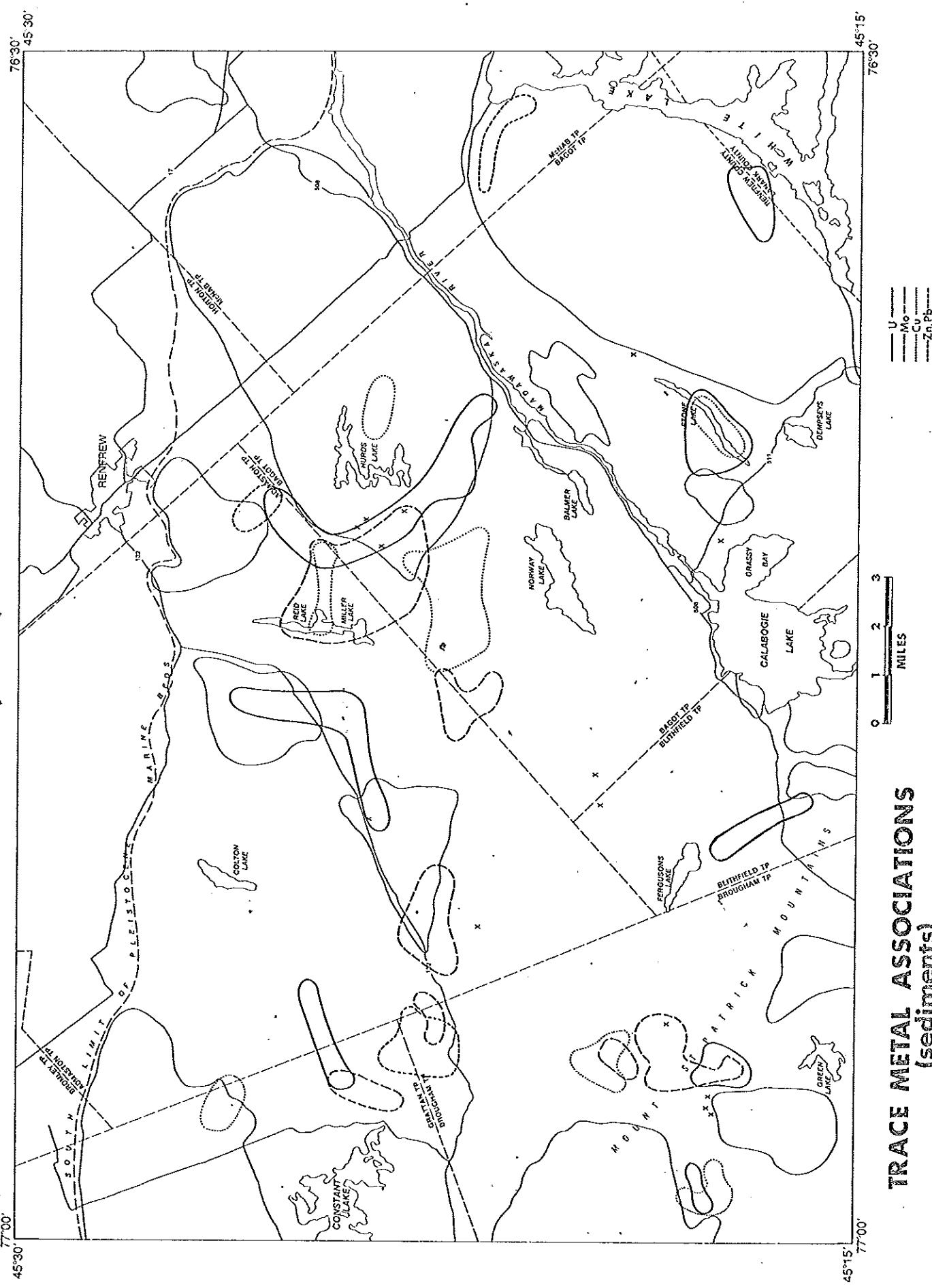
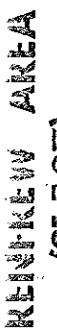


Figure 6. Trace metal associations in lake sediments, Renfrew area, Ontario.

worthy of further investigations for possible Zn occurrences.

Conclusions

The usefulness of detailed hydrogeochemistry in the search for U mineralization in the Grenville geologic province of Ontario has been demonstrated clearly.

At the detailed scale employed it has proved possible to outline areas wherein targets of limited size, such as the Hurd Lake radioactive pegmatites, may be located. Both waters and sediments can be sampled with positive results although each has its own advantages. Waters can be collected anywhere and except for the very large lakes, neither size nor permanence seems important. Sediments may be usefully employed in true lakes and old swamps. They can yield further useful data on elements other than U which may prove to be accessories in U mineralization assemblages. The prospecting level of sampling has proved to be efficient in outlining favourable geology and perhaps certain structures with possible mineral potential. The next stage of the hydrogeochemical procedure would be to use stream sediments and waters to fill in gaps in coverage.

On the other hand, the broad extent of the anomalies outlined indicates that reconnaissance scale lake sediment sampling every 13 km² (5 mi²) using lakes, the larger ponds and true swamps would be successful in locating these zones.

There is clearly a definite value in interpreting the hydrogeochemical dispersion patterns in terms of elemental associations which are based on a knowledge of trace and minor element chemistry of known mineral assemblages in the study area. Perhaps data could be more usefully presented in this rather simplistic form of cluster analysis which has a very sound basis in fact.

The same scale of drainage basin lake sampling would also seem to be of value in seeking Pb-Zn and celestite prospects in Grenville marbles and skarns and also for locating new Mo occurrences in metamorphosed sediments.

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Appendix I

Sample Numbers and Locations for Surface Lake Waters and Lake
Sediments, Renfrew Area, Ontario

At each site a surface lake water (31F07 755 XXX) and lake sediment (31F07 756 XXX) sample were collected. Only the last three significant digits of each sample number are plotted at each site. The surface lake water and lake sediment have, therefore, the same sample number at each site. Sample numbers underlined (eg. 9, 76, 163 etc.) indicate that while a water sample was obtained at the sample site no sediment was collected.

The field observations and analytical data for the lake water samples (identified by a 5 in digit eight of the eleven digit sample number -31F07 755 XXX) and the lake sediment sample (identified by a 6 in digit eight of the eleven digit sample number 31F07 756XXX) are listed in Appendices II and III respectively.

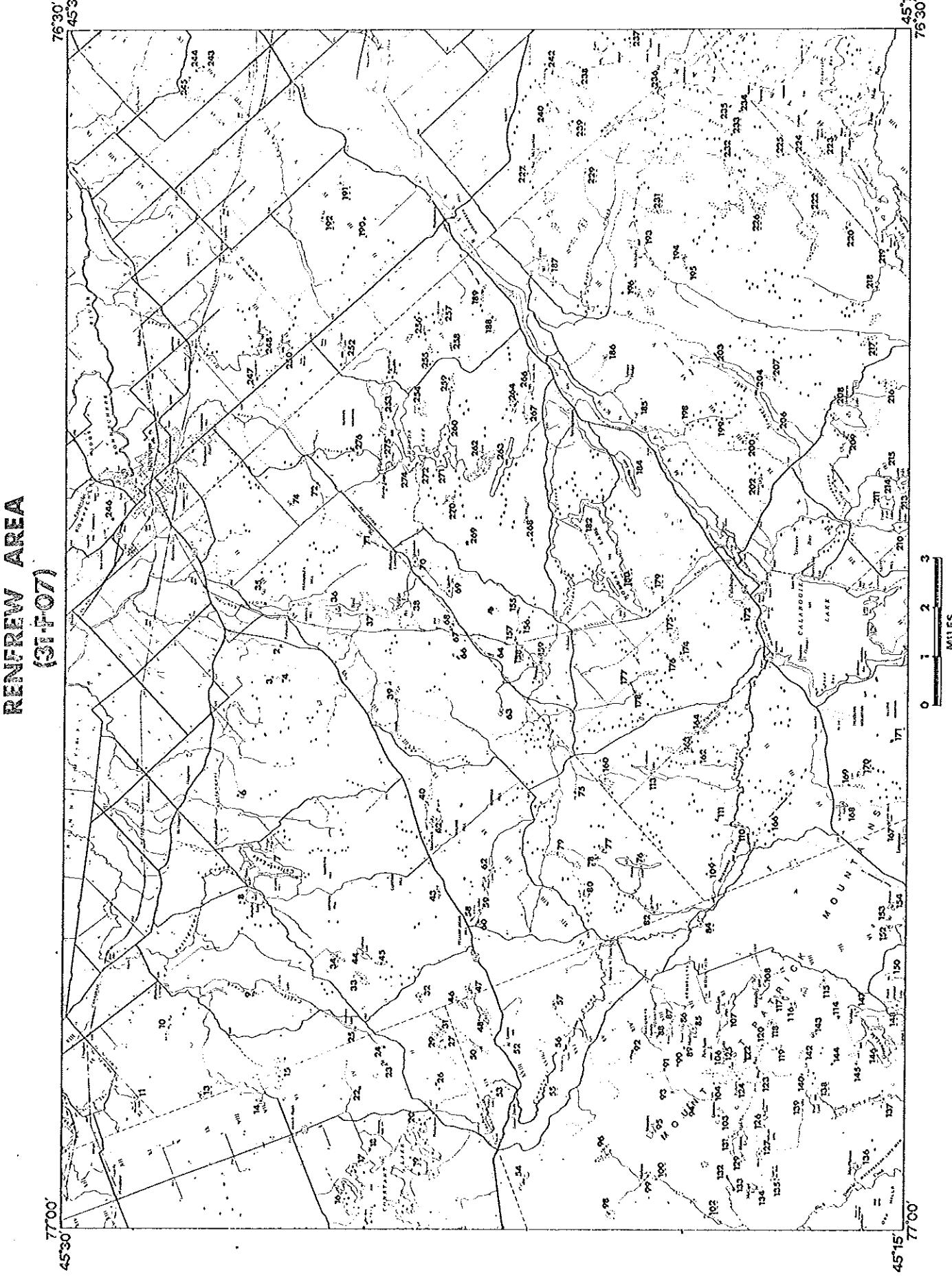


Figure A1: Sample numbers and locations for surface lake waters and lake sediments, Renfrew area, Ontario.

Appendix II

Surface Lake Waters

Field Observations and Analytical Data

Key: Catchment basin rock type: (lake entirely within bedrock unit and drainage into lake also predominately from within the same bedrock unit).

CLAY - Champlain marine clays

DMLM - dolomite

GBBR - gabbro

GNSS - granitic gneiss

GRNT - granite

GRPG - granite pegmatite

MGMT - migmatite

SCST - schist

SYNT - syenite

Colour: 0 clear

1 brown transparent

2 white cloudy

3 brown cloudy

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM IN RENFREW AREA (315/F/07) - ONTARIO, 1975
SURFACE LAKE WATERS
ACIDIFIED 1:250 MICROLITRES OF NITRIC ACID PER 125 MILLILITRES OF WATER, ON DAY OF COLLECTION

- 30 -

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM, RENFREW AREA (131/F/07) - ONTARIO, 1975
SURFACE LAKE WATERS
ACIDIFIED (250 MICROLITRES OF NITRIC ACID PER 125 MILLILITRES OF WATER) ON DAY OF COLLECTION

- 31 -

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM, RENFREW AREA (31/F/070) - ONTARIO, 1975
SURFACE LAKE WATERS
ACIDIFIED (250 MICROLITRES OF NITRIC ACID PEK 125 MILLILITRES OF WATER) ON DAY OF COLLECTION

- 32 -

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM - RENFREW AREA (31FF/87) - ONTARIO - 1975
 ACIDIFIED < 250 MICROLITRES OF NITRIC ACID PER 125 MILLILITRES OF WATER, ON DAY OF COLLECTION

MAP SHEET	SAMPLE NUMBER	UTM COORDINATES		CATCH BASIN ROCK TYPE	COL.	COND. MMHO	DIS. OXY. PPM	MN. PPB	FE. PPB	NI. PPB	CO. PPB	PB. PPB	CU. PPB	ZN. PPB	U. PPB
		NORTH	EAST												
31FF07	755176	1.6	361956	SCST	0	6.0	10.16	2.6	24.1	1.6	553	3.7	15.6	1.6	1.6
31FF07	755177	1.6	361100	SC21450	0	6.5	10.16	2.6	24.9	3.7	563	3.4	15.5	1.6	1.6
31FF07	755178	1.6	360800	SC20950	0	6.2	10.16	2.6	24.4	3.4	564	3.4	15.5	1.6	1.6
31FF07	755179	1.6	364200	SC20350	0	6.4	10.31	2.5	2.5	4.0	565	4.0	15.5	1.6	1.6
31FF07	755180	1.6	364300	SC21450	0	6.4	10.61	2.5	2.5	4.0	566	4.0	15.5	1.6	1.6
31FF07	755182	1.6	366050	SC21250	0	6.1	10.51	2.5	2.5	4.0	567	4.0	15.5	1.6	1.6
31FF07	755184	1.6	368000	SC21000	0	6.2	10.75	2.6	2.2	4.0	568	4.2	15.4	1.6	1.6
31FF07	755185	1.6	369300	SC20750	0	6.2	10.51	2.6	2.2	4.1	569	4.2	15.5	1.6	1.6
31FF07	755186	1.6	371750	SYNT	0	6.2	10.80	2.6	2.2	4.2	570	4.2	15.5	1.6	1.6
31FF07	755187	1.6	374660	SC23750	0	6.2	10.35	2.6	2.2	4.2	571	4.2	15.5	1.6	1.6
31FF07	755188	1.6	373220	SC25500	0	6.2	10.26	2.6	2.2	4.2	572	4.2	15.5	1.6	1.6
31FF07	755189	1.6	373200	GRNT	0	6.2	10.75	2.6	2.2	4.2	573	4.2	15.5	1.6	1.6
31FF07	755190	1.6	376450	SC20800	0	6.2	10.51	2.6	2.2	4.2	574	4.2	15.5	1.6	1.6
31FF07	755191	1.6	377600	SC20900	0	6.2	10.44	2.6	2.2	4.2	575	4.2	15.5	1.6	1.6
31FF07	755192	1.6	376500	SC21000	0	6.1	10.24	2.6	2.2	4.2	576	4.2	15.5	1.6	1.6
31FF07	755193	1.6	375400	SC20600	0	6.1	10.15	2.6	2.2	4.2	577	4.2	15.5	1.6	1.6
31FF07	755194	1.6	375500	SC21500	0	6.1	10.15	2.6	2.2	4.2	578	4.2	15.5	1.6	1.6
31FF07	755195	1.6	375500	SC21500	0	6.1	10.15	2.6	2.2	4.2	579	4.2	15.5	1.6	1.6
31FF07	755196	1.6	375750	SC20800	0	6.1	10.29	2.6	2.2	4.2	580	4.2	15.5	1.6	1.6
31FF07	755197	1.6	369500	SC21000	0	6.1	10.15	2.6	2.2	4.2	581	4.2	15.5	1.6	1.6
31FF07	755198	1.6	369700	SC21500	0	6.1	10.15	2.6	2.2	4.2	582	4.2	15.5	1.6	1.6
31FF07	755199	1.6	369100	SC21000	0	6.1	10.15	2.6	2.2	4.2	583	4.2	15.5	1.6	1.6
31FF07	755200	1.6	369100	SC21000	0	6.1	10.15	2.6	2.2	4.2	584	4.2	15.5	1.6	1.6
31FF07	755201	1.6	367600	SC21600	0	6.1	10.15	2.6	2.2	4.2	585	4.2	15.5	1.6	1.6
31FF07	755202	1.6	367450	SC21600	0	6.1	10.15	2.6	2.2	4.2	586	4.2	15.5	1.6	1.6
31FF07	755203	1.6	371450	SC21600	0	6.1	10.15	2.6	2.2	4.2	587	4.2	15.5	1.6	1.6
31FF07	755204	1.6	370550	SC21600	0	6.1	10.15	2.6	2.2	4.2	588	4.2	15.5	1.6	1.6
31FF07	755205	1.6	370520	SC21600	0	6.1	10.15	2.6	2.2	4.2	589	4.2	15.5	1.6	1.6
31FF07	755206	1.6	369200	SC21600	0	6.1	10.15	2.6	2.2	4.2	590	4.2	15.5	1.6	1.6
31FF07	755207	1.6	369200	SC21600	0	6.1	10.15	2.6	2.2	4.2	591	4.2	15.5	1.6	1.6
31FF07	755208	1.6	369200	SC21600	0	6.1	10.15	2.6	2.2	4.2	592	4.2	15.5	1.6	1.6
31FF07	755209	1.6	369200	SC21600	0	6.1	10.15	2.6	2.2	4.2	593	4.2	15.5	1.6	1.6
31FF07	755210	1.6	369200	SC21600	0	6.1	10.15	2.6	2.2	4.2	594	4.2	15.5	1.6	1.6
31FF07	755211	1.6	369200	SC21600	0	6.1	10.15	2.6	2.2	4.2	595	4.2	15.5	1.6	1.6
31FF07	755212	1.6	367250	SC21600	0	6.1	10.15	2.6	2.2	4.2	596	4.2	15.5	1.6	1.6
31FF07	755213	1.6	367250	SC21600	0	6.1	10.15	2.6	2.2	4.2	597	4.2	15.5	1.6	1.6
31FF07	755214	1.6	367250	SC21600	0	6.1	10.15	2.6	2.2	4.2	598	4.2	15.5	1.6	1.6
31FF07	755215	1.6	368000	SC21600	0	6.1	10.15	2.6	2.2	4.2	599	4.2	15.5	1.6	1.6
31FF07	755216	1.6	370750	SC21600	0	6.1	10.15	2.6	2.2	4.2	600	4.2	15.5	1.6	1.6
31FF07	755217	1.6	372200	SC21600	0	6.1	10.15	2.6	2.2	4.2	601	4.2	15.5	1.6	1.6
31FF07	755218	1.6	373750	SC21600	0	6.1	10.15	2.6	2.2	4.2	602	4.2	15.5	1.6	1.6
31FF07	755219	1.6	375190	SC21600	0	6.1	10.15	2.6	2.2	4.2	603	4.2	15.5	1.6	1.6
31FF07	755220	1.6	377500	SC21600	0	6.1	10.15	2.6	2.2	4.2	604	4.2	15.5	1.6	1.6
31FF07	755221	1.6	376300	SC21600	0	6.1	10.15	2.6	2.2	4.2	605	4.2	15.5	1.6	1.6
31FF07	755222	1.6	376300	SC21600	0	6.1	10.15	2.6	2.2	4.2	606	4.2	15.5	1.6	1.6
31FF07	755223	1.6	376300	SC21600	0	6.1	10.15	2.6	2.2	4.2	607	4.2	15.5	1.6	1.6
31FF07	755224	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	608	4.2	15.5	1.6	1.6
31FF07	755225	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	609	4.2	15.5	1.6	1.6
31FF07	755226	1.6	377500	SC21600	0	6.1	10.15	2.6	2.2	4.2	610	4.2	15.5	1.6	1.6
31FF07	755227	1.6	379300	SC21600	0	6.1	10.15	2.6	2.2	4.2	611	4.2	15.5	1.6	1.6
31FF07	755228	1.6	379300	SC21600	0	6.1	10.15	2.6	2.2	4.2	612	4.2	15.5	1.6	1.6
31FF07	755229	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	613	4.2	15.5	1.6	1.6
31FF07	755230	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	614	4.2	15.5	1.6	1.6
31FF07	755231	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	615	4.2	15.5	1.6	1.6
31FF07	755232	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	616	4.2	15.5	1.6	1.6
31FF07	755233	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	617	4.2	15.5	1.6	1.6
31FF07	755234	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	618	4.2	15.5	1.6	1.6
31FF07	755235	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	619	4.2	15.5	1.6	1.6
31FF07	755236	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	620	4.2	15.5	1.6	1.6
31FF07	755237	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	621	4.2	15.5	1.6	1.6
31FF07	755238	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	622	4.2	15.5	1.6	1.6
31FF07	755239	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	623	4.2	15.5	1.6	1.6
31FF07	755240	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	624	4.2	15.5	1.6	1.6
31FF07	755241	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	625	4.2	15.5	1.6	1.6
31FF07	755242	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	626	4.2	15.5	1.6	1.6
31FF07	755243	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	627	4.2	15.5	1.6	1.6
31FF07	755244	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	628	4.2	15.5	1.6	1.6
31FF07	755245	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	629	4.2	15.5	1.6	1.6
31FF07	755246	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	630	4.2	15.5	1.6	1.6
31FF07	755247	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	631	4.2	15.5	1.6	1.6
31FF07	755248	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	632	4.2	15.5	1.6	1.6
31FF07	755249	1.6	378250	SC21600	0	6.1	10.15	2.6	2.2	4.2	633	4.2	15.5	1.6	1.6
31FF07	755250	1.6	378250	SC21600	0	6.1									

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM, RENFREW AREA (31/F/07) - ONTARIO - 1975
 ACIDIFIED < 250 MICROLITRES OF NITRIC ACID PER 125 MILLILITRES OF WATER; ON DAY OF COLLECTION

MAP SHEET	SAMPLE NUMBER	UTM COORDINATES			CATCH BASIN	POCK TYPE	COL	TEMP DEG C	PH	CONDU MHO	DIS OXY PPM	U PPS	ZN PPS	CO PPS	PB PPS	NI PPS	FE PPS	NN PPS	PPB	
		ZONE	EAST	NORTH																
31F07	755235	18	3729900	5017550	GRNT	C	12	7.8	31	11.20	*04	0.2	0.2	2.0	3.7	4.3	4.1	2.9	2.6	
31F07	755236	18	3827550	5019900	GRNT	C	14	7.9	132	11.36	*10	0.5	0.2	2.0	3.4	4.2	4.0	3.6	2.6	
31F07	755237	18	3821500	5029600	SGST	C	13	7.9	203	10.89	*04	0.2	0.2	2.0	3.5	4.2	4.0	3.4	2.6	
31F07	755238	18	3806500	5022550	GRNT	C	11	7.9	46	10.92	*04	0.6	0.5	6.0	3.7	0.2	1.15	1.0	3.4	
31F07	755239	18	3795500	5022750	GRNT	C	13	7.9	52	14.31	*04	0.2	0.2	2.0	3.2	1.4	1.4	1.0	2.75	
31F07	755240	18	3603500	5023600	GRNT	C	13	7.8	74	11.41	*08	0.5	0.3	2.0	3.6	1.4	1.4	1.0	2.5	
31F07	755241	18	3612200	5023600	GRNT	C	12	7.9	126	9.34	*12	0.9	0.2	2.0	3.5	1.0	1.0	0.9	2.5	
31F07	755242	18	3621500	5023600	SYNT	C	12	6.9	67	11.29	*46	0.2	0.2	2.0	3.2	1.4	1.4	1.0	2.6	
31F07	755243	18	3621500	5034900	SYNT	C	13	7.9	63	11.43	*02	0.2	0.2	2.0	3.2	1.4	1.4	1.0	2.4	
31F07	755244	18	3614500	5035200	SYNT	C	13	7.9	59	11.47	*02	0.9	0.2	2.0	3.2	1.4	1.4	1.0	2.5	
31F07	755245	18	3612200	5035400	SYNT	C	13	6.9	164	9.62	*36	0.2	0.2	2.0	3.2	1.4	1.4	1.0	2.5	
31F07	755246	18	3608900	5039100	CLAY	C	13	6.9	203	11.65	*28	3.9	0.2	2.0	3.2	1.4	1.4	1.0	2.5	
31F07	755247	18	3712500	5033500	GRNT	C	12	6.9	137	10.95	*06	0.2	0.2	2.0	3.5	0.2	0.2	0.2	2.4	
31F07	755248	18	3712650	5033500	GRNT	C	12	6.9	141	11.29	*34	1.3	0.2	2.0	3.4	1.0	1.0	1.0	2.4	
31F07	755249	18	3722500	5032400	GRNT	C	11	8.1	127	10.70	*24	1.4	0.6	2.0	3.5	1.0	1.0	1.0	2.3	
31F07	755250	18	3706600	5030500	GRNT	C	13	8.1	67	10.92	*32	1.2	0.2	2.0	3.5	1.0	1.0	1.0	2.3	
31F07	755251	18	3722600	5029900	GRNT	C	13	8.1	39	11.25	*02	0.5	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755252	18	3722600	5026100	GRNT	C	12	8.9	36	11.19	*04	1.9	0.2	2.0	3.5	1.0	1.0	1.0	2.3	
31F07	755253	18	3722600	5026100	GRNT	C	13	8.1	49	11.49	*04	0.2	0.2	2.0	3.5	1.0	1.0	1.0	2.3	
31F07	755254	18	3722600	5026100	GRNT	C	13	8.1	47	10.78	*02	0.2	0.2	2.0	3.5	1.0	1.0	1.0	2.3	
31F07	755255	18	3716300	5027550	GRPG	C	12	8.9	21	10.41	*32	0.2	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755256	18	3727000	5027700	GRPG	C	11	8.2	39	11.25	*02	0.5	0.2	2.0	3.5	1.0	1.0	1.0	2.3	
31F07	755257	18	3731100	5027200	GRPG	C	13	8.1	49	11.49	*04	0.2	0.2	2.0	3.5	1.0	1.0	1.0	2.3	
31F07	755258	18	3732600	5026800	GRPG	C	13	7.9	78	11.36	*16	0.2	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755259	18	3732600	5026800	GRPG	C	13	7.9	405	10.11	*12	0.2	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755260	18	3732600	5026800	GRPG	C	12	7.9	87	6.94	*52	2.5	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755261	18	3669300	5027100	GRNT	C	13	7.9	65	6.54	*38	0.5	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755262	18	3669300	5025600	GRNT	C	12	7.9	78	11.36	*16	0.2	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755263	18	3669300	5025600	GRNT	C	13	7.9	405	10.11	*12	0.2	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755264	18	3670300	5024750	GRNT	C	12	8.0	87	6.94	*52	2.5	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755265	18	3669300	5024750	GRNT	C	12	8.0	85	11.07	*51	0.6	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755266	18	3669300	5024800	HGT	C	12	8.0	68	11.03	*02	0.2	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755267	18	3669300	5024800	HGT	C	12	8.0	68	10.67	*32	0.2	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755268	18	3669300	5024800	HGT	C	13	8.0	159	10.65	*45	0.6	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755269	18	3672000	5027050	GRNT	C	13	8.1	84	35	11.53	*02	0.6	0.2	2.0	3.5	0.2	0.2	0.2	2.3
31F07	755270	18	3669300	5027050	GRNT	C	13	8.0	65	10.96	*32	0.9	0.2	2.0	3.5	0.2	0.2	0.2	2.3	
31F07	755271	18	3669300	5027050	GRNT	C	13	7.9	54	11.13	*07	2.7	0.2	1.5	3.0	3.1	1.0	1.0	1.0	2.7
31F07	755272	18	3669300	5026400	GRNT	C	13	8.0	56	10.79	*39	24.1	0.9	2.0	3.5	7.8	3.4	1.0	1.0	2.7
31F07	755273	18	3669300	5029000	GRNT	C	14	8.0	66	10.82	*06	3.0	0.2	2.0	3.5	3.7	1.0	1.0	2.7	
31F07	755274	18	3669300	5030100	GRNT	C	13	7.9	61	10.66	*02	0.5	0.2	2.0	3.5	3.6	1.0	1.0	2.7	

Lower detection limits
 (For statistical treatment of the data the value employed for the lower detection limit is equal to one-half the actual lower detection limit).

.05 0.5 5.0 2.0 0.5 5.0 2.0 0.5 5.0 2.0 0.5 5.0 2.0 0.5 5.0 2.0 0.5 5.0 2.0

0.5 2.0 10

Appendix III

Lake Sediments

Field Observations and Analytical Data

Key: Catchment basin rock type: (see explanation Appendix II)

Composition: The four columns are used to describe the bulk mechanical composition of the collected sediment on scales of 0 to 3 and 0 or 1. The total of the first three columns must add to 3 or 4:-

blank or 0 Absent

1 Minor <33%

2 Medium 33-67%

3 Major >67%

The three size fractions are divided as follows

column 1 >0.125 mm Sand

2 <0.125 mm Fines, Silt and Clay

3 Organics

The fourth column is used to record the presence of an organic gel or gyttja:-

blank or 0 Absent

1 Present

Colour: Up to two of the colours may be checked (1 in appropriate column.)

column 1 Tan

2 Yellow

3 Green

4 Grey

5 Brown

6 Black

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM, RENFREW AREA (31/F/071), ONTARIO, 1975
ORGANIC LAKE CENTRE SEDIMENTS

BY DELAYED NEUTRON ACTIVATION; MO, ZN, CU, PS, NI, CO, MN, AND FE BY ATOMIC ABSORPTION TECHNIQUES

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM - RENFREW AREA (31FF07) - ONTARIO, 1975
 ORGANIC LAKE CENTRE SEDIMENTS
 THE DATA LISTED BELOW (SR TO Y) ARE ESTIMATED BY EMISSION SPECTROMETRY

ANALYTICAL DATA CONTINUED FROM PREVIOUS PAGE

MAP SHEET	SAMPLE NUMBER	SR PPH	BA PPH	HAN PPH	TI PPH	AL Z%	CA Z%	HG Z%	FE %	K %	PB PPM	ZN PPM	CU PPM	CO PPM	NI PPM	PPH PPM	LA PPM	BE PPM	Y PPM
31FF07	756002	216	216	337	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
31FF07	756003	227	50	471	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756004	370	50	476	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756006	139	328	50	719	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756007	414	168	165	569	0.8	4.0	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
31FF07	756008	307	232	372	558	1.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
31FF07	756010	245	515	159	1711	3.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
31FF07	756011	160	390	626	172	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
31FF07	756012	135	287	50	645	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
31FF07	756013	312	437	56	165	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
31FF07	756015	245	273	50	154	3.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
31FF07	756016	229	628	433	324	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756017	168	240	335	526	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
31FF07	756018	233	456	275	1094	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756020	147	294	344	249	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756022	312	437	56	154	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756024	245	345	274	164	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756025	160	243	284	294	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756025	135	255	642	255	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756027	756027	294	344	274	164	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756029	158	215	30	179	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756031	180	235	50	340	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756032	225	235	50	391	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756033	284	294	56	315	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756034	243	243	50	277	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756035	199	59	336	50	345	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756036	284	294	56	315	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756037	161	243	294	344	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756038	404	563	565	2337	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
31FF07	756039	264	367	50	659	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
31FF07	756040	186	230	50	806	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
31FF07	756042	756042	274	303	50	433	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756043	172	172	50	554	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756044	120	204	50	367	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756045	139	164	50	433	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
31FF07	756046	189	174	50	459	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
31FF07	756047	251	155	50	495	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756048	268	452	50	495	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756049	120	204	50	495	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756050	172	172	50	495	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756051	226	595	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756052	364	276	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756053	220	353	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756054	367	276	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756055	226	353	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756056	226	353	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756057	371	274	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756058	367	240	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756059	180	349	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756060	180	349	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756061	180	349	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756062	180	349	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756063	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756064	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756065	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756066	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756067	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756068	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756069	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756070	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756071	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756072	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756073	216	173	50	526	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
31FF07	756074	216	173	50	526	2.0	2.0	2.0	2.0</td										

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CATCH BASIN	ROCK TYPE	SAMPLE NUMBER	UTM COORDINATES		WATER CONDITIONS		DIS	COND	TEMP	TIME
			ZONE	WEST	NORTH	EAST				
318667	755665	5026800	18	362550	5027000	5027000	DMLX	SCST	5028150	0.65
31867	755667	5027000	18	363050	5027000	5027000	DMLX	SCST	5028150	0.65
31868	755668	5026900	18	3632200	5027000	5027000	DMLX	SCST	5028150	0.65
31869	755669	5027050	18	364250	5027050	5027050	DMLX	SCST	5028150	0.65
31870	755670	5027100	18	365200	5027100	5027100	DMLX	SCST	5028150	0.65
31871	755671	5027150	18	365200	5027150	5027150	DMLX	SCST	5028150	0.65
31872	755672	5027200	18	367650	5027200	5027200	DMLX	SCST	5028150	0.65
31873	755673	5027250	18	367650	5027250	5027250	DMLX	SCST	5028150	0.65
31874	755674	5027300	18	367650	5027300	5027300	DMLX	SCST	5028150	0.65
31875	755675	5027350	18	357550	5027350	5027350	DMLX	SCST	5028150	0.65
31876	755676	5027400	18	355570	5027400	5027400	DMLX	SCST	5028150	0.65
31877	755677	5027450	18	355560	5027450	5027450	DMLX	SCST	5028150	0.65
31878	755678	5027500	18	354250	5027500	5027500	DMLX	SCST	5028150	0.65
31879	755679	5027550	18	354250	5027550	5027550	DMLX	SCST	5028150	0.65
31880	755680	5027600	18	353680	5027600	5027600	DMLX	SCST	5028150	0.65
31881	755681	5027650	18	353680	5027650	5027650	DMLX	SCST	5028150	0.65
31882	755682	5027700	18	353680	5027700	5027700	DMLX	SCST	5028150	0.65
31883	755683	5027750	18	353680	5027750	5027750	DMLX	SCST	5028150	0.65
31884	755684	5027800	18	353680	5027800	5027800	DMLX	SCST	5028150	0.65
31885	755685	5027850	18	353680	5027850	5027850	DMLX	SCST	5028150	0.65
31886	755686	5027900	18	353680	5027900	5027900	DMLX	SCST	5028150	0.65
31887	755687	5027950	18	353680	5027950	5027950	DMLX	SCST	5028150	0.65
31888	755688	5028000	18	353680	5028000	5028000	DMLX	SCST	5028150	0.65
31889	755689	5028050	18	353680	5028050	5028050	DMLX	SCST	5028150	0.65
31890	755690	5028100	18	353680	5028100	5028100	DMLX	SCST	5028150	0.65
31891	755691	5028150	18	353680	5028150	5028150	DMLX	SCST	5028150	0.65
31892	755692	5028200	18	353680	5028200	5028200	DMLX	SCST	5028150	0.65
31893	755693	5028250	18	353680	5028250	5028250	DMLX	SCST	5028150	0.65
31894	755694	5028300	18	353680	5028300	5028300	DMLX	SCST	5028150	0.65
31895	755695	5028350	18	353680	5028350	5028350	DMLX	SCST	5028150	0.65
31896	755696	5028400	18	353680	5028400	5028400	DMLX	SCST	5028150	0.65
31897	755697	5028450	18	353680	5028450	5028450	DMLX	SCST	5028150	0.65
31898	755698	5028500	18	353680	5028500	5028500	DMLX	SCST	5028150	0.65
31899	755699	5028550	18	353680	5028550	5028550	DMLX	SCST	5028150	0.65
31900	755700	5028600	18	353680	5028600	5028600	DMLX	SCST	5028150	0.65
31901	755701	5028650	18	353680	5028650	5028650	DMLX	SCST	5028150	0.65
31902	755702	5028700	18	353680	5028700	5028700	DMLX	SCST	5028150	0.65
31903	755703	5028750	18	353680	5028750	5028750	DMLX	SCST	5028150	0.65
31904	755704	5028800	18	353680	5028800	5028800	DMLX	SCST	5028150	0.65
31905	755705	5028850	18	353680	5028850	5028850	DMLX	SCST	5028150	0.65
31906	755706	5028900	18	353680	5028900	5028900	DMLX	SCST	5028150	0.65
31907	755707	5028950	18	353680	5028950	5028950	DMLX	SCST	5028150	0.65
31908	755708	5029000	18	353680	5029000	5029000	DMLX	SCST	5028150	0.65
31909	755709	5029050	18	353680	5029050	5029050	DMLX	SCST	5028150	0.65
31910	755710	5029100	18	353680	5029100	5029100	DMLX	SCST	5028150	0.65
31911	755711	5029150	18	353680	5029150	5029150	DMLX	SCST	5028150	0.65
31912	755712	5029200	18	353680	5029200	5029200	DMLX	SCST	5028150	0.65
31913	755713	5029250	18	353680	5029250	5029250	DMLX	SCST	5028150	0.65
31914	755714	5029300	18	353680	5029300	5029300	DMLX	SCST	5028150	0.65
31915	755715	5029350	18	353680	5029350	5029350	DMLX	SCST	5028150	0.65
31916	755716	5029400	18	353680	5029400	5029400	DMLX	SCST	5028150	0.65
31917	755717	5029450	18	353680	5029450	5029450	DMLX	SCST	5028150	0.65
31918	755718	5029500	18	353680	5029500	5029500	DMLX	SCST	5028150	0.65
31919	755719	5029550	18	353680	5029550	5029550	DMLX	SCST	5028150	0.65
31920	755720	5029600	18	353680	5029600	5029600	DMLX	SCST	5028150	0.65
31921	755721	5029650	18	353680	5029650	5029650	DMLX	SCST	5028150	0.65
31922	755722	5029700	18	353680	5029700	5029700	DMLX	SCST	5028150	0.65
31923	755723	5029750	18	353680	5029750	5029750	DMLX	SCST	5028150	0.65
31924	755724	5029800	18	353680	5029800	5029800	DMLX	SCST	5028150	0.65
31925	755725	5029850	18	353680	5029850	5029850	DMLX	SCST	5028150	0.65
31926	755726	5029900	18	353680	5029900	5029900	DMLX	SCST	5028150	0.65
31927	755727	5029950	18	353680	5029950	5029950	DMLX	SCST	5028150	0.65
31928	755728	5030000	18	353680	5030000	5030000	DMLX	SCST	5028150	0.65
31929	755729	5030050	18	353680	5030050	5030050	DMLX	SCST	5028150	0.65
31930	755730	5030100	18	353680	5030100	5030100	DMLX	SCST	5028150	0.65
31931	755731	5030150	18	353680	5030150	5030150	DMLX	SCST	5028150	0.65
31932	755732	5030200	18	353680	5030200	5030200	DMLX	SCST	5028150	0.65
31933	755733	5030250	18	353680	5030250	5030250	DMLX	SCST	5028150	0.65
31934	755734	5030300	18	353680	5030300	5030300	DMLX	SCST	5028150	0.65
31935	755735	5030350	18	353680	5030350	5030350	DMLX	SCST	5028150	0.65
31936	755736	5030400	18	353680	5030400	5030400	DMLX	SCST	5028150	0.65
31937	755737	5030450	18	353680	5030450	5030450	DMLX	SCST	5028150	0.65
31938	755738	5030500	18	353680	5030500	5030500	DMLX	SCST	5028150	0.65
31939	755739	5030550	18	353680	5030550	5030550	DMLX	SCST	5028150	0.65
31940	755740	5030600	18	353680	5030600	5030600	DMLX	SCST	5028150	0.65
31941	755741	5030650	18	353680	5030650	5030650	DMLX	SCST	5028150	0.65
31942	755742	5030700	18	353680	5030700	5030700	DMLX	SCST	5028150	0.65
31943	755743	5030750	18	353680	5030750	5030750	DMLX	SCST	5028150	0.65
31944	755744	5030800	18	353680	5030800	5030800	DMLX	SCST	5028150	0.65
31945	755745	5030850	18	353680	5030850	5030850	DMLX	SCST	5028150	0.65
31946	755746	5030900	18	353680	5030900	5030900	DMLX	SCST	5028150	0.65
31947	755747	5030950	18	353680	5030950	5030950	DMLX	SCST	5028150	0.65
31948	755748	5031000	18	353680	5031000	5031000	DMLX	SCST	5028150	0.65
31949	755749	5031050	18	353680	5031050	5031050	DMLX	SCST	5028150	0.65
31950	755750	5031100	18	353680	5031100	5031100	DMLX	SCST	5028150	0.65
31951	755751	5031150	18	353680	5031150	5031150	DMLX	SCST	5028150	0.65
31952	755752	5031200	18	353680	5031200	5031200	DMLX	SCST	5028150	0.65
31953	755753	5031250	18	353680	5031250	5031250	DMLX	SCST	5028150	0.65
31954	755754	5031300	18	353680	5031300	5031300	DMLX	SCST	5028150	0.65
31955	755755	5031350	18	353680	5031350	5031350	DMLX	SCST	5028150	0.65
31956	755756	5031400	18	353680	5031400	5031400	DMLX	SCST	5028150	0.65
31957	755757	5031450	18	353680	5031450	5031450	DMLX	SCST	5028150	0.65
31958	755758	5031500	18	353680	5031500	5031500	DMLX	SCST	5028150	0.65
31959	755759	5031550	18	353680	5031550	5031550	DMLX	SCST	5028150	0.65
31960	755760	5031600	18	353680	5031600	5031600	DMLX	SCST	5028150	0.65
31961	755761	5031650	18	353680	5031650	5031650	DMLX	SCST	5028150	0.65
31962	755762	5031700	18	353680	5031700	5031700	DMLX	SCST	5028150	0.65
31963	755763	5031750	18	353680	5031750	5031750	DMLX	SCST	5028150	0.65
31964	755764	5031800	18	353680	5031800	5031800	DMLX	SCST	5028150	0.65
31965	755765	5031850	18	353680	5031850	5031850	DMLX	SCST	5028150	0.65
31966	755766	5031900	18	353680	5031900	5031900	DMLX	SCST	5028150	0.65
31967										

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM, RENFREW AREA (51/F/071) - ONTARIO, 1975
ORGANIC LAKE CENTRE SEDIMENTS

THE DATA LISTED BELOW (SR TO Y) WERE ESTIMATED BY EMISSION SPECTROMETRY

ANALYTICAL DATA CONTINUED FROM PREVIOUS PAGE

HAP SHEET	SAMPLE NUMBER	SR PPN	BA PPN	MN PPN	TI PPN	AL PPN	CA %	GA %	NG %	Z%	K%	FE %	Zn PPN	Pb PPN	Cr PPN	Co PPN	Ni PPN	Be PPN	La PPN	Y PPN
31F07	756066	59	548	59	548	59	548	59	548	59	548	59	59	59	59	59	59	59	59	59
31F07	756067	235	741	632	104	632	104	632	104	632	104	632	104	632	104	632	104	632	104	632
31F07	756068	112	223	150	644	108	644	108	644	108	644	108	644	108	644	108	644	108	644	108
31F07	756069	132	340	1679	108	926	108	926	108	926	108	926	108	926	108	926	108	926	108	926
31F07	756070	146	340	109	1309	24	24	109	1309	24	24	109	1309	24	24	109	1309	24	24	109
31F07	756071	140	754	109	848	1204	24	848	1204	24	848	1204	24	848	1204	24	848	1204	24	848
31F07	756072	137	56	848	1204	24	848	1204	24	848	1204	24	848	1204	24	848	1204	24	848	1204
31F07	756074	296	346	59	1409	20	20	59	1409	20	59	1409	20	59	1409	20	59	1409	20	59
31F07	756075	242	544	394	3378	5	20	544	394	5	20	544	394	5	20	544	394	5	20	544
31F07	756077	83	221	483	548	4	20	83	221	4	20	83	221	4	20	83	221	4	20	83
31F07	756079	185	56	390	7	56	390	7	56	390	7	56	390	7	56	390	7	56	390	7
31F07	756080	149	196	50	272	5	5	149	196	50	272	5	149	196	50	272	5	149	196	50
31F07	756082	204	208	50	272	5	5	204	208	50	272	5	204	208	50	272	5	204	208	50
31F07	756085	194	496	526	2463	3	20	194	496	526	2463	3	194	496	526	2463	3	194	496	526
31F07	756086	142	253	681	616	4	20	142	253	681	616	4	142	253	681	616	4	142	253	681
31F07	756087	176	524	291	1346	2	20	176	524	291	1346	2	176	524	291	1346	2	176	524	291
31F07	756088	205	523	144	249	4	20	205	523	144	249	4	205	523	144	249	4	205	523	144
31F07	756089	158	278	50	272	5	5	158	278	50	272	5	158	278	50	272	5	158	278	50
31F07	756090	165	495	50	308	4	20	165	495	50	308	4	165	495	50	308	4	165	495	50
31F07	756091	169	416	130	224	2	20	169	416	130	224	2	169	416	130	224	2	169	416	130
31F07	756092	142	426	130	224	2	20	142	426	130	224	2	142	426	130	224	2	142	426	130
31F07	756093	164	426	995	1573	2	20	164	426	995	1573	2	164	426	995	1573	2	164	426	995
31F07	756094	202	486	50	7149	2	20	202	486	50	7149	2	202	486	50	7149	2	202	486	50
31F07	756095	128	257	381	815	2	20	128	257	381	815	2	128	257	381	815	2	128	257	381
31F07	756096	240	496	50	1250	2	20	240	496	50	1250	2	240	496	50	1250	2	240	496	50
31F07	756098	756098	348	784	50	348	784	50	348	784	50	348	784	50	348	784	50	348	784	50
31F07	756099	756099	145	268	518	2	20	145	268	518	268	2	145	268	518	268	2	145	268	518
31F07	756100	756100	145	268	518	2	20	145	268	518	268	2	145	268	518	268	2	145	268	518
31F07	756101	756101	145	268	518	2	20	145	268	518	268	2	145	268	518	268	2	145	268	518
31F07	756102	756102	145	268	518	2	20	145	268	518	268	2	145	268	518	268	2	145	268	518
31F07	756103	117	268	518	1537	2	20	117	268	518	1537	2	117	268	518	1537	2	117	268	518
31F07	756104	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268	518
31F07	756105	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268	518
31F07	756106	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268	518
31F07	756107	756107	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756108	756108	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756109	756109	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756110	756110	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756111	756111	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756112	756112	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756113	756113	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756114	756114	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756115	756115	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756116	756116	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756117	756117	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756118	756118	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756119	756119	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756120	756120	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756121	756121	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756122	756122	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756123	756123	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756124	756124	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756125	756125	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756126	756126	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756127	756127	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756128	756128	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756129	756129	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268
31F07	756130	756130	145	268	518	1537	2	20	145	268	518	1537	2	145	268	518	1537	2	145	268

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM, RENFREW AREA (31/F/07) • ONTARIO • 1975
ORGANIC LAKE CENTRE SEDIMENTS
U BY DELAYED NEUTRON ACTIVATION; MO, ZN, CU, PB, NI, CO, MN, AND FE BY ATOMIC ABSORPTION TECHNIQUES

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM - RENFREW AREA (3147E/27) - ONTARIO - 1975
ORGANIC LAKE CENTRE SEDIMENTS
THE DATA LISTED BELOW (SR TO Y) HERE ESTIMATED BY EMISSION SPECTROMETRY

ANALYTICAL DATA CONTINUED FROM PREVIOUS PAGE

MAP SHEET	SAMPLE NUMBER	BA PPM	NN PPM	TI PPM	AL Z%	CA Z%	LA PPM	BE PPM	PPM PPM	Y PPM
31F07	756131	164	2036	3.4	4.0	1.7	50	684	1.0	4.9
31F07	756132	155	205	1.7	4.7	1.7	50	1510	1.0	3.8
31F07	756133	156	208	1.7	4.7	1.7	50	1510	1.0	5.0
31F07	756134	56	115	242	792	1.9	2.3	1551	1.0	1.0
31F07	756135	79	198	272	1551	2.3	1.6	699	1.0	1.0
31F07	756136	116	59	15	1.5	1.0	1.0	1229	1.0	1.0
31F07	756137	130	270	206	146	2.0	1.6	1223	1.0	1.0
31F07	756138	197	235	50	547	1.5	1.9	1224	1.0	1.0
31F07	756139	79	194	59	405	2.7	1.9	1224	1.0	1.0
31F07	756140	96	214	50	443	0.9	1.0	1225	1.0	1.0
31F07	756142	97	224	50	653	1.5	1.6	1225	1.0	1.0
31F07	756143	756144	95	175	373	1.5	1.9	1225	1.0	1.0
31F07	756145	79	152	50	702	1.7	1.9	1225	1.0	1.0
31F07	756147	139	224	50	846	1.7	1.9	1225	1.0	1.0
31F07	756150	216	243	50	536	1.5	1.6	1225	1.0	1.0
31F07	756152	136	146	183	707	1.3	1.5	1225	1.0	1.0
31F07	756153	756154	83	182	455	0.9	1.4	1225	1.0	1.0
31F07	756155	412	129	50	1458	2.2	1.5	1225	1.0	1.0
31F07	756156	274	394	634	355	1.5	1.6	1225	1.0	1.0
31F07	756157	296	305	50	103	0.5	0.5	1225	1.0	1.0
31F07	756158	221	363	50	1458	1.5	1.6	1225	1.0	1.0
31F07	756159	149	165	50	134	0.5	0.5	1225	1.0	1.0
31F07	756160	198	199	50	976	2.5	1.5	1225	1.0	1.0
31F07	756161	117	227	50	267	0.7	0.7	1225	1.0	1.0
31F07	756162	117	227	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756163	149	165	50	165	1.5	1.6	1225	1.0	1.0
31F07	756164	117	227	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756165	117	227	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756166	117	227	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756167	64	179	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756168	354	739	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756169	354	739	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756170	56	165	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756171	53	179	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756172	310	847	236	359	1.5	1.6	1225	1.0	1.0
31F07	756174	82	229	50	258	0.9	0.9	1225	1.0	1.0
31F07	756175	136	335	50	403	2.0	2.0	1225	1.0	1.0
31F07	756176	132	264	50	365	0.9	0.9	1225	1.0	1.0
31F07	756177	166	383	50	365	0.9	0.9	1225	1.0	1.0
31F07	756178	208	343	50	331	2.0	2.0	1225	1.0	1.0
31F07	756179	164	396	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756180	117	264	50	1275	1.7	1.7	1225	1.0	1.0
31F07	756181	152	205	50	867	2.0	2.0	1225	1.0	1.0
31F07	756182	152	205	50	250	2.0	2.0	1225	1.0	1.0
31F07	756183	148	348	50	459	1.5	1.5	1225	1.0	1.0
31F07	756184	144	393	50	376	1.5	1.5	1225	1.0	1.0
31F07	756185	144	393	50	671	2.0	2.0	1225	1.0	1.0
31F07	756186	144	393	50	376	1.5	1.5	1225	1.0	1.0
31F07	756187	144	393	50	671	2.0	2.0	1225	1.0	1.0
31F07	756188	60	235	50	867	2.0	2.0	1225	1.0	1.0
31F07	756189	157	227	50	250	2.0	2.0	1225	1.0	1.0
31F07	756190	377	757	50	445	2.0	2.0	1225	1.0	1.0
31F07	756191	377	757	50	376	1.5	1.5	1225	1.0	1.0
31F07	756192	130	843	50	671	2.0	2.0	1225	1.0	1.0
31F07	756193	238	393	50	376	1.5	1.5	1225	1.0	1.0
31F07	756194	214	393	50	671	2.0	2.0	1225	1.0	1.0
31F07	756195	214	393	50	376	1.5	1.5	1225	1.0	1.0
31F07	756196	152	205	50	867	2.0	2.0	1225	1.0	1.0
31F07	756197	152	205	50	250	2.0	2.0	1225	1.0	1.0
31F07	756198	148	348	50	459	1.5	1.5	1225	1.0	1.0
31F07	756199	130	843	50	671	2.0	2.0	1225	1.0	1.0
31F07	756200	543	789	50	376	1.5	1.5	1225	1.0	1.0

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM & RENEWABLE AREA (31/F/07) → ONTARIO → 1975

U BY DELAYED NEUTRON ACTIVATION; MO, ZN, CU, PB, Ni, CO, Mn, AND Fe BY ATOMIC ABSORPTION TECHNIQUES

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM, RENFREW AREA (31/F/07), ONTARIO, 1975
ORGANIC LAKE CENTRE SEDIMENTS
THE DATA LISTED BELOW (SR TO Y) WERE ESTIMATED BY EMISSION SPECTROMETRY

ANALYTICAL DATA CONTINUED FROM PREVIOUS PAGE

MAP SHEET	SAMPLE NUMBER	SR PPM	BA PPM	MN PPM	Ti PPM	Al PPM	CA PPM	MG %	GA %	Z %	FE %	K %	PB PPM	Zn PPM	V PPM	Cr PPM	CO PPM	Ni PPM	SE PPM	LA PPM	PPH	Y PPH
31FC07	756202	853	50	169	0.5	0.7	4.0	2.0	2.2	2.0	0.5	1.1	77	14	1.0	4.0	1.0	69	63	5	1.1	
31FC07	756203	645	317	50	475	2.0	0.5	0.8	0.3	0.3	0.3	1.0	48	1.0	1.0	1.0	1.0	62	62	1.1	2.3	
31FC07	756204	467	357	50	636	2.0	0.5	0.5	0.2	0.2	0.2	1.0	59	1.0	1.0	1.0	1.0	65	65	1.0	2.0	
31FC07	756205	351	443	50	445	2.0	0.5	0.6	0.2	0.2	0.2	1.0	59	1.0	1.0	1.0	1.0	68	68	1.0	2.0	
31FC07	756206	388	599	971	445	2.0	0.5	0.6	0.2	0.2	0.2	1.0	123	1.0	1.0	1.0	1.0	58	58	1.0	1.0	
31FC07	756207	784	297	50	869	4.0	0.5	0.5	0.5	0.5	0.5	1.0	100	2.0	2.0	2.0	2.0	52	52	1.0	1.0	
31FC07	756208	257	197	1021	537	4.0	0.5	0.4	0.4	0.4	0.4	1.0	105	2.0	2.0	2.0	2.0	58	58	1.0	1.0	
31FC07	756209	294	245	50	550	4.0	0.5	0.4	0.4	0.4	0.4	1.0	105	2.0	2.0	2.0	2.0	68	68	1.0	1.0	
31FC07	756210	340	430	592	445	5.0	0.5	0.5	0.5	0.5	0.5	1.0	85	57	2.0	2.0	2.0	57	57	1.0	1.0	
31FC07	756211	350	220	198	335	2.0	0.5	0.5	0.2	0.2	0.2	1.0	123	2.0	2.0	2.0	2.0	56	56	1.0	1.0	
31FC07	756212	315	223	703	399	50	726	4.0	2.0	2.0	2.0	2.0	100	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756213	341	214	253	682	3.0	0.5	0.5	0.5	0.5	0.5	1.0	105	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756214	219	553	50	997	4.0	0.5	0.5	0.5	0.5	0.5	1.0	105	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756215	178	346	443	2568	4.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756216	67	218	131	549	4.0	0.5	0.5	0.5	0.5	0.5	1.0	105	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756217	106	156	50	685	4.0	0.5	0.5	0.5	0.5	0.5	1.0	105	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756218	229	99	232	337	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756219	316	225	89	237	1.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756220	126	224	126	238	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756221	340	225	235	235	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756222	106	156	131	197	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756223	229	99	232	337	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756224	126	224	126	238	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756225	340	225	235	235	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756226	145	247	133	247	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756227	145	247	133	247	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756228	126	224	126	238	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756229	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756230	756230	119	560	363	864	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0
31FC07	756231	107	310	418	1651	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756232	132	247	123	263	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756233	106	310	355	2431	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756234	145	247	133	247	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756235	126	224	126	238	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756236	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756237	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756238	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756239	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756240	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756241	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756242	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756243	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756244	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756245	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756246	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756247	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756248	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756249	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756250	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756251	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756252	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756253	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756254	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756255	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756256	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756257	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756258	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756259	316	225	317	271	2.0	0.5	0.5	0.5	0.5	0.5	1.0	123	2.0	2.0	2.0	2.0	53	53	1.0	1.0	
31FC07	756260	316	225	317																		

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM, RENFREW AREA (31/F/07), ONTARIO, 1975
 U BY DELAYED NEUTRON ACTIVATION; NO, ZN, CU, PB, NI, CO, MN, AND FE BY ATOMIC ABSORPTION TECHNIQUES

MAP SHEET	SAMPLE NUMBER	UTM COORDINATES		BASIN	ROCK	TYPE	DEPTH	COMP.	COLOUR	BOTTOM WATER CONDITIONS		NO	ZINC	CO	IRON	POTASSIUM	PHOSPHATE	PPM	PERCENT	L.U.I.
		ZONE	EAST							COND.	TEMP.	AMMONIA	OXYGEN	PH	CHLORIDE	PBM	PPM	PPM	PPM	PPM
31FC07	756270	18	357220	5027050	GRNT	1	---	---	---	1.1	8.0	35	11.53	56.9	8.2	36	1.9	1.0	4	1.53
31FC07	756271	18	358520	5027300	GRNT	13	---	---	---	6	7.9	61	0.59	10.4	3.3	63	22	8	9	0.73
31FC07	756272	18	358420	5027900	GRNT	3	---	---	---	1.3	7.9	54	11.13	6.0	3.5	62	14	3	7	0.77
31FC07	756274	18	358420	5026300	GRNT	8	---	---	---	1.4	7.9	55	8.55	9.7	2.5	77	16	8	3	0.47
31FC07	756275	18	358720	5029400	GRNT	8	---	---	---	1.3	7.9	66	8.42	8.3	2.3	73	13	9	4	0.47
31FC07	756276	18	358950	5133100	GRNT	1	---	---	---	1.3	7.9	61	10.88	13.0	3.3	67	15	7	6	1.35
																			1.11	
																			0.29	
																			0.5	

Lower detection limits
 (For statistical treatment of the data the value employed for the lower detection limit is equal to one-half the actual lower detection limit).

GEOCHEMICAL ORIENTATION SURVEY FOR URANIUM, RENFREW AREA (31/F/97) - ONTARIO, 1975

ORGANIC LAKE CENTRE SEDIMENTS

THE DATA LISTED BELOW (SHEET 4) WERE ESTIMATED BY EMISSION SPECTROMETRY

ANALYTICAL DATA CONTINUED FROM PREVIOUS PAGE

MAP SHEET NUMBER	SAMPLE NUMBER	SR PPM	BA PPM	XN PPM	TI PPM	AL PPM	CA PPM	NG %	FE %	K %	PB PPM	ZN PPM	Y PPM	Mo PPM	Cr PPM	Cu PPM	Co PPM	Ni PPM	Be PPM	La PPM	Y PPM
31F07	756270	176	4.87	56	2099	3.0	2.3	0.3	1.3	0.6	15	90	31	4.0	2.0	58	5	10	3.5	66	149
31F07	756271	75	1.62	50	845	2.2	1.3	0.1	0.7	0.1	8	116	17	2.1	16	33	6	10	1.0	55	43
31F07	756272	97	2.55	50	663	1.3	0.9	0.1	0.4	0.7	2	85	11	1.1	13	28	3	6	1.0	46	32
31F07	756274	103	2.59	50	975	2.1	1.1	0.1	0.4	0.8	6	105	19	1.0	15	39	5	11	1.0	62	47
31F07	756275	133	3.17	50	1921	3.1	2.1	0.2	1.0	0.5	7	102	23	2.2	23	29	7	13	2.1	42	40
31F07	756276	54	1.22	50	273	0.7	1.1	0.1	0.4	0.1	3	166	14	2.0	5	26	2	2	1.0	56	37

Lower detection limits

Upper detection limits

(For statistical treatment of the data the value employed for the lower detection limit is equal to one-half the actual lower detection limit and for the upper detection limit is equal to the actual upper detection limit).